



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
SEPTEMBER 27, 2023 COUNCIL MEETING  
VIRTUAL MEETING BY ELECTRONIC PARTICIPATION &  
IN-PERSON AT THE MUNICIPAL OFFICE –  
7404 WELLINGTON RD 34, PUSLINCH

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## **A G E N D A ADDENDUM**

**DATE:** Wednesday September 27, 2023

**CLOSED MEETING:** Directly following Section 13 Announcements

**REGULAR MEETING:** 10:00 A.M.

### **Addendum**

7.1.1 Delegation by Daniel Gibbons regarding 9.3.1 Report ADM-2023-049

14.3 Confidential written report regarding a proposed or pending acquisition or disposition of land by the municipality or local board – Township owned ROW

**≠ Denotes resolution prepared**

1. **Call the Meeting to Order**
2. **Roll Call**
3. **Moment of Reflection**
4. **Confirmation of the Agenda ≠**
5. **Disclosure of Pecuniary Interest & the General Nature Thereof**
6. **Consent Agenda ≠**
  - 6.1 Adoption and Receipt of the Minutes of the Previous Council and Committee Meetings:



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- 6.1.1 September 6, 2023 Council Minutes
  - 6.1.2 May 30, 2023 Special Council Minutes
  - 6.1.3 July 4, 2023 Special Council Minutes
  - 6.1.4 August 8, 2023 Committee of Adjustment Minutes
  - 6.1.5 August 8, 2023 Planning and Development Advisory Committee Minutes
  - 6.1.6 June 5, 2023 Youth Advisory Committee Minutes
  - 6.1.7 June 5, 2023 Heritage Advisory Committee Minutes
  - 6.2 Town of Essex Letter of Support Municipal Freedom of Information and Protection of Privacy Act
  - 6.3 Town of Bracebridge resolution regarding Municipal Freedom of Information and Protection of Privacy Act Review Request
  - 6.4 Township of Killaloe, Hagarty and Richards Letter of Support Municipal Free of Information and Protection of Privacy Act
  - 6.5 Township of Matachewan resolution regarding Support Update to Municipal Codes of Conduct Matachewan
  - 6.6 Town of Plympton-Wyoming Support Resolution regarding Strengthening Municipal Codes of Conduct
  - 6.7 Municipality of Wawa Resolution regarding Health Insurance Plan Coverage for Chronic Pain Treatments
  - 6.8 Municipality of Shuniah Support Resolution regarding for Ontario Health Insurance Plan Coverage for Chronic Pain Treatments
  - 6.9 Municipality of St. Charles Support Resolution regarding Stop Arm Cameras on all School Buses
  - 6.10 Elgin County correspondence regarding Bus Patrol with respect to Support Resolution School Bus Stop Arm Cameras
  - 6.11 City of Hamilton request regarding support of 311 launch
  - 6.12 Ministry of Municipal Affairs and Housing Proposal to return lands in Ajax to the Greenbelt
  - 6.13 Township of Cramahe Support Resolution regarding Highway Traffic Act Amendments
  - 6.14 Town of Grimsby Support Resolution regarding Guaranteed Livable Income
  - 6.15 Township of Puslinch Council Resolution 2023-236 Hanlon Expressway Mid Block Inter-change response from MTO
7. **Delegations ≠**
- 7.1 Specific Interest (Items Listed on the Meeting Agenda)
    - 7.1.1 Delegation by Daniel Gibbons regarding 9.3.1 Report ADM-2023-049
  - 7.2 General Interest (Items Not Previously Listed on the Meeting Agenda)
    - 7.2.1 None



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8. **Public Meetings**

- 8.1 September 27, 2023 Public Information Meeting held at 7404 Wellington Rd 34 in-person and by electronic participation through Zoom regarding the following matter:

Proposed 2024 User Fees and Charges

9. **Reports ≠**

9.1 **Puslinch Fire and Rescue Services**

9.1.1 None

9.2 **Finance Department**

9.2.1 None

9.3 **Administration Department**

9.3.1 Report ADM-2023-049 - Telecommunication Tower – 7424 Wellington Rd 34≠

9.3.2 Report ADM-2023-050 - Township Group Benefits≠

9.3.3 Report ADM-2023-051 - Travelled Road Pedestrian Puslinch Lake Access≠

9.3.4 Report ADM-2023-052 – *Ontario Heritage Act* Alternative Notice Policy≠

9.3.5 Report ADM-2023-054 – ERO Posting 019-7595 – Dufferin Aggregates Aberfoyle Pit 2 Tonnage Increase Proposal≠

9.4 **Planning and Building Department**

9.4.1 None

9.5 **Roads and Parks Department**

9.5.1 None

9.6 **Recreation Department**

9.6.1 Report REC-2023-004 - Service Levels - Parks and Recreation≠

10. **Correspondence ≠**

10.1 Council Resolution 2023-236 - Hanlon Expressway Midblock Interchange & Draft Comments Prepared by Salvini Consulting and Presentation by Salvini Consulting and MTO≠ **10:00 A.M.**

10.2 Presentation by Sarah Wilhelm, Manager of Policy Planning, County of Wellington regarding the Regionally Significant Economic Development Study Area≠ **11:00 A.M.**

10.3 Blue Triton Brands – Aberfoyle Site – 2022 Annual Monitoring Report and Peer Review≠

10.4 Hamilton Conservation Authority – Resolution regarding Reverse Changes to the Conservation Authorities Act and Ontario Wetland Evaluation System≠



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11. **Council reports ≠**
  - 11.1 Mayor' Updates
  - 11.2 Council Member Reports (verbal or written updates from members who sit on boards/committees)
  
12. **By-laws ≠**
  - 12.1 First, Second and Third Reading
    - 12.1.1 None
  
13. **Announcements**
  
14. **Closed Session – Pursuant to Section 239 of the Municipal Act, 2001**
  - 14.1 Confidential written report regarding personal matters about an identifiable individual, including municipal or local board employees– Human Resource matter
  - 14.2 Confidential verbal report regarding personal matters about an identifiable individual, including municipal or local board employees – Human Resource matter
  - 14.3 Confidential written report regarding a proposed or pending acquisition or disposition of land by the municipality or local board – Township owned ROW
  - 14.4 Confidential minutes from previous closed meetings:
    - 14.4.1 May 30, 2023
    - 14.4.2 July 4, 2023
    - 14.4.3 August 16, 2023
  
15. **Business Arising from Closed Session**
  
16. **Notice of Motion**
  
17. **New Business**
  
18. **Confirmatory By-law ≠**
  - 18.1 BL2023-41 Confirm By-law – September 27, 2023 ≠
  
19. **Adjournment ≠**



## MINUTES

**DATE:** September 6, 2023

**CLOSED MEETING:** 1:00 PM

**COUNCIL MEETING:** 10:00 A.M.

The September 6, 2023 Council Meeting was held on the above date and called to order at 10:00 a.m. via electronic participation and in-person at 23 Brock Rd S, Puslinch.

### 1. CALL THE MEETING TO ORDER

### 2. ROLL CALL

#### ATTENDANCE:

Councillor Sara Bailey  
Councillor Russel Hurst  
Councillor Jessica Goyda  
Councillor John Sepulis  
Mayor James Seeley

#### STAFF IN ATTENDANCE:

1. Glenn Schwendinger, CAO - absent
2. Mike Fowler, Director of Public Works, Parks and Facilities
3. Mary Hasan, Director of Finance/Treasurer
4. Courtenay Hoytfox, Municipal Clerk
5. Justine Brotherston, Deputy Clerk
6. Mirela Oltean, Deputy Treasurer
7. Tom Mulvey, Fire Chief
8. Andrew Hartholt, CBO

### 3. MOMENT OF REFLECTION

### 4. CONFIRMATION OF THE AGENDA

#### Resolution No. 2023-276:

Moved by Councillor Goyda and  
Seconded by Councillor Sepulis

**That Council approves the September 6, 2023 Agenda and Addendum as circulated; and**

**That Council approves the additions to the agenda as follows:**

**Consent Item 6.1.4 Questions received from Council seeking additional information and the corresponding responses provided by staff regarding the September 6, 2023 Council agenda; and**

**That Council approve a change to the order of business to advance item 9.3.3 Report ADM-2023-047 Township Roads Management Plan Final Draft and item 9.3.2 Report ADM-2023-046 Budget Process and Service Level Review to directly following Disclosure of Pecuniary Interest.**

**CARRIED**

### 5. DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:

None

### 6. CONSENT AGENDA

- 6.1 Adoption and Receipt of the Minutes of the Previous Council and Committee Meetings:
  - 6.1.1 August 16, 2023 Council Minutes
  - 6.1.2 July 11, 2023 Committee of Adjustment Minutes
  - 6.1.3 July 11, 2023 Planning and Development Advisory Committee Minutes

6.1.4 Council Questions regarding the September 6, 2023 agenda and the corresponding responses provided by staff.

- 6.2 Ministry of Infrastructure - Red Tape Reduction Measures
- 6.3 Ministry of Municipal Affairs and Housing - Building Faster Fund
- 6.4 Ministry of Natural Resources and Forestry - Streamlining of Approvals under the Aggregate Resources Act and Supporting Policy
- 6.5 Ministry of the Environment Conservation and Parks - Moving to a Project List under the Environmental Assessment Act
- 6.6 City of Guelph - Notice of Complete Application Public Meeting Decision - Agency - 585 Hanlon Creek
- 6.7 City of Guelph - Notice of Complete Application - 55 Teal Dr
- 6.8 Village of Merrickville-Wolford - Proposed Provincial Planning Statement
- 6.9 Municipality of St. Charles - Provincial Planning Statement
- 6.10 City of Stratford - Strengthen Municipal Codes of Conduct
- 6.11 Northumberland County - Legislative Amendments to Improve Municipal Codes of Conduct and Enforcement
- 6.12 Municipality of Powassan - Legislative Amendments to Improve Municipal Codes of Conduct and Enforcement
- 6.13 City of Port Colborne - Short Term Rentals
- 6.14 Municipality of Dutton Dunwich - Special Powers and Duties of Heads of Council
- 6.15 Town of Blind River - Special Powers and Duties of Heads of Council
- 6.16 Municipality of St. Charles - Bill 5, Stopping Harassment and Abuse from Local Leaders Act
- 6.17 Municipality of St. Charles – National Housing Strategy
- 6.18 Municipality of St. Charles - Support Municipalities Retaining Surplus from Tax Sales
- 6.19 Town of Amherstburg - Violence Against Women
- 6.20 Township of Emo - Black Ash Tree
- 6.21 Township of Greater Madawaska - The Women of Ontario Say No
- 6.22 Township of Severn - Climate Emergency Just Transition Transfer
- 6.23 Township of the Archipelago - Request to Province to Establish a Regulatory Framework for global technology platforms affecting municipal rentals
- 6.24 Municipality of Shuniah - Changes to Municipal Freedom of Information and Privacy Protection Act
- 6.25 Mill Creek Pit July Monthly Monitoring Report – 5738
- 6.26 Grand River Conservation Authority - August General Meeting

**Resolution No. 2023-277:**

Moved by Councillor Sepulis and  
Seconded by Councillor Bailey

**That the Consent Agenda items listed for SEPTEMBER 6, 2023 Council meeting be received for information.**

**CARRIED**

**7. DELEGATIONS:**

7.1 Specific Interest (Items Listed on the Meeting Agenda)

7.1.1 None

7.2 General Interest (Items Not Previously Listed on the Meeting Agenda)

7.2.1 None

**8. PUBLIC MEETINGS:**

8.1 September 14, 2023 Open House held at 23 Brock Rd S. in-person and by electronic participation through Zoom regarding the following matter:

Local Business Open House

8.2 September 27, 2023 Public Information Meeting held at 23 Brock Rd S. in-person and by electronic participation through Zoom regarding the following matter:

Proposed 2024 User Fees and Charges

**9. REPORTS:**



**9.1 Puslinch Fire and Rescue Services**

9.1.1 None

**9.2 Finance Department**

9.2.1 Report FIN-2023-026 - 2024 Proposed Cost of Living Adjustment

**Resolution No. 2023-278:** Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

**That Report FIN-2023-026 entitled 2024 Proposed Cost of Living Adjustment be received; and**

**That Council approve a Cost of Living Adjustment of 4.0% effective January 1, 2024 with the remaining 2.9% Cost of Living Adjustment to be added to the Cost of Living Adjustment approved in the 2025 budget and future year budgets (as needed); and**

**That Council consider, subject to budget consideration, allocating an additional 1% COLA increase to be contributed into a reserve for the 2024 market review process.**

**CARRIED**

**9.3 Administration Department**

9.3.1 Report ADM-2023-045 - Lot 26 & 27 Con. 7 ERO Posting to Permit Sewage System

**Resolution No. 2023-279:** Moved by Councillor Sepulis and  
Seconded by Councillor Hurst

**That Report ADM-2023-045 entitled ERO Posting 019-7545 - 7475 McLean Road East & ERO Posting 019-7435 – Lot 26 & 27 Concession 7 be received; and**

**That Council direct staff to submit the following comments to the ERO:**

**“The Township has not received a formal Site Plan Control application for this property detailing the proposed use and therefore, objects to approval of an ECA application until such time that the proponent demonstrates the proposed use complies with the Township’s Zoning By-law and specifically the Township definition of dry industrial uses.**

**CARRIED**

**Council recessed from 12:28 pm-12:33 pm**

**Roll Call**

**Councillor Goyda  
Councillor Sepulis  
Councillor Bailey  
Councillor Hurst  
Mayor Seeley**

9.3.2 Report ADM-2023-046- Budget Process and Service Level Review

**Resolution No. 2023-280:** Moved by Councillor Bailey and  
Seconded by Councillor Hurst

**THAT Report ADM-2023-046 entitled Budget Process and Service Level Review be received for information; and**

**1. That the current Budget Development and Control Policy be utilized as the guiding**



document for the preparation of the 2024 Budget as presented; and

**2. That staff be directed to prepare the 2024 budget and/or report back with more information based on the direction provided by Council in the comment summaries attached as Schedule A to the September 6, 2023 Council meeting minutes.**

**CARRIED**

9.3.3 Report ADM-2023-047- Township Roads Management Plan Final Draft

**Resolution No. 2023-281:**

Moved by Councillor Hurst and  
Seconded by Councillor Goyda

**That Report ADM-2023-047 regarding the Township of Puslinch Road Management Plan (RMP) be received for information; and**

**Whereas the Township RMP has been prepared by the Township Engineering Consultant in consultation with staff; and**

**Whereas Council has thoroughly reviewed and provided input into the RMP; and**

**Whereas the public has been provided opportunity to comment on the RMP during the development process;**

**Therefore, that Council approve the RMP as presented to be used as a key tool regarding maintaining and operating the Township's road network; budgeting for the Township's road network; and responding to concerns and requests regarding the Township's road network; and**

**That the recommendations outlined in the RMP are endorsed by Council subject to budget considerations; and further**

**That Council direct staff to include the RMP on the Township website and that staff develop a tracking database as outlined in the report.**

**CARRIED**

**9.4 Planning and Building Department**

9.4.1 None

**9.5 Emergency Management**

9.5.1 None

**9.6 Roads and Parks Department**

9.6.1 None

**9.7 Recreation Department**

9.7.1 None



10. **CORRESPONDENCE:**

10.1 2022 Ecological Monitoring Report & Annual Monitoring Peer Review

**Resolution No. 2023-282:**

Moved by Councillor Hurst and  
Seconded by Councillor Sepulis

**That Council receive correspondence item 10.1 regarding the 2022 Ecological Monitoring Report for the Mill Creek Pit (5738) and and peer review for information; and**

**That Council direct staff to forward the peer review to the pit operator for a response once clarification is provided by Harden Environmental; and**

**That Council direct staff to utilize the report and the rehabilitation of the pit for a wetland going forward as a preferred after use in the Township.**

**CARRIED**

11. **COUNCIL REPORTS:**

11.1 Mayor' Updates

11.1.1 Mayor Seeley gave an update regarding the AMO conference and the TAPMO General Meeting.

11.2 Council Member Reports

11.2.1 None

**Resolution No. 2023-283:**

Moved by Councillor Bailey and  
Seconded by Councillor Sepulis

**That Council receive the Mayors updates for information.**

**CARRIED**

12. **BY-LAWS:**

12.1.1 None

13. **ANNOUNCEMENTS:**

13.1 Councillor Bailey announced the Badenoch BBQ on September 16, 2023 any time after 4pm and mentioned that the Fall Fair is scheduled for this weekend September 8, 9, and 10.

13.2 Councillor Sepulis remarked that an announcement was made by the Province and Federal Government that funding has been made available for fiber internet. The announcement included areas in Puslinch.

14. **CLOSED SESSION:**

Council was in closed session from 1:16 p.m. to 5:01 p.m.

The Clerk stopped the recording and removed all public attendees from the webinar. The webinar was then 'locked' so no new participants are able to join.

**Resolution No. 2023-284:**

Moved by Councillor Goyda and  
Seconded by Councillor Sepulis

**That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:**

**14.1 Confidential report regarding advise that is subject to solicitor-client privilege, including communications necessary for that purpose – Telecommunications Tower**

**14.2 Confidential verbal report regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Ontario Land Tribunal matter**



**14.3 Confidential verbal report regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Ontario Land Tribunal matter**

**CARRIED**

**Resolution No. 2023-285:** Moved by Councillor Bailey and  
Seconded by Councillor Hurst

**THAT Council moves into open session at 5:01 pm**

**CARRIED**

Council resumed into open session at 5:01 p.m.

**Resolution No. 2023-286:** Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

**That Council receives the:**

**14.1 Confidential report regarding advise that is subject to solicitor-client privilege, including communications necessary for that purpose – Telecommunications Tower**

**14.2 Confidential verbal report regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Ontario Land Tribunal matter**

**14.3 Confidential verbal report regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Ontario Land Tribunal matter; and**

**That staff proceed as directed.**

**CARRIED**

**15. BUSINESS ARISING FROM CLOSED SESSION:**

None

**16. NOTICE OF MOTION:**

None

**17. NEW BUSINESS:**

None

**18. CONFIRMATORY BY-LAW:**

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

**Resolution No. 2023-287:** Moved by Councillor Sepulis and  
Seconded by Councillor Bailey

**That the following By-law be taken as read three times and finally passed in open Council:**

**By-Law 2023-037 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 6 day of September 2023.**

**CARRIED**

**19. ADJOURNMENT:**

**Resolution No. 2023-288:** Moved by Councillor Bailey and  
Seconded by Councillor Hurst



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& IN-PERSON AT 23 BROCK RD S, PUSLINCH

**That Council hereby adjourns at 6:11 p.m.**

**CARRIED**

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James Seeley, Mayor

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Courtenay Hoytfox, Clerk

## Council Input – Budget Content/Service Levels

Compiled Comments received regarding suggested items for consideration for the 2024 Budget

	Budget Content	James Seeley A	Sara Bailey B	Russel Hurst C	Jessica Goyda D	John Sepulis E	Council Direction
C-1	Are there any service levels you would like to see increased?	<ul style="list-style-type: none"> <li>a. More frequent cleaning of facilities. A thorough full cleaning/maintenance of all facilities every spring.</li> <li>b. More frequent cleaning of washrooms at ball diamonds.</li> <li>c. Regular re-grading of diamonds to ensure proper drainage.</li> </ul>	<ul style="list-style-type: none"> <li>a. Parks maintenance service levels to meet the current upkeep needs and the needs of the changes with the parks revitalization upgrades. Would like to see an increase where the millennial garden has a one time spring landscape clean up at the beginning of the season – this will allow volunteers to maintain it in a reasonable capacity.</li> <li>b. Assessment of our bookings program that services staff use. Need to improve the</li> </ul>	<ul style="list-style-type: none"> <li>a. Ash tree removal, speed enforcement, snow removal (but I would defer to public works on setting realistic expectations).</li> </ul>	<ul style="list-style-type: none"> <li>a. Road Speed Mitigation/Enforcement throughout the township.</li> </ul>	<ul style="list-style-type: none"> <li>a. Removal of dead trees</li> </ul>	<p>Tree removal: increase forestry budget by 10k (current budget is approximately 22k which provides 2 weeks of forestry services)</p> <p>Road speed mitigation: staff reporting back on speed indicator signs and costing</p> <p>Millennial garden: no action (subject to the discussion regarding additional staffing resources or outsourcing)</p> <p>Facility booking system: no action; staff to review the possibility of a flexible rental approval process where a rental request is made during a time where public drop-in programming is typically scheduled.</p>

			<p>process for adding insurance to a booking and paying online via credit card or e-transfer. Make bookings easy. Can reservations be done without services staff?</p> <p>c. Once the Site Alteration by-law is in place, want to ensure we have enough staff support to fulfill the monitoring obligations.</p>				<p>Site alteration by-law: that staff investigate after hours by-law enforcement support through contact neighbouring municipalities with 24/7 service delivery for budget deliberations and investigate cost recovery options related to enforcement; and that staff report back through the budget process on added admin support for technical reviews for site alteration applications.</p> <p>Park cleaning and maintenance: subject to the discussion regarding additional staffing resources</p> <p>Base budget increase for gravel roads reserve included in the first draft of the budget which equals a 1% tax increase (this is in addition to the base amount already being allocated to the reserve) – include the possibility of utilizing the aggregate tax assessment or</p>
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							the anticipated new growth percentage to account for the 1% increase; and that this additional increase be add to the 10 year plan.
C-2	Are there any service levels that you would like to see decreased?			a. Not that I am aware of or have been given feedback on.			
C-3	Are there any service levels you would like to see added?		a. Would like to see an increase in recreation programming options for Puslinch residents. Adding a liaison person to sport organizations, community partners, local residents to run programs out of our facilities for our community kids (in conjunction with running programs for kids from	a. I think engage Puslinch/social media is a forum that could see future growth b. I think we should have a discussion about supporting Township staff professional development. We have a fairly new/younger staff that we need to invest in.			Recreation programming & liaison person: refer this initiative to the Youth Advisory Committee & Recreation Committee to increase awareness in addition to utilizing Township communication tools. Staff to bring back a revised TOR for the Recreation Committee to increase the meeting frequency to 6-8 meetings per year (including 1-2 combined meetings with Rec & Youth for project building and brainstorming) and adjust the per diem through the 2024 budget process;

			<p>outside Puslinch) and help with the registration process (and board advertising).</p> <p>b. Would like to see speed mitigation options proposed when roadwork is in design stage and added into the road work projects (similar for wildlife mitigation work).</p> <p>c. Adding lighting to Millennial garden.</p> <p>d. Follow up on delegation from Ken DeHart regarding pit tax assessments – helicopter fly over.</p> <p>e. Starting a Heritage Fund similar to the County’s CIP but for private homes on the heritage registry (“Heritage</p>				<p>and that this be presented to the Rec Committee at an upcoming meeting. Staff to look into software capabilities to include the program name on the online calendar and the privacy limitations.</p> <p>Speed mitigation: staff to provide Council the opportunity to comment prior to road design is completed in order to consider speed mitigation, wildlife mitigation, road widening, etc. and that staff include any public feedback received for the road or road section.</p> <p>Millennial garden lighting: staff to request a quote from an electrician in order to provide lighting options and report back through budget process.</p> <p>Air photos for pit operations with drones: subject to</p>
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			Improvement Program”).				<p>discussions in staff comment summary.</p> <p>Heritage fund (CIP): staff to report back on the possibility of a policy to modify the statutory requirement to advertise Heritage Designations; and the possibility to establish a Heritage Fund or Heritage CIP.</p> <p>Engage Puslinch: staff will present budget request for advertising related to communications tool during budget process.</p> <p>Staff development: the Township has a professional development budget that is reviewed annually by staff. We are currently working with Centre Wellington to take advantage of training opportunities outside of courses and seminars typically offered.</p>
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							Township meeting refreshments: include \$750 as a base budget increase.
C-4	Are there any service levels you would like to see removed?		a. Would like to know if any current services are inefficient for discussion,	a. Not that I am aware of or have been given feedback on.			
C-5	Are there any potential legislative or policy directions or initiatives that may be coming that you are concerned about?		a. Bill 99 Garrett's Legacy Act (Requirements for Movable Soccer Goals)	a. Soil management regulations, aggregate licencing, rural internet.	a. Continuation of rising costs associated with labour, construction, fuel, insurance etc. and it's impact not only on current budget year but also future capital forecast costs - for example – are we forecasting adequate replacement values in our Asset Management Plan? Do we need to	a. Bill 23 b. Bill 97 c. Unbridled growth of gravel pits d. Ensuring all residents have access to at least consistent 50/10 internet service	No specific action.

					increase the target balance in that reserve?		
C-6	Are there any potential legislative or policy directions or initiatives that you would like to see implemented?		a. Follow up on discussion around increased community safety zones within the Township and implementation of speed cameras, etc.	a. Not at this time.	<ul style="list-style-type: none"> <li>a. Implementation of Asset Management Software.</li> <li>b. Improved Public Access to Puslinch Lake.</li> <li>c. Implementation of Roads Management Plan including speed mitigation.</li> <li>d. Movement toward a solution for permanent council chambers.</li> </ul>	<ul style="list-style-type: none"> <li>a. See 7.1 below.</li> <li>b. Actively move on providing natural gas service to residents.</li> <li>c. Work toward removing rail storage tracks at Arkell.</li> <li>d. Improved accessibility to Puslinch Lake.</li> <li>e. Implementation of Road Master Plan including signage and cameras at Aberfoyle and Lake Road.</li> <li>f. Implementation of software to manage asset management reserve.</li> </ul>	<p>Puslinch Lake Access: Travelled Road lake access to be presented to Council at an upcoming meeting; Staff continue to work with the GRCA and City of Cambridge on the opportunity for lake access on GRCA lands.</p> <p>Staff continue discussions regarding highway 6 by-pass and will request a meeting with the Minister Transportation and Minister of Finance to identify the urgency of the by-pass going forward as planned.</p>
						g. More movement on County KPMG	Planning revitalization of Aberfoyle between the two roundabouts: staff to

						<p>study efficiency recommendations.</p> <p>h. Finalization of Fill by-law.</p> <p>i. Economic sustainability of the Township.</p> <p>j. Pressure to reprioritize Morriston Bypass.</p> <p>k. Planning revitalization of Aberfoyle between the two roundabouts.</p> <p>l.</p>	<p>prepare an RFP for Urban Design concepts for the Aberfoyle and Morriston area to include the Township banners; pole lighting, sidewalks, crosswalk.</p>
C-7	<p>Are there any new projects you would like to see added for consideration?</p>	<p>a. New lights at Morriston meadows and Badenoch soccer field.</p>	<p>a. Lighting for Badenoch soccer pitch and for Morriston Meadows ball diamond.</p>	<p>a. Reasonable Puslinch lake access (vis GRCA), speed enforcement (via camera), Hwy 6 bypass push.</p>	<p>a. Expanding our Community Improvement Plan in partnership with County Economic Development Department. Currently, the Puslinch Community Improvement Plan applies only to Aberfoyle and Morriston but all of Puslinch could benefit</p>	<p>a. Study and consultation with Province to look at limiting the area of Township land actively used for gravel extraction to a fixed percentage at any point in time.</p> <p>b. Public docks at Puslinch Lake.</p> <p>c. High Level Study to provide order of magnitude</p>	<p>Speed enforcement: staff to request that the County representative of the Police Services Board (Councillor Campbell and the Inspector) to delegate to Council regarding level of service, breakdown of the member municipality (i.e. tickets issued in each municipality, km of road per each municipality).</p> <p>Expanding CIP area: report back on the process to</p>

					<p>from the goals and objectives of the CIP.</p> <p>b. Consideration of updating Parks Master Plan.</p>	<p>costs and the viability of train whistle cessation agreement at all Township crossings.</p>	<p>amend the CIP area and the potential for grant funding through the County. Investigate including the CIP expansion into the already funded CIP project for 2023.</p> <p>Parks Master Plan: the next review is scheduled for 2032; given that the current PMP is nearing completion by end of 2024 that staff report back on what the costing is to be considered during the budget process to start the process in 2024.</p> <p>Gravel extraction study: 25k is currently funded in the 2023 budget – carry forward to 2024 to undertake this work.</p>
					<p>d. Technical support for review of Morrison Bypass components.</p> <p>e. Technical support for creation of economic area</p>		<p>Morrison By-pass: review is currently being completed by Township Traffic Engineer related to 'hotspots'. Total amount 25k with 5k being used in 2023 and 20k carry forward to 2024</p>

						<p>(being undertaken by County).</p> <p>f. Expansion of Township Offices to accommodate staff and new Council Chambers.</p>	<p>Regionally Significant Economic Employment Study area: 30k included in the 2024 budget. Further discussion at the September 27 Council meeting.</p> <p>Municipal Office Expansion: detailed design options to be presented to Council during the budget process including costing for the 2024 budget. Staff to investigate the potential to sever a parcel of land from the Township owned Watson property for the purpose of sale to fund the Municipal Office renovation and report back. Staff report back to Council on the costing associated with returning to Council Chambers for Council and Committee meetings.</p>
C-8	Are there any projects you would like to see considered for removal			a. Not at this time.			

	from past plans?						
C-9	Are there any new programs you would like to see considered?			<ul style="list-style-type: none"> <li>a. Working with County economic development more closely.</li> <li>b. Further collaboration with conservation authorities to foster access to conservation areas.</li> </ul>	<ul style="list-style-type: none"> <li>a. Implementation of a Seniors Committee</li> </ul>	<ul style="list-style-type: none"> <li>a. See items under 6 and 7 above.</li> </ul>	Seniors Committee: staff to prepare communications to the public to gauge interest in a seniors committee and report back for potential to add in the next term of Council.
C-10	What would the overall big picture direction to staff be that you would like considered?		<ul style="list-style-type: none"> <li>a. Our budget should reflect Council's goals.</li> </ul>	<ul style="list-style-type: none"> <li>a. Keep to a long term vision for the Township, sustainable tax increases that are comparable to other regions.</li> </ul>		<ul style="list-style-type: none"> <li>a. Fair tax rate increase to residents and businesses.</li> </ul>	

C-11	Given the current situation what would your target increase be in terms of a percentage?					a. I would support a 3.5% increase or higher as long as the blended tax rate with County is at 3.5%.	
C-12	In one sentence, what would you like the theme of the next budget to be?			a. "Puslinch Township: focused on being a safe community, fostering connectivity and ensuring a vibrant quality of life for our residents and businesses"		a. Managing Inflation Equitably for All	

## Leadership Team Input – Budget Content/Service Levels

Compiled Comments received regarding suggested items for consideration for the 2024 Budget

	Budget Content	Glenn Schwendinger CAO	Mary Hassan Director of Finance	Andrew Hartholt CBO	Courtenay Hoytfox Clerk (Interim CAO)	Mike Fowler Director of Public Works, Parks, and Facilities	Tom Mulvey Fire Chief	Council Direction
		A	B	C	D	E	F	
L-1	Are there any service levels you would like to see increased?				<p>a. Bill 23 introduced legislative changes affecting the Heritage Act. In response, Council has initiated the work to designate priority properties through consultation with the Heritage Committee and the property owners. Staff are developing a Heritage Permit and Screening process which will include a delegated authority by-law. This will enable staff to screen out projects that meet specific criteria and therefore not be required to come before Council/Committee for approval.</p> <p>b. Bill 23 introduced legislative changes affecting the Planning Act. In response, the Township has passed a mandatory pre-consultation by-law that increased the requirement to consult with the Township. Staff recommend that</p>	<p>a. The Puslinch Community Centre is currently not staffed during weekend rentals. Part time facility staff are scheduled to clean and 'turn over' the facility in between rentals. It is becoming increasingly difficult to manage large scale events with no staffing presence. The facility is being damaged on a more regular basis, as well as rentals are exceeding occupant loads. This is being communicated to full time facility staff by the students working at the ORC. Often renters are not fulfilling their contract obligations in respect to cleaning of the facility upon departure. It is also being reported that some large scale rentals are avoiding the Alcohol Risk Management Policy by drinking in the PCC</p>	<p>a. Puslinch Fire &amp; Rescue Department continues to increase the amount of Public Education and Fire Prevention, however the number of preventable fire deaths in Ontario continue to increase. We need to continue increasing the amount of Public Education &amp; Fire Prevention.</p>	<p>PCC rentals: staff report back on the costing of the addition of a full time facility operator; investigating an occupant maximum for facility rentals at the PCC.</p> <p>Parks pick-up truck: staff prepare costing for consideration during the budget process for the addition of a pick-up truck in the parks department and also include a leasing option in the costing analysis. Include the life cycle of the existing trucks in the analysis.</p>



					<p>Council consider amending this by-law to include</p>	<p>parking lot and grounds and not in the facility. Full time staff are aware of this activity as they often clean the PCC grounds the following Monday and are finding bottles. Staff strongly suggest that a lower occupant maximum be set for the facility as the cleaning associated with large groups (250+) is not feasible with current staffing levels. In addition, staff suggest that Facility staff work on a rotational basis in order to have a full time staff person present at all times when the PCC is being rented. Staff are preparing an information report with detailed costing for Council's consideration. This would include reducing the number of part time hours and adding a third facility operator in order to develop a rotational shift schedule.</p> <p>b. The Parks department has one (1) truck for three (3) employees; Within the Parks</p>		
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						department, there is one crew cab pick-up responsible for transporting staff and mowers to the various sites in the Township. In addition to parks duties Parks staff are required to complete garbage removal from parks;		
	<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
					<p>c. severance applications, condominium and subdivision applications, and applications that include official plan amendments. Council has approved the addition of a Township Planner and this position would be responsible for the increased service levels associated with planning and development.</p> <p>d. Staff are currently developing detailed user guides for all planning applications to assist the public. In addition, staff are developing a detailed guide for applicants that pre-consult with the Township on</p>	<p>daily baseball diamond dragging; washroom cleanings; part and supplies pick-ups during the week. With the addition of a second truck, the three parks workers could more efficiently complete tasks. Currently all three staff must travel together in the one truck. The Township has two mowers and so it would be much more efficient if a second truck was added to parks in order for the third park's employee to complete additional tasks at a different site. The addition of the second truck for</p>		

					proposed developments. The aim is to include funding opportunities in the guide to attract new businesses and promote existing business expansion in the Township.	Parks would be beneficial in advance of the new PCC grounds being completed as this site will require additional maintenance and up-keep.		
<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>		
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>		
					<p>e. Staff have developed an online webpage dedicated to roads and public works service requests. This includes requests for service regarding road maintenance, trees, dead animals, sidewalks, etc. This is an improved service level that aims to streamline the process and is being supported with existing staff resources in the Public Works department and Clerks department.</p> <p>f. The Township continues to improve its communication programs with existing resources. Staff aim to</p>			

					focus more in 2024 on ways the Township can support its local community groups and external committees through the Communication Policy. In addition, the Township is developing its video and image assets relating to media advertising and promotions. This would allow the Township to limit the use of stock images.			
<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>		
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>		
					g. As a result of the pandemic and shifting the majority of Township services to be available online in addition to in-person, staff have identified a need to audit the Township's existing IT infrastructure. Given the Township's currently service delivery model, staff recommend Council consider engaging an IT specialist to develop an IT strategy to outline the Township's current state, its targeted future state, the gaps to be resolved, and a			IT infrastructure gap analysis: staff are able to have this study funded through the modernization grant funding and the total cost is approximately \$9750. The results of this analysis can be provided back to Council for consideration during the budget process. The analysis would identify the budget requirements associated with IT infrastructure upgrades or recommended changes to the managed services.

					detailed plan outlining how to proactively manage and support the Township's technology needs. The County of Wellington completed a County-wide IT Service Delivery Review in November 2020 which would be included in the Township specific IT infrastructure review.			
	<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
L-2	Are there any service levels that you would like to see decreased?							
L-3	Are there any service levels you would like to see added?			a. Consider the addition of a dedicated position in the Building Department to help process building permits. The new position would fall between our current Building Official position and Customer Service Coordinator. The position would be a technical role responsible to closely	a. Continue to develop a local Economic Development program. b. Increase social media presence with the addition of a Township LinkedIn account to improved Township recruitment. c. Develop a Corporate-wide Health and Safety and wellness program to be led by HR in consultation with department heads and		a. Puslinch Fire & Rescue provide a great service to the community, Puslinch is one of the busiest departments in the county. It would be difficult to add any more services if we stay as a Volunteer Department.	Economic Development program: staff are submitting for County grant funding for 2024 and suggest that funds are budgeted for in future years. Staff will report to Council on detailed costing during the budget process.  LinkedIn: incremental budget increase to support this new platform.  Corporate wide H&S program: no budget impacts in 2024 as

				monitor current and issued permit applications, complete plans review and inspections (as needed) on smaller projects. This position would also provide coverage for the Building Official position and would be available in the office to provide technical support to the public as needed.	CAO to increase awareness of Township support programs, policies, and other resources available to staff. d. Aerial survey work related to aggregate industrial lands for compliance and taxation purposes			the program will be developed and analyzed for funding in 2025.  Aerial survey work: staff to report back on detailed costing including quotes.  Addition of Building Official position: staff to provide funding for 75-25% split building and by-law
L-4	Are there any service levels you would like to see removed?							
	<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
L-5	Are there any potential legislative or policy directions or initiatives that may be coming that you are concerned about?		a. The implications associated with Bill 23 and the results of the Province's third party audit process of municipal finances and development fees (ie. audits of Toronto, Peel Region, Mississauga, Caledon, Brampton and Newmarket).  b. Increasing insurance premium costs due to		a. Proposed changes to the Aggregate resources Act b. Bill 190 refund and timeline implications continues to be a concern and are being monitoring by Township staff in accordance with Township procedures related to Planning Act applications.			Increase in fuel costs: investigate opportunities to reduce costs by buying bulk or utilizing LAS

			<p>Ontario's joint and several liability system.</p> <p>c. Increasing cost of fuel - many of the Township's suppliers have implemented a fuel surcharge on their invoices.</p> <p>d. Due to the COVID-19 pandemic, the Ontario government had postponed the 2020 Assessment Update. Property assessments for the 2023 property tax years continued to be based on the January 1, 2016 values. Property assessment for the 2023 property tax year were the same as the 2021 and 2022 tax year, unless there had been changes to the property.</p>		<p>c. Proposed changes to the PPS.</p> <p>d. Bill 23 and the changes to the Heritage Act are in place and the Township is implementing a number of changes related to this legislation.</p>			
<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>		
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>		
			<p>As of August 8, 2023, there has been no update from the Province on the reassessment for the 2024 property tax year.</p> <p>e. Ontario's increases to the minimum wage rate effective October</p>					

			<p>1, 2023. There will likely be further increases announced in 2024.</p> <p>f. The increasing retirement workforce has an impact on attracting and retaining staff.</p>					
L-6	Are there any potential legislative or policy directions or initiatives that you would like to see implemented?				<p>a. Delegated Authority By-law related to Heritage Permitting Process</p> <p>b. Amending the Township Pre-Consultation By-law to include County planning applications</p>		<p>a. I would like to see the township enter an agreement with Fire Marque. Fire Marque is a great source of revenue and cost recovery that has no financial impact on Insurance policy holders</p>	Fire Marque: staff to report back with report and draft agreement during the budget process
L-7	Are there any new projects you would like to see added for consideration?		<p>a. Further information technology enhancements to assist with modernization and digitization efforts</p>		<p>a. Present building concept designs related to the Municipal Facility for Council consideration</p> <p>b. Policy and By-law audit to develop a schedule for regular review and updates.</p>	<p>a. The back senior soccer field turf unfortunately did not take with many efforts taken by Township staff.</p>	<p>a. All-terrain vehicle to assist with grass fires</p>	All-terrain vehicle for grass-fires: staff to investigate opportunities to continued support from the City of Guelph.
	<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
			<p>b. Further opportunities for working collaboratively with the Township's municipal partners (ie. implementation</p>			<p>b. The Puslinch Soccer Club has identified concerns with the turf playing conditions as well and has highlighted this</p>		Senior soccer field re-sodding: staff to provide a report back to Council on the feasibility of this request.



			<p>of shared service delivery agreements, etc.)</p> <p>c. Continued updates to the Capital Budget and Forecast and Asset Management Plan based on more current information being available (ie. the results of the Roads Management Plan, 2023 OSIM inspection results, etc.)</p> <p>d. Cost estimate and funding strategy for the Public Administration and Operations Facilities after the detailed design is complete.</p> <p>e. Operating budget implications associated with the parks revitalization projects that are currently underway.</p>			<p>concern in advance of the 2024 playing season. The Fall Fair is utilizing the field for their 2023 events including tents and animal exhibits. Staff recommend that Council consider re-sodding the field in late fall after the Fall Fair while the current contractor is on site and available to do the work. Staff can provide detailed costing for consideration should Council give that direction.</p>		
L-8	Are there any projects you would like to see considered for removal from past plans?							
	<b>Budget Content</b>	<b>Glenn Schwendinger CAO</b>	<b>Mary Hassan Director of Finance</b>	<b>Andrew Hartholt CBO</b>	<b>Courtenay Hoytfox Clerk (Interim CAO)</b>	<b>Mike Fowler Director of Public Works, Parks, and Facilities</b>	<b>Tom Mulvey Fire Chief</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
L-9	Are there any new programs you would like to see considered?				a. Program related to the Township Economic Development initiative			

					b. Corporate-wide Health and Safety and wellness program to be lead by HR to increase awareness of Township support programs, policies, and other resources available to staff.			
L-10	What would the overall big picture direction to staff be that you would like considered?						a. To continue to see value in our staff while they provide a cost effective service to Residents and visitors to the Township of Puslinch	
L-11	Given the current situation what would your target increase be in terms of a percentage?							
L-12	In one sentence, what would you like the theme of the next budget to be?				a. Focus on sustainable growth	a. Ensure the budget reflects the pressures from inflation while ensuring resources are available to support the expected service levels.	a. Cost effective high quality service to the residents and visitors of the Township of Puslinch.	



**MINUTES**

**DATE:** May 30, 2023

**CLOSED MEETING:** Directly following section 5 Disclosure of Conflict of Interest

**COUNCIL MEETING:** 2:00 P.M.

The May 30, 2023 Council Meeting was held on the above date and called to order at 2:00 p.m. via electronic participation and in-person in Council Chambers at 7404 Wellington Rd 34.

1. **CALL THE MEETING TO ORDER**

2. **ROLL CALL**

**ATTENDANCE:**

Councillor Sara Bailey  
Councillor Russel Hurst  
Councillor Jessica Goyda  
Councillor John Sepulis  
Mayor James Seeley

**STAFF IN ATTENDANCE:**

1. Courtenay Hoytfox, Municipal Clerk
2. Justine Brotherston, Deputy Clerk

3. **MOMENT OF REFLECTION**

4. **CONFIRMATION OF THE AGENDA**

**Resolution No. 2023-193:**

Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

That Council approves the May 30, 2023 Agenda circulated.

**CARRIED**

5. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

6. **CLOSED SESSION:**

Council was in closed session from 2:05 p.m. to 3:17 p.m.

The Clerk stopped the recording and removed all public attendees from the webinar. The webinar was then 'locked' so no new participants are able to join.

**Resolution No. 2023-194:**

Moved by Councillor Bailey and  
Seconded by Councillor Sepulis

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

**6.1 Confidential report prepared by staff regarding litigation or potential litigation, including matters before administrative tribunals, affecting the municipality – Planning Act application**

**6.2 Confidential verbal report by staff regarding litigation or potential litigation, including matters before administrative tribunals, affecting the municipality and regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Planning Act application**



**CARRIED**

**Resolution No. 2023-195:**

Moved by Councillor Goyda and  
Seconded by Councillor Sepulis

**THAT Council moves into open session at 3:17 pm**

**CARRIED**

Council resumed into open session at 3:17 p.m.

**Resolution No. 2023-196:**

Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

**That Council receives the:**

**6.1 Confidential report prepared by staff regarding litigation or potential litigation, including matters before administrative tribunals, affecting the municipality – Planning Act application**

**6.2 Confidential verbal report by staff regarding litigation or potential litigation, including matters before administrative tribunals, affecting the municipality and regarding advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Planning Act application; and**

**That Council direct staff to proceed as directed.**

**CARRIED**

**7. BUSINESS ARISING FROM CLOSED SESSION:**

**8. CONFIRMATORY BY-LAW:**

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

**Resolution No. 2023-197:**

Moved by Councillor Bailey and  
Seconded by Councillor Goyda

**That the following By-law be taken as read three times and finally passed in open Council:**

**By-Law 2023-029 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 30 day of May 2023.**

**CARRIED**

**9. ADJOURNMENT:**

**Resolution No. 2023-198:**

Moved by Councillor Goyda and  
Seconded by Councillor Sepulis

**That Council hereby adjourns at 3:18 p.m.**

**CARRIED**

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James Seeley, Mayor

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THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
MAY 30, 2023 COUNCIL MEETING  
VIRTUAL MEETING BY ELECTRONIC PARTICIPATION  
& IN-PERSON AT 23 BROCK RD S, PUSLINCH

Courtenay Hoytfox, Clerk



**MINUTES**

**DATE:** July 4, 2023

**CLOSED MEETING:** Directly following section 5 Disclosure of Conflict of Interest

**COUNCIL MEETING:** 1:00 P.M.

The July 4, 2023 Council Meeting was held on the above date and called to order at 1:32 p.m. via electronic participation and in-person at 23 Brock Rd S, Puslinch.

1. **CALL THE MEETING TO ORDER**

2. **ROLL CALL**

**ATTENDANCE:**

Councillor Sara Bailey  
Alternate Mayor Russel Hurst  
Councillor Jessica Goyda  
Councillor John Sepulis

**STAFF IN ATTENDANCE:**

1. Courtenay Hoytfox, Municipal Clerk, Interim CAO
2. Justine Brotherston, Deputy Clerk

3. **MOMENT OF REFLECTION**

4. **CONFIRMATION OF THE AGENDA**

**Resolution No. 2023-220:**

Moved by Councillor Goyda and  
Seconded by Councillor Bailey

That Council approves the July 4, 2023 Agenda as circulated.

**CARRIED**

5. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

6. **CLOSED SESSION:**

Council was in closed session from 1:35 p.m. to 3:00 p.m.

The Clerk stopped the recording and removed all public attendees from the webinar. The webinar was then 'locked' so no new participants are able to join.

**Resolution No. 2023-221:**

Moved by Councillor Goyda and  
Seconded by Councillor Bailey

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

**13.1 Confidential verbal report regarding personal matters about an identifiable individual, including municipal or local board employees and advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Human Resources Matter**

**CARRIED**

**Resolution No. 2023-222:**

Moved by Councillor Goyda and  
Seconded by Councillor Sepulis



**THAT Council moves into open session at 3:00 pm**

**CARRIED**

Council resumed into open session at 3:00 p.m.

**Resolution No. 2023-223:**

Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

**That Council receives the:**

**13.1 Confidential verbal report regarding personal matters about an identifiable individual, including municipal or local board employees and advice that is subject to solicitor-client privilege, including communications necessary for that purpose – Human Resources Matter; and**

**That staff proceed as directed.**

**CARRIED**

**7. BUSINESS ARISING FROM CLOSED SESSION:**

**8. CONFIRMATORY BY-LAW:**

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

**Resolution No. 2023-224:**

Moved by Councillor Bailey and  
Seconded by Councillor Goyda

**That the following By-law be taken as read three times and finally passed in open Council:**

**By-Law 2023-032 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 4 day of July 2023.**

**CARRIED**

**9. ADJOURNMENT:**

**Resolution No. 2023-225:**

Moved by Councillor Sepulis and  
Seconded by Councillor Goyda

**That Council hereby adjourns at 3:02 p.m.**

**CARRIED**

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Alternate Mayor Russel Hurst

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Courtenay Hoytfox, Clerk



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 COMMITTEE OF ADJUSTMENT MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**MINUTES**

**DATE:** August 8, 2023

**MEETING:** 7:00 p.m.

The August 8, 2023 Committee of Adjustment Meeting was held on the above date and called to order at 7:00 p.m. via electronic participation and in-person at 23 Brock Rd S, Puslinch.

**1. CALL THE MEETING TO ORDER**

**2. ROLL CALL**

**ATTENDANCE:**

**PRESENT:**

Councillor John Sepulis, Chair  
Paul Sadhra  
Jeffrey Born  
Dennis O'Connor  
Chris Pickard

**ABSENT:**

None

**STAFF IN ATTENDANCE:**

Lynne Banks, Secretary/Treasurer  
Courtenay Hoytfox, Municipal Clerk  
Zachary Prince, Senior Planner, County of Wellington  
Asavari Jadhav, Junior Planner, County of Wellington

**3. MOMENT OF REFLECTION**

**4. CONFIRMATION OF THE AGENDA**

**Resolution No. 2023-063:**

Moved by Committee Member Dennis O'Connor and  
Seconded by Committee Member Chris Pickard





THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 COMMITTEE OF ADJUSTMENT MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**That the Committee approves the August 8, 2023 Agenda as circulated.**

**CARRIED.**

**5. DISCLOSURE OF CONFLICT OF INTEREST:**

None

**6. APPROVAL OF MINUTES**

**6.1 Approval of the Minutes**

6.1.1 July 11, 2023

**Resolution No. 2023-064:**

Moved by Committee Member Jeff Born and  
Seconded by Committee Member Paul Sadhra

**That the Committee of Adjustment approves the Minutes from the meeting held July 11, 2023.**

**CARRIED.**

**7. APPLICATIONS FOR MINOR VARIANCE OR PERMISSION** under section 45 of the Planning Act to be heard by the Committee this date:

**7.1 Minor Variance Application D13-DUA – Lisa and Nelson Duarte – 7737 Wellington Rd 34, Concession 10, Part Lot 21, Township of Puslinch. ≠**

Requesting relief of New Comprehensive Zoning By-Law #23-2018, as amended, from Sections 4.2.1 c. Outdoor Swimming Pools to permit existing pool equipment to have a reduced setback to be 0.76m (2.5 ft) from the lot line.

- Lisa Duarte, owner of the property, provided an overview of the application.
- Lynne Banks read out a written comment received from a neighbouring property owner in support of the application.
- There were no questions or comments from the public.
- Chris Pickard asked if the propane tank will be relocated.
- Lisa Duarte advised that they can move it if it is necessary.
- Dennis O'Connor noted that it is the responsibility of the propane company for proper placement of the tank in relation to property lines and buildings.



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 COMMITTEE OF ADJUSTMENT MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

- There were no further questions or comments from the Committee.

**Resolution No. 2023-065:**

Moved by Committee Member Dennis O'Connor and  
Seconded by Committee Member Chris Pickard

**That the Committee approve Minor Variance Application D13-DUA with the following Conditions:**

That any concerns of the Building and Public Works Departments are addressed including adequate servicing, as well as drainage and grading.

**CARRIED.**

**7.2 Minor Variance Application D13-CHA – Michel Lorenzo Chartrand and Victoria Lynn Chartrand – 90 Gilmour Rd, Concession 8, Rear Part Lot 23, Township of Puslinch. #**

Requesting relief of New Comprehensive Zoning By-Law #23-2018, as amended, from Sections 4.16.1 a. - New Non-Farm Uses to permit a reduced MDS I setback to be 217m rather than the 255m as required from the barn at 76 Gilmour Rd.

- Nancy Shoemaker, agent for the applicant provided an overview of the application.
- There were no questions or comments from the public.
- There were no questions or comments from the Committee.

**Resolution No. 2023-066:**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Dennis O'Connor

**That the Committee approve Minor Variance Application D13-CHA with no Conditions**

**CARRIED.**

**8. New Business**

John Sepulis advised the other members of the Committee that the Sub-Committee meetings will be held either before or after the Committee of Adjustment meeting.

**9. ADJOURNMENT**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 COMMITTEE OF ADJUSTMENT MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**Resolution No. 2023-067:**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Dennis O'Connor

**That the Committee of Adjustment hereby adjourns at 7:23 p.m.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**MINUTES**

**DATE:** August 8, 2023

**MEETING:** Following Committee of Adjustment

**CLOSED MEETING:** Directly following Planning and  
Development Advisory Committee Meeting

The August 8, 2023 Planning and Development Advisory Committee Meeting was held on the above date and called to order at 7:23 p.m. via electronic participation and in-person at 23 Brock Rd S, Puslinch.

**1. CALL THE MEETING TO ORDER**

**2. ROLL CALL**

**ATTENDANCE:**

**PRESENT:**

Councillor John Sepulis, Chair  
Paul Sadhra  
Jeffrey Born  
Dennis O'Connor  
Chris Pickard

**ABSENT:**

None

**STAFF IN ATTENDANCE:**

Lynne Banks, Secretary/Treasurer  
Courtenay Hoytfox, Municipal Clerk  
Zachary Prince, Senior Planner, County of Wellington  
Asavari Jadhav, Junior Planner, County of Wellington

**3. MOMENT OF REFLECTION**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**4. CONFIRMATION OF THE AGENDA**

**Resolution No. 2023-068:**

Moved by Committee Member Chris Pickard and  
Seconded by Committee Member Dennis O'Connor

**That the Committee approves the August 8, 2023 Agenda as circulated.**

**CARRIED.**

**5. DISCLOSURE OF CONFLICT OF INTEREST:**

None

**6. DELEGATIONS**

None

**7. CONSENT AGENDA**

**7.1 Approval of the Minutes**

7.1.1 July 11, 2023

**Resolution No. 2023-069:**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Jeff Born

**That the Planning and Development Advisory Committee approves the Minutes from the meeting held July 11, 2023**

**CARRIED.**

**7.2 Other Consent Items**

None

**8. NOTICE OF PUBLIC MEETINGS/HEARINGS**

None

**9. REPORTS**

**9.1. LAND DIVISION (CONSENTS)**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**9.1.1 Revised Severance Application B87-21 (D10-BAU) – Jane and George Baukham –**  
Part Lot 19, Concession 7, municipally known as 4507 Concession 7, Township of  
Puslinch. ≠

Proposed revised severance is 1.1 hectares with 132m frontage, existing agricultural use for proposed rural residential use. Together with proposed access easement on severed in favour of retained parcel.

Retained parcel is 39.6 hectares with 176m frontage, existing and proposed agricultural use with existing dwelling, garage, shed and barn. Together with proposed access easement on retained in favour of severed parcel.

**Resolution No. 2023-070:** Moved by Committee Member Dennis O'Connor and  
Seconded by Committee Member Paul Sadhra

**That the majority of the Committee does not support Severance Application B87-21, however if the application is approved by County of Wellington Land Division Committee the following conditions are requested:**

1. That the Owner satisfy all the requirements of the Township of Puslinch, financial and otherwise (including taxes paid in full and Consent Review/Condition Clearance fee) which the Township may deem to be necessary at the time of issuance of the Certificate of Consent for the property and orderly development of the subject lands. Any fees incurred by the Township for the review of this application will be the responsibility of the applicant; and further that the Township of Puslinch file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.
2. That safe access to the retained lands can be accommodated to the satisfaction of the Township; and further that the Township file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.
3. That the Owner enter into an easement agreement for the shared entrance for both the retained and severed parcels, in favour of the retained parcel, and that the easement agreement be registered on title to both parcels to the satisfaction of the Township of Puslinch; and further, that the Township of Puslinch file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

3. That the Owner obtain zoning compliance for the severed parcel for the reduced setback from the Natural Environment Zone to the satisfaction of the Township of Puslinch; and further, that the Township of Puslinch file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.

**CARRIED**

**9.1.2 Severance Application B52-23 (D10-CHA) – Michael and Victoria Chartrand – Part Lot 23, Concession 8, municipally known as 90 Gilmour Rd, Township of Puslinch. ≠**

Proposed severance is 35.22m frontage x 122.12m = 0.43 hectares, existing and proposed rural residential use with existing shed and well.

Retained parcel is 1.12 hectares with 100.48m frontage, existing and proposed rural residential use with existing dwelling, garage and septic system.

**Resolution No. 2023-071:**

Moved by Committee Member Jeff Born and  
Seconded by Committee Member Paul Sadhra

**That the Committee supports Severance Application B52-23 subject to the following condition(s):**

1. That the Owner satisfy all the requirements of the Township of Puslinch, financial and otherwise (including taxes paid in full and Consent Review/Condition Clearance fee) which the Township may deem to be necessary at the time of issuance of the Certificate of Consent for the property and orderly development of the subject lands. Any fees incurred by the Township for the review of this application will be the responsibility of the applicant; and further that the Township of Puslinch file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.
2. That safe access to the proposed severed lands can be accommodated to the satisfaction of the Township; and further that the Township file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.
3. That the existing accessory structure located on the proposed severed parcel be removed to the satisfaction of the Township; and further that the Township of Puslinch



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.

4. That the owner obtain zoning conformity for the barn located at 76 Gilmour Road for MDS1 setbacks to the satisfaction of the Township; and further that the Township file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.

**CARRIED.**

**9.1.23 Lot Line Adjustment Application B54-23 (D10-VAN) – Adrian Van Opstal and Julie Rowe-Van Opstal** – Part Lot 30, Concession Gore, municipally known as 7271 Concession 1, Township of Puslinch. ≠

Proposed lot line adjustment is 0.24 hectares with no frontage, vacant land to be added to abutting residential and agricultural parcel – Adrian Van Opstal and Julie Rowe-Van Opstal.

Retained parcel is 0.40 hectares with 30.7m frontage, existing and proposed vacant rural residential lot.

**Resolution No. 2023-072:**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Jeff Born

**That the Committee supports Severance Application B52-23 subject to the following condition(s):**

1. That the Owner satisfy all the requirements of the Township of Puslinch, financial and otherwise (including taxes paid in full and Consent Review/Condition Clearance fee) which the Township may deem to be necessary at the time of issuance of the Certificate of Consent for the property and orderly development of the subject lands. Any fees incurred by the Township for the review of this application will be the responsibility of the applicant; and further that the Township of Puslinch file with the Secretary-Treasurer of the Planning and Land Division Committee a letter of clearance of this condition.

**CARRIED.**





THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**9.2 ZONING BY-LAW AMENDMENT APPLICATIONS**

None

**10. CORRESPONDENCE**

None

**11. NEW BUSINESS**

John Sepulis advised the other members of the Committee that the Sub-Committee meetings will be held either before or after the Planning and Development Advisory Committee meeting.

**12. CLOSED SESSION – Pursuant to Section 239 of the *Municipal Act***

The Committee was in closed session from 7:57 p.m. to 8:26 p.m.

The Clerk stopped the recording and removed all public attendees from the webinar. The webinar was then 'locked' so no new participants are able to join.

**Resolution No. 2023-073:**

Moved by Committee Member Chris Pickard and  
Seconded by Committee Member Jeff Born

**That the Planning and Development Advisory Committee shall go into closed session under Section 239 of the Municipal Act for the purpose of a confidential verbal report regarding personal matters about an identifiable individual including local board employees and regarding a position, plan, procedure, criteria, or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board - Line Fence Dispute.**

**CARRIED.**

**Resolution No. 2023-074:**

Moved by Committee Member Dennis O'Connor and  
Seconded by Committee Member Chris Pickard

**That the Committee move into open session at 8:26 p.m.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
AUGUST 8, 2023 PLANNING AND DEVELOPMENT ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**CARRIED.**

The Committee resumed into open session at 8:26 p.m.

**Resolution No. 2023-075:**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Jeff Born

**That the Committee receives the confidential verbal report regarding personal matters about an identifiable individual including local board employees and regarding a position, plan, procedure, criteria, or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board - Line Fence Dispute; and that staff proceed as directed.**

**CARRIED**

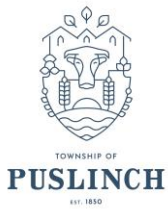
**13. ADJOURNMENT**

**Resolution No. 2023-076**

Moved by Committee Member Paul Sadhra and  
Seconded by Committee Member Jeff Born

**That the Planning and Development Advisory Committee hereby adjourns at 8:27 p.m.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 YOUTH ADVISORY COMMITTEE MEETING  
IN-PERSON MEETING

**MINUTES**

**DATE:** June 5, 2023

**MEETING:** 6:00 P.M.

The June 5, 2023 Youth Advisory Committee was held on the above date and called to order at 6:07 p.m. via in person participation at the Municipal Office at 7404 Wellington Road 34, Puslinch.

**1. CALL THE MEETING TO ORDER**

**2. ROLL CALL**

**Attendance:**

Councillor Sara Bailey  
Aaron Dochstader  
Chelsey MacPherson  
Katey Whaling  
Kenzo Szatori  
Oliver Van Gerwen  
Carter O'Driscoll  
Laz Holford  
Talia Wineberg  
Xander Wineberg

**Absent**

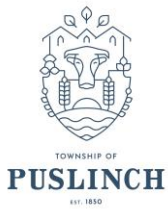
Carter Devries  
Ayla Panylo

**Staff in Attendance:**

Justine Brotherston, Deputy Clerk  
Lisa Madden, Communication and Committee Coordinator

**3. MOMENT OF REFLECTION**

**4. CONFIRMATION OF THE AGENDA**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 YOUTH ADVISORY COMMITTEE MEETING  
IN-PERSON MEETING

**Resolution No. 2023-040:**

Moved by Chelsey MacPherson and  
Seconded by Carter O'Driscoll

**That the Youth Advisory Committee approves the June 5, 2023 Agenda as circulated.**

**CARRIED.**

**5. DISCLOSURE OF CONFLICT OF INTEREST**

None

**6. DELEGATIONS**

None

**7. CONSENT AGENDA**

7.1 May 1, 2023 Youth Advisory Committee Minutes

7.2 May 15, 2023 Recreation Advisory Committee; Presentation materials from Mary Christidis regarding attendance at PRO Educational Forum

**Resolution No. 2023-041:**

Moved by Aaron Dochstader and  
Seconded by Talia Wineberg

**That Consent Agenda items 7.1 and 7.2 listed for the June 5, 2023 Youth Advisory Committee Meeting be received for information.**

**CARRIED.**

**8. COMMITTEE AND STAFF REPORTS**

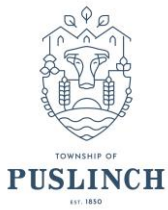
8.5 Ice Breaker Activity

**Resolution No. 2023-042:**

Moved by Katey Whaling and  
Seconded by Xander Wineberg

**That the Icebreaker Activity be received for information.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 YOUTH ADVISORY COMMITTEE MEETING  
IN-PERSON MEETING

8.2 Report YOU-2023-011 – Proposed 2024- Youth Advisory Committee Meeting Schedule

**Resolution No. 2023-043:**

Moved by Oliver Van Gerwen and  
Seconded by Talia Wineberg

**That staff report YOU-2023-011 regarding the Proposed 2024 Youth Advisory Committee Schedule be received for information; and,**

**That the 2024 Youth Advisory Committee Schedule be approved as presented; and further,**

**That any Youth Advisory Committee meeting dates that fall in the same week as a Council meeting be reviewed by staff, with alternative dates brought for approval at a future Committee meeting.**

**CARRIED.**

8.3 Report YOU-2023-008 - Youth Advisory Committee 2024 Proposed Budget

**Resolution No. 2023-044:**

Moved by Chelsey MacPherson and  
Seconded by Kenzo Szatori

**That staff report YOU-2023-012 regarding the Youth Advisory Committee 2024 Proposed Budget be received for information; and,**

**That the 2024 Youth Advisory Committee Budget approve item 1 as presented/amended; and further,**

**That the approved budget be forwarded to Council for consideration for the 2024 Budget.**

**CARRIED.**

8.4 Report YOU-2023-013 – Committee Recommendations Update

**Resolution No. 2023-045:**

Moved by Laz Holford and  
Seconded by Talia Wineberg

**That Report YOU-2023-013 entitled Committee Recommendations Update be received for information.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 YOUTH ADVISORY COMMITTEE MEETING  
IN-PERSON MEETING

8.5 Report YOU-2023- – Committee Goals and Objectives Update & Working on our Projects

**Resolution No. 2023-046:**

Moved by Laz Holford and  
Seconded by Aaron Dochstader

**That report YOU-2023-010 entitled Committee Goals and Objectives & Working on our Projects be received; and,**

**That the verbal updates provided by the Sports Day Sub-committee, Hobbies Day Sub-Committee and Fall Fair Sub-Committee be received.**

**CARRIED.**

**9. CORRESPONDENCE**

None

**10. ANNOUCEMENTS**

None

**11. NOTICE OF MOTION**

None

**12. NEW BUSINESS**

None

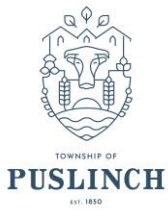
**13. ADJOURNMENT**

**Resolution No. 2023-047:**

Moved by Katey Whaling and  
Seconded by Oliver Van Gerwen

**That the Youth Advisory Committee hereby adjourns at 8:05 p.m.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 HERITAGE ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**MINUTES**

**DATE:** June 5, 2023

**MEETING:** 1:00 P.M.

The June 5, 2023 Heritage Advisory Committee meeting was held on the above date and called to order at 1:22 p.m. via in person participation at the Puslinch Community Centre at 23 Brock Rd S. and via electronic and in-person participation.

**1. CALL THE MEETING TO ORDER**

Resignation

**2. ROLL CALL**

**Attendance:**

Councillor Russel Hurst

Josh Heller

Lily Klammer-Tsuji

**Absent**

Kristine O'Brien

Andy Day

**Staff in Attendance:**

Courtenay Hoytfox, Municipal Clerk

Justine Brotherston, Deputy Clerk

Lisa Madden, Communications and Committee Coordinator

**3. MOMENT OF REFLECTION**

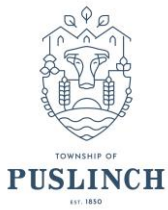
**4. CONFIRMATION OF THE AGENDA**

**Resolution No. 2023-020:**

Moved by Lily Klammer-Tsuji and  
Seconded by Josh Heller

**That Heritage Advisory Committee approves the June 5, 2023 Agenda as circulated; and,  
That Heritage Advisory Committee approves the additions to the agenda as follows:  
Verbal Report 8.1 City of Guelph Request for Expression of Interest for 880 Victoria Rd  
Property**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 HERITAGE ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

**5. DISCLOSURE OF CONFLICT OF INTEREST**

None

**6. DELEGATIONS**

None

**7. CONSENT AGENDA**

7.1 May 1, 2023 Heritage Advisory Committee Minutes

**Resolution No. 2023-021:** Moved by Lily Klammer-Tsuji and  
Seconded by Josh Heller

**That the Consent Agenda items listed for the June 5, 2023 Heritage Advisory Committee meeting be received for information.**

**CARRIED.**

**8. COMMITTEE AND STAFF REPORTS**

8.1 Verbal Report - City of Guelph Request for Expression of Interest for 880 Victoria Rd Property

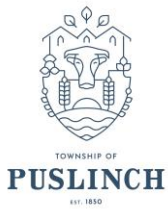
**Resolution No. 2023-022:** Moved by Lily Klammer-Tsuji and  
Seconded by Josh Heller

**That the Verbal Report from Courtenay Hoytfox, Municipal Clerk regarding City of Guelph Request for Expression of Interest for 880 Victoria Rd Property be received for information; and further,**

**That the Heritage Advisory Committee forward the following comments to Council for consideration;**

- i. The Heritage Advisory Committee supports sports and recreation uses, affordable housing uses, or commercial uses on the property, such that any development does not impact the Heritage features on the property;**
- ii. The Heritage Advisory Committee requests that the Heritage features of the property be maintained where possible; and**
- iii. The Heritage Advisory Committee supports educational facilities or uses on the property through a post-secondary institution or non-profit organization;**





THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 HERITAGE ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

- iv. **The Heritage Advisory Committee requests that they be included in any further changes to the uses on the property and any long term development plans.**
- v. **The Heritage Advisory Committee requests information from the GRCA regarding the permitted uses on the property;**

**CARRIED.**

8.2 Report – HER-2023-013 – Proposed 2024 Heritage Advisory Committee Agenda

**Resolution No. 2023-022:**

Moved by Josh Heller and  
Seconded by Lily Klammer-Tsuji

**That staff report HER-2023-013 regarding the Proposed 2024 Heritage Advisory Committee Schedule be received for information; and further,**

**That the 2024 Heritage Advisory Committee Schedule be approved as presented.**

**CARRIED.**

8.3 Report – HER-2023-014 – 2024 Heirage Advisory Committttee Proposed Budget

**Resolution No. 2023-023:**

Moved by Josh Heller and  
Seconded by Lily Klammer-Tsuji

**That staff report HER-2023-014 regarding the Heritage Advisory Committee 2024 Proposed Budget be received for information.**

**CARRIED.**

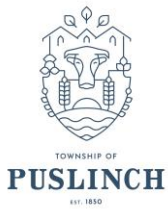
8.4 Report – HER-2023-015 – Heritage Student Update

**Resolution No. 2023-024:**

Moved by Josh Heller and  
Seconded by Lily Klammer-Tsuji

**That Staff Report HER-2023-015 regarding the heritage student update be received.**

**CARRIED.**



THE CORPORATION OF THE TOWNSHIP OF PUSLINCH  
JUNE 5, 2023 HERITAGE ADVISORY COMMITTEE MEETING  
IN-PERSON AND VIRTUAL MEETING BY ELECTRONIC PARTICIPATION

8.5 Report – HER-2023-012 – Goals and Objectives

**Resolution No. 2023-018:**

Moved by Lily Klammer-Tsuji and  
Seconded by Josh Heller

**That staff report HER-2023-016 entitled 2022-2026 Goals and Objectives Update be received for information.**

**CARRIED.**

**9. CORRESPONDENCE**

None

**10. ANNOUCEMENTS**

None

**11. NOTICE OF MOTION**

None

**12. NEW BUSINESS**

Councillor Hurst requested an update regarding the appeal at the OLT for 82 Queen St. Staff advised that the matter had gone to case management conference and would return in September for further resolution.

Councillor Hurst acknowledged that staff held an Open House to seek in input on the Heritage Designation Process.

**13. ADJOURNMENT**

**Resolution No. 2023-019:**

Moved by Josh Heller and  
Seconded by Lily Klammer-Tsuji

**That the Heritage Advisory Committee hereby adjourns at 2:14 p.m.**

**CARRIED.**



**CORPORATION OF THE TOWN OF ESSEX**

33 Talbot Street South, Essex, Ontario, N8M 1A8

p: 519.776.7336 f: 519.776.8811 | [essex.ca](http://essex.ca)

**Judy Smith**

Director, Municipal Governance/Clerk  
Municipality of Chatham-Kent  
[ckclerk@chatham-kent.ca](mailto:ckclerk@chatham-kent.ca)

August 30, 2023

**BY EMAIL**

RE: Letter of Support – Time for Change: *Municipal Freedom of Information and Protection of Privacy Act* ("MFIPPA")

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Dear Judy Smith,

At its Regular Council Meeting held on August 14, 2023, Council discussed the correspondence dated July 5, 2023, from the Municipality of Chatham-Kent regarding the request to review the *Municipal Freedom of Information and Protection of Privacy Act*. In particular, Mayor Bondy indicated the importance of encouraging the Ministry of Government and Consumer Services to review the *Act*, specifically to consider eliminating the option for redundant, frivolous, or vexatious requests.

As a result of this discussion, Council passed the following resolution:

**R23-08-324**

Moved By Mayor Bondy  
Seconded By Councillor Verbeek

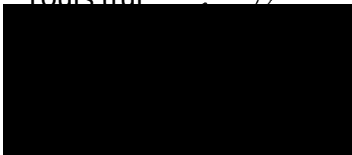
**That** the correspondence dated July 5, 2023, from the Municipality of Chatham-Kent regarding the request for the Ministry of Government and Consumer Services review the *Municipal Freedom of Information and Protection of Privacy Act* be received and supported; and

**That** Council direct Administration to send a letter of support to the Municipality of Chatham-Kent, Anthony Leardi, MPP, Lisa Gretzky, MPP, Andrew Dowie, MPP, Chris Lewis, MP; and all other municipalities in Ontario.

**Carried**

I trust you will find this satisfactory. If you have any questions or comments, please feel free to contact the undersigned.

Yours truly,



Joseph Malandrucolo  
Director, Legal and Legislative Services/Clerk  
[jmandrucolo@essex.ca](mailto:jmandrucolo@essex.ca)



**CORPORATION OF THE TOWN OF ESSEX**

33 Talbot Street South, Essex, Ontario, N8M 1A8

p: 519.776.7336 f: 519.776.8811 | [essex.ca](http://essex.ca)

**c.c. Anthony Leardi, MPP**

[Anthony.Leardi@pc.ola.org](mailto:Anthony.Leardi@pc.ola.org)

**Lisa Gretzky, MPP**

[lgretzky-co@ndp.on.ca](mailto:lgretzky-co@ndp.on.ca)

**Andrew Dowie, MPP**

[andrew.dowie@pc.ola.org](mailto:andrew.dowie@pc.ola.org)

**Chris Lewis, MP**

[chris.lewis@parl.gc.ca](mailto:chris.lewis@parl.gc.ca)

All other municipalities in Ontario

September 15, 2023

**Re: Item for Discussion - Item for Discussion – Time for Change - Municipal Freedom of Information and Protection of Privacy Act (MFIPPA)**

At its meeting of September 13, 2023, the Council of the Corporation of the Town of Bracebridge ratified motion 23-GC-184, regarding the Item for Discussion – Time for Change - Municipal Freedom of Information and Protection of Privacy Act (MFIPPA), as follows:

“WHEREAS the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990 (MFIPPA) came into force and effect on January 1, 1991;

AND WHEREAS municipalities, including the Town of Bracebridge, practice and continue to promote open and transparent government operations, actively disseminate information and routinely disclose public documents upon request outside of the MFIPPA process;

AND WHEREAS government operations, public expectations, technologies, and legislation surrounding accountability and transparency have dramatically changed and MFIPPA has not advanced in line with these changes;

AND WHEREAS the creation, storage and utilization of records has changed significantly, and the Clerk of the Municipality is responsible for records and information management programs as prescribed by the Municipal Act, 2001;

AND WHEREAS regulation 823 under MFIPPA continues to reference antiquated technology and does not adequately provide for cost recovery, and these financial shortfalls are borne by the municipal taxpayer;

AND WHEREAS the threshold to establish frivolous and/or vexatious requests is unreasonably high and allows for harassment of staff and members of municipal councils, and unreasonably affects the operations of the municipality;

AND WHEREAS the MFIPPA fails to recognize how multiple requests from an individual, shortage of staff resources or the expense of producing a record due to its size, number, or physical location does not allow for time extensions to deliver requests and unreasonably affects the operations of the municipality;

AND WHEREAS the name of the requestor is not permitted to be disclosed to anyone other than the person processing the access request, and this anonymity is used by requesters to abuse the MFIPPA process and does not align with the spirit of openness and transparency embraced by municipalities;

AND WHEREAS legal professionals use MFIPPA to gain access to information to launch litigation against institutions, where other remedies exist;

1000 Taylor Court  
Bracebridge, ON  
P1L 1R6 Canada

AND WHEREAS there are limited resources to assist administrators or requestors to navigate the legislative process;

AND WHEREAS reform is needed to address societal and technological changes in addition to global privacy concerns and consistency across provincial legislation;

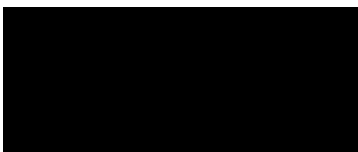
NOW THEREFORE BE IT RESOLVED THAT the Ministry of Public and Business Service Delivery be requested to review MFIPPA, and consider recommendations as follows:

1. That MFIPPA assign the Municipal Clerk, or their designate to be the Head under the Act;
2. That MFIPPA be updated to address current and emerging technologies;
3. That MFIPPA regulate the need for consistent routine disclosure practices across institutions;
4. That the threshold for frivolous and/or vexatious actions be reviewed, and take into consideration the community and available resources in which it is applied;
5. That the threshold for frivolous and/or vexatious also consider the anonymity of requesters, their abusive nature and language in requests to ensure protection from harassment as provided for in the Occupational Health and Safety Act;
6. That the application and scalability of fees be designed to ensure taxpayers are protected from persons abusing the access to information process;
7. That administrative practices implied or required under MFIPPA, including those of the Information and Privacy Commissioner (IPC), be reviewed and modernized;
8. That the integrity of MFIPPA be maintained to protect personal privacy and transparent governments; and
9. And that this resolution be sent to the Premier of Ontario; Minister of Municipal Affairs and Housing; Minister of Public and Business Service Delivery; and Member of Provincial Parliament for Parry Sound-Muskoka; Muskoka and Area Indigenous Leadership Table (MAILT); and all Ontario Municipalities.”

In accordance with Council's direction, I am forwarding you a copy of the resolution for you reference.

Please do not hesitate to contact me if I can provide any additional clarification in this regard.

Yours truly,



Lori McDonald  
Director of Corporate Services/Clerk



*Naturally Spirited*

**TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS**

**Date: July 18, 2023**

**Resolution No.:** 03

Moved by \_\_\_\_\_

Seconded by \_\_\_\_\_

THAT Council for the Township of Killaloe, Hagarty and Richards hereby agrees with and supports the Municipality of Chatham-Kent with their resolution regarding "Time for Change – Municipal Freedom of Information and Protection of Privacy Act".

WHEREAS the Council for the Township of Killaloe, Hagarty and Richards realizes the importance of the changes needed to the *Municipal Freedom of Information and Protection Privacy Act R.S.O., 1990* as it dates back 30 years and has not advanced in line with current changes to government operations, public expectations, technologies and respective legislations.

AND WHEREAS the Council for the Township of Killaloe, Hagarty and Richards agrees that the Ministry of Government and Consumer Services be requested to review the MFIPPA and consider all recommendations made by the Municipality of Chatham-Kent.

AND FURTHER THAT this resolution be circulated to the Information and Privacy Commissioner of Ontario, MP Cheryl Gallant, MPP John Yakabuski, AMCTO Legislative and Policy Advisory Committee, all municipalities in Ontario and AMO.

Carried: ✓

Not Carried: \_\_\_\_\_

Certified a true copy

Tammy Gogerat, CAO/Clerk-Treasurer  
Township of Killaloe, Hagarty and Richards



**Municipality of Chatham-Kent**

*Corporate Services*

Municipal Governance

315 King Street West, P.O. Box 640

Chatham ON N7M 5K8

July 5, 2023

Via Email: [Kaleed.Rasheed@ontario.ca](mailto:Kaleed.Rasheed@ontario.ca)

Minister of Public and Business Service Delivery (MPBSD)

Honourable Rasheed:

**Re: Time for Change  
Municipal Freedom of Information and Protection of Privacy Act**

Please be advised the Council of the Municipality of Chatham-Kent at its regular meeting held on June 26, 2023 passed the following resolution:

WHEREAS the Municipal Freedom of Information and Protection of Privacy Act R.S.O. 1990 (MFIPPA) dates back 30 years;

AND WHEREAS municipalities, including the Municipality of Chatham-Kent, practice and continue to promote open and transparent government operations, actively disseminate information and routinely disclose public documents upon request outside of the MFIPPA process;

AND WHEREAS government operations, public expectations, technologies, and legislation surrounding accountability and transparency have dramatically changed and MFIPPA has not advanced in line with these changes;

AND WHEREAS the creation, storage and utilization of records has changed significantly, and the Municipal Clerk of the Municipality is responsible for records and information management programs as prescribed by the Municipal Act, 2001;

AND WHEREAS regulation 823 under MFIPPA continues to reference antiquated technology and does not adequately provide for cost recovery, and these financial shortfalls are borne by the municipal taxpayer;

AND WHEREAS the threshold to establish frivolous and/or vexatious requests is unreasonably high and allows for harassment of staff and members of municipal councils, and unreasonably affects the operations of the municipality;

AND WHEREAS the Act fails to recognize how multiple requests from an individual, shortage of staff resources or the expense of producing a record due to its size, number or physical location does not allow for time extensions to deliver requests and unreasonably affects the operations of the municipality;



AND WHEREAS the name of the requestor is not permitted to be disclosed to anyone other than the person processing the access request, and this anonymity is used by requesters to abuse the MFIPPA process and does not align with the spirit of openness and transparency embraced by municipalities;

AND WHEREAS legal professionals use MFIPPA to gain access to information launch litigation against institutions, where other remedies exist;

AND WHEREAS there are limited resources to assist administrators or requestors to navigate the legislative process;

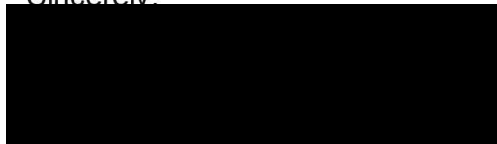
AND WHEREAS reform is needed to address societal and technological changes in addition to global privacy concerns and consistency across provincial legislation;

BE IT RESOLVED THAT the Ministry of Government and Consumer Services be requested to review the MFIPPA, and consider recommendations as follows:

1. That MFIPPA assign the Municipal Clerk, or designate to be the Head under the Act;
2. That MFIPPA be updated to address current and emerging technologies;
3. That MFIPPA regulate the need for consistent routine disclosure practices across institutions;
4. That the threshold for frivolous and/or vexatious actions be reviewed, and take into consideration the community and available resources in which it is applied;
5. That the threshold for frivolous and/or vexatious also consider the anonymity of requesters, their abusive nature and language in requests to ensure protection from harassment as provided for in Occupational Health and Safety Act;
6. That the application and scalability of fees be designed to ensure taxpayers are protected from persons abusing the access to information process;
7. That administrative practices implied or required under the Act, including those of the IPC, be reviewed and modernized;
8. That the integrity of the Act be maintained to protect personal privacy and transparent governments.

If you have any questions or comments, please contact Judy Smith at [ckclerk@chatham-ketn.ca](mailto:ckclerk@chatham-ketn.ca)

Sincerely,



Judy Smith, CMO  
Director Municipal Governance  
Clerk /Freedom of Information Coordinator

c.

Lianne Rood, MP  
Dave Epp MP  
Trevor Jones, MPP  
Monte McNaughton, MPP  
Information and Privacy Commissioner of Ontario  
Association of Municipalities of Ontario  
AMCTO Legislative and Policy Advisory Committee  
Ontario municipalities



**MATACHEWAN**

PO Box 177 , Matachewan , Ontario , P0K 1M0  
Tel: 705-565-2274

August 16, 2023

**RESOLUTION**

**Resolution # 2023-252**

**Agenda Item # 8.2 Regular Council Meeting**

**Moved By :** Emily Stewart

**Seconded By :** Dianne Gilbert

**WHEREAS**, all Ontarians deserve and expect a safe and respectful workplace;

**WHEREAS**, municipal governments, as the democratic institutions most directly engaged with Ontarians need respectful discourse;

**WHEREAS**, several incidents in recent years of disrespectful behaviour and workplace harassment have occurred amongst members of municipal councils;

**WHEREAS**, these incidents seriously and negatively affect the people involved and lower public perceptions of local governments;

**WHEREAS**, municipal Codes of Conduct are helpful tools to set expectations of council member behaviour;

**WHEREAS**, municipal governments do not have the necessary tools to adequately enforce compliance with municipal Codes of Conduct;

**NOW**, therefore be it resolved that the Council of the Corporation of the Township of Matachewan supports the call of the Association of Municipalities of Ontario for the Government of Ontario to introduce legislation to strengthen municipal Codes of Conduct and compliance with them in consultation with municipal governments;

**ALSO BE IT RESOLVED** that the legislation encompass the Association of Municipalities of Ontario's recommendations for:

- Updating municipal Codes of Conduct to account for workplace safety and harassment
- Creating a flexible administrative penalty regime, adapted to the local economic and financial circumstances of municipalities across Ontario
- Increasing training of municipal Integrity Commissioners to enhance consistency of investigations and recommendations across the province
- Allowing municipalities to apply to a member of the judiciary to remove a sitting member if recommended through the report of a municipal Integrity Commissioner
- Prohibit a member so removed from sitting for election in the term of removal and the subsequent term of office.

**WHEREAS**, this legislation be prioritized for the fall of 2023 given the urgency of this issue; and

**FURTHERMORE**, this resolution be sent to the Premier of Ontario, MPP Fedeli, Minister of Municipal Affairs, Associate Minister of Women's Social and Economic Opportunity, AMO and all municipalities.

**Carried**

\_\_\_\_\_  
Mike Young  
Deputy Mayor

\_\_\_\_\_  
Cheryl Swanson  
Clerk

**COPY**  
*Signatures on file*



---

City Clerk  
Corporation of the City of Stratford  
clerks@stratford.ca

August 30, 2023

**Re: Strengthen Municipal Codes of Conduct**

To whom it may concern:

Please be advised that at the Regular Council Meeting on August 30<sup>th</sup> 2023, the Town of Plympton-Wyoming Council passed the following motion, supporting the attached resolution from the Council of the City of Stratford regarding Strengthening Municipal Codes of Conduct:

***Motion 7***

*Moved by Councillor Kristen Rodrigues*

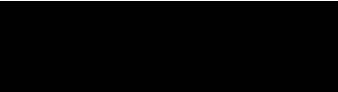
*Seconded by Councillor John van Klaveren*

*That Council support item 'P' of correspondence from the City of Stratford regarding Strengthening Municipal Codes of Conduct.*

***Carried.***

If you have any questions regarding the above motion, please do not hesitate to contact me by phone or email at [ekwarciak@plympton-wyoming.ca](mailto:ekwarciak@plympton-wyoming.ca).

Sincerely,



Erin Kwarciak  
Clerk  
Town of Plympton-Wyoming

cc: All Ontario Municipalities



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

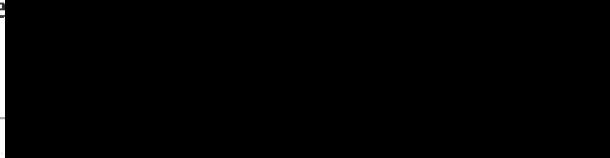
Tuesday, June 20, 2023

Resolution # RC23163

Meeting Order: 6

Moved by:

Seconded by:



**WHEREAS** the Ontario College of Physicians and Surgeons has made a decision that will lead more people who suffer from chronic pain to turn to opioids to alleviate their pain and;

**WHEREAS** the College is targeting community pain clinics by requiring the use of ultrasound technology in the administration of nerve block injections by licensed physicians. This requirement will increase the time it takes to administer the nerve block and, therefore, reduce the number of patients a physician can see in a day and;

**WHEREAS** the Ontario Health Insurance Plan (OHIP) is proposing to reduce coverage for several vital healthcare services, including a drastic reduction in the number and frequency of nerve block injections a patient can receive and;

**WHEREAS** these changes have been proposed without any consultation with pain management medical professionals or with their patients and;

**WHEREAS** this cut will force chronic pain clinics to shut down, putting a greater strain on family physicians and emergency rooms and;

**WHEREAS** with the reduction in the number of nerve blocks being administered, many patients, looking for pain relief, will turn to overcrowded emergency rooms, opioid prescriptions from doctors or opioid street drugs;

**NOW THEREFORE BE IT RESOLVED THAT** the Council of the Corporation of the Municipality of Wawa is requesting that the Government of Ontario maintain OHIP coverage for chronic pain treatments and continue to provide much-needed care for the people of Ontario;

*p.2....*



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

**AND FURTHERMORE THAT** a copy of the resolution be forwarded to all Municipalities of Ontario, local MPs and MPPs, Premier Doug Ford, the Minister of Health, Associate Minister of Mental Health and Addictions and the Association of Municipalities of Ontario.

RESOLUTION RESULT		RECORDED VOTE		
<input checked="" type="checkbox"/>	<b>CARRIED</b>	<b>MAYOR AND COUNCIL</b>	<b>YES</b>	<b>NO</b>
<input type="checkbox"/>	<b>DEFEATED</b>	<b>Mitch Hatfield</b>		
<input type="checkbox"/>	<b>TABLED</b>	<b>Cathy Cannon</b>		
<input type="checkbox"/>	<b>RECORDED VOTE (SEE RIGHT)</b>	<b>Melanie Pilon</b>		
<input type="checkbox"/>	<b>PECUNIARY INTEREST DECLARED</b>	<b>Jim Hoffmann</b>		
<input type="checkbox"/>	<b>WITHDRAWN</b>	<b>Joseph Opato</b>		

**Disclosure of Pecuniary Interest and the general nature thereof.**

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: \_\_\_\_\_

MAYOR – MELANIE PILON	CLERK – MAURY O’NEILL



MUNICIPALITY OF SHUNIAH

# COUNCIL RESOLUTION

Resolution No.: 324-23

Date: Sep 12, 2023

Moved By: \_\_\_\_\_

Seconded By: \_\_\_\_\_

THAT Council hereby receives receives and supports the resolution from the Municipality of Wawa regarding Chronic Pain Treatments;

AND THAT Council directs the Clerk to forward a copy of this email to all Municipalities of Ontario, local MP's and MPP's, Premier Doug Ford, the Minister of Health, Associate Minister of Mental Health and Addictions and the Association of Municipalities of Ontario (AMO).

Carried

Defeated

Amended

Deferred

\_\_\_\_\_  
[Redacted Signature]

Signature

Municipality of Shuniah, 420 Leslie Avenue, Thunder Bay, Ontario, P7A 1X8

The Corporation of the Municipality of St. Charles  
RESOLUTION PAGE



Regular Meeting of Council

**Agenda Number:** 10.2.  
**Resolution Number** 2023-173  
**Title:** Resolution Stemming from July 19, 2023 Regular Meeting of Council - Item 10.1 -  
Correspondence #4  
**Date:** August 9, 2023

---

**Moved by:** Councillor Laframboise  
**Seconded by:** Councillor Lachance

**BE IT RESOLVED THAT Council for the Corporation of the Municipality of St.-Charles hereby supports the Resolution passed by the Municipality of Grey Highlands on June 21, 2023 requiring all stop arm cameras on to be installed and paid for by the Province on all school buses for the start of the 2023-2024 school year;**

**AND BE IT FURTHER RESOLVED THAT a copy of this Resolution be forwarded to Premier Doug Ford; Attorney General Doug Downey; the Ministry of Education; the local Member of Provincial Parliament (MPP); the Association of Municipalities of Ontario (AMO) and all Ontario Municipalities.**

CARRIED

  
MAYOR



June 21, 2023

Office of the Premier of Ontario

Sent via email

To Hon. Doug Ford:

**Re: Resolution # 2023-475**

Please be advised that the following resolution was passed at the June 21, 2023 meeting of the Council of the Municipality of Grey Highlands.

That the Council of the Municipality of Grey Highlands urges the Provincial Government to:

1. Require all school buses to have stop arm cameras installed and paid for by the Province for the start of the 2023-2024 school year; and

2. Underwrite the costs for the implementation and on-going annual costs for Administrative Monetary Penalties in small and rural municipalities;

FURTHER RESOLVED THAT this resolution be circulated to Premier Doug Ford, Attorney General Doug Downey, Minister of Education Stephen Lecce, Provincial opposition parties, Rick Byers MPP, AMO, Bluewater District School Board, Grey County Warden and all municipalities in Ontario.

If you require anything further, please contact this office.

Sincerely,

*Amanda Fines-VanAlstine*

Amanda Fines-VanAlstine  
Manager of Corporate Services/Deputy-Clerk  
Municipality of Grey Highlands

cc. Attorney General Doug Downey,  
Minister of Education Stephen Lecce,  
Provincial opposition parties,  
Rick Byers MPP,  
AMO,  
Bluewater District School Board,  
Grey County Warden  
and all municipalities in Ontario.

**The Municipality of Grey Highlands**

206 Toronto Street South, Unit One - P.O. Box 409 Markdale, Ontario N0C 1H0  
519-986-2811 Toll-Free 1-888-342-4059 Fax 519-986-3643  
[www.greyhighlands.ca](http://www.greyhighlands.ca) [info@greyhighlands.ca](mailto:info@greyhighlands.ca)

## Justine Brotherston

---

**To:** Admin  
**Cc:** Courtenay Hoytfox  
**Subject:** RE: Support Resolution - School Bus Stop Arm Cameras

**From:** CAO <[CAO@elgin.ca](mailto:CAO@elgin.ca)>

**Sent:** Friday, September 15, 2023 2:15 PM

**To:** Tammy Godden <[clerk@stcharlesontario.ca](mailto:clerk@stcharlesontario.ca)>; [premier@ontario.ca](mailto:premier@ontario.ca); [attorneygeneral@ontario.ca](mailto:attorneygeneral@ontario.ca); [stephen.lecce@pc.ola.org](mailto:stephen.lecce@pc.ola.org); [amo@amo.on.ca](mailto:amo@amo.on.ca); [jvanthof-QP@ndp.on.ca](mailto:jvanthof-QP@ndp.on.ca)

**Cc:** 'clerk@addingtonhighlands.ca' <[clerk@addingtonhighlands.ca](mailto:clerk@addingtonhighlands.ca)>; 'info@adelaidemetcalfe.on.ca' <[info@adelaidemetcalfe.on.ca](mailto:info@adelaidemetcalfe.on.ca)>; 'clerk@adjtos.ca' <[clerk@adjtos.ca](mailto:clerk@adjtos.ca)>; 'info@admastonbromley.com' <[info@admastonbromley.com](mailto:info@admastonbromley.com)>; 'clerks@ajax.ca' <[clerks@ajax.ca](mailto:clerks@ajax.ca)>; [alberton@jam21.net](mailto:alberton@jam21.net); 'arochefort@alfred-plantagenet.com' <[arochefort@alfred-plantagenet.com](mailto:arochefort@alfred-plantagenet.com)>; 'dnewhook@algonquinhighlands.ca' <[dnewhook@algonquinhighlands.ca](mailto:dnewhook@algonquinhighlands.ca)>; 'pkemp@ahtwp.ca' <[pkemp@ahtwp.ca](mailto:pkemp@ahtwp.ca)>; 'nmartin@amaranth.ca' <[nmartin@amaranth.ca](mailto:nmartin@amaranth.ca)>; 'info@amaranth.ca' <[info@amaranth.ca](mailto:info@amaranth.ca)>; 'clerk@amherstburg.ca' <[clerk@amherstburg.ca](mailto:clerk@amherstburg.ca)>; 'deputyclerk@armourtownship.ca' <[deputyclerk@armourtownship.ca](mailto:deputyclerk@armourtownship.ca)>; [dan.thibeault@armstrong.ca](mailto:dan.thibeault@armstrong.ca); 'kzamojski@arnprior.ca' <[kzamojski@arnprior.ca](mailto:kzamojski@arnprior.ca)>; 'mspratt@arnprior.ca' <[mspratt@arnprior.ca](mailto:mspratt@arnprior.ca)>; 'ojacob@arnprior.ca' <[ojacob@arnprior.ca](mailto:ojacob@arnprior.ca)>; 'clerk@arran-elderslie.ca' <[clerk@arran-elderslie.ca](mailto:clerk@arran-elderslie.ca)>; 'clerk@acwtownship.ca' <[clerk@acwtownship.ca](mailto:clerk@acwtownship.ca)>; 'cwhite@antownship.ca' <[cwhite@antownship.ca](mailto:cwhite@antownship.ca)>; 'ahobbs@assignack.ca' <[ahobbs@assignack.ca](mailto:ahobbs@assignack.ca)>; 'athens@myhighspeed.ca' <[athens@myhighspeed.ca](mailto:athens@myhighspeed.ca)>; 'sue.bates@atikokan.ca' <[sue.bates@atikokan.ca](mailto:sue.bates@atikokan.ca)>; 'officeclerk@augusta.ca' <[officeclerk@augusta.ca](mailto:officeclerk@augusta.ca)>; 'clerks@aurora.ca' <[clerks@aurora.ca](mailto:clerks@aurora.ca)>; 'jbrick@town.aylmer.on.ca' <[jbrick@town.aylmer.on.ca](mailto:jbrick@town.aylmer.on.ca)>; 'admin@baldwin.ca' <[admin@baldwin.ca](mailto:admin@baldwin.ca)>; 'clerk@bancroft.ca' <[clerk@bancroft.ca](mailto:clerk@bancroft.ca)>; 'cityclerks@barrie.ca' <[cityclerks@barrie.ca](mailto:cityclerks@barrie.ca)>; 'cao@bayham.on.ca' <[cao@bayham.on.ca](mailto:cao@bayham.on.ca)>; 'cmcgregor@twp.beckwith.on.ca' <[cmcgregor@twp.beckwith.on.ca](mailto:cmcgregor@twp.beckwith.on.ca)>; 'communications@belleville.ca' <[communications@belleville.ca](mailto:communications@belleville.ca)>; 'edance@billingstwp.ca' <[edance@billingstwp.ca](mailto:edance@billingstwp.ca)>; 'cchild@twpbrm.ca' <[cchild@twpbrm.ca](mailto:cchild@twpbrm.ca)>; 'cwrap@twpbrm.ca' <[cwrap@twpbrm.ca](mailto:cwrap@twpbrm.ca)>; 'generalmail@blandfordblenheim.ca' <[generalmail@blandfordblenheim.ca](mailto:generalmail@blandfordblenheim.ca)>; 'info@blindriver.ca' <[info@blindriver.ca](mailto:info@blindriver.ca)>; 'clerk@municipalityofbluewater.ca' <[clerk@municipalityofbluewater.ca](mailto:clerk@municipalityofbluewater.ca)>; 'officeclerk@bonfieldtownship.com' <[officeclerk@bonfieldtownship.com](mailto:officeclerk@bonfieldtownship.com)>; 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'Info@wawa.cc' <[Info@wawa.cc](mailto:Info@wawa.cc)>; 'clerk@welland.ca' <[clerk@welland.ca](mailto:clerk@welland.ca)>; 'gkosch@wellesley.ca'  
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<[kwallace@wellington-north.com](mailto:kwallace@wellington-north.com)>; 'clerk@westgrey.com' <[clerk@westgrey.com](mailto:clerk@westgrey.com)>; [jdyson@westlincoln.ca](mailto:jdyson@westlincoln.ca);  
'clerk@westperth.com' <[clerk@westperth.com](mailto:clerk@westperth.com)>; 'cao@villageofwestport.ca' <[cao@villageofwestport.ca](mailto:cao@villageofwestport.ca)>;  
'clerk@whitby.ca' <[clerk@whitby.ca](mailto:clerk@whitby.ca)>; 'clerks@townofws.ca' <[clerks@townofws.ca](mailto:clerks@townofws.ca)>; 'cao@whiteriver.ca'  
<[cao@whiteriver.ca](mailto:cao@whiteriver.ca)>; 'michelle.hendry@whitestone.ca' <[michelle.hendry@whitestone.ca](mailto:michelle.hendry@whitestone.ca)>;  
'cmiller@whitewaterregion.ca' <[cmiller@whitewaterregion.ca](mailto:cmiller@whitewaterregion.ca)>; 'clerks@citywindsor.ca' <[clerks@citywindsor.ca](mailto:clerks@citywindsor.ca)>;  
'clerk@wollaston.ca' <[clerk@wollaston.ca](mailto:clerk@wollaston.ca)>; 'ahumphries@cityofwoodstock.ca' <[ahumphries@cityofwoodstock.ca](mailto:ahumphries@cityofwoodstock.ca)>;  
'woolwich.mail@woolwich.ca' <[woolwich.mail@woolwich.ca](mailto:woolwich.mail@woolwich.ca)>; 'regionalclerk@york.ca' <[regionalclerk@york.ca](mailto:regionalclerk@york.ca)>;  
'awettlaufer@zorra.ca' <[awettlaufer@zorra.ca](mailto:awettlaufer@zorra.ca)>

**Subject:** RE: Support Resolution - School Bus Stop Arm Cameras

Good day,

I encourage Municipalities who are interested in school bus safety to checkout Bus Patrol, their website can be accessed at the following link.

<https://buspatrol.com/join/>

When I was working in Chatham-Kent we opened discussions with this company, I found they offer a cutting edge technology and a business model that will be attractive to Municipalities. Perhaps of greatest importance they have a principled management team that is committed to enhancing public safety.

Don

Don Shropshire

CAO/Clerk

Elgin County



September 14, 2023

To Whom It May Concern,

The City of Hamilton is looking to launch 311 for our municipality. 311 is a telecom service that allows constituents to call 311 instead of the city's 10-digit number (905) 546-2489 to reach our municipality's customer contact centre. As part of the launch of 311, the City of Hamilton is required to gain alignment from other municipalities that may be affected.

The City of Hamilton would like to launch 311 for the telecom exchange of 805103 . This exchange also covers part of your municipality.

By launching 311 in this exchange, there is the potential that constituents in your municipality who dial 311 in error would be connected to our customer contact center. The City of Hamilton would develop a process to forward these calls to your municipality.

The Canadian Radio-television and Telecommunications Commission (CRTC) requires expressed alignment from your municipality in writing for the City of Hamilton to proceed with its launch. This could be in any written format of your municipality's choosing. Should you need to discuss this initiative further, or need additional information, please contact me directly.

Thank you,



Heather Vitucci  
Business and Support Services  
Customer Service, POA and Financial Integration, City of Hamilton  
(905) 546-2424 ext. 2595  
[heather.vitucci@hamilton.ca](mailto:heather.vitucci@hamilton.ca)

*Paper mail to follow*



**Ministry of  
Municipal Affairs  
and Housing**

Office of the Minister  
777 Bay Street, 17<sup>th</sup> Floor  
Toronto ON M7A 2J3  
Tel.: 416 585-7000

**Ministère des  
Affaires municipales  
et du Logement**

Bureau du ministre  
777, rue Bay, 17<sup>e</sup> étage  
Toronto ON M7A 2J3  
Tél. : 416 585-7000



234-2023-4434

September 6, 2023

Dear Clerks, CAOs, and Conservation Authority Administrators:

**Re: Proposal to return lands in Ajax to the Greenbelt**

In December 2022, to accommodate Ontario's unprecedented growth by supporting the building of more homes, our government removed or redesignated 15 areas of land totaling approximately 7,400 acres from the edge of the Greenbelt Area. At the same time, a portion of the Paris Galt Moraine was added to the Greenbelt, along with 13 Urban River Valleys, totalling 9,400 acres, for an overall expansion of approximately 2000 acres.

The government was clear that owners of the lands removed from the Greenbelt would be expected to develop detailed plans to build housing with landowners also being responsible for paying for the full cost of housing-enabling and community-building infrastructure. It is the government's expectation that significant progress on approvals and implementation be achieved by the end of 2023.

It has come to the government's attention that the discussions surrounding the development of the lands removed from the Greenbelt located at 765 and 775 Kingston Road East in the Town of Ajax were at an early stage, and that a 104-acre parcel within the lands was recently listed for sale. These actions run counter to the government's objective of building homes quickly. The government is now seeking feedback on a proposal to return these lands, amounting to approximately 133 acres, to the Greenbelt Area through an amendment to the Greenbelt Area boundary regulation ([O. Reg. 59/05](#)) and an amendment to the Greenbelt Plan.

Further information on the proposal to amend the Greenbelt Plan and Greenbelt Area boundary regulation, can be found at:

- [ERO #019-7561 – Proposal to return lands to the Greenbelt \(Amendment to the Greenbelt Plan\)](#)
- [ERO #019-7562 – Proposal to return lands to the Greenbelt \(Amendment to Greenbelt Boundary Regulation O. Reg. 59/05\)](#)

Information and mapping on the 2022 decision to amend the Greenbelt Plan can be found here:

- [ERO #019-6216 - Amendments to the Greenbelt Plan](#)
- [Greenbelt Maps](#)

The comment period on the Environmental Registry of Ontario is open for 45 days and will close on October 20, 2023. I look forward to receiving your input on this proposal.

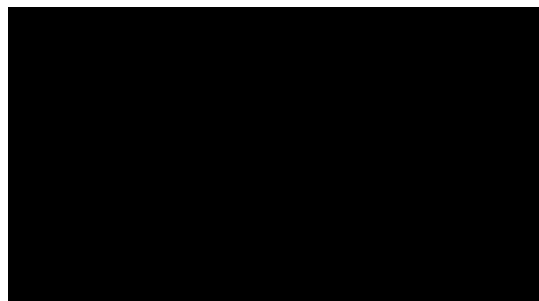
In the meantime, my ministry is working to prepare a review of the Greenbelt to ensure that it is appropriately accommodating Ontario's significant growth, as is mandated in provincial legislation. This review will be informed by the recommendations of the Auditor General's report

and will include an evaluation of the remaining properties that were removed from the Greenbelt late last year.

As ministry officials design and launch this review, the non-partisan Provincial Land and Development Facilitator will continue to work with proponents of the remaining sites to ensure that progress on these lands continues, including the obligation to provide community benefits such as parks, community centres, schools and hospitals. This work will be an important input into the mandated review into the Greenbelt, as will meaningful consultation with municipalities, Indigenous communities and regular people living in these areas who deal with the negative impacts of the housing supply crisis the most. The properties that were removed from the Greenbelt will have to stand on their own merits: If the review finds these properties cannot support the government's objective of building homes quickly, they will be returned to the Greenbelt.

We have been clear that progress on these sites must meet the government's expectations. If planning and approvals have not significantly progressed by the end of this year and if shovels are not in the ground by 2025, the government will return these lands to the Greenbelt.

Sincerely,



The Hon. Paul Calandra

Minister of Municipal Affairs and Housing

- c. Martha Greenberg, Deputy Minister, Municipal Affairs and Housing  
Sean Fraser, Assistant Deputy Minister, Municipal Affairs and Housing,  
Planning and Growth Division



Corporate Services Department Legislative Services Division	
Date & Time Received:	July 03, 2023 8:52 am
Original To:	CIP
Copies To:	
Take Appropriate Action	<input type="checkbox"/> File <input type="checkbox"/>
Notes/Comments:	

## Cramahe Township Council Resolution

**June 29, 2023**

**Sent via Email**

Hon. Caroline Mulroney, Minister of Transportation and Francophone Affairs  
Hon. Steve Clark, Minister of Municipal Affairs and Housing  
Hon. David Piccini, Minister of Environment, Conservation and Parks & MPP for  
Northumberland - Peterborough South  
Association of Municipalities of Ontario (AMO)  
All Ontario Municipalities

### **RE: Amendments to the Highway Traffic Act**

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Please be advised that the Council of the Township of Cramahe passed the following resolution at their regular meeting held June 20, 2023 regarding the Highway Traffic Act Amendments.

#### **Resolution No. 2023-213**

**Moved By: COUNCILLOR HAMILTON**

**Seconded By: DEPUTY MAYOR ARTHUR**

**BE IT RESOLVED THAT** Council support the City of Cambridge resolution; and  
**THAT** speeding on our roads is a major concern in our community; and  
**THAT** speeding can occur in all areas of our community; and  
**THAT** barriers and delays to enforcement pose a danger to our community; and  
**THAT** our municipality has limited resources to implement speed mitigation road design and re-design; and  
**THAT** our local police service has limited resources to undertake speed enforcement; and  
**THAT** s.205.1 of the Highway Traffic Act (HTA) provides that Automated Speed Enforcement systems (ASE) may only be placed in designated community safety zones and school safety zones; and

**THAT**, the Township of Cramahe request that the Ontario Government amend s.205.1 of the HTA to permit municipalities to locate an ASE system permanently or temporarily on any roadway under the jurisdiction of municipalities and as

**The Corporation of the Township of Cramahe**

1 Toronto Street, P.O. Box 357, ON K0K 1S0 •Tel 905-355-2821•www.cramahe.ca

determined by municipalities and not be restricted to only community safety zones and school safety zones; and

**THAT** a copy of this resolution be forwarded to the Ontario Minister of Transportation, the Ontario Minister of Municipal Affairs and Housing, local area MPPs, the Association of Municipalities of Ontario (AMO) and all Ontario Municipalities.

**CARRIED**

Attached please find a copy of the City of Cambridge Council Resolution, dated May 10, 2023.

If you have any questions regarding the above resolution, please do not hesitate to contact me at [nhamilton@cramahe.ca](mailto:nhamilton@cramahe.ca)

Sincerely,



Nicole Hamilton  
Municipal Deputy Clerk  
Township of Cramahe

**The Corporation of the City of Cambridge  
Corporate Services Department  
Clerk's Division  
The City of Cambridge  
50 Dickson Street, P.O. Box 669  
Cambridge ON N1R 5W8  
Tel: (519) 740-4680 ext. 4585  
[mantond@cambridge.ca](mailto:mantond@cambridge.ca)**

May 10, 2023

**Re: Highway Traffic Act Amendments**

Dear Ms. Mulronev,

At the Council Meeting of May 9, 2023, the Council of the Corporation of the City of Cambridge passed the following Motion:

**WHEREAS** speeding on our roads is a major concern in our community,

**AND WHEREAS** speeding can occur in all areas of our community,

**AND WHEREAS** barriers and delays to enforcement pose a danger to our community,

**AND WHEREAS** our municipality has limited resources to implement speed mitigation road design and re-design,

**AND WHEREAS** our local police service has limited resources to undertake speed enforcement,

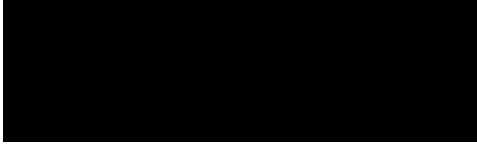
**AND WHEREAS** s.205.1 of the Highway Traffic Act (HTA) provides that Automated Speed Enforcement systems (ASE) may only be placed in designated community safety zones and school safety zones,

**THEREFORE BE IT RESOLVED THAT**, the City of Cambridge request that the Ontario Government amend s.205.1 of the HTA to permit municipalities to locate an ASE system permanently or temporarily on any roadway under the jurisdiction of municipalities and as determined by municipalities and not be restricted to only community safety zones and school safety zones;

**AND THAT** a copy of this resolution be forwarded to the Ontario Minister of Transportation, the Ontario Minister of Municipal Affairs and Housing, local area MPPs, the Association of Municipalities of Ontario (AMO) and all Ontario Municipalities.

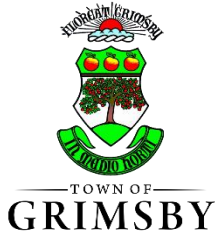
Should you have any questions related to the approved resolution, please contact me.

Yours Truly,



Danielle Manton  
City Clerk

Cc: (via email)  
Steve Clark, Ontario Minister of Municipal Affairs and Housing  
Local Area MPPs  
Association of Municipalities of Ontario (AMO)  
All Ontario Municipalities



**The Corporation of the Town of Grimsby  
Administration**

Office of the Town Clerk

160 Livingston Avenue, Grimsby, ON L3M 0J5

**Phone:** 905-945-9634 Ext. 2171 | **Fax:** 905-945-5010

**Email:** [bdunk@grimsby.ca](mailto:bdunk@grimsby.ca)

September 8, 2023

SENT VIA E-MAIL

Office of the Prime Minister  
80 Wellington St.  
Ottawa, ON, K1A

Attention: The Right Honourable Justin Trudeau

**RE: Establishing a Guaranteed Livable Income**

Please be advised that the Council of the Corporation of the Town of Grimsby at its meeting held on September 5, 2023 passed the following resolution:

Moved by: Councillor Korstanje

Seconded by: Councillor Freake

Whereas the Canadian livable wage for Niagara Region, two years ago was determined to be \$19.80. This was \$6000 below the annual income of a minimum wage employee; and

Whereas our residents on programs such as Ontario Works, receive targeted fixed monthly incomes of \$733, and ODSP recipients receive \$1376; and

Whereas at the current Ontario minimum wage rate, a person working 37.5 hours per week will earn approximately \$2,500 monthly (before tax); and

Whereas the median rent for one bedroom in Grimsby as of August 2023 is now \$2000 a month; and

Whereas rent is considered affordable, when it is less than 30% of income. In Niagara west, rent is approximately 272% of Ontario Works, 145% of Ontario Disability Support Services, 75% of minimum wage full-time, and 150% of minimum wage part time; and

Whereas an annual 2.5% allowable rent increase can be combined with an additional 3-6.5% capital investment increase, raising the cost of rental housing another minimum of \$110 monthly; and

Whereas there are no housing units under Niagara Regional Housing for single adults or families with dependents, including 2,3,4 or five bedrooms in our community; and

Whereas the Grimsby Benevolent Fund reported that in 2022:

- 70+ households received monthly rental supplement totaling \$237,744
- \$79,500 was invested into one time emergency housing support as of June 7, 2023
- 78 households are receiving monthly financial benefits to make rental housing more affordable; and

Whereas food inflation was 8.3% and groceries rose by 9.1%; and

Whereas the Grimsby Food Bank numbers from June 2023 reported:

- 19 new households
- 447 served households
- 1055 served individuals
- 7 emergency visits; and

Whereas the Grimsby Economic Strategic Plan identified the general high cost of living and housing affordability as primary obstacles in our workforce attraction.

Therefore be it resolved that The Corporation of the Town of Grimsby circulate correspondence to Ontario municipalities encouraging them not only to collect data of their housing and poverty statistics, but also to examine their pending economic vulnerability as a result.

Be it further resolved that The Corporation of the Town of Grimsby encourage these same municipalities to join us in advocating on behalf of our communities with this data, and by writing a letter to the Prime Minister, Premier, and local politicians calling for a united effort in establishing a Guaranteed Livable Income program.

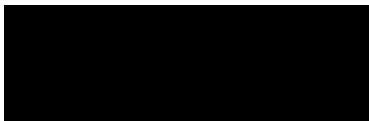


Be it further resolved the Town of Grimsby Clerks Department circulates this resolution to Niagara West MP Dean Allison and Niagara West MPP Sam Oosterhoff, requesting a response on this matter within 30 days of receipt.

Be it further resolved that The Corporation of the Town of Grimsby, through its Finance and Human Resources departments, undertake a comprehensive assessment to explore the feasibility and implementation of a living wage policy for all Town of Grimsby employees, with the aim of ensuring that all municipal workers receive fair compensation that aligns with the principles of a living wage and that staff be directed to explore becoming a living wage employer.

If you require any additional information, please let me know.

Regards,



Bonnie Nistico-Dunk  
Town Clerk

cc. Hon. Doug Ford, Premier of Ontario  
Ontario Municipalities  
Dean Allison, MP Niagara West  
Sam Oosterhoff, MPP Niagara West

**From:** [Green, Christine](#)  
**To:** [Hillary Miller](#); [Courtenay Hoytfox](#)  
**Cc:** [Khuskivadze, Olga \(MTO\)](#); [Jewell, Sarah \(MTO\)](#); [Jansen, Kelly \(MTO\)](#); [Bamforth, Peter](#); [Jackson, Geoff \(CRH Canada Group Inc.\)](#)  
**Subject:** RE: Township of Puslinch Council Resolution 2023-236 - Hanlon Expressway Midblock Interchange  
**Date:** Thursday, August 24, 2023 2:39:04 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)

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Good afternoon,

We have received the Township of Puslinch's Council Resolution No. 2023-236 regarding the Design and Construction Report #2 (DCR #2) for the Highway 6 / Hanlon Expressway Midblock Interchange Design-Build, Class Environmental Assessment Study.

In response to Council's comments and questions:

1. A Terrestrial Ecosystem Existing Conditions and Impact Assessment Report was prepared for the Highways 6 and 401 Improvements Detail Design and Class Environmental Assessment (G.W.P. 3042-14-00) in July 2021. The findings of the report can be found on the Highways 6 and 401 Improvements project website at: <https://highways6and401hamiltontoguelph.ca/reports/>. For specific information on the Impact Assessment and Mitigation of the Terrestrial Ecosystems and Wildlife Passages, please refer to the following link: [https://highways6and401hamiltontoguelph.ca/wp-content/uploads/2021/11/Terrestrial-IA\\_Report-only\\_Part5.pdf](https://highways6and401hamiltontoguelph.ca/wp-content/uploads/2021/11/Terrestrial-IA_Report-only_Part5.pdf). As noted in the report, maintaining habitat connectivity is important for the preservation of local wildlife, including amphibians. The riparian corridors along Mill Creek, particularly at the crossing of Wellington Road 34, offer the greatest potential to maintain wildlife linkages to larger forests, wetlands, and other natural habitats within the broader landscape. The crossings of McCrimmon's Tributary also offer crossing opportunities. They link several wetlands features of the Mill Creek Puslinch Provincially Significant Wetland complex on the west side of Highway 6. In order to mitigate potential risks for wildlife-vehicle collisions, the culverts requiring replacement along Wellington Road 34 and Concession Road 7 will be replaced with larger structures that will permit wildlife crossing.

During construction, vegetation removal will be kept within the limits of work and will be avoided if possible. Temporarily disturbed areas will be restored as soon as possible following construction and fencing will be using to protect vegetation, where feasible. A Landscape Plan has been drafted by a team of Landscape Architects as part of the Detail Design process The Plan includes enhancement of plantings for wildlife passage at these culvert locations. The Landscape Plan will be applied following construction. Through the implementation of the culvert replacements, landscaping enhancements, and stringent environmental mitigation measures, it is anticipated that amphibian migration routes will experience minimal temporary impacts based on the Remaining Works construction.

2. WSP has completed a private well survey within the study limits of the Remaining Works. No impact is anticipated to private well users, given the temporary nature of the dewatering and the distance of properties from the excavations. A Hydrogeological Assessment was undertaken and confirmed that a Category 3 Permit-To-Take-Water (PTTW) is required and must be obtained prior

to the start of construction at the area of dewatering. As part of the PTTW, a pre-construction private well survey will be undertaken within a 500 m radius of the proposed site of dewatering (i.e., the centre pier at Wellington Road 34 and Highway 6 / Hanlon Expressway). Standard mitigation measures will be applied to minimize any potential impacts that could arise. Any dewatering at the site will be returned to the area and the work is anticipated to be temporary and should not affect recharge.

Thank you,

Christine G. (*Sent on behalf of the Highway 6/Hanlon Expressway - Midblock Interchange Project Team*)

**Contact Us:** [ProjectTeam@Highway6Midblock.ca](mailto:ProjectTeam@Highway6Midblock.ca)



**Christine Green**

Environmental Planner  
*She / Her*

WSP Canada Inc.  
25 York Street, Suite 700  
Toronto, Ontario  
Canada  
[wsp.com](http://wsp.com)

---

**From:** Hillary Miller <[hmillier@puslinch.ca](mailto:hmillier@puslinch.ca)>

**Sent:** August 4, 2023 9:43 PM

**To:** Pegelo, Jessica (MTO) <[Jessica.Pegelo@ontario.ca](mailto:Jessica.Pegelo@ontario.ca)>

**Cc:** Courtenay Hoytfox <[choytfox@puslinch.ca](mailto:choytfox@puslinch.ca)>

**Subject:** Township of Puslinch Council Resolution 2023-236 - Hanlon Expressway Midblock Interchange

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hi Jessica,

Please see the attached Township Puslinch Council Resolution 2023-236 regarding the Hanlon Expressway Midblock Interchange.

Council is requesting that the MTO determine if any amphibian migration routes are affected and if so provide the necessary crossings and further request that MTO establish a baseline level for area wells prior to dewatering and commit to remediation if impact does occur.

Thank you,

Untitled

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NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies. You are receiving this communication because you are listed as a current WSP contact. Should you have any questions regarding WSP's electronic communications policy, please consult our Anti-Spam Commitment at [www.wsp.com/casl](http://www.wsp.com/casl). For any concern or if you believe you should not be receiving this message, please forward this message to [caslcompliance@wsp.com](mailto:caslcompliance@wsp.com) so that we can promptly address your request. Note that not all messages sent by WSP qualify as commercial electronic messages.

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-LAEmHhHzdJzBITWfa4Hgs7pbKI

**Justine Brotherston**

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**From:** Township of Puslinch <services@puslinch.ca>  
**Sent:** Tuesday, September 26, 2023 11:55 AM  
**To:** Justine Brotherston  
**Subject:** New Entry: Delegate Request

**Type of Meeting**

Council

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**Meeting Date**

September 27, 2023

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**How many delegates are requesting to make this presentation?**

One (1)

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**Type of Delegation**

This is a request to delegate on a topic on the upcoming agenda

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**Identify which agenda item you are requesting to delegate on?**

9.3.1

---

**Type of Presentation**

---

This request is to present a verbal delegation

---

**Type of Attendance**

Via Zoom

---

**Name of Delegate**

Daniel Gibbons

---

**Mailing Address of Delegate**

[REDACTED]

---

**Phone Number of Delegate**

[REDACTED]

---

**Email Address of Delegate**

[REDACTED]

---

**Purpose of delegation (state position taken on issue, if applicable)**

Shared Tower wishes to clarify the process (and specifically its role) with respect to any repeated public consultation requirement in connection with its tower development application. Shared Tower further wishes to have an opportunity to

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discuss its usual approach to completing consultation requirements in accordance with ISED protocols.

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**A formal presentation is being submitted to accompany the delegation**

No

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**The delegation will require the use of audio-visual equipment (power point presentation)**

No

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**Acknowledgement**

I (we) have read, understand and acknowledge the Rules and Procedures relating to Delegations as prescribed by the Procedural By-law 2022-046.

Sent from [Township of Puslinch](#)



## **REPORT ADM-2023-049**

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TO: Mayor and Members of Council

PREPARED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

PRESENTED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

MEETING DATE: September 27, 2023

SUBJECT: Radiocommunications Tower Application – 7424 Wellington Road 34, Puslinch

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### **RECOMMENDATION**

**That Report ADM-2023-049 entitled Radiocommunications Tower Application – 7424 Wellington Road 34, Puslinch be received; and**

**Whereas the Township is not satisfied that its agent, CRINS, has completed the consultation in accordance with the applicable protocols;**

**That Council defer its decision on providing concurrence or non-concurrence for the application; and**

**That Council direct staff to advise the proponent that a re-submission of the application is required, to be submitted directly to the Township, in order to ensure that the consultation is completed in accordance with the default ISED protocols; and**

**Further, that Council direct staff to process the application in accordance with the timeline outlined in this report.**

### **Purpose**

The purpose of this report is to provide Council information and a recommendation regarding the Radiocommunications Tower application for the property 7424 Wellington Road for consideration.

### **Background**

Council passed the following resolution on September 4, 2019 outlining the services to be provided to the Township by CRINS:



Resolution No. 2019-314

Moved by Councillor Goyda

Seconded by Councillor Bulmer

That Council receives the presentation from Todd White, Executive Director CRINS (Canadian Radiocommunications Information and Notification Services), with respect to information surrounding membership and services provided; and

That Report PD-2019-013 with respect to a membership with Canadian Radiocommunications Information and Notification Services {CRINS-SINRC} be received; and

That Council authorize that the Township of Puslinch become a member of the Canadian Radiocommunications Information and Notification Service for processing Radiocommunications facilities applications within the Township of Puslinch and forward a letter to CRTNS-SINRC advising of the decision; and

That Council authorize CRINS-SINRC and its staff to act as the authorized representative of the Township for the purpose of receiving and acting upon all Radiocommunications applications, reporting to and working with the Development and Legislative Coordinator; and

That Council adopt the CRINS-SINRC Antenna System Siting Review and Consultation Protocol as amended to clarify the responsibilities of the Township and the responsibilities of CRINS-SINRC; and

That Council authorize a combined application fee of \$2293.00 where \$543.00 is remitted to the Township to cover administration costs and \$1750.00 is remitted to CRINS; and

That exempt applications would not be subject to a Township administration fee of \$543.00 or CRINS fee of \$1750,00.

In accordance with the Council resolution above, all Radiocommunications applications and payments are submitted directly to CRINS. Once the application materials are confirmed to be submitted, CRINS is responsible for conducting all consultation including public consultation and consultation with agencies having jurisdiction. This includes the public within the specified circulation area, the Township, Conservation Authorities, the Heritage Advisory Committee, utility companies, etc. A Land Use Authority (LUA) Recommendation Report is then provided to

Township Council for consideration. The LUA outlines the process that has been followed, the consultation that has taken place, and a recommendation for concurrence or non-concurrence. The LUA report and recommendation is provided to Innovation, Science and Economic Development Canada (ISED) who is the authority on Radiocommunications applications.

In respect to the application for the property 7424 Wellington Road 34, staff are able to provide the following information in addition to the letter dated September 12, 2023 submitted by the proponent attached as **Schedule "A"** to this report:

- Township had no knowledge of the proponent's tower development application until construction of the pad began in November 2022 and the Township began receiving questions and concerns from neighbouring property owners.
- CRINS provided the proponent with a letter dated May 14, 2022, signed by Todd White, Executive Director of CRINS (the "Letter"), enclosing a Notice of Completion dated February 9, 2022 (the "Notice of Completion") and an undated and unsigned Land Use Authority Recommendation Report dated February 9, 2022 (the "Draft LUA Report"), collectively attached as **Schedule "B"**.
- The Township never saw the Letter, the Notice of Completion or the Draft LUA Report prior to it being provided to the proponent by CRINS. The Township first saw the Draft LUA Report in February 2023.
- Though the Letter, Notice of Completion and Draft LUA Report appear to contain language indicating that a public consultation was undertaken in relation to the Application, the Township has not been provided with evidence that a public consultation was ever undertaken by CRINS in 2022. The Township has requested copies the public information notice and public feedback received on several occasions from CRINS which has not been provided to date.
- In 2023, the Township understands that CRINS conducted a public consultation in relation to the Application and received commentary from the public. CRINS indicated that the commentary included in the revised LUA report dated June 6, 2023 (the "Second Draft LUA Report") were verbal comments made to CRINS and therefore no written records exist.

- Following the public consultation process undertaken in 2023, the Township understands that CRINS prepared and provided Shared Tower with the Second Draft LUA Report, which was again undated and unsigned and has been attached as **Schedule “C”**.

As Council is aware, this is the first time information relating to the Radiocommunications Tower Application at 7424 Wellington Road 34 has been provided to Council in an open-meeting staff report.

As stated in the letter provided by the proponent and attached as **Schedule “A”** on page 4, Council’s role is to confirm to ISED through a letter of concurrence or non-concurrence, that “the consultation was completed in accordance with the municipality’s protocols”.

It appears that the Township and the proponent agree that consultation was not completed in accordance with the applicable protocols. Indeed, as it relates to the Second Draft LUA Report, the proponent indicates that it “was prepared without their knowledge or input. It contains information that is inaccurate about the land and the Tower”.

The Township is committed to promoting open, clear, and accessible communication with its residents and community stakeholders.

In summary, based on the information available, staff recommend that Council defer its decision on concurrence or non-concurrence for the Radiocommunications Tower Application at 7424 Wellington Road 34 and request that the proponent submit their application directly to the Township in order to ensure the consultation is completed in accordance with the default ISED protocols.

The Township will commit to completing the consultation process within 120 days of receiving the complete application including all relevant materials in accordance with the ISED default protocols. The Township will make efforts to complete the required consultation process as quickly as possible given the extended amount of time that has passed since the application was submitted to CRINS.

### **Financial Implications**

None

### **Applicable Legislation and Requirements**

*Radiocommunications Act* (federal)

ISED Protocols

**Engagement Opportunities**

Township Website; Public Information Meeting (Statutory or Otherwise); Print Advertisements/Notices (Statutory or Otherwise)

**Attachments**

**Schedule "A"** – Letter dated September 12, 2023, prepared by Daniel Gibbons, Shared Tower (proponent)

**Schedule "B"** – Letter dated May 14, 2022, signed by Todd White, Executive Director of CRINS, enclosing a Notice of Completion dated February 9, 2022; and the undated and unsigned Land Use Authority Recommendation Report dated February 9, 2022

**Schedule "C"** - Second Draft LUA report dated June 6, 2023

**Respectfully submitted,**

---

**Courtenay Hoytfox,  
Municipal Clerk (Interim CAO)**



Daniel Gibbons  
President & CEO  
e: dgibbons@sharedtower.ca  
p: (416)275-9594

September 12, 2023

Eric Davis  
245 Hanlon Creek Boulevard, Unit 102  
Guelph ON N1C 0A1

Dear Mr. Davis:

**RE:** STC0062 - Aberfoyle

Thank you for the opportunity to discuss Shared Tower's application for the development of a telecommunications tower at 7424 Wellington Road 34, Aberfoyle (the "Tower").

We write to provide you with additional information relating to: 1) our search efforts for a development site in Aberfoyle; 2) the challenges with the recommendation by CRINS that the tower be developed at 20 Wellington Road 46 (Ren's Pet Depot); and 3) the potential of other properties in Aberfoyle for purposes of our development.

To put this information in the appropriate context, a brief discussion about the history of this matter is helpful.

### **Background**

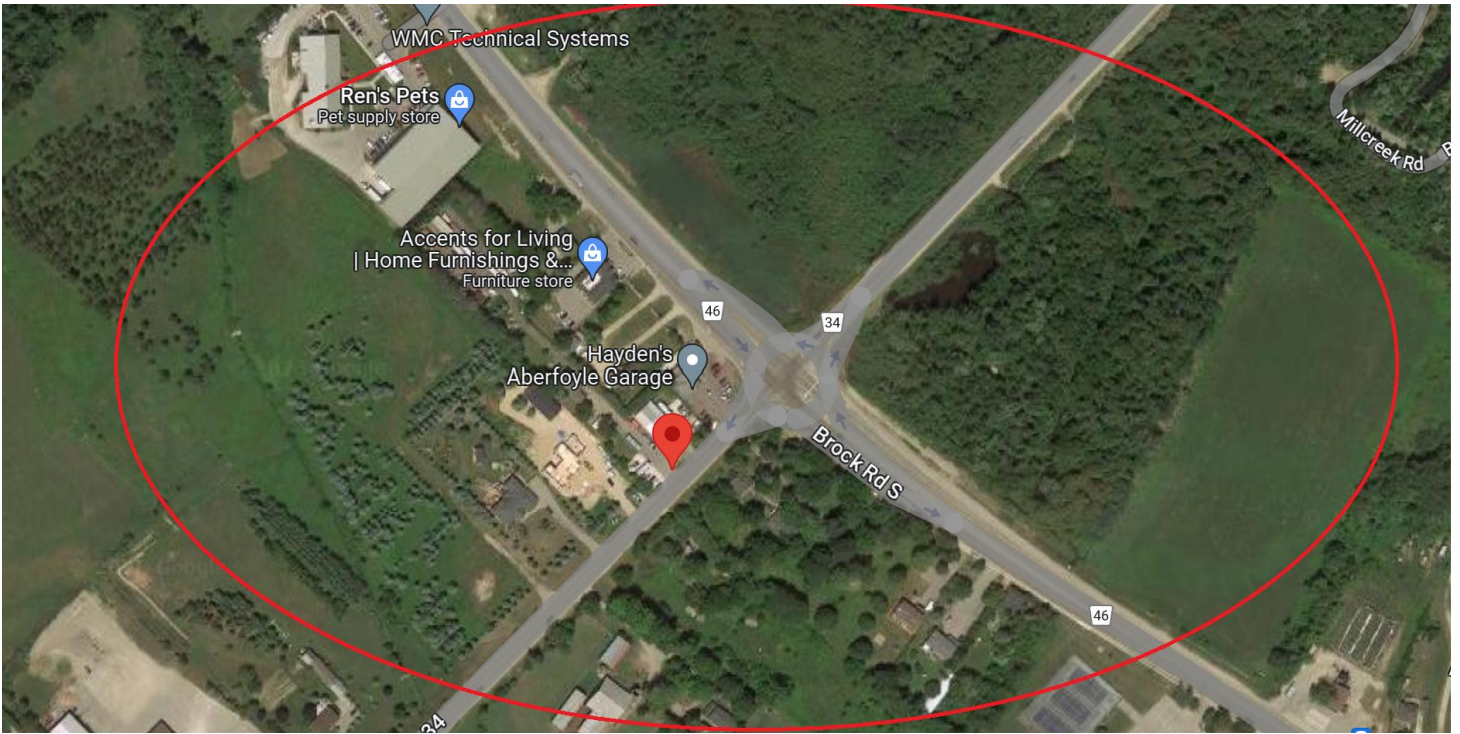
Shared Tower is Canada's leading developer of neutral telecommunications infrastructure. Our clients include all of Canada's primary telecommunications carriers, who routinely rely on Shared Tower to provide the finance, design, and implementation of multi-tenanted cellular towers.

With respect to securing municipal concurrence for site development, Shared Tower engages all relevant local stakeholders and land use authorities well in advance of construction in accordance with Innovation, Science and Economic Development Canada ("ISED") regulations. We have generated positive relationships with many Ontario municipalities, including for the purpose of tower development on municipal lands.

With deep expertise in the industry and a team devoted entirely to the municipal concurrence process, we have never had trouble engaging with a municipality in a meaningful way except in instances where the municipality was represented by CRINS.

### **Shared Tower's Search Efforts for Tower Development in Aberfoyle**

Shared Tower's search for a tower development site in Aberfoyle was prompted by a network assessment demonstrating that the area suffers from significant gaps in cellular coverage, which would be improved by telecommunications infrastructure within the area in the ring below. As you will see, this coverage zone limits the development potential to very few properties:



Beginning in early 2021, Shared Tower commenced an extensive search for a suitable real estate candidate for a new tower. As with all of our searches, we balanced the network coverage requirements of our clients with the relevant land use considerations, available space for the tower compound, willingness of the landowner to enter into a long-term (20-year) lease, and feasibility of the location for access, maintenance and supply of power to the site. Our goal is always to seek the “least worst” location, reflecting the reality that towers are a necessary but not always universally popular addition to the communities we serve. Our proposed tower type is a 35-metre tall monopole structure, which is actually a very small structure for towers located outside of dense urban areas, again reflecting our willingness to adapt our proposal to the location and balance competing interests and objectives.

Our search in Aberfoyle was focused on properties near to the intersection of Brock Road and Wellington Road 34, and was relatively challenging in that many landowners were either not interested in hosting the tower, or had insufficient space. For example:

- Hayden’s Aberfoyle Garage at 2 Brock Rd North has insufficient space to accommodate a tower compound without obstruction of existing parking spaces and access to the facilities at the property;
- The owners of Accents for Living at 8 Brock Road were not willing to have a tower on their property;
- The owners of 27 Brock road did not respond to our proposal; and
- While there was initial interest from Ren’s Pet Depot, the negotiations were halted by a death in the family of the landowners.

Importantly, a tower on any of these properties would pose visual amenity issues. We considered all of these locations at length, but kept in mind the principle that the best location for this type of infrastructure is its “least worst” location.

Ultimately, the owner of 7424 Wellington Road was the only landowner who 1) was willing to proceed and 2) had sufficient space for a tower.

Shared Tower entered into a lease with the owner of 7424 Wellington Road 34, a property with existing commercial uses, including outdoor storage and truck / trailer repair services. By entering into the lease with Shared Tower, the owner gave

up space that was otherwise used for his primary commercial activities at the site (and consequently reduced his income generating potential from these uses).

Shared Tower initiated consultation with the Township via its agent, CRINS, in late 2021, following CRINS's standard pre-consultation requirements. No concerns about the proposed tower were expressed by the Township at this time. We believe it is important to point out that the pre-consultation process is a key step in any development application, since it is the initial test of the suitability of the application for the area in which it is proposed. We relied on the Township to comment at this time on any initial concerns about the proposal, but no concerns were expressed either at this stage or at any point during the consultation process.

### **Shared Tower's Development Application**

The following is a brief chronology of the relevant events since Shared Tower submitted its application for the tower sought by the Town:

1. Following an extensive search for a suitable property to accommodate the Tower, beginning in early 2021, we originally submitted our application via the CRINS web portal in December of 2021.
2. In March 2022, we received confirmation via the CRINS portal that the "draft report" on the tower was available, but despite repeated requests, we were not able to obtain a copy of this report. This has been the case for many other CRINS consultations that we have been engaged in.
3. In May 2022, we received a Notice of Completion from CRINS. This Notice of Completion states that public consultation was completed and concluded in accordance with ISED requirements and that the Township had reviewed the proposed site as described in the Land Use Authority Recommendations Report. CRINS further stated that "the report outlines the recommendations of the Land Use Authority ... and outlines any conditions attached to the Land Use Authority's approval of the proposed facility." No public comments on the Tower proposal were provided to Shared Tower, which combined with CRINS's attestation that public consultation was satisfactorily concluded, clearly indicated no public or municipal staff concerns regarding the tower or its location on the subject property. Given this correspondence and the lack of any communication from CRINS suggesting that there were any issues with our application, we entered into a long-term license agreement with a national telecommunications carrier for the Tower and commenced construction in November 2022.
4. On December 5, 2022, approximately seven months after issuing the Notice of Completion, CRINS delivered a vague email to us asking us to pause construction because there may be issues with the location of the Tower. This was the first time since its application had been submitted one full year earlier that Shared Tower was made aware of any concerns whatsoever.
5. Despite repeated efforts, CRINS, and in particular Todd White, was entirely unresponsive to us until February of 2023. At that point, Mr. White assured us that the concerns with the Tower were not material (his precise words were "your tower is fine"). Later that day, Mr. White finally shared the Land Use Authority Recommendation Report dated February 9, 2022 ("Original LUA Report").
6. The Original LUA Report does not contain any relevant objections to the proposed tower. Indeed, the Original LUA Report confirms that CRINS had no significant objections to the tower other than "visual amenity" issues, which CRINS acknowledges are not significant land use considerations that would preclude the issuance of concurrence for the Tower.
7. On February 24, 2023, Shared Tower received a concerning email from Mr. White, which referred to an unknown number of public concerns regarding garage overhang and ice risk and requested information regarding steps that were taken to review additional tower sites.
8. Throughout this timeline and in the ensuing weeks, Shared Tower made numerous attempts to schedule meetings or discussions with Town staff. In almost all cases, our communications were ignored.
9. On April 12, 2023 – over a year after the Original LUA Report was completed, and almost a year after CRINS provided an attestation, which confirmed the successful conclusion of public consultation – Mr. White provided Shared Tower with a brief summary of four public concerns that were received, primarily regarding property value and of a visual

amenity nature. These comments were provided to us as CRINS's own transcripts of apparent public comments, with no supporting documentation to indicate when, how or by whom they were submitted.

10. As a result of the significant difficulties we experienced in reaching Mr. White, and our unsuccessful attempts to secure a meeting or substantive response from Town staff, Shared Tower submitted a Freedom of Information request in May 2023 in order to secure the full record of communications between CRINS, the Township and the public regarding the town site, a request with which the Town initially refused to comply. When the Township finally complied with the FOI request, we were provided with an alternative LUA Recommendation Report (the "Alternative LUA Report"), which was prepared without our knowledge or input. As described in more detail below, the Alternative LUA Report contains information that is inaccurate about the land and the Tower. In particular:
- a. There is a mistaken suggestion that some portion of the proposed tower would overhang the neighbouring property. This is plainly false. There will not be any overhang, and therefore no risk of ice fall at this location; and
  - b. There is a recommendation that "the Proponent consider moving the site to the northwest corner of ... (Ren's Pet Depot)...". While there was some preliminary interest from the landowner of Ren's Pet Depot, Mr. White should have been well aware as of the date of the Alternative LUA Report that this landowner was no longer willing to lease his property. Shared Tower made considerable efforts to secure a site at Ren's nearly two years earlier, but the owner was and is not interested. This is therefore not in fact a possible alternative location.

### **The Legal and Regulatory Framework**

It is important to bear in mind that telecommunications development falls under the exclusive jurisdiction of the federal government, regulated through federal legislation that is administered by ISED. Accordingly, while ISED requires proponents to follow municipal consultation protocols and consult with local land use authorities, a municipality's role is ultimately limited to providing comments to the proponent during the pre-consultation period, and confirmation to ISED following the consultation period. This confirmation is achieved through a letter of concurrence or non-concurrence, which indicates whether or not the consultation was completed in accordance with: 1) the municipality's protocols (if there is one); or 2) the default ISED protocols.

In this case, telecommunications development in the Township of Puslinch is governed by the default ISED protocols administered by CRINS. Despite the irregular and unusual manner in which Shared Tower's development application has advanced, our position is that we have effectively complied with ISED protocols and have successfully concluded the consultation process as administered by CRINS. While there are comments in both the Original and Alternative LUA Report, they are either entirely irrelevant, do not comprise significant land use concerns, or have been adequately addressed. For reference, ISED provides a list of concerns that should be deemed not relevant in concluding consultation, including but not limited to:

- *disputes with members of the public relating to the proponent's service, but unrelated to antenna installations*
- *potential effects that a proposed antenna system will have on property values or municipal taxes*
- *questions whether the Radiocommunication Act, this document, Safety Code 6, locally established by-laws, other legislation, procedures or processes are valid or should be reformed in some manner<sup>1</sup>*

### **Ren's Pet Depot**

Discussions with the owner of Ren's Pet Depot resumed in approximately March 2023 upon receiving concerning communications from Mr. White about our tower site. While there was some interest in entering into a lease initially, the landowners ultimately rejected our proposal and expressed that they do not want a tower on their property.

<sup>1</sup> <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/procedures/client-procedures-circulars-cpc/cpc-2-0-03-radiocommunication-and-broadcasting-antenna-systems#s4.2>

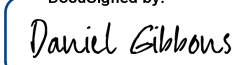


### Alternative Properties in Aberfoyle

As illustrated above, we have already undertaken a comprehensive search effort in the limited area within which telecommunications infrastructure is needed. Nonetheless, in the context of our current discussions with the Township regarding the comments included in the Alternative LUA Report, and particularly comments regarding visual amenity concerns, we have carefully re-evaluated the area. Our assessment is that there is no feasible location for a tower, which would eliminate potential visual amenity concerns by residents, and that the Tower has met the requirements for consultation and concurrence.

Thank you for your attention to this matter.

Yours truly,

DocuSigned by:  
  
Daniel Gibbons  
19765386A5E4B3...

Canadian Radiocommunications  
Information and Notification Service



Service d'information et de notification  
en radiocommunications canadiennes

**Shared Tower Incorporated**  
1375 North Service Road East, Unit 104  
Oakville, ON L6H 1A7  
Attn: Leticia Avanse

May 14, 2022

**RE: "STC0062 – Aberfoyle"**  
**CRINS Case Number 2112-0702-1928 CONDITIONALLY APPROVED**

Dear **Leticia Avanse**:

Attached please find a Notice of Completion for the above referenced facility.

We advise that **Shared Tower Corporation** has completed its obligations for Public Consultation as outlined in Innovation, Science and Economic Development Canada's Client Procedure Circular "*CPC 2-0-03 Radiocommunications and Broadcast Antenna Systems, Issue 5*" as prescribed in the Protocol adopted by the **Township of Puslinch**.

Additionally, please be advised that **Township of Puslinch** has reviewed the proposed site as described in the *Land Use Authority Recommendations Report*. The format of this report has also changed, and you will receive this report shortly under separate cover.

The report outlines the recommendations of the Land Use Authority with respect to the construction and operations of the site, and outlines any conditions attached to the Land Use Authority's approval of the proposed facility.

Should you have any questions, please contact the undersigned or the Land Use Authority.

Sincerely yours,

A handwritten signature in blue ink that reads "Todd White". The signature is fluid and cursive.

Todd White  
Executive Director



## Notice of Completion

**In the matter of:**

### **STC0062 - Aberfoyle**

a radiocommunications facility being proposed by the Proponent,

**Shared Tower Incorporated**  
**1375 North Service Road East, Unit 104, Oakville ON L6H1A7**

for commissioning in the jurisdiction of the Land Use Authority, the

### **Township of Puslinch**

Pursuant to the *Radiocommunications Act*, and the procedures set forth in *Client Procedures Circular (CPC) 2-0-03*, the above noted proposal for a radiocommunications facility was presented by the Proponent for consultation with the Land Use Authority and supporting regulatory agencies, adjacent landowners and, as appropriate, members of the general public.

The consultation was conducted in accordance with the CRINS-SINRC Reference Protocol, Issue 5, as amended, as the protocol adopted by the Land Use Authority as a member of CRINS-SINRC, and brought into force through by-law.

We advise the Minister of Innovation, Science and Economic Development (ISED), as the designated representative of the Land Use Authority, that the proponent has completed the consultation according to the Protocol.

Dated and affixed with our Seal in the City of Ottawa, Ontario, Canada.



**February 9, 2022**



TOWNSHIP OF  
**PUSLINCH**  
EST. 1850

## **Township of Puslinch**

Land Use Authority Recommendation Report  
For

### **Shared Tower Incorporated STC0062-"Aberfoyle"**

February 09, 2022

**CRINS-SINRC# 2112-0702-1928**

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## 1. Introduction

The purpose of the *Land Use Authority Recommendation Report* is to detail the review process conducted for an application submitted through CRINS-SINRC to a participating Land Use Authority (LUA) for the siting and construction of an antenna system, as well as defining the participating LUA's expectations relating to the location and design of radiocommunications facilities.

This report is a deliverable resulting from the LUA's adoption of the CRINS-SINRC Reference Protocol, Issue 5 (2020) which applies to any proponent planning to install a new or modify an existing radiocommunications facility regardless of the type of installation or service. This includes, but not limited to:

- Personal Communications Services (PCS);
- Cellular operators;
- Fixed wireless operators;
- Broadcasting operators;
- Land-mobile operators;
- License-exempt operators; and,
- Amateur radio operators.

All new radiocommunications facilities are expected to follow this process to obtain either a Notice of Facility Exemption or a Notice of Completion relating to the consultation and the corresponding Land Use Authority (LUA) Recommendations Report.

## 2. Subject Property

The proposed installation is located at coordinates **43° 28' 25.600" N, 80° 9' 19.800" W** on parcel [PIN 711970093] ( **7424 Wellington Road 34 , Aberfoyle** ) and is designed as a **35m Flush Mount Monopole** structure, with **Ground Cabinet** to house the Proponents equipment.

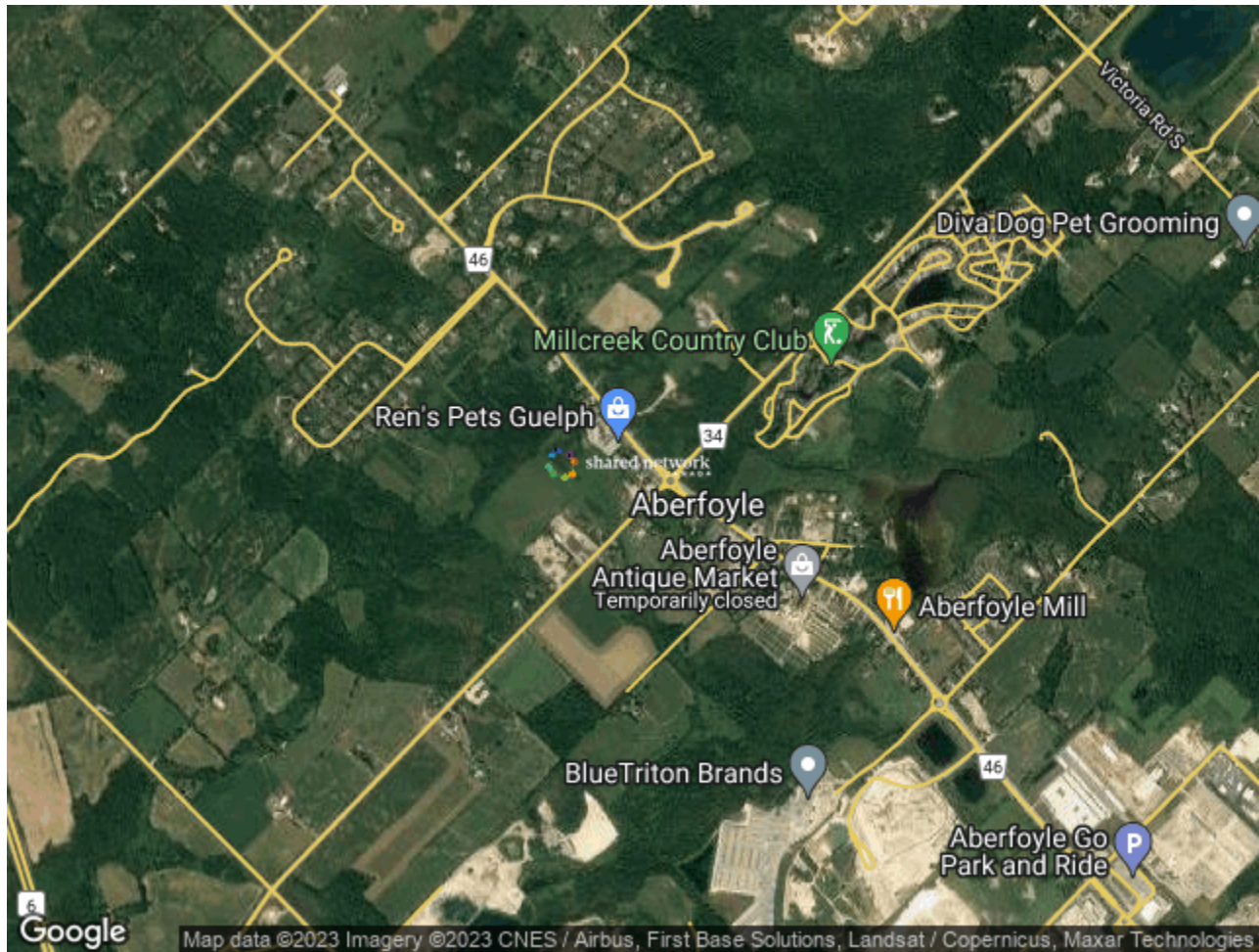


Figure 1 - Location Overview

## 2.1. Justification Statement by Proponent



Figure 2- Example of Flush Mount Monopole (Type FM)

The Proponent is seeking a Notice of Completion for the installation.



### 3. Statement on Land Use

The LUA considers all proposals in the context of its existing Land Use Plans, as well as its mandate for ensuring the safety and security of persons and property which may be affected by a proposed development. The proposed radiocommunications site has been reviewed and the following sections represent the LUA's assessment of the proposed site relative to existing land use practices.

#### 3.1. Community Sensitive Locations

While antenna systems have become common infrastructure in the public realm, some areas of a municipality may contain cultural, natural or historical assets which may be diminished by the introduction of antenna systems. ISEDC provides for exclusions from consultation for proposals which are deemed low impact in nature, or related to maintenance of existing structures. While in general terms, such exclusions are reasonable, there exists individual instances where such exclusions may have a disproportionate negative impact on the public realms.

The LUA will generally recognize an exclusion provided that the site is not located in a **Community Sensitive Location**.

If a proposed site is located in a *Community Sensitive Location*, the Proponent may be asked to proceed with a Public Consultation due to the sensitive nature of the site, even though it may otherwise qualify for exempt status. The LUA will advise both the Proponent, as well as Innovation, Science and Economic Development Canada, as to its concerns in these situations.

If a proposed site is a non-exempt facility and is located in a Community Sensitive Location, public consultation will be required in all cases, and the proponent should expect that a community sensitive location will invoke a "High" degree of visual change under ASDF Criteria.

A **Community Sensitive Location** is defined as being:

- 1) on or near a designated *Heritage Property*;
- 2) located in an *area of Architectural Significance*;
- 3) located in an *area of Archeological Significance*; or,
- 4) in a *Natural Conservation Area*.

In the case of the current proposal, we advise the Minister that the proposed antenna system:

	is not believed to have any adverse effects on a <i>Community Sensitive Location</i> according to the Protocol.	
	may impact an area deemed to be architecturally significant whether or not each of the individual properties/assets have received a federal, provincial or municipal Designation.	
	may impact properties that have received a federal, provincial or municipal Designation(s), and are registered in the <i>Canadian Register of Historic Places</i> .	
	may impact an area deemed to be a Natural Conservation area or park.	

### 3.2. Zoning and Compatibility with Existing Plans

The proposed site encompasses a Based on the allowable uses and in reference to the current proposal we advise the Minister that the proposed antenna system:

	is proposed in an area in which the current zoning by-laws of the Land Use Authority allow for industrial or commercial enterprises which have the potential for light, noise or other emissions. As such, an antenna system is consistent in nature with the allowable uses of the zone – even if not explicitly declared.	
	is proposed in a commercial, or other zoned area that does not include any residential uses.	
	is proposed in a mixed-use area with both commercial and residential uses.	
	is proposed within a residential, environmentally protected, or nature area.	

### 3.3. Fire Routing and Access – National Fire Code

We advise the Minister that the site layout for the proposed antenna system, per the submitted site plan:

	satisfies the needs of the Land Use Authority to provide emergency services to the site, including the protection of adjacent structures on the same property, or any adjacent properties.	
	requires modification to the site design to conform to the requirements of the Land Use Authority to be able to provide emergency services to adjacent structures on the same property, or adjacent properties	
	does not allow for the provision of emergency services including the protection of adjacent structures or properties.	

### 3.4. Health Canada Safety Code 6

All radiocommunication facilities, irrespective of the nature of the antenna system, or physical form is required to operate within the limits specified in the Health Canada guidelines for electromagnetic radiation emissions – Safety Code 6 - which has been adopted by Innovation, Science and Economic Development Canada for use with all radiocommunications facilities.

To that end, a Proponent is required to provide a statement attesting to the Proponent’s understanding and commitment to operate within the limits of Safety Code 6, and to identify a Professional Engineer who, either as a employee of the Proponent or as a service provider under contract to the Proponent, has agree to take responsibility for ensuring compliance of the antenna system.

With respect to the current proposal, we advise the Minister that:

	the Proponent provided an attestation from a Professional Engineer licensed in the province in which the site is proposed affirming that the antenna system will operate below the thresholds specified in Health Canada Safety Code 6.	
	the Proponent has provided a Statement of Liability and Insurance in the form required by CRINS and the Land Use Authority in lieu of an attestation.	
	the agent of the Proponent provided an attestation that the proposed antenna system will operate below the thresholds specified in Health Canada Safety Code 6. As the agent is not a Professional Engineer licensed in the province in which the antenna system is proposed, the Land Use Authority's concurrence with the proposal is subject to the Proponent engaging a Professional Engineer who is licensed to practice within the Province to confirm compliance with Safety Code 6 prior to construction.	
	the Proponent has made no attestation that the proposed antenna system is compliant with Safety Code 6.	

### 3.5. Structural Review – National Building Code

Radiocommunications facilities are constructed under the authority of the *Minister of Innovation, Science and Economic Development*. As such, these structures are deemed a *federal undertaking*, requiring Proponents to uphold the standards which apply to the construction of buildings and other infrastructure as if it were being constructed on behalf of the Government of Canada.

As such, the *Minister of Labour* has adopted the *National Building Code (NBC)* amongst many other federal standards in relation to any structure built under enabling federal legislation.

Part II of the *Canada Labour Code* (<http://laws-lois.justice.gc.ca/eng/acts/L-2/>) and the regulations made there under, set out the rules that apply to all federal undertakings, or workers enabled as a result of their work on such undertakings, including, but not limited to broadcasters and telecommunication carriers.

The obligations include ensuring that all permanent and temporary buildings and structures meet the prescribed standards in the *Canada Occupational Health and Safety Regulations* which apply to any federal undertaking. Section 2.2 (1) of the aforementioned regulations, reference the *National Building Code* as the applicable code to be used as the reference.

Also included is the requirement for broadcasters and telecommunication carriers, when constructing towers, to follow the *Canada Occupational Health and Safety Regulations, Division II, Section 2.19*, which refers to the Canadian Standards Association (CSA) Standard CAN/CSA-S37-94, entitled “*Antennas, Towers, and Antenna-Supporting Structures*”.

Legislation under *HRSDC (Human Resources and Skills Development Canada)* enforced by the *Minister of Labour* (who is one of the Ministers under the HRSDC portfolio) is responsible to enforce the provisions of the NBC and the CSA Standard, along with provincial legislation relating to the practice of professional engineering in each province.

In reference to the current proposal, we advise the Minister that:

	<p>the Proponent provided an attestation from a Professional Engineer licensed in the province in which the site is proposed affirming that the antenna system will be constructed according to the National Building Code, and CAN/CSA S37-18 as amended from time-to-time.</p>	
	<p>the Proponent has provided a Statement of Liability and Insurance in the form required by CRINS and the Land Use Authority in lieu of an attestation.</p>	
	<p>the agent of the Proponent provided an attestation that the proposed antenna system will be constructed according to the National Building Code, and CAN/CSA S37-18 as amended from time-to-time. As the agent is not a Professional Engineer licensed in the province in which the antenna system is proposed, the Land Use Authority's concurrence with the proposal is subject to the Proponent engaging a licensed Professional Engineer to confirm compliance with the National Building Code and CAN/CSA S37-18 prior to construction.</p>	
	<p>the Proponent has made no attestation that the proposed antenna system is compliant with the National Building Code, or CAN/CSA S37-18</p>	

#### 4. Antenna Siting Design Framework (ASDF) Review

The Antenna Siting Design Framework (ASDF) is a quantitative scoring mechanism which assesses proposed installations by considering their design relative to the surrounding visual landscape.

This results in 3 specific metrics:

- A **Visibility Score** which provides a measurement of how visible the site is within the surrounding landscape (scored out of a possible 24 points).
- A **Design Compatibility percentage** which scores the proposed site design in terms of its visual elements (structure type, antenna mounts, equipment shelters, antennas and cables) relative to the surrounding landscape.
- A **Degree of Visual Change** calculation which assesses the visual effect of the site on the surrounding landscape.

The Degree of Visual Change is utilized to assess the level of public consultation required for Non-Exempt facilities.

For Exempt facilities, the Degree of Visual Change along with the design recommendations of the ASDF tool are provided to assist the Proponent to consider design choices which will improve the site's compatibility with the surrounding landscape and uses.

For the current proposal, the following score has been assigned to this site design:





Design Compatibility/ Site Visibility	1 to 5	6 to 10	11 to 15	16 to 19	20 to 24
76 - 100%	Low	Low	Low	Medium	Medium
51 - 75%	Low	Low	Medium	Medium	High
26 - 50%	Low	Low	Medium	High	High
0 - 25%	Low	Medium	High	High	High

<b>Visibility</b>	<b>15</b>
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<b>Compatibility (%)</b>	<b>81.3</b>	<b>Low</b>
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## 4.1. Design Targets

The following table outlines the relevant design targets for the proposed site. Key design targets are highlighted below:

	 Poles and Towers	 Antenna Mounts	 Equipment Cabins	 Antennas and Cables
<b>Land Use</b>				
<b>Residential</b>	Use slim pole profiles and limit vertical extensions relative to the surrounding built form. Avoid lattice towers and head frames. Reduce the impact on street frontages.	Avoid cross bracing and support wires. Set antenna mounts back from street frontages. Limit size of structural members and ensure mounts are proportional to the built form.	Capitalise on rear lanes or less public locations. Match the colour, built form and materiality to reduce the visual impact.	Maintain uniform antennas positions that respond to the construction of the pole or antenna mount. Develop consistent cable connections and shroud cables.
<b>Topography</b>				
<b>Flat</b>	Consider the use of monopoles as uniform narrow profile structures will limit visual impact.	Develop simple support structures that respond to the horizontal landscape character. Flush mount and reduce horizontal extensions. Avoid diagonal or angled bracing.	Attempt to locate cabins adjacent to existing vegetation or buildings to reduce the visual mass within the flat landscape.	Consider simple panel profiles to reduce the visual impact. Locate at a uniform frequency to respond to the horizontal visual character. Align cable runs to maintain a consistent visual form.
<b>Built form</b>				
<b>Medium scale</b>	Select narrow profile support structures to limit the vertical visual effect. Pole or tower height should respond to building form (15 to 20m) or a ratio of 1:1.4-1.5.	Use simple support structures and avoid complex cross bracing support configurations. Mounts and panels should be flush mounted or shrouded to achieve a uniform profile.	Capitalise on the existing utility areas and service lanes to provide an appropriate context for the cabins. Ensure that foundation pads respond to the built form scale (avoid steps in excess of 150 to 200 mm).	Aim to achieve a ratio of 1:1.3 - 1.4 in relation to built form and total height of antenna. Increase setbacks if larger antennas are required. Locate cable trays to rear or side facades.
<b>Sky lining</b>				
<b>Uniform</b>	Reduce the vertical profile of poles and towers to reduce the impact on the skyline. Select monopoles and avoid lattice towers with tension cables to limit both the vertical and horizontal effects.	Develop a consistent rectangular antenna mount and headframe design. Avoided angled cross bracing. Maintain uniform structural member sizes, connections and positions that do not contrast the uniform skyline.	Locate cabins with adequate setbacks to avoid any skylining in relation to prominent facades and viewpoints. Consider co-locations with more visible rooftop equipment or develop ground based site.	Uniformly position antennas to reduce the visual impact and establish a consistent alignment and height. Avoid significant vertical projections. Ensure a consistent alignment for cables, connections and cable trays.

<b>Containment</b>				
<b>Fragmented boundaries</b>	Capitalise on the existing containment or consider increased setbacks to provide additional screening of the pole or tower. Avoid major view corridors. Maintain a consistent vertical profile to reduce the visual complexity of the tower.	Capitalise on the existing containment to provide additional screening or back screening. Avoid highly visible or open areas where containment is limited.	Design and locate outdoor base units that respond to the existing containment. Develop a compatible form, scale and materiality in relation to the surrounding enclosure.	Limit the impact of cables on the surrounding containment. Align cable runs and avoid complex directional changes. Locate with other service runs and ensure that cables do not project over the edge of the containment and/or building parapet.

<b>Vegetation</b>				
<b>Tree groups</b>	Assess the tree height and design responses relative to the canopy of the trees. Avoid vertical extensions that exceed a ration of 1:1.2 relative to the adjacent trees.	Select locations that capitalise on tree screening.	Use screening from tree groups. Avoid locations that impact on the tree canopy, structure or root plate.	Locate antennas, cables and cable runs to capitalise on screening potential of surrounding trees.

<b>Existing Telcom-equipment (adjacent to site)</b>				
<b>Isolated items</b>	Respond to existing height of infrastructure. Avoid significant variation in form and height. Select pole or tower with reference to the ASDF recommendations.	Maintain a consistent height and form in relation to existing infrastructure.	Establish a consistent location and positional relationship with existing equipment cabins.	Cluster and position antennas as well as align and co-location cables with reference to existing infrastructure.

<b>Colour</b>				
<b>Mixed (complimentary)</b>	Identify prominent colours, colour match or select neutral colours to minimise of visual effect.	Identify prominent colours of roofscape or surrounding area and colour match or select neutral colours to maintain consistency in relation surrounding built form.	Colour match through applied paint finishes all surfaces in response to dominant colours of adjacent land use.	Colour match to surrounding landscape and built form. Select neutral colours if antennas or cables are elevated or sky lining.

## 4.2. Design Recommendations

Based on the design targets outlined above, the **Township of Puslinch** requests that **Shared Tower Incorporated** consider the following design recommendations prior to construction:

**Recommended that the Proponent consider moving the site to the northwest corner of the same property to reduce visual amenity impact and ice fall damage risk for residential buildings at 7422 Wellington Rd. 34 and utilize visual cover from adjacent commercial property.**



## 5. Compliance with General Design Requirements

With respect to the current proposal, we advise the Minister that:

	the design of the proposed site is compliant with the general design requirements as outlined in the CRINS-SINRC Reference Protocol as amended.	
	the design of the proposed site demonstrates some deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. However, the deviation(s) are deemed reasonable based on the specifics of the proposal and under the circumstances.	
	the design of the proposed site demonstrates some deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. The Proponent has been asked to bring their proposal into compliance.	
	the design of the proposed site demonstrates substantive deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. These deviations are not deemed reasonable by the Land Use Authority, and concurrence shall be withheld on that basis pending re-design by the Proponent.	

## 6. Siting of Facility Relative to Existing Use

The following requirements apply to antenna systems seeking concurrence:

*The placement of any parking space or any component of an antenna system shall not create or cause a situation of non-compliance with any LUA Zoning By-law for any other use, building, or structure on the host or adjacent properties.*

In the case of the current proposal, we advise the Minister that:

	The design of the proposed site does not create a situation of non-compliance with any LUA zoning by-law for any other use, building, or structure on the host and adjacent properties.	
	The design of the proposed site causes a situation of non-compliance with one or more LUA zoning by-laws for the current uses, buildings, or structures on the host property.	
	The design of the proposed site causes a situation of non-compliance with one or more LUA zoning by-laws for the current and or future uses, buildings, or structures on an adjacent property.	

## 7. Statement of Concurrence

The **Township of Puslinch** requests that the Proponent – **Shared Tower Incorporated** – comply with the design targets where possible as presented in Section 4.

*No further Development or Planning approvals are required however the Proponent is required to comply with any and all conditions outlined in Section 9 as a requirement of obtaining and maintaining concurrence from the Land Use Authority. Failure to comply with the conditions as outlined in Section 9 shall render concurrence with the proposal null and void.*

Where an undertaking from the proponent is required as part of the concurrence conditions, no work on the structure shall begin until the undertaking is received by CRINS-SINRC and the Land Use Authority.

Overall, the Land Use Authority position with regards to the proposal is that:

	The Land Use Authority concurs with the proposed antenna system, subject to any conditions outlined in Section 9.	
	The Land Use Authority requests an extension to the consultation period due to unresolved concerns after 120 days, as outlined in Section 8.5	
	The Land Use Authority requests the Minister instruct the Proponent to undergo a public consultation, even though the proposed antenna system is excluded from consultation under Section 6 of CPC 2-0-03, as it is our opinion that the proposed antenna system may damage the public realm, or is contrary to the public good and requires further review.	
	The Land Use Authority rejects (non-concurrence) the proposed antenna system as presented, for the reasons outlined in Section 8.5.	

## 8. Public Consultation

### 8.1 CRINS-SINRC Public Comments

In addition to the questions posed in the survey, both priority stakeholders and the general public were provided an opportunity to provide free form comments. The following summarizes the themes that were represented in the comments:

**The proposed site is directly abutting the property at 7422 Wellington County Road 34 effectively overshadowing the garage. Visual impact on the homes at 7418 and 7420 was also noted. Suggestions that the site be moved to the back of the lot further out of direct visual view was recommended.**

## 8.2 CRINS-SINRC Reporting Statement

CRINS-SINRC reviews each application for a proposed antenna system according to the guidelines set out by the Minister of Innovation, Science, and Economic Development (ISED) and identifies matters which the Minister has identified as relevant to the federal purpose pursuant to S. 5(1)(f) of the *Radiocommunications Act*. As the designated representative of the Land Use Authority, overseeing the consultation process, CRINS-SINRC presents the opinions of both the public and/or elected body as well as the evidence-based land use guidance of the planning and development staff in each Land Use Authority, as provided for in the procedures set out in the *Client Procedures Circulars (CPCs)* to inform the decision of the Minister.

Where there is non-concurrence between the public opinion and/or the elected body of a Land Use Authority regarding a proposed antenna system and the satisfactory compliance of a proponent proposal with the technical, planning and procedural requirements set out by the Minister, CRINS-SINRC maintains a fiduciary role to provide any information which ISED may request such that the Minister may make a final determination regarding a proposal taking into regard to the objectives of the Canadian telecommunications policy set out in Section 7 of the *Telecommunications Act*.

Where a proposal receives a non-concurrence statement, CRINS-SINRC shall identify for the Minister the matters which resulted in the statement of non-concurrence, and may provide independent narrative on those matters according to the criteria which the Minister has articulated in the policies and procedures which flow from the implementation of the *Act(s)*.

Where such narrative is required, CRINS-SINRC shall issue a Reporting Statement for the Minister's consideration which, when provided, shall be attached to this report as Schedule 'A'.

	CRINS-SINRC has not deemed it necessary to include a Reporting Statement for the Minister's review.	
	CRINS-SINRC <b>has included</b> a Reporting Statement as Schedule 'A' for the Minister's consideration.	

## 8.3 Statement by Council

Notwithstanding the technical and planning review by CRINS and LUA staff requested by the Minister, Council may deem it appropriate to issue a statement for the Minister's consideration which, when provided, shall be attached to this report as Schedule 'B'.

	Council has not deemed it necessary to include a statement for the Minister's consideration.	
	Council has <b>provided</b> a statement as Schedule 'B' for the Minister's consideration.	

## **8.4 Justification for Concurrence Statement**

The Proponent has addressed all relevant concerns of the public, and the Land Use Authority has no further concerns about the proposal, subject to the Proponent's compliance with all conditions as may be set forth in Section 9.

## 9. LUA Confirmation of Report and Conditions

We hereby advise that the attached report accurately reflects the position of the **Township of Puslinch** with respect to the radiocommunications facility proposed by **Shared Tower Incorporated**, designated **STC0062-"Aberfoyle" (CRINS-SINRC # 2112-0702-1928)**.

Our position with respect to the proposal is based on the following conditions being met:

- 1) *Confirmation by CRINS-SINRC that the Proponent has addressed all relevant concerns of the public according to the Protocol and that the above conditions have been met such that a Notice of Completion is warranted.*
- 2) *Application made for, and receipt of, all necessary permits prior to construction of the foundation of the tower and building to house proponent's equipment.*
- 3) *Submission of "as-built" drawings to CRINS-SINRC no later than 30 days after the completion of construction.*
- 4) *Receipt of the Safety Code 6 report by a Professional Engineer licensed in the Province which confirms compliance with Safety Code 6 prior to the commissioning of the tower.*
- 5) *Receipt of an attestation or stamped drawings by a Professional Engineer licensed in the Province which confirms compliance with the National Building Code and CSA S37-XX Standard prior to construction.*
- 6) *Provision of Transport Canada guidance on lighting and painting requirements of the antenna system.*
- 7) *Receipt of NAV Canada land use approval letter (non-conditional). If with conditions, concurrence may require subsequent review.*
- 8) *Proponent to address the recommendations in Section 4.2 of this report.*

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

---

**Courtenay Hoytfox**  
Town Clerk  
Township of Puslinch



## **Township of Puslinch**

Land Use Authority Recommendation Report  
For

### **Shared Tower Incorporated STC0062-"Aberfoyle"**

February 09, 2022

Revised: June 6, 2023

**CRINS-SINRC# 2112-0702-1928**

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## 1. Introduction

The purpose of the *Land Use Authority Recommendation Report* is to detail the review process conducted for an application submitted through CRINS-SINRC to a participating Land Use Authority (LUA) for the siting and construction of an antenna system, as well as defining the participating LUA's expectations relating to the location and design of radiocommunications facilities.

This report is a deliverable resulting from the LUA's adoption of the CRINS-SINRC Reference Protocol, Issue 5 (2020) which applies to any proponent planning to install a new or modify an existing radiocommunications facility regardless of the type of installation or service. This includes, but not limited to:

- Personal Communications Services (PCS);
- Cellular operators;
- Fixed wireless operators;
- Broadcasting operators;
- Land-mobile operators;
- License-exempt operators; and,
- Amateur radio operators.

All new radiocommunications facilities are expected to follow this process to obtain either a Notice of Facility Exemption or a Notice of Completion relating to the consultation and the corresponding Land Use Authority (LUA) Recommendations Report.



## 2. Subject Property

The proposed installation is located at coordinates **43° 28' 25.600" N, 80° 9' 19.800" W** on parcel [PIN 711970093] ( **7424 Wellington Road 34 , Aberfoyle** ) and is designed as a **35m Flush Mount Monopole** structure, with **Ground Cabinet** to house the Proponents equipment.

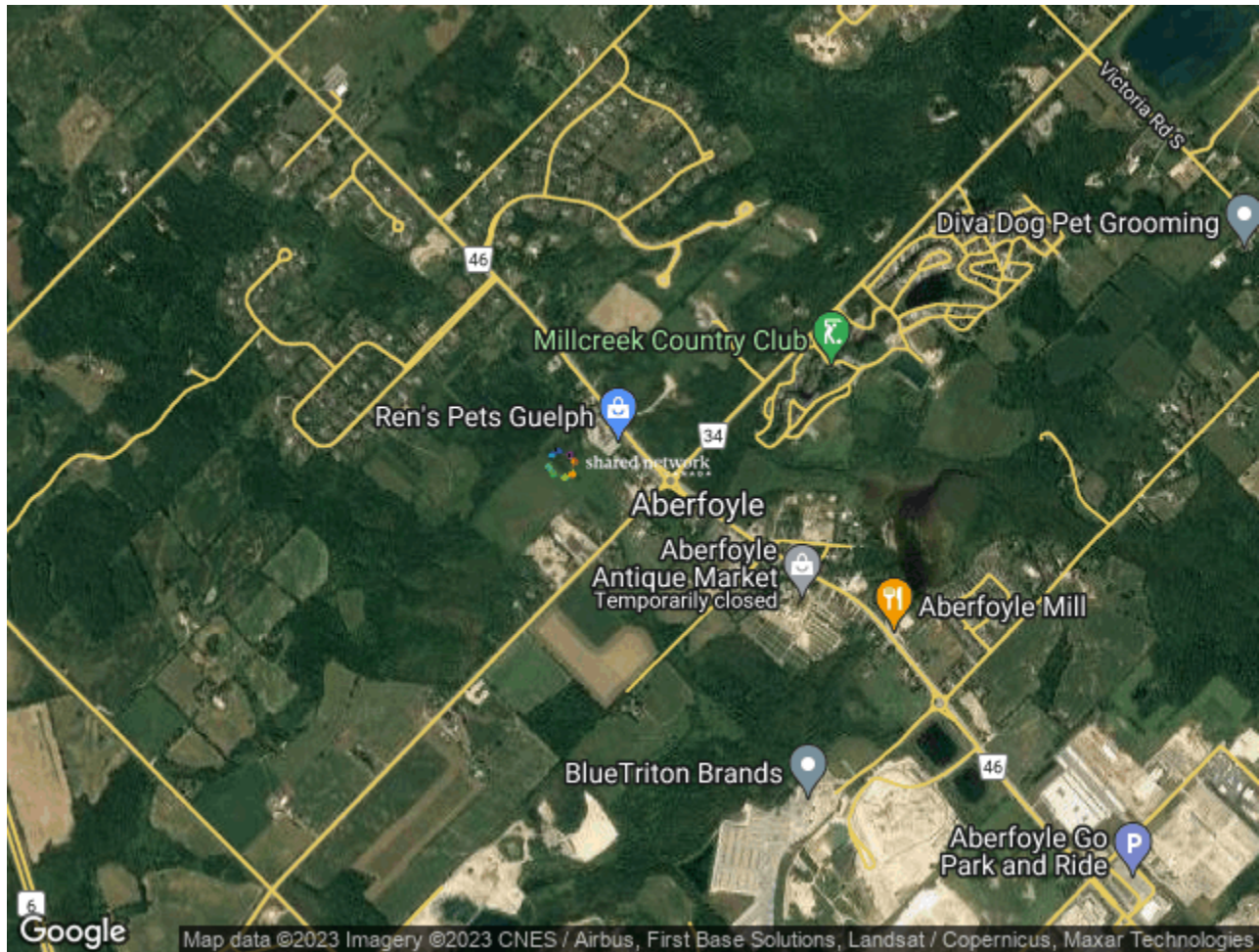


Figure 1 - Location Overview

## 2.1. Justification Statement by Proponent



Figure 2- Example of Flush Mount Monopole (Type FM)

The Proponent is seeking a Notice of Completion for the installation.

### 3. Statement on Land Use

The LUA considers all proposals in the context of its existing Land Use Plans, as well as its mandate for ensuring the safety and security of persons and property which may be affected by a proposed development. The proposed radiocommunications site has been reviewed and the following sections represent the LUA's assessment of the proposed site relative to existing land use practices.

#### 3.1. Community Sensitive Locations

While antenna systems have become common infrastructure in the public realm, some areas of a municipality may contain cultural, natural or historical assets which may be diminished by the introduction of antenna systems. ISEDC provides for exclusions from consultation for proposals which are deemed low impact in nature, or related to maintenance of existing structures. While in general terms, such exclusions are reasonable, there exists individual instances where such exclusions may have a disproportionate negative impact on the public realms.

The LUA will generally recognize an exclusion provided that the site is not located in a **Community Sensitive Location**.

If a proposed site is located in a *Community Sensitive Location*, the Proponent may be asked to proceed with a Public Consultation due to the sensitive nature of the site, even though it may otherwise qualify for exempt status. The LUA will advise both the Proponent, as well as Innovation, Science and Economic Development Canada, as to its concerns in these situations.

If a proposed site is a non-exempt facility and is located in a Community Sensitive Location, public consultation will be required in all cases, and the proponent should expect that a community sensitive location will invoke a "High" degree of visual change under ASDF Criteria.

A **Community Sensitive Location** is defined as being:

- 1) on or near a designated *Heritage Property*;
- 2) located in an *area of Architectural Significance*;
- 3) located in an *area of Archeological Significance*; or,
- 4) in a *Natural Conservation Area*.

In the case of the current proposal, we advise the Minister that the proposed antenna system:

	is not believed to have any adverse effects on a <i>Community Sensitive Location</i> according to the Protocol.	
	may impact an area deemed to be architecturally significant whether or not each of the individual properties/assets have received a federal, provincial or municipal Designation.	
	may impact properties that have received a federal, provincial or municipal Designation(s), and are registered in the <i>Canadian Register of Historic Places</i> .	
	may impact an area deemed to be a Natural Conservation area or park.	

### 3.2. Zoning and Compatibility with Existing Plans

The proposed site encompasses a Based on the allowable uses and in reference to the current proposal we advise the Minister that the proposed antenna system:

	is proposed in an area in which the current zoning by-laws of the Land Use Authority allow for industrial or commercial enterprises which have the potential for light, noise or other emissions. As such, an antenna system is consistent in nature with the allowable uses of the zone – even if not explicitly declared.	
	is proposed in a commercial, or other zoned area that does not include any residential uses.	
	is proposed in a mixed-use area with both commercial and residential uses.	
	is proposed within a residential, environmentally protected, or nature area.	

### 3.3. Fire Routing and Access – National Fire Code

We advise the Minister that the site layout for the proposed antenna system, per the submitted site plan:

	satisfies the needs of the Land Use Authority to provide emergency services to the site, including the protection of adjacent structures on the same property, or any adjacent properties.	
	requires modification to the site design to conform to the requirements of the Land Use Authority to be able to provide emergency services to adjacent structures on the same property, or adjacent properties	
	does not allow for the provision of emergency services including the protection of adjacent structures or properties.	

### 3.4. Health Canada Safety Code 6

All radiocommunication facilities, irrespective of the nature of the antenna system, or physical form is required to operate within the limits specified in the Health Canada guidelines for electromagnetic radiation emissions – Safety Code 6 - which has been adopted by Innovation, Science and Economic Development Canada for use with all radiocommunications facilities.

To that end, a Proponent is required to provide a statement attesting to the Proponent’s understanding and commitment to operate within the limits of Safety Code 6, and to identify a Professional Engineer who, either as a employee of the Proponent or as a service provider under contract to the Proponent, has agree to take responsibility for ensuring compliance of the antenna system.

With respect to the current proposal, we advise the Minister that:

	the Proponent provided an attestation from a Professional Engineer licensed in the province in which the site is proposed affirming that the antenna system will operate below the thresholds specified in Health Canada Safety Code 6.	
	the Proponent has provided a Statement of Liability and Insurance in the form required by CRINS and the Land Use Authority in lieu of an attestation.	
	the agent of the Proponent provided an attestation that the proposed antenna system will operate below the thresholds specified in Health Canada Safety Code 6. As the agent is not a Professional Engineer licensed in the province in which the antenna system is proposed, the Land Use Authority's concurrence with the proposal is subject to the Proponent engaging a Professional Engineer who is licensed to practice within the Province to confirm compliance with Safety Code 6 prior to construction.	
	the Proponent has made no attestation that the proposed antenna system is compliant with Safety Code 6.	

### 3.5. Structural Review – National Building Code

Radiocommunications facilities are constructed under the authority of the *Minister of Innovation, Science and Economic Development*. As such, these structures are deemed a *federal undertaking*, requiring Proponents to uphold the standards which apply to the construction of buildings and other infrastructure as if it were being constructed on behalf of the Government of Canada.

As such, the *Minister of Labour* has adopted the *National Building Code (NBC)* amongst many other federal standards in relation to any structure built under enabling federal legislation.

Part II of the *Canada Labour Code* ( <http://laws-lois.justice.gc.ca/eng/acts/L-2/> ) and the regulations made there under, set out the rules that apply to all federal undertakings, or workers enabled as a result of their work on such undertakings, including, but not limited to broadcasters and telecommunication carriers.

The obligations include ensuring that all permanent and temporary buildings and structures meet the prescribed standards in the *Canada Occupational Health and Safety Regulations* which apply to any federal undertaking. Section 2.2 (1) of the aforementioned regulations, reference the *National Building Code* as the applicable code to be used as the reference.

Also included is the requirement for broadcasters and telecommunication carriers, when constructing towers, to follow the *Canada Occupational Health and Safety Regulations, Division II, Section 2.19*, which refers to the Canadian Standards Association (CSA) Standard CAN/CSA-S37-94, entitled “*Antennas, Towers, and Antenna-Supporting Structures*”.

Legislation under *HRSDC (Human Resources and Skills Development Canada)* enforced by the *Minister of Labour* (who is one of the Ministers under the HRSDC portfolio) is responsible to enforce the provisions of the NBC and the CSA Standard, along with provincial legislation relating to the practice of professional engineering in each province.

In reference to the current proposal, we advise the Minister that:

	<p>the Proponent provided an attestation from a Professional Engineer licensed in the province in which the site is proposed affirming that the antenna system will be constructed according to the National Building Code, and CAN/CSA S37-18 as amended from time-to-time.</p>	
	<p>the Proponent has provided a Statement of Liability and Insurance in the form required by CRINS and the Land Use Authority in lieu of an attestation.</p>	
	<p>the agent of the Proponent provided an attestation that the proposed antenna system will be constructed according to the National Building Code, and CAN/CSA S37-18 as amended from time-to-time. As the agent is not a Professional Engineer licensed in the province in which the antenna system is proposed, the Land Use Authority's concurrence with the proposal is subject to the Proponent engaging a licensed Professional Engineer to confirm compliance with the National Building Code and CAN/CSA S37-18 prior to construction.</p>	
	<p>the Proponent has made no attestation that the proposed antenna system is compliant with the National Building Code, or CAN/CSA S37-18</p>	

#### 4. Antenna Siting Design Framework (ASDF) Review

The Antenna Siting Design Framework (ASDF) is a quantitative scoring mechanism which assesses proposed installations by considering their design relative to the surrounding visual landscape.

This results in 3 specific metrics:

- A **Visibility Score** which provides a measurement of how visible the site is within the surrounding landscape (scored out of a possible 24 points).
- A **Design Compatibility percentage** which scores the proposed site design in terms of its visual elements (structure type, antenna mounts, equipment shelters, antennas and cables) relative to the surrounding landscape.
- A **Degree of Visual Change** calculation which assesses the visual effect of the site on the surrounding landscape.

The Degree of Visual Change is utilized to assess the level of public consultation required for Non-Exempt facilities.

For Exempt facilities, the Degree of Visual Change along with the design recommendations of the ASDF tool are provided to assist the Proponent to consider design choices which will improve the site's compatibility with the surrounding landscape and uses.

For the current proposal, the following score has been assigned to this site design:





Design Compatibility/ Site Visibility	1 to 5	6 to 10	11 to 15	16 to 19	20 to 24
76 - 100%	Low	Low	Low	Medium	Medium
51 - 75%	Low	Low	Medium	Medium	High
26 - 50%	Low	Low	Medium	High	High
0 - 25%	Low	Medium	High	High	High

<b>Visibility</b>	<b>15</b>
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<b>Compatibility (%)</b>	<b>81.3</b>	<b>Low</b>
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## 4.1. Design Targets

The following table outlines the relevant design targets for the proposed site. Key design targets are highlighted below:

	 Poles and Towers	 Antenna Mounts	 Equipment Cabins	 Antennas and Cables
<b>Land Use</b>				
<b>Residential</b>	Use slim pole profiles and limit vertical extensions relative to the surrounding built form. Avoid lattice towers and head frames. Reduce the impact on street frontages.	Avoid cross bracing and support wires. Set antenna mounts back from street frontages. Limit size of structural members and ensure mounts are proportional to the built form.	Capitalise on rear lanes or less public locations. Match the colour, built form and materiality to reduce the visual impact.	Maintain uniform antennas positions that respond to the construction of the pole or antenna mount. Develop consistent cable connections and shroud cables.
<b>Topography</b>				
<b>Flat</b>	Consider the use of monopoles as uniform narrow profile structures will limit visual impact.	Develop simple support structures that respond to the horizontal landscape character. Flush mount and reduce horizontal extensions. Avoid diagonal or angled bracing.	Attempt to locate cabins adjacent to existing vegetation or buildings to reduce the visual mass within the flat landscape.	Consider simple panel profiles to reduce the visual impact. Locate at a uniform frequency to respond to the horizontal visual character. Align cable runs to maintain a consistent visual form.
<b>Built form</b>				
<b>Medium scale</b>	Select narrow profile support structures to limit the vertical visual effect. Pole or tower height should respond to building form (15 to 20m) or a ratio of 1:1.4-1.5.	Use simple support structures and avoid complex cross bracing support configurations. Mounts and panels should be flush mounted or shrouded to achieve a uniform profile.	Capitalise on the existing utility areas and service lanes to provide an appropriate context for the cabins. Ensure that foundation pads respond to the built form scale (avoid steps in excess of 150 to 200 mm).	Aim to achieve a ratio of 1:1.3 - 1.4 in relation to built form and total height of antenna. Increase setbacks if larger antennas are required. Locate cable trays to rear or side facades.
<b>Sky lining</b>				
<b>Uniform</b>	Reduce the vertical profile of poles and towers to reduce the impact on the skyline. Select monopoles and avoid lattice towers with tension cables to limit both the vertical and horizontal effects.	Develop a consistent rectangular antenna mount and headframe design. Avoided angled cross bracing. Maintain uniform structural member sizes, connections and positions that do not contrast the uniform skyline.	Locate cabins with adequate setbacks to avoid any skylining in relation to prominent facades and viewpoints. Consider co-locations with more visible rooftop equipment or develop ground based site.	Uniformly position antennas to reduce the visual impact and establish a consistent alignment and height. Avoid significant vertical projections. Ensure a consistent alignment for cables, connections and cable trays.



<b>Containment</b>				
<b>Fragmented boundaries</b>	Capitalise on the existing containment or consider increased setbacks to provide additional screening of the pole or tower. Avoid major view corridors. Maintain a consistent vertical profile to reduce the visual complexity of the tower.	Capitalise on the existing containment to provide additional screening or back screening. Avoid highly visible or open areas where containment is limited.	Design and locate outdoor base units that respond to the existing containment. Develop a compatible form, scale and materiality in relation to the surrounding enclosure.	Limit the impact of cables on the surrounding containment. Align cable runs and avoid complex directional changes. Locate with other service runs and ensure that cables do not project over the edge of the containment and/or building parapet.

<b>Vegetation</b>				
<b>Tree groups</b>	Assess the tree height and design responses relative to the canopy of the trees. Avoid vertical extensions that exceed a ration of 1:1.2 relative to the adjacent trees.	Select locations that capitalise on tree screening.	Use screening from tree groups. Avoid locations that impact on the tree canopy, structure or root plate.	Locate antennas, cables and cable runs to capitalise on screening potential of surrounding trees.

<b>Existing Telcom-equipment (adjacent to site)</b>				
<b>Isolated items</b>	Respond to existing height of infrastructure. Avoid significant variation in form and height. Select pole or tower with reference to the ASDF recommendations.	Maintain a consistent height and form in relation to existing infrastructure.	Establish a consistent location and positional relationship with existing equipment cabins.	Cluster and position antennas as well as align and co-location cables with reference to existing infrastructure.

<b>Colour</b>				
<b>Mixed (complimentary)</b>	Identify prominent colours, colour match or select neutral colours to minimise of visual effect.	Identify prominent colours of roofscape or surrounding area and colour match or select neutral colours to maintain consistency in relation surrounding built form.	Colour match through applied paint finishes all surfaces in response to dominant colours of adjacent land use.	Colour match to surrounding landscape and built form. Select neutral colours if antennas or cables are elevated or sky lining.

## 4.2. Design Recommendations

Based on the design targets outlined above, the **Township of Puslinch** requests that **Shared Tower Incorporated** consider the following design recommendations prior to construction:

### Original Recommendation:

Recommended that the Proponent consider moving the site to the northwest corner of the same property to reduce visual amenity impact and ice fall damage risk for residential buildings at 7422 Wellington Rd. 34 and utilize visual cover from adjacent commercial property.

### Revised Recommendation (February 24, 2023):

Recommended that the Proponent consider moving the site to the northwest corner of 20 Wellington Road 46 (Ren's Pet Depot) – a commercial property. CRINS has spoken to land owner and there is interest which can be pursued by proponent.

## 5. Compliance with General Design Requirements

With respect to the current proposal, we advise the Minister that:

	the design of the proposed site is compliant with the general design requirements as outlined in the CRINS-SINRC Reference Protocol as amended.	
	the design of the proposed site demonstrates some deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. However, the deviation(s) are deemed reasonable based on the specifics of the proposal and under the circumstances.	
	the design of the proposed site demonstrates some deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. The Proponent has been asked to bring their proposal into compliance.	
	the design of the proposed site demonstrates substantive deviation(s) from the general design requirements as outlined in the CRINS-SINRC Reference Protocol. These deviations are not deemed reasonable by the Land Use Authority, and concurrence shall be withheld on that basis pending re-design by the Proponent.	

## 6. Siting of Facility Relative to Existing Use

The following requirements apply to antenna systems seeking concurrence:

*The placement of any parking space or any component of an antenna system shall not create or cause a situation of non-compliance with any LUA Zoning By-law for any other use, building, or structure on the host or adjacent properties.*

In the case of the current proposal, we advise the Minister that:

	The design of the proposed site does not create a situation of non-compliance with any LUA zoning by-law for any other use, building, or structure on the host and adjacent properties.	
	The design of the proposed site causes a situation of non-compliance with one or more LUA zoning by-laws for the current uses, buildings, or structures on the host property.	
	The design of the proposed site causes a situation of non-compliance with one or more LUA zoning by-laws for the current and or future uses, buildings, or structures on an adjacent property.	

## 7. Statement of Concurrence

The **Township of Puslinch** requests that the Proponent – **Shared Tower Incorporated** – comply with the design targets where possible as presented in Section 4.

*No further Development or Planning approvals are required however the Proponent is required to comply with any and all conditions outlined in Section 9 as a requirement of obtaining and maintaining concurrence from the Land Use Authority. Failure to comply with the conditions as outlined in Section 9 shall render concurrence with the proposal null and void.*

Where an undertaking from the proponent is required as part of the concurrence conditions, no work on the structure shall begin until the undertaking is received by CRINS-SINRC and the Land Use Authority.

Overall, the Land Use Authority position with regards to the proposal is that:

	The Land Use Authority concurs with the proposed antenna system, subject to any conditions outlined in Section 9.	
	The Land Use Authority requests an extension to the consultation period due to unresolved concerns after 120 days, as outlined in Section 8.	
	The Land Use Authority requests the Minister instruct the Proponent to undergo a public consultation, even though the proposed antenna system is excluded from consultation under Section 6 of CPC 2-0-03, as it is our opinion that the proposed antenna system may damage the public realm, or is contrary to the public good and requires further review.	
	The Land Use Authority rejects (non-concurrence) the proposed antenna system as presented, for the reasons outlined in Section 8.5.	

## 8. Public Consultation

### 8.1 CRINS-SINRC Public Comments

In addition to the questions posed in the survey, both priority stakeholders and the general public were provided an opportunity to provide free form comments. The following summarizes the themes that were represented in the comments:

The proposed site is directly abutting the property at 7422 Wellington County Road 34 effectively overshadowing the garage. Visual impact on the homes at 7418 and 7420 was also noted. Suggestions that the site be moved to the back of the lot further out of direct visual view was recommended

Comments received included:

Hillary Van Fleet (7418 Wellington Rd 34) : Visual amenity of the tower impacting views around the property and concerns regarding impact on property values. Concerns over possible health and safety issues (Safety Code 6).

Brad Finck and Susi Zybura (7420 Wellington Rd. 34): Visual amenity of the tower impacting views around the property and concerns regarding impact on property values.

Tom and Julia Wrjalka (7422 Wellington Rd. 34): Visual amenity of the tower impacting views around the property and concerns regarding impact on property values. Immediately adjacent to property, effectively overhead of the garage on the property.

CRINS Field Staff (Structural) : Concerns for ice fall damage from tower onto 7422 Wellington Rd. 34 per attached ice guidance.

Township staff noted that a proposed tower had been approved on the municipal property only a few hundred metres away. CRINS advised that as the tower had not been built yet with no confirmation of availability, CPC 2-0-17 did not apply at this time.

Additional Comments (April 12 and 13th, 2023):

In preparing for ISEDC discovery, and preparation of affidavits for the Minister, additional comments were received from the public commenters above:

Tomy and Julia Wrzalka, 7422 Wellington Rd.34

“Our concerns are:

1. Electromagnetic radiation.,
2. Non-ionizing radiation.
3. Tower collapse or debris due to severe weather.
4. Potential fire hazard in close proximity.
5. Aesthetic. Property value concerns.
6. Interference with other electronic devices.
7. Falling ice can damage the property or it can cause injury to a person or death.
8. Psychological concerns: Some people living near radio communication towers may experience anxiety or stress due to fears about the potential health effects of the tower's emissions. This psychological concern can impact their quality of life.”

Hillary Van Fleet (7418 Wellington Rd. 34) who was copied on the above e-mail also supported the above concerns,

Further, the Township reiterated the availability of the pre-approved site on municipal lands, and advised the proponent for that tower was building imminently.

## 8.2 CRINS-SINRC Reporting Statement

CRINS-SINRC reviews each application for a proposed antenna system according to the guidelines set out by the Minister of Innovation, Science, and Economic Development (ISED) and identifies matters which the Minister has identified as relevant to the federal purpose pursuant to S. 5(1)(f) of the *Radiocommunications Act*. As the designated representative of the Land Use Authority, overseeing the consultation process, CRINS-SINRC presents the opinions of both the public and/or elected body as well as the evidence-based land use guidance of the planning and development staff in each Land Use Authority, as provided for in the procedures set out in the *Client Procedures Circulars (CPCs)* to inform the decision of the Minister.

Where there is non-concurrence between the public opinion and/or the elected body of a Land Use Authority regarding a proposed antenna system and the satisfactory compliance of a proponent proposal with the technical, planning and procedural requirements set out by the Minister, CRINS-SINRC maintains a fiduciary role to provide any information which ISEDC may request such that the Minister may make a final determination regarding a proposal taking into regard to the objectives of the Canadian telecommunications policy set out in Section 7 of the *Telecommunications Act*.

Where a proposal receives a non-concurrence statement, CRINS-SINRC shall identify for the Minister the matters which resulted in the statement of non-concurrence, and may provide independent narrative on those matters according to the criteria which the Minister has articulated in the policies and procedures which flow from the implementation of the *Act(s)*.

Where such narrative is required, CRINS-SINRC shall issue a Reporting Statement for the Minister's consideration which, when provided, shall be attached to this report as Schedule 'A'.

	CRINS-SINRC has not deemed it necessary to include a Reporting Statement for the Minister's review.	
	CRINS-SINRC <b>has included</b> a Reporting Statement as Schedule 'A' for the Minister's consideration.	

## 8.3 Statement by Council

Notwithstanding the technical and planning review by CRINS and LUA staff requested by the Minister, Council may deem it appropriate to issue a statement for the Minister's consideration which, when provided, shall be attached to this report as Schedule 'B'.

	Council has not deemed it necessary to include a statement for the Minister's consideration.	
	Council has <b>provided</b> a statement as Schedule 'B' for the Minister's consideration.	

## **8.4 Justification for Concurrence Statement**

**To be determined – subject to Council's submission.**

## 9. LUA Confirmation of Report and Conditions

We hereby advise that the attached report accurately reflects the position of the **Township of Puslinch** with respect to the radiocommunications facility proposed by **Shared Tower Incorporated**, designated **STC0062-"Aberfoyle" (CRINS-SINRC # 2112-0702-1928)**.

Our position with respect to the proposal is based on the following conditions being met:

- 1) *Confirmation by CRINS-SINRC that the Proponent has addressed all relevant concerns of the public according to the Protocol and that the above conditions have been met such that a Notice of Completion is warranted.*
- 2) *Application made for, and receipt of, all necessary permits prior to construction of the foundation of the tower and building to house proponent's equipment.*
- 3) *Submission of "as-built" drawings to CRINS-SINRC no later than 30 days after the completion of construction.*
- 4) *Receipt of the Safety Code 6 report by a Professional Engineer licensed in the Province which confirms compliance with Safety Code 6 prior to the commissioning of the tower.*
- 5) *Receipt of an attestation or stamped drawings by a Professional Engineer licensed in the Province which confirms compliance with the National Building Code and CSA S37-XX Standard prior to construction.*
- 6) *Provision of Transport Canada guidance on lighting and painting requirements of the antenna system.*
- 7) *Receipt of NAV Canada land use approval letter (non-conditional). If with conditions, concurrence may require subsequent review.*
- 8) *Proponent to address the recommendations in Section 4.2 of this report.*

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

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**Courtenay Hoytfox**  
Town Clerk  
Township of Puslinch





## **REPORT ADM-2023-050**

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TO: Mayor and Members of Council

PREPARED BY: Courtenay Hoytfox, Municipal Clerk, (Interim CAO)

PRESENTED BY: Courtenay Hoytfox, Municipal Clerk, (Interim CAO)

MEETING DATE: September 27, 2023

SUBJECT: Township Group Benefits Program

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### **RECOMMENDATION**

**That Report ADM-2023-050 entitled Township Group Benefits be received; and**

**That Council provide approval for the proposed changes to the Township Group Benefits Program amounting to approximately \$3,711 in order for the changes to be implemented as soon as possible; and**

**Further, that staff review the Township Group Benefits Program concurrently with the Township Compensation and Benefits Review (every 4 years) on a go-forward basis to ensure equitable coverage is maintained.**

### **Purpose**

The purpose of this report is to seek Council approval of the proposed changes to the Township Group Benefits Program as outlined in this report.

### **Background**

At the June 14, 2023 Council meeting, Council directed staff to investigate options to implement a policy or to make an adjustment to the Township benefit program to ensure that the program is equitable to all employees on short/long term disability.

The current group benefits coverage applicable to full-time permanent employees is as follows:

<b>Current Coverages</b>	<b>Plan Design</b>	<b>Number of employee position(s) not fully covered</b>
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Basic Life	200% of annual earnings Non-evidence maximum (NEM) /overall maximum of \$300,000	1 (one) position
Long Term Disability	75% of monthly earnings NEM/overall maximum of \$7,000	3 (three) positions
Short-Term Disability	75% of weekly earnings Overall maximum of \$1,300	8 (eight) positions
Basic AD&D	200% of annual earnings NEM/overall maximum of \$300,000	1 (one) position

As noted in the table above, the current coverage is not equitable to all full-time permanent employees as a number of positions are not being fully covered. Staff analyzed the impact of providing top-up payments for positions on long/short term leave that are not fully covered to a maximum of 75% of earnings (based on the assumption that the employee is at Step 5 and based on the 2023 Salary Grid). The estimated impact of providing top-up payments up to 75% of earnings are outlined below. The range indicates the position with the least impact to the position with the most impact (highest earner).

Long Term Disability - 3 (three) positions	\$545.60 to \$2,418.80 (monthly top-up payment)
Short-Term Disability - 8 (eight) positions	\$83.60 to \$4,218.80 (monthly top-up payment)

The proposed group benefits coverage applicable to full-time permanent employees is as follows:

Proposed Coverages	Plan Design	Number of employee position(s) not fully covered
Basic Life	200% of annual earnings NEM/overall maximum of \$400,000	None
Long Term Disability	75% of monthly earnings Increase the LTD Overall maximum to \$12,000 and NEM Maximum of \$9,500.	None

Short-Term Disability	75% of weekly earnings Overall maximum of \$3,000	None
Basic AD&D	200% of annual earnings NEM/overall maximum of \$400,000	None

Staff analyzed the coverage based on the assumption that the employee positions are at Step 5 and based on the 2023 Salary Grid. As noted in the table above, the proposed coverages are equitable to all permanent full-time employees as all positions are fully covered. The total annual premium increase for the proposed coverage is \$3,711.30. The proposed coverage would take effect immediately and would not be applicable to employees currently on short/long term disability leave until they return to work in accordance with the contract provisions.

Staff do not recommend that a ‘top-up’ policy be investigated at this time as the proposed changes to the group benefits provides equitable coverage to all employees. Staff recommend that Council provide pre-budget approval for the proposed changes to the Township Group Benefits Program in order for the changes to be implemented as soon as possible given the nominal cost associated with this change. Further, that staff review the Township Group Benefits Program concurrently with the Township Compensation and Benefits Review (every 4 years) on a go forward basis to ensure equitable coverage is maintained.

**Financial Implications**

As detailed throughout the report.

**Applicable Legislation and Requirements**

None

**Engagement Opportunities**

None

**Attachments**

None

Respectfully submitted,

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**Courtenay Hoytfox,  
Municipal Clerk (Interim CAO)**



## **REPORT ADM-2023-051**

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TO: Mayor and Members of Council

PREPARED BY: Courtenay Hoytfox, Municipal Clerk, (Interim CAO)

PRESENTED BY: Courtenay Hoytfox, Municipal Clerk, (Interim CAO)  
Mike Fowler, Director of Public Works, Parks, and Facilities

MEETING DATE: September 27, 2023

SUBJECT: Travelled Road Pedestrian Puslinch Lake Access

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### **RECOMMENDATION**

**That Report ADM-2023-051 entitled Travelled Road Pedestrian Puslinch Lake Access be received; and**

**That Council direct staff to proceed with the construction of the pedestrian lake access as outlined in this report.**

### **Purpose**

The purpose of this report to to present Council with a design concept for the Travelled Road Pedestrian Puslinch Lake Access for approval.

### **Background**

Staff initially reported to Council in August 2022 on the potential to improve the pedestrian access to Puslinch Lake at Travelled Rd. Council directed staff to report back on the feasibility and costing.

Council further directed staff through the 2023 budget process to specifically investigate options to delineate the private and public lands and that the access include a gravel path, armour stone to deter vehicle access, and pedestrian bench with identifying signage. The 2023 budget includes \$10k for cost of materials and labour.

Staff are recommending that the public access be limited to pedestrian only traffic as parking cannot be accommodated on Travelled Road as it is signed as a Fire Route. In addition, while

Travelled Road is a public road, the adjacent roads are private and therefore public parking cannot be accommodated.

The design concept is attached as Schedule "A" to this report. Staff are seeking Council approval of the design concept in order to commence construction in the fall of 2023.

**Financial Implications**

As outlined throughout the report.

**Applicable Legislation and Requirements**

None

**Engagement Opportunities**

Township Website

**Attachments**

Schedule "A" Travelled Road Pedestrian Puslinch Lake Access Design Concept

Respectfully submitted,

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**Courtenay Hoytfox,  
Municipal Clerk, (Interim CAO)**

# PUSLINCH LAKE: PEDESTRIAN ACCESS POINT



## PLANT LIST

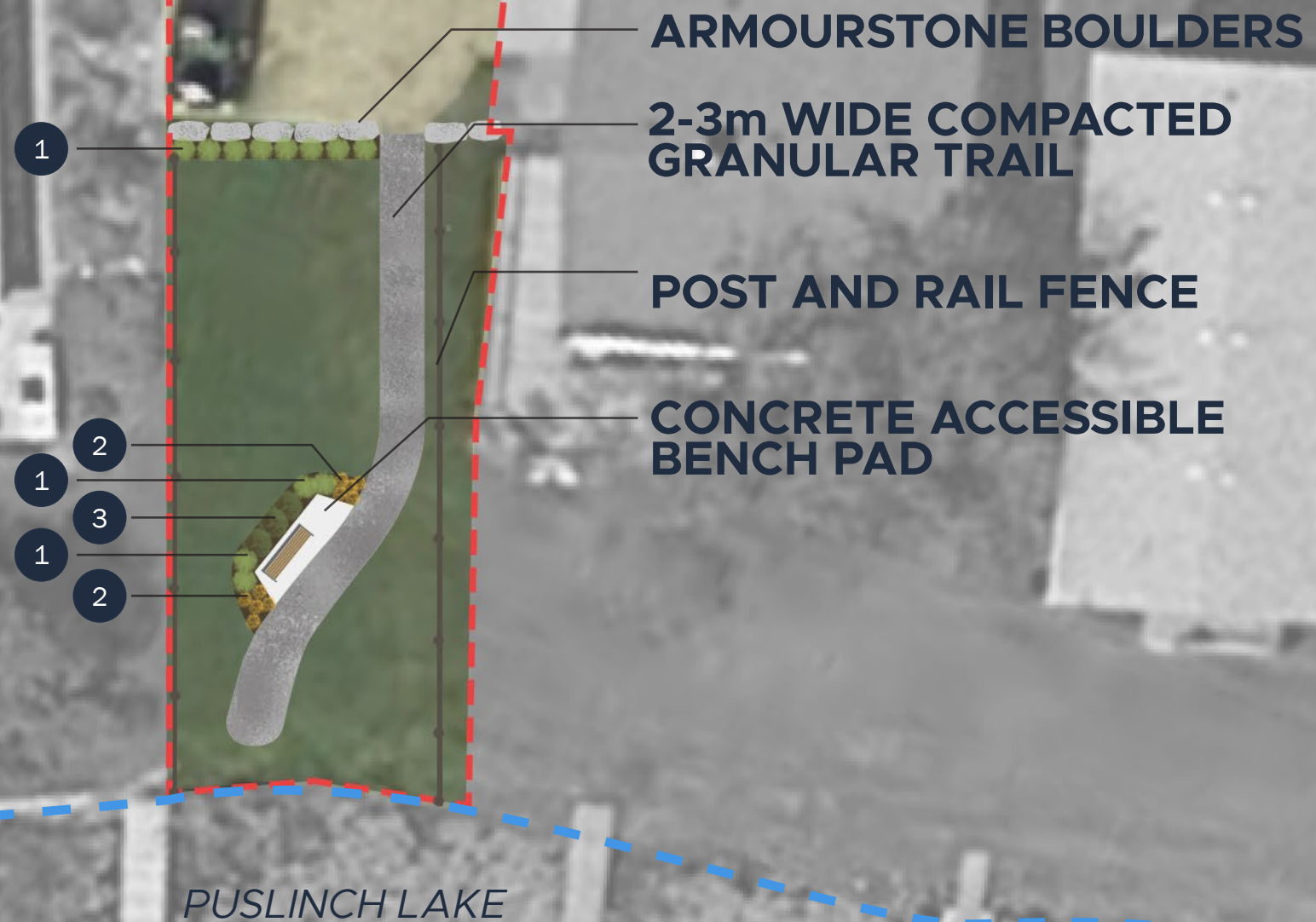
- 1 Feather Reed Grass 'Karl Foerster'  
*Calamagrostis x acutiflora 'Karl Foerster'*  
QTY: 12



- 2 Black-Eyed Susan  
*Rudbeckia hirta*  
QTY: 8



- 3 Hicks Yew  
*Taxus x media 'Hicksii'*  
QTY: 3



## CONCEPTUAL DESIGN PLAN

ALL DESIGNS AND IMAGES SHOWN IN THIS DOCUMENT ARE FOR CONCEPTUAL AND INSPIRATIONAL PURPOSES AND DO NOT REPRESENT A FINISHED DESIGN. ALL DESIGNS ARE SUBJECT TO CHANGE.





ALL DESIGNS AND IMAGES SHOWN IN THIS DOCUMENT ARE FOR CONCEPTUAL AND INSPIRATIONAL PURPOSES AND DO NOT REPRESENT A FINISHED DESIGN. ALL DESIGNS ARE SUBJECT TO CHANGE.





## **REPORT ADM-2023-052**

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TO: Mayor and Members of Council

PREPARED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

PRESENTED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

MEETING DATE: September 27, 2023

SUBJECT: Ontario Heritage Act Alternative Notice Policy

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### **RECOMMENDATION**

**That Report ADM-2023-052 entitled Ontario Heritage Act Alternative Notice Policy be received; and**

**That Council approve the Ontario Heritage Act Alternative Notice Policy as [presented/amended]; and**

**That the funds of \$11,000 approved in the 2023 budget for advertising related to Ontario Heritage Act designations be transferred to the operating carry forward discretionary reserve to be utilized in future years for possible heritage financial incentive programs.**

### **Purpose**

The purpose of this report is to provide Council with the proposed Ontario Heritage Act Alternative Notice Policy for consideration.

### **Background**

The *Ontario Heritage Act* requires notices to be published in a newspaper having general circulation in a municipality. The *Ontario Heritage Act* and the *Municipal Act* allow municipalities to adopt policies to publish notices in alternative media, such as a website. Staff are recommending that the Township adopt the proposed Ontario Heritage Act Alternative Notice Policy attached to this report as Schedule "A", to permit the Township to publish notices required by the *Ontario Heritage Act* on the Township's website as an alternative to publishing in the newspaper (Wellington Advertiser).

**Financial Implications**

Council budgeted \$11k in 2023 for advertising related to Ontario Heritage Act designations. Should Council approve the Ontario Heritage Act Alternative Notice Policy, these funds would no longer be required for advertising. An additional \$11k in 2024 would also not be requested for the remaining 20 priority properties on the Township Heritage Register. It is recommended that these funds be transferred to the operating carry forward discretionary reserve to be used in future years to fund possible heritage financial incentive programs. Staff plan to report back on the consideration of such programs at a future Council Meeting in accordance with Council's direction in Council Resolution No. 2023-280 at their September 6, 2023 Council Meeting.

**Applicable Legislation and Requirements**

*Ontario Municipal Act, Section 270 (1)*

*Ontario Heritage Act, Section 26 (4)*

*Ontario Heritage Act, Section 39.1 (3)*

Advertising, Communication, and Media Relations Policy – 2021-08

Corporate Accessibility Policy – 2021-04

**Engagement Opportunities**

Township Website

**Attachments**

Schedule "A" Proposed Ontario Heritage Act Alternative Notice Policy

Respectfully submitted,

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**Courtenay Hoytfox,  
Municipal Clerk, Interim CAO**

**Title:** Ontario Heritage Act Alternative Notice Policy

**Date:** September 27, 2023

**Adoption:**

**Subject:** Ontario Heritage Act Alternative Notice Policy

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### **1.0 Statement**

The Township of Puslinch (the “Township”) values and encourages public engagement and is committed to open two-way communication to develop and deliver quality programs and services that meet the needs of the community. The Township supports the use of online communications to promote open, inclusive communications in accordance with the Township’s Advertising, Communication, and Media Relations Policy, Corporate Accessibility Policy and any other related policies and procedures.

### **2.0 Purpose**

The objective of this Policy is to establish an alternative method for the Township to provide public notice required under the Ontario Heritage Act (OHA) by publishing notices on the Township website, whereas currently these public notices are published in the local newspaper (Wellington Advertiser). This Policy aims to continue to provide timely, clear and accessible communication that is fiscally and environmentally sustainable.

### **3.0 Policy**

When required under the OHA, the Township shall provide public notice on the Township’s website, [www.puslinch.ca](http://www.puslinch.ca)

In addition to public notice, the OHA requires notices to be sent to the Ontario Heritage Trust and to owners of property that is subject to a decision made under the OHA. This Policy does not apply to those requirements and they remain in effect.

Public notice required under the OHA may still be given in the local newspaper, in addition to the website, if considered by staff to be beneficial and appropriate.

This Policy applies to all Township staff who provide public notice in accordance with the OHA. All notices published in accordance with the OHA must adhere to all municipal policies including the Township’s Advertising, Communication, and Media Relations Policy, Corporate Accessibility Policy and any other related policies and procedures.

#### **4.0 Amendments**

This policy may be amended from time to time by the Township, as it deems necessary or appropriate, as relevant circumstances change, and will be applied in accordance with the *OHA*, and all other applicable law.

#### **5.0 References**

*Ontario Municipal Act, Section 270 (1)*

*Ontario Heritage Act, Section 26 (4)*

*Ontario Heritage Act, Section 39.1 (3)*

Advertising, Communication, and Media Relations Policy – 2021-08

Corporate Accessibility Policy – 2021-04

DRAFT



## **REPORT ADM-2023-054**

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TO: Mayor and Members of Council

PREPARED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

PRESENTED BY: Courtenay Hoytfox, Municipal Clerk (Interim CAO)

MEETING DATE: September 27, 2023

SUBJECT: ERO Posting 019-7595 Dufferin Aggregates Aberfoyle Pit 2 Tonnage Increase

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### **RECOMMENDATION**

**That Report ADM-2023-054 entitled ERO Posting 019-7595 Dufferin Aggregates Aberfoyle Pit 2 Tonnage Increase; and**

**That Council direct staff to submit the letter of objection attached to this report as Schedule "A" to the Province through ERO positing 019-7595; and**

**That Council direct staff to circulate the proposal to the Township's professional consultants for review in order to identify any concerns and report back to Council.**

### **Purpose**

The purpose of this report is to provide Council with information relating to ERO Posting 019-7595 regarding the proposal from Dufferin Aggregates to amend their site plan license to increase the tonnage limits for Aberfoyle Pit 2.

### **Background**

Staff was formally made aware of Dufferin Aggregate's proposal to amend their site license on September 8, 2023. Attached as Schedule "B" is the letter from Dufferin Aggregates to the Township outlining the proposal. As previously directed by Council, an objection letter has been sent automatically on September 11, 2023 (attached as Schedule "A"). The purpose of sending the objection letter is to advise the MNRF and the pit operator that the Township requires time to conduct a review process that will allow the Township an opportunity to identify concerns and seek community input on this proposal. The timeframe for comments provided by the MNRF is insufficient to conduct a meaningful review.

In addition to the proposed amendment to the site license, Dufferin Aggregates is requesting an amendment to the hours of operation outlined in the agreement with the Township. Currently the operating times are as follows: May 1<sup>st</sup> to November 15<sup>th</sup> from 8am to 6pm Monday through Friday. The proposed operating hours are as follows: May 1<sup>st</sup> to December 23<sup>rd</sup> from 7am to 7am Monday through Friday. While the Township is a commenting agency in relation to amendments to ARA licenses, the Township would need to agree and authorize any changes to the existing agreement.

Staff recommend that the objection letter attached as Schedule "A" be submitted to the ERO and that staff circulate the proposal to the Township's professional consultants for review in order to identify any concerns and report back to Council.

### **Financial Implications**

None

### **Applicable Legislation and Requirements**

*Aggregate resources Act, 1990*

### **Engagement Opportunities**

None

### **Attachments**

Schedule "A" Objection Letter to MNRF dated September 11, 2023

Schedule "B" Dufferin Aggregates notice to the Township of the proposed Amendment

Schedule "C" ERO posting 019-7595 Dufferin Aggregates Aberfoyle Pit 2 Tonnage Increase

**Respectfully submitted,**

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**Courtenay Hoytfox,  
Municipal Clerk, Interim CAO**



Kevin Mitchell  
Dufferin Aggregates  
Director Property, Planning  
& Approvals  
VIA EMAIL ONLY:  
[kevin.mitchell@ca.crh.com](mailto:kevin.mitchell@ca.crh.com)

MNRF Aggregates Section  
Regional Operations Division  
300 Water Street  
Peterborough, ON K9J 3C7  
VIA EMAIL ONLY:  
[ARAapprovals@ontario.ca](mailto:ARAapprovals@ontario.ca)

Township of Puslinch  
7404 Wellington Road 34  
Puslinch, ON N0B 2J0  
[www.puslinch.ca](http://www.puslinch.ca)

September 11, 2023

Dear Mr. Mitchell and MNRF:

**Re: Notice of Proposed Site Plan and Licence Amendment – Tonnage Limit Increase  
4445 Victoria Road, Township of Puslinch, County of Wellington  
ARA Licence No. 5609 – Aberfoyle Pit #2  
Dufferin Aggregates, a CRH Company**

Please be advised that the Township was formally notified on September 8, 2023 of the proposed site plan and licence amendment to increase the tonnage limit from 1,000 000 tonnes to 2,000 000 tonnes annually for the lands subject to ARA Licence No. 5609 – Aberfoyle Pit #2. The Township has been provided with the proposal letter and the application to amend the licence. No additional submission materials have been provided for the Township's review at this time. The municipal review process will allow the Township an opportunity to identify concerns and seek community input on this proposal.

Accordingly, the Township **objects** to the Proposed Site Plan and Licence Amendment to the Tonnage Limit Increase for the subject land until such time that the municipal review process has concluded.

Should the Ministry grant the proposed amendment to the licence for the subject land, we would appreciate a copy of the approved site plans for our files.

Sincerely,  
Courtenay Hoytfox  
Municipal Clerk

CC:

Jennah Pettenuzzo [jennah.pettenuzzo@ca.crh.com](mailto:jennah.pettenuzzo@ca.crh.com)  
Meagan Ferris, County of Wellington [meaganf@wellington.ca](mailto:meaganf@wellington.ca)



**RECEIVED**

**SEP 08 2023**

**Township of Puslinch**

**Dufferin Aggregates**  
2300 Steeles Ave W, 4<sup>th</sup> floor  
Concord, Ontario  
L4K 5X6 Canada

T. 905-761-7100  
F. 905-761-7200

[www.dufferinaggregates.com](http://www.dufferinaggregates.com)

September 6, 2023

**Township Clerk**  
**Township of Puslinch**  
7404 Wellington Road 34,  
Puslinch, ON N0B 2J0

**County Clerk**  
**County of Wellington**  
74 Woolwich Street  
Guelph, ON N1H 3T9

**MNRF Aggregates Section**  
**Regional Operations**  
**Division 300 Water Street**  
Peterborough, ON K9J 3C7  
Via Email Only:  
[ARAapprovals@ontario.ca](mailto:ARAapprovals@ontario.ca)

Dear Sir/Madam,

**Re: Aberfoyle Pit #2 (Licence #5609)**  
**Proposed Site Plan and Licence Amendment – Tonnage Limit Increase**

Dufferin Aggregates, a division of CRH Canada Group Inc., has submitted an application to the Ministry of Natural Resources and Forestry (MNRF) for a Site Plan Amendment and Licence Amendment to the Aggregate Resources Act (ARA) Site Plans for the Aberfoyle Pit #2 (ARA Licence No. 5609) located at 4445 Victoria Road, Aberfoyle, in the Township of Puslinch, County of Wellington.

Overall, the application proposes to increase the maximum annual tonnage limit from 1,000,000 tonnes to 2,000,000 tonnes per annum. This will necessitate amendments to the ARA site plan and licence for the Aberfoyle Pit #2.

At Dufferin's Aberfoyle Pit #2 there is no processing completed and the material is shipped to Dufferin's Aberfoyle Pit #1 for processing and shipping to market. Aberfoyle Pit #1 is located on Brock Road just north of Highway 401. The material from Pit #2 is shipped on an existing approved haul route which has trucks travelling north on Victoria Road South, west on Wellington Road 34 and south on Brock Road. The aggregate reserves in Pit #1 are running out and additional material is required from Pit #2 in order for Dufferin to continue to maintain current shipping levels from Pit #1.

Currently, Dufferin ships from Pit #2 from 8am to 6pm, May 1st to November 15<sup>th</sup>. In order to accommodate the proposed increase in tonnage, Dufferin is proposing to extend the hours of operation to 7am to 7pm, May 1st to December 23<sup>rd</sup>. Dufferin will not be increasing peak hourly traffic since the proposed changes in operational hours will accommodate the tonnage increase while maintaining the existing peak hourly traffic of 17 to 18 trucks per hour. As part of the site plan amendment, Dufferin proposes to add these hours of operation to the ARA site plans which would extend the hours and shipping season within the existing agreement between Dufferin and the Township of Puslinch. This application will increase the amount of aggregate extracted from Pit #2 per year, which will in turn allow for Pit #2 to be finalized and rehabilitated twice as fast.

Enclosed please find a copy of the ARA Site Plan Amendment Application Form.

If you would like to schedule a meeting to discuss the proposed Site Plan Amendment, please contact Jennah Pettenuzzo at [jennah.pettenuzzo@ca.crh.com](mailto:jennah.pettenuzzo@ca.crh.com) to arrange for a meeting.

If you wish to provide any written comments on the application, please provide them to both of the following via email no later than **October 11, 2023**. Alternatively, comments can also be mailed to the following addresses:





Ministry of Natural Resources and Forestry  
Integrated Aggregate Operations Section  
300 Water Street, Peterborough, ON K9J 3C7  
[ARAApprovals@ontario.ca](mailto:ARAApprovals@ontario.ca)

Dufferin Aggregates Attn: Jennah Pettenuzzo  
2300 Steeles Avenue West, 4th Floor,  
Concord, ON L4K 5X6  
[jennah.pettenuzzo@ca.crh.com](mailto:jennah.pettenuzzo@ca.crh.com)

Yours truly,

Kevin Mitchell  
Director Property, Planning & Approvals

Cc: Uche Eje | Ministry of Natural Resources and Forestry

Attachments: Site Plan Amendment Form

## Instructions

### Applications for an Amendment

This form is to be completed by any licence or permit holder applying to the ministry to make a change to their licence, permit, or site plan under sections 13, 13.1, 13.2, 30.1, or 37.2 of the Act.

When notification is required, this form must be circulated with the amendment application package.

As part of an application for an amendment, the licensee or permittee must submit a sketch or a draft copy of an updated site plan or site plan pages to the ministry.

Following confirmation from the ministry that the proposed amendment is acceptable, the licensee or permittee must make changes to the site plan to reflect the noted changes and submit the updated site plan or site plan pages to the ministry for approval.

Following ministry approval, the licensee or permittee must include a description of the amendment and the date the amendment was approved on a schedule to the site plan and must forward the site plan to the ministry for their records.

Submit this form and any additional information online using the [Natural Resources Information Portal](#). If you have any questions about using the Natural Resources Information Portal, contact [NRIP@ontario.ca](mailto:NRIP@ontario.ca). If web access is unavailable, submit the form and additional information by mail to Integrated Aggregate Operations Section, Ministry of Natural Resources and Forestry, 300 Water Street, Peterborough ON K9J 3C7.

When an amendment requires consultation and you are participating in the *Aggregates Resources Act* (ARA) notification and consultation process, all personal information (PI) you provide may be subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA), whether provided to the Applicant or MNR at any point during the consultation process. The MNR collects your PI under the authority of s.7, s. 11, s.13.1, s.23, s. 34, s. 35 and other provisions of the ARA and maintains it for the purposes of ensuring consultation and other requirements in the ARA are met. Under the authority of s. 11(2), s.13.1(3), s.23(7), s.35(2) of the ARA, your name and address will form part of the public record (that is available to the general public as described in s 37 of FIPPA) and will appear with your comments, unless you request in your submission that your name and address be kept confidential. If you have any questions about the collection and use of your personal information, please contact Ministry of Natural Resources and Forestry, Natural Resources Information and Support Centre (NRISC) 300 Water Street, Peterborough ON K9J 3C7. Toll free: 1-800-667-1940.

Fields marked with an asterisk (\*) are mandatory.

## Section A: Site Identification

Licence/Permit ID Number \*

5609

Licensee/Permittee Name \*

Dufferin Aggregates, a division of CRH Canada Group Inc.

Local Municipality

Township of Puslinch

Upper Tier Municipality

County of Wellington

Site Location (e.g. lot and concession, geographic township, 911 address) \*

4445 Victoria Road, Aberfoyle, Ontario

Part Lots 22 & 23, Concession 9, Township of Puslinch, County of Wellington

## Section B: Contact Information

Last Name \*

Mitchell

First Name \*

Kevin

Middle Initial

Telephone Number \*

416-788-0015

Extension

Email

kevin.mitchell@ca.crh.com

Address

Unit Number

400

Street Number \*

2300

Street Name \*

Steeles Avenue West

PO Box

City/Town \*

Concord

Country \*

Canada

Province/State \*

Ontario

Postal Code/Zip Code \*

L4K 5X6

Input all necessary information for correspondence

I authorize the person named above to provide correspondence and proceed with amendments on my behalf.

I authorize the person applying on my behalf to use their company name and address to be used for correspondence on behalf of the licensee/permittee during the site plan amendment process.

## Section C: Description of Amendment

Check the box that best represents the amendment that is the subject of this form. \*

- Amendment to lower the depth of extraction in an area of a licence or aggregate permit that does not allow extraction below the water table under section 13.1 or 37.2 of the *Aggregate Resources Act*
- If selected, include technical reports, information and an updated site plan in your submission as described in *Aggregate Resources of Ontario: Amendment Standards*.
- Amendment to expand a licence boundary into an adjacent road allowance under section 13.2 of the Act
- If selected, ensure that technical reports, information and an updated site plan are attached in your submission as described in *Aggregate Resources of Ontario: Amendment Standards*.

Other amendments (not including Amendment Without Approval)

- The ministry may require the applicant to provide additional information.
- The ministry may direct you to circulate this form to organization(s) and individual(s) for comment(s).

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**Description \***

Provide a description of the proposed amendment(s)

The request is to change the maximum annual tonnage limit from 1,000,000 tonnes to 2,000,000 tonnes.

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Provide reasons for the site plan amendment request

As other Dufferin locations are nearing depletion, additional tonnage is required to fulfill customer requirements.

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**Select all that apply \***

- Enclosed is a sketch/picture outlining proposed changes to the site plan.
- Enclosed is a draft version of a page(s) of the site plan altered to demonstrate the desired changes to the site plan.
- Enclosed is additional information and/or technical reports.

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**Last Name \***

Mitchell

**First Name \***

Kevin

**Signature (Licencee/Permittee)**



**Date (yyyy/mm/dd) \***

2023/02/13

# Dufferin Aggregates, a division of CHR Canada Group Inc.

Instrument type: [Changes to the conditions of a licence to operate a pit or quarry \(/index.php/taxonomy/term/419\)](/index.php/taxonomy/term/419)

ERO.(Environmental Registry.of.Ontario) number	019-7595
Ministry reference number	ARA # 5609
Notice type	Instrument
Act	Aggregate Resources Act, R.S.O. 1990
Posted by	Ministry of Natural Resources and Forestry
Notice stage	Proposal
Proposal posted	September 11, 2023
Comment period	September 11, 2023 - October 11, 2023 (30 days) Open
Last updated	September 11, 2023

This consultation closes at 11:59 p.m.

on:

**October 11, 2023**

## Proposal summary

Dufferin Aggregates, a division of CHR Canada Group Inc. (Incorporated) seeks to amend the current licence to increase the annual tonnage limit for Aberfoyle Pit 2 in the Township of Puslinch.

## Location details

### Site location details

Township of Puslinch, County of Wellington.

Part Lots 22 & 23, Concession 9, Geographic Township of Puslinch.

The site is located approximately 4 kilometres Southwest of Milton.

The site is ARA (Aggregate Resources Act) licence No. (number) 5609.

A [link \(https://www.ontario.ca/page/find-pits-and-quarries\)](https://www.ontario.ca/page/find-pits-and-quarries) to our mapping tool allows you to locate and view licensed sites under the ARA (Aggregate Resources Act).

## Site location map

The location pin reflects the approximate area where environmental activity is taking place.

[View this location on a map \(https://maps.google.com/?q=43.4837,-80.12296\)](https://maps.google.com/?q=43.4837,-80.12296)

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## Proponent(s)

Dufferin Aggregates, a division of CHR Canada Group Inc.  
2300 Steeles Avenue West  
Concord, ON  
L4K 5X6  
Canada

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## Proposal details

Dufferin Aggregates, a division of CHR Canada Group Inc. (Incorporated) has applied to vary a condition of the current licence to increase the annual tonnage limit for the site to 2,000,000 tonnes. The current annual tonnage limit for this site as stated on the site plan is 1,000,000 tonnes.

## Public consultation opportunities

The proposal request for this licence is being circulated within the Ministry of Natural Resources and Forestry. Additionally, notification of this application has been forwarded to the Township of Puslinch, County of Wellington and any landowners within 120 metres of the licence boundary.

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## Supporting materials

### Related links

[Aggregate Resources Act \(http://www.ontario.ca/laws/statute/90a08\)](http://www.ontario.ca/laws/statute/90a08)

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### View materials in person

Some supporting materials may not be available online. If this is the case, you can request to view the materials in person.

Get in touch with the office listed below to find out if materials are available.

MNRF - ROD - DDB - Aggregates Section  
300 Water Street, 4th Floor, South tower  
Peterborough, ON  
K9J 3C7  
Canada

## Comment

Let us know what you think of our proposal.

Have questions? Get in touch with the contact person below. Please include the ERO (Environmental Registry of Ontario) number for this notice in your email or letter to the contact.

[Read our commenting and privacy policies. \(/page/commenting-privacy\)](/page/commenting-privacy)


### Submit by mail

Uche Eje  
MNRF - ROD - DDB - Aggregates  
Section  
300 Water Street, 4th Floor, South  
tower  
Peterborough, ON  
K9J 3C7  
Canada

Connect with  
US

Contact

Uche Eje

 [365-885-2684](tel:365-885-2684)

 [Uche.Eje2@ontario.ca](mailto:Uche.Eje2@ontario.ca)





## **REPORT REC-2023-004**

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TO: Mayor and Members of Council

PREPARED BY: Mike Fowler, Director of Public Works, Parks, and Facilities  
Mary Hasan, Director of Finance/Treasurer

PRESENTED BY: Mike Fowler, Director of Public Works, Parks, and Facilities

MEETING DATE: September 27, 2023

SUBJECT: Service Levels – Parks and Recreation  
File: F05 BUD

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### **RECOMMENDATIONS**

**THAT Report REC-2023-004 entitled Service Levels – Parks and Recreation be received; and**

**THAT Council authorize additional funds of \$42,000 for the senior soccer field topsoil and re-sodding to be funded by the Cash in Lieu of Parkland Restricted Reserve as soon as possible in the Fall of 2023; and**

**THAT Schedule J of the 2024 User Fees and Charges By-law be updated to clarify that Personnel Costs are applicable for any additional staffing requirements for events at the discretion of the Director of Public Works, Parks and Facilities subject to operational demands and staff availability; and**

**THAT Council authorize a net 2024 base budget increase of approximately \$25,860 based on 2023 salary and benefit amounts in order to develop a rotational shift schedule and to develop a mandatory Township staffing presence during weekends to be funded as follows:**

- **Increase from 2 full-time facility operators to 3 full-time facility operators resulting in annual approximate costs of \$74,577; and**
- **Reduce the part-time position hours from 3,544 annual hours to 1,500 annual hours resulting in annual approximate savings of \$48,717; and**

**THAT the Puslinch Community Centre capacity limits as outlined in Report REC-2023-004 be updated in the Township's Facility Rental Agreements and the Alcohol Risk Management Policy effective immediately; and**

**THAT Council authorize the intercorporate transfer of the Public Works Pickup truck – ¾ ton – Crew Cab Asset No. 7009 acquired in 2017 to Parks as part of the 2024 Budget; and**

**THAT Council authorize the pre-budget approval of a new Public Works Pickup truck – ½ ton – Crew Cab amounting to \$55,000 as part of the 2024 Budget; and**

**That the Township remove the free Family Skate scheduled from 12:00 p.m. to 4:00 p.m. on Saturday’s in order to facilitate the rental of the ice during this prime time for other leagues and one-time bookings; and**

**That Council direct staff to implement in 2024 the promotion of recreational programming offered by third party organizations/renters who utilize the Township’s facilities on the Township’s Recreation and Leisure Calendar and Community Groups Page on [Puslinch.ca](https://puslinch.ca) after all permissions and waivers are obtained by the third party organization/renter as detailed in Report REC-2023-004.**

**DISCUSSION**

**Purpose**

The purpose of this report is to seek Council’s approval on 2024 budget items pertaining to Parks and Recreation service levels based on Council’s direction at the service level meeting held on September 6, 2023.

**Background**

Council at its meeting held on September 6, 2023 received Report ADM-2023-046 – Budget Process and Service Level Review.

Summarized below are the comments and direction received from Council pertaining to Parks and Recreation service levels that are being reported on in this Report:

<b>Council Comments Report ADM-2023-046</b>	<b>Council Direction - September 6, 2023 Council Meeting</b>	<b>2024 Budget Implications</b>
More frequent cleaning of facilities. A thorough full cleaning/maintenance of all facilities every spring.	Park cleaning and maintenance: subject to the discussion regarding additional staffing resources	See section below entitled “Facilities Operational Service Levels and Additional Resourcing Needs”
More frequent cleaning of washrooms at ball diamonds.	See above.	See section below entitled “Facilities Operational Service Levels and Additional Resourcing Needs”

Regular re-grading of diamonds to ensure proper drainage.	See above.	See section below entitled "Parks Operational Service Levels"
Parks maintenance service levels to meet the current upkeep needs and the needs of the changes with the parks revitalization upgrades.	See above.	See section below entitled "Parks Operational Service Levels"
Would like to see an increase where the millennial garden has a one-time spring landscape clean up at the beginning of the season – this will allow volunteers to maintain it in a reasonable capacity.	Millennial garden: no action (subject to the discussion regarding additional staffing resources or outsourcing)	See section below entitled "Parks Operational Service Levels"
Assessment of our bookings program that services staff use.	Facility booking system: no action; staff to review the possibility of a flexible rental approval process where a rental request is made during a time where public drop-in programming is typically scheduled.	See section below entitled "Public Drop-in Programming"
Would like to see an increase in recreation programming options for Puslinch residents.	Staff to look into software capabilities to include the program name on the online calendar and the privacy limitations.	See section below entitled "Recreation Programming, Recreation and Leisure Calendar and Community Groups Page on <a href="https://puslinch.ca">Puslinch.ca</a> "
Adding lighting to Millennial garden.	Staff to request a quote from an electrician in order to provide lighting options and report back through budget process.	The estimated cost associated with running electrical conduit for lighting and a decorative lantern and post is approximately \$10K. Staff are requesting Council's direction on whether this cost should be incorporated in the proposed 2024 capital budget as a standalone project. Alternatively, this project could be considered as part of the upcoming review of the Recreation and Parks Master Plan.

Summarized below are the comments received from staff pertaining to Parks and Recreation Service Levels that are being reported on in this Report:

<b>Staff Comments</b> <b>Report ADM-2023-046</b>	<b>Council Direction -</b> <b>September 6, 2023</b> <b>Council Meeting</b>	<b>2024 Budget Implications</b>
<p>The Puslinch Community Centre (PCC) is currently not staffed during weekend rentals. Part time facility staff are scheduled to clean and ‘turn over’ the facility in between rentals. It is becoming increasingly difficult to manage large scale events with no staffing presence. The facility is being damaged on a more regular basis, as well as rentals are exceeding occupant loads. This is being communicated to full time facility staff by the students working at the Optimist Recreation Centre (ORC). Often renters are not fulfilling their contract obligations in respect to cleaning of the facility upon departure. It is also being reported that some large scale rentals are avoiding the Alcohol Risk Management Policy by drinking in the PCC parking lot and grounds and not in the facility. Full time staff are aware of this activity as they often clean the PCC grounds the following Monday and are finding bottles. Staff strongly suggest that a lower occupant maximum be set for the facility as the cleaning associated with large groups (250+) is not feasible with current staffing levels. In addition, staff suggest that Facility staff work on a rotational basis in order to have a full time staff person present at all times when the PCC is being rented. Staff are preparing an information report with detailed costing for Council’s consideration. This would include reducing the number of part time hours and adding a third facility operator in order to develop a rotational shift schedule.</p>	<p>PCC rentals: staff report back on the costing of the addition of a full time facility operator; investigating an occupant maximum for facility rentals at the PCC.</p>	<p>See section below entitled “Facilities Operational Service Levels and Additional Resourcing Needs”</p>
<p>The Parks department has one (1) truck for three (3) employees; Within the Parks department, there is one crew cab pick-up</p>	<p>Parks pick-up truck: staff prepare costing for consideration during the</p>	<p>See section below entitled “Additional Parks Pickup Truck”</p>

<p>responsible for transporting staff and mowers to the various sites in the Township. In addition to parks duties Parks staff are required to complete garbage removal from parks; daily baseball diamond dragging; washroom cleanings; part and supplies pick-ups during the week. With the addition of a second truck, the three parks workers could more efficiently complete tasks. Currently all three staff must travel together in the one truck. The Township has two mowers and so it would be much more efficient if a second truck was added to parks in order for the third park’s employee to complete additional tasks at a different site. The addition of the second truck for Parks would be beneficial in advance of the new PCC grounds being completed as this site will require additional maintenance and upkeep.</p>	<p>budget process for the addition of a pick-up truck in the parks department and also include a leasing option in the costing analysis. Include the life cycle of the existing trucks in the analysis.</p>	
<p>The back senior soccer field turf unfortunately did not take with many efforts taken by Township staff. The Puslinch Soccer Club has identified concerns with the turf playing conditions as well and has highlighted this concern in advance of the 2024 playing season. The Fall Fair is utilizing the field for their 2023 events including tents and animal exhibits. Staff recommend that Council consider resodding the field in late fall after the Fall Fair while the current contractor is on site and available to do the work. Staff can provide detailed costing for consideration should Council give that direction.</p>	<p>Senior soccer field re-sodding: staff to provide a report back to Council on the feasibility of this request.</p>	<p>Staff recommend that additional senior soccer field topsoil and re-sodding costs of \$42K be authorized to be completed as soon as possible in the Fall of 2023 while the contractor is on site for the PCC Park Renovation and Upgrade project.</p>
<p>Operating budget implications associated with the parks revitalization projects that are currently underway.</p>	<p>Park cleaning and maintenance: subject to the discussion regarding additional staffing resources</p>	<p>See section below entitled “Parks Operational Service Levels”</p>

## Level of Service Policy for the Public Works, Parks and Facilities Department

Attached as Schedule A to this Report is the Level of Service Policy for the Public Works, Parks and Facilities Department adopted by Council at their meeting held on November 17, 2021 through Council Resolution No. 2021-373.

As previously directed by Council, staff are currently undertaking public engagement through EngagePuslinch.ca to obtain feedback on the Level of Service Policy for the Public Works, Parks and Facilities Department. Staff will be reporting back separately through the budget process the public feedback received. Staff recommend that in future years, public engagement be conducted in June each year in order to report back on the results to Council as part of service level review discussion.

## Facilities Operational Service Levels and Additional Resourcing Needs

The Township currently has:

- 2 full-time facility operators which are allocated to the PCC and the ORC.
- 5 part-time student facility operators which are allocated to the ORC and 1 part-time municipal representative allocated to the PCC. These part-time positions share 3,544 annual hours.

Attached as Schedule B to this Report is Report REC-2022-014 – Facility Rental Concerns presented to Council at their meeting held on August 10, 2022. At this meeting, Council passed Council Resolution No. 2022-269 which outlined:

*THAT a discretionary Township staffing presence may be requested during weekend and statutory holiday rentals effective immediately at the Puslinch Community Centre; and*

*THAT an hourly fee be established effective immediately for full cost recovery associated with the position during weekend and statutory holiday rentals; and*

*That the security deposit be increased to \$1,500 effective immediately; and*

*That the increased security deposit and the hourly fee for staffing be included in the 2023 User Fees and Charges by-law.*

Based on previous Council direction, the following has been implemented to date:

- The facility rental security deposit for the PCC Hall increased from \$365 to \$1,500 effective August 2022 and was incorporated in the 2023 User Fees and Charges By-law.
- The hourly fee for full cost recovery associated with the position during weekend and statutory holiday rentals was included in the 2023 User Fees and Charges By-law but was not implemented as further outlined below.

- Staff finalized the recruitment for the municipal representative position in early February 2023.
  - A discretionary Township staffing presence was not consistently scheduled to attend the PCC during weekend and statutory holiday rentals due to staffing unavailability.
  - Staff have not implemented the hourly fee for personnel costs at the PCC given the uncertainties associated with determining when a discretionary staffing fee should be included in a contract or not or when the individual would be scheduled to work. This is very difficult for operational and customer service staff to manage and implement. Rental contracts are often created well in advance of the rental taking place. The scheduling for a discretionary Township staffing presence is typically not known this early in the contract creation stage and was very difficult to implement.
  - The need for discretionary personnel costs are proposed to be mitigated further with the reduced capacity limit and increase in full-time facility operators as recommended in this Report below.
  - It is recommended that Schedule J of the 2024 User Fees and Charges By-law be updated to clarify that Personnel Costs are applicable for any additional staffing requirements for events at the discretion of the Director of Public Works, Parks and Facilities subject to operational demands and staff availability.
- Consumer price index (CPI) inflation increases have been implemented annually for the Township's user fees to closely reflect the actual cost for providing the service while keeping in line with comparator municipalities.
- A non-resident surcharge for PCC rentals commenced in 2020 and is recommended to continue to be in place in accordance with Report FIN-2023-025 presented to Council on August 16, 2023. This is in accordance with staff's previous recommendation to Council in Report FIN-2019-031 presented to Council on October 16, 2019.
- Proposed increases above the CPI inflation rate for 2024 User Fees and Charges based on a benchmarking analysis completed for the Township's 10 high frequency user fees.
  - Staff compared the Township's proposed user fees to both comparator and boundary municipalities.
  - The impacts of the benchmarking analysis for Parks and Recreation user fees is a proposed increase to the following fees:
    - Ice – Prime hourly rate increase from \$184.18 (2023) to \$234.00 (2024) based on an average calculated fee of \$233.80 and a median calculated fee of \$237.00.
    - Hall-Prime-Non Resident Rental or Commercial Rental daily rate increase from \$711.01 (2023) to \$818.00 (2024) based on an average calculated fee of \$928.50 and a median calculated fee of \$818.32.
  - Future detailed benchmarking analysis of further Township fees may result in further changes to the Township's fee structure in 2025 and future years in order to ensure that the Township is recovering actual costs for its rental fees while keeping in line with comparator municipalities.

As summarized in Report REC-2022-014 – Facility Rental Concerns, the Township has issued several letters over the years to renters failing to comply with rental agreements which resulted in the Township retaining a portion or all of the renters' security deposits. There have also been instances where renters have lost their rental privileges due to the severity of the issues and/or the number of warning letters that had been issued to the renter in the past. The Township issued 6 letters in 2022 and 4 letters to date in 2023 due to the compliance issues that have been noted by Township staff as summarized below:

- Failure to clean the facility (washroom, kitchen, Archie MacRobbie Hall and/or Alf Hales Room) to a reasonable standard as per the rental agreement.
- Excessive garbage left on the outdoor grounds of the PCC.
- Garbage and water bottles thrown on the metal roof of the building.
- Failure to properly secure the facility after the rental.
- Removal of kitchen supplies from the PCC after rentals.
- Interior furniture brought and left outside on the PCC grounds.
- Barbeque coals on the PCC grounds.
- Failure to properly dispose of waste in the waste containers.
- Unauthorized use of areas within the facility that are not rented; locks were installed in 2022 at the Alf Hales Room to restrict unauthorized access.
- Unauthorized use of outdoor areas that are not rented (ie. soccer fields, tennis courts, baseball diamonds, etc.) which results in additional operational cleaning and repair costs.
- Unauthorized use of other facilities that are not rented (ie. ORC).
- Unauthorized use of facility equipment at the ORC and the PCC.
- Unauthorized alcohol consumption and failure to adhere to the requirements of the Alcohol Risk Management Policy.
- Damage to cabinet locks to gain unauthorized access to supplies in the Alf Hales Room.
- Damage to areas within the facility (ie. holes in walls, broken projector screen, etc.).
- Aggressive behaviour from renters towards Township staff.
- Increased overtime costs associated with unnecessary calls to the Public Works on-call number for non-emergency items.

Unfortunately, the above operational issues have significant operational cost implications for the Township. There have been a number of times where overtime costs are being incurred by the Township due to the lack of staffing resources as a result of the operational issues at these facilities. There are also additional administrative costs associated with issuing letters and retaining a portion of each security deposit. The transition to usage as commercial facilities has resulted in a financial situation that is not sustainable and the requirement for additional facility staffing resources as further outlined below:

- It is recommended that a mandatory Township staffing presence during weekend rentals be implemented at the PCC in order to minimize damage and risk exposure due to capacity exceedances, use of unauthorized areas of the facility, and the other



compliance issues outlined above. The recommended increase in full-time equivalents as further outlined below would also assist with implementing the requests from Council in Report ADM-2023-046 – Budget Process and Service Level Review (ie. more frequent cleaning of facilities including washrooms at ball diamonds).

- As outlined in Report ADM-2023-046 – Budget Process and Service Level Review, staff recommend that full-time facility staff work on a rotational basis in order to have a full time staff present when the PCC is being rented.
- Staff's recommendation is to reduce the part-time position hours from 3,544 annual hours to 1,500 annual hours resulting in annual approximate savings of \$48,717. The majority of the part-time hours are still required for additional assistance during the daytime at the ORC when the ice is in for ice maintenance or as required on a case by case basis based on rental requirements. Township staff will continue to monitor the staffing requirements.
- Staff's recommendation is to increase from 2 full-time facility operators to 3 full-time facility operators in order to develop a rotational shift schedule resulting in annual approximate costs of \$74,577.
- The net impact of the above recommendations is a 2024 base budget increase of approximately \$25,860 based on 2023 salary and benefits amounts.

Staff have noted that the PCC in particular is being rented with maximum fire code capacity limits. Staff recommend that the capacity limits be limited to 100 attendees maximum for all PCC hall private event rentals (both licensed and non-licensed events). It is also recommended that the Alf Hales Room have a 30 attendee maximum for both licensed and non-licensed events.

- The following types of events would not be subject to the 100 attendee maximum in the PCC hall:
  - Community events (ie. Fall Fair, Santa Claus Parade, Canada Day, Family Day, Remembrance Day, etc.); and
  - Township events (ie. Township annual appreciation night, etc.); and
  - Other bazaars/markets/vendor type events where the number of attendees fluctuates throughout the duration of the event.
- The capacity limits outlined above are recommended to ensure that the service level of the facility is maintained, as it is operated on a private well and septic system. The number of attendees using the facility can greatly impact this Township infrastructure.

Additionally, staff note that back-to-back rentals during prime times (ie. Friday through Sunday) are very hard on the facility infrastructure such as the septic system and the cleanliness of the facility (both indoor and the grounds). Staff recommend that a maintenance window be incorporated between rentals in order to permit staff sufficient time to fully clean and sanitize the facility and to inspect the facility for damages between rentals. Rental requests would be processed on a first come first serve basis. Staff will continue to monitor and report back to Council as needed.

### **Parks Operational Service Levels**

The Township currently has 3 full-time equipment operators which are allocated to Public Works (40% of the year) and Parks (60% of the year). Several parks requests have been made as part of Report ADM-2023-046 – Budget Process and Service Level Review (ie. regular regrading of diamonds to ensure proper drainage, millennium garden requests, operating budget implications associated with the parks revitalization projects that are currently underway, etc.).

Additionally, Township staff agree that the PCC Park Renovation and Upgrade will result in an increased staffing requirement in the Parks department. Staff plan to report on additional parks resourcing requirements as part of 2025 budget deliberations upon completion of the PCC Park Renovation and Upgrade construction.

Staff's understanding was that the works at the Millennium Garden are a volunteer based initiative with no staff resources currently allocated:

- A one-time \$3,000 base budget increase was allocated in the 2023 budget for top soil, plantings and mulch at the Millennium Garden. These items have been purchased.
- It was recommended in Report FIN-2023-001 that the \$3,000 be a permanent base budget increase with the additional funds utilized for establishing and maintaining additional flower beds around the new signage installed at the Township's facilities and parks.

It is recommended that any additional increases in service levels in parks including additional works at the Millennium Garden, be considered as part of the upcoming review of the Recreation and Parks Master Plan. Further, staff recommend that prior to allocating funds for works at the Millennium Garden, that the Recreation Committee be requested to engage with interested volunteers in the community such as the Junior Gardener's Club to increase volunteer numbers.

### **Additional Parks Pickup Truck**

As outlined in Report ADM-2023-046 – Budget Process and Service Level Review, the parks department has one (1) pickup truck that is currently being used amongst three (3) employees. Within the Parks department, there is one ½ ton crew cab pick-up responsible for transporting staff and mowers to the various sites in the Township. With the addition of a second pickup truck, the three parks employees could more efficiently complete tasks. Currently all three staff must travel together in the one truck. The Township has two mowers and so it would be much more efficient if a second truck was added in parks in order for the third parks employee to complete additional tasks at a different site. The addition of the second truck for Parks would

be beneficial in advance of the completion of the PCC Park Renovation and Upgrade as this site will require additional maintenance and upkeep.

Staff discussed potential leasing options and were notified by the dealer that due to the wear and tear on Public Works/Parks vehicles, long-term leasing options are not available.

The Township has typically completed intercorporate transfers of pickup trucks between departments. Outlined in the table below are the current Public Works/Parks pickup trucks and their proposed replacement year based on the 2023 Capital Budget and Forecast presented to Council in the previous year:

Department	Description	Year	Intercorporate Transfer	Current Mileage (kilometer)	Lifecycle	Replacement Year	Replacement Cost
Public Works	Pickup truck - 3/4 ton - Crew Cab	2017-05		183,371	8	2025	\$54K
Public Works	Pickup truck - 3/4 ton - Single Cab	2021-03	To Parks	57,901	5	2026	\$42K
Parks	Pickup truck - 1/2 ton	2015-04	From Public Works	161,174	5	2026	Transfer

It is recommended that the Public Works Pickup truck – ¾ ton - Crew Cab acquired in 2017 be transferred to Parks as part of the 2024 budget to be replaced in 2027. It is recommended that Council authorize the pre-budget approval of a new Pickup truck – ½ ton – Crew Cab amounting to \$55K in Public Works as part of the 2024 Budget to be transferred to Parks in 2027. There is currently one unit in stock and due to the potential strike with both Canada and the United States automotive workers, the projected backlog for vehicles is between 6 to 8 months.

Outlined in the table below are the proposed Public Works/Parks pickup trucks and their proposed replacement year based on the above recommendation:

Department	Description	Year	Intercorporate Transfer	Current Mileage	Lifecycle	Replacement Year	Replacement Cost
Parks	Pickup truck - 3/4 ton - Crew Cab	2017-05	From Public Works in 2024	183,371	4 years in Parks	2027	Transfer
Public Works	Pickup truck – 1/2 ton - Crew Cab	2024	To Parks in 2027	N/A	3 years in Public Works	2027	\$55K
Public Works	Pickup truck - 3/4 ton - Single Cab	2021-03	N/A	57,901	10	2031	\$42K
Parks	Pickup truck - 1/2 ton	2015-04	N/A	161,174	10	2025	\$55K

## Public Drop-in Programming

Council direction at the November 25, 2020 Council Meeting through Council Resolution No. 2020-349 is outlined below:

*That staff continue to develop a free skate and shinny schedule, upon eight week league scheduling bookings being confirmed no later than November 30th of each year; and  
That the Township facilitate the rental of the ice for other leagues and one-time bookings after the eight week league bookings have been scheduled; and*

*That the Township reduce the amount of free Adult Shinny to one hour per week.*

The Township's annual ice schedule is developed in accordance with the above Council Resolution. The free skate and shinny schedule is developed upon league scheduling being confirmed while attempting to keep the schedule as consistent as possible to previous years. Attached as Schedule C to this Report is the 2022/2023 ice schedule prepared by Township staff.

The benefits associated with establishing a consistent, weekly drop-in ice schedule are outlined below:

- Enables increased utilization of the facility by users.
- The public appreciates the reliability in a weekly drop-in schedule.
- Enables effective and timely advertising to the public through the Township website of the weekly drop-in schedule.
- Creates a fair, equal and transparent process for providing free drop-in times to the public.

The establishment of a weekly drop-in ice schedule is also consistent with the Township's Roller Skating and Inline Shinny Free Drop-in Time at the ORC rink. The participant/utilization rates associated with a fluid schedule were very low as previously reported to Council in Report REC-2023-003. As outlined in Report REC-2023-003, the Township's practice has been that drop-ins outside of scheduled ice program times or outside of ice league/private rentals, are generally accommodated on a first come first serve basis upon facility staff being on site.

The ice-prime times include weekdays from 5:00 p.m. to 10:00 p.m. and Saturdays and Sundays. The Township does receive a number of rental requests for weekend tournaments. These requests are typically for greater than the current 2 hour time slot availability on Saturday's.

- In 2022/2023, the private rental opportunities in the established weekly ice schedule on Saturdays and Sundays were limited to no more than two hours per rental.
- In 2022/2023, family skate was offered during the following times:
  - 12:00 p.m. to 4:00 p.m. from Monday to Sunday; and
  - 6:30 p.m. to 8:30 p.m. from Friday to Sunday.

An option for Council's consideration for the 2023/2024 established weekly ice schedule in order to facilitate the rental of the ice during this time for other leagues and one-time bookings during prime times on Saturday's is to remove the free Family Skate on Saturday's from 12:00 p.m. to 4:00 p.m. Based on review of usage data from the pilot program associated with free skating, the Family Skate from 2016/2017 season and 2017/2018 season averaged 235 attendees on Saturday's and 446 attendees on Sunday's. There are more attendees on Sunday's, therefore, it is not recommended that we change the Sunday free Family Skate schedule.

League rental contracts are typically established by the end of November. The Township is able to accommodate weekend tournament requests on a first come first serve basis prior to the league rentals being confirmed. This would provide sufficient notice to the public when publishing the weekly ice schedule where certain public drop in times may not be available. If tournament rental requests are received after the league rental contracts are finalized, the Township would not be able to cancel the league rentals in order to accommodate one-time tournaments/events.

**Recreation Programming, Recreation and Leisure Calendar and Community Groups Page on [Puslinch.ca](http://Puslinch.ca)**

The following was reported to Council in Report FIN-2021-036 at their November 17, 2021 Council Meeting:

*The Township obtained information from Guelph Eramosa Township who offers the following municipally led recreation programming and participant numbers:*

*Pickleball (10 to 15), Nordic Pole Walking (5), Chess, Cooking Classes (10), Gentle Walk and Movement (3), Shuffleboard (8), Enabling Garden Club (5), Darts (4), Games for the Brain (6), Euchre, Bocce Ball (5), Educational Workshops (average of 10), Crafting Workshops (5), Silver Screening (8), Bingo (6), Hand Stitching (6), Art Workshops (10), Music in the Garden (40), Yoga (10 to 15), Cardio Core (7), Cardio Sculpt Intervals (6), Strength and Stretch (12), Bands and Bells (12), Yoga 55 (7), DDPY (15 to 32), Benefits of Bone fitness (12), Sitfit (7), Use it Lose it Tone it up (29), Music 'N' Motion (12), Stroller Fit, Family Yoga, Walking Soccer (10 to 12), Remote Control Airplanes (5 to 7), Tot 'N' Play, 55+ Soccer, Indoor Golf Range, Women's Recreation Soccer, Coed Slo Pitch League, Pole Walking Workshops.*

*The number of staff required for each program include 14 part-time staff, 1 full-time staff, and 2 seasonal staff. There are also many volunteers and special guest speakers that assist with this programming.*

*The Township of Guelph Eramosa also has external organizations (similar to the Township of Puslinch) who offer recreation programming and book the Township's facilities such as summer camps, soccer, baseball, and adult recreational leagues.*

The Township currently does not provide Township run recreation programming as this would result in a significant service level and staffing increase. Township community groups offer the programs while utilizing Township facilities.

In accordance with Council's direction at their meeting held on September 6, 2023, Township staff recommend that the following be implemented in 2024 to promote the recreational programming offered by third party organizations/renters who utilize the Township's facilities on the Township's Recreation and Leisure Calendar and Community Groups Page on [Puslinch.ca](https://www.puslinch.ca) by establishing the following processes/controls prior to implementation:

- Staff recommend that the Township obtain prior written permission from the third party organization/renter offering an organized league/program/event prior to promotion on the Township's online calendar and the Community Groups page:
  - Any third party organization/renter requesting their organized league/program/event to be placed on the Township's online calendar must provide contact information to be displayed on the Community Groups page.
    - The rationale for this is that the Township does not have the resources or the detailed knowledge regarding each organized league/ program/ event. The Township does not have a recreation liaison/recreation staff member dedicated to manage these public inquiries.
  - It is preferred that the contact information noted on the Township's website be an organization affiliated website and/or email.
  - Permission is required from the third party organization/renter due to privacy concerns.
    - Township staff are not in a position to provide personal information on the Township's website without obtaining this permission directly from the third party organization/renter.
  - The third party organization/renter will be required to sign a waiver confirming that:
    - The Township is not responsible for any unsolicited/phishing emails received by the organization/renter and that the organization/renter is providing their contact information that must be placed on the Township's Community Groups page at their own risk.
    - The content placed in the online calendar and Community Groups page must adhere to the requirements of the Township's Advertisement, Communication and Media Relations Policy and the Corporate Accessibility Policy.
    - It is the organization/renter's responsibility to notify the Township of updated contact information.

- If the organization/renter does not host a league/program/event in a Township facility within 365 calendar days, the organization/renter will be automatically removed from the Township's Community Groups page.
- The Township will include the following in its online calendar and Community Groups page to be implemented in 2024 only after the above permissions have been obtained from the third party organization/renter:
  - It is recommended that Township drop-in programming (ie. Drop-In Roller/Inline Skating, Family Skate, etc.) continue to include the specific drop-in program name in the online calendar.
  - It is recommended that organized leagues/programs for registered participants be specifically noted on the online calendar. For example, "League Women's Volleyball" or "Cooking Classes", etc.
  - It is recommended that events open to the public such as the Fall Fair, Santa Claus Parade, Canada Day, Family Day, Remembrance Day, etc. be specifically noted on the online calendar.
  - It is important that once this is implemented, that it be implemented based on the type of rental. For example, there are certain leagues/programs/events that are not open to the public and will be noted as a "Private Rental" in the online calendar.
  - This initiative does not apply to private functions that are not open to the public (ie. stag and does, weddings, birthday parties, anniversaries, funerals, etc.). These types of private functions will be noted as a "Private Rental" in the online calendar.
  - The Township's facility booking system has a character limit of 60 when noting the type of event which would then display on the online calendar.
- Staff recommend that the Township update the Recreation and Leisure Calendar page on [Puslinch.ca](https://www.puslinch.ca) in 2024 once this is implemented to note a legend as follows:
  - "Private Rental" means private events that are not open to the public.
  - "League" events are for registered participants only. For contact information for this league, please click here to visit our Community Groups page.
  - "Other Programs/Events" may require registration and are open to the public. For contact information for this program/event, please click here to visit our Community Groups page.
  - "Drop In" events are non-supervised Township programs open to the public. For more information, please contact the Township.

## FINANCIAL IMPLICATIONS

In addition to the financial implications outlined throughout this Report, staff also obtained estimates for external commercial cleaning services for the PCC for weekends. Quotes ranged from \$125 to \$350 per cleaning averaging \$267 per visit. The cleaning cost may increase depending on the condition of the facility after the rental. These estimated costs amount to

approximately \$28K of incremental annual costs assuming the commercial cleaning services are required 2 times per week. Staff recommend that this option only be explored if Council does not support the increase in the full-time facility operator positions from 2 to 3 as outlined in this Report.

Township staff also have the ability to draw on the renter's security deposit in the event that a commercial cleaning service is required based on the severity of the condition of the facility after the rental. This would not result in an incremental cost to the Township.

**APPLICABLE LEGISLATION AND REQUIREMENTS**

Municipal Act

**ATTACHMENTS**

Schedule A - Level of Service Policy for the Public Works, Parks and Facilities Department

Schedule B - Report REC-2022-014 – Facility Rental Concerns

Schedule C – 2022/2023 Ice Schedule

**Respectfully submitted:**

**Reviewed by:**

**Mike Fowler**  
**Director of Public Works, Parks, and Facilities**

**Courtenay Hoytfox**  
**Municipal Clerk**

**Mary Hasan**  
**Director of Finance/Treasurer**





**CORPORATION OF THE  
TOWNSHIP OF PUSLINCH**

**LEVEL OF SERVICE POLICY FOR THE  
PUBLIC WORKS, PARKS, AND FACILITIES DEPARTMENT  
POLICY 2021-007**

**THE CORPORATION OF THE  
TOWNSHIP OF PUSLINCH**  
7404 WELLINGTON ROAD 34  
PUSLINCH, ONTARIO N0B 2J0




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### **PREAMBLE**

This document describes of the level of service which the Township of Puslinch Public Works, Parks and Facilities Department provides for common and routine activities which are required and expected of the department. The policy sets an obligation for the Public Works Parks and Facilities Department to make reasonable efforts to achieve a consistent approach towards meeting a safe and achievable standard level of service.

The following level of service policies meet or exceed the requirements of the Minimum Maintenance Standards for Municipal Highways predetermined by the Province of Ontario through Ontario Regulation 239/02 under the Municipal Act, 2001, as amended from time to time.

Council of the Township of Puslinch has adopted the Ontario Minimum Maintenance Standards for Municipal Highways as the minimum acceptable standard for Township of Puslinch maintained rights-of-way. This document provides additional details to each of the areas identified within the Minimum Maintenance Standards. Furthermore, the policy establishes an inventory of practices and procedures for additional services provided by the Public Works Parks and Facilities Department which are not covered through the Minimum Maintenance Standards.

The Director of Public Works Parks and Facilities shall be the primary person responsible for the implementation and administration of these policies.



## DEFINITIONS

- 1) *for the purpose of this document, the terms roadway, highway, street and road are interchangeable throughout;*
- 2) *for the purpose of this document, the term Township, Municipality, Puslinch, and Township of Puslinch are interchangeable and all refer to The Corporation of the Township of Puslinch;*
- 3) *for the purpose of this document, the term Director of Public Works, Parks, and Facilities or Public Works Manager are interchangeable and refer to the Township of Puslinch, Director of Public Works, Parks, and Facilities and Park;*

<b>cm</b>	Centimetres;
<b>Day</b>	24-hour period;
<b>Non-Paved Surface</b>	a surface that is not paved;
<b>Paved Surface</b>	a surface with a layer of asphalt, concrete, or asphalt emulsion;
<b>Roadway</b>	has the same meaning as in subsection 1 of the highway traffic act;
<b>Shoulder</b>	the untraveled portion of the highway that provides lateral support to the roadway;
<b>Shoulder Drop-off</b>	the vertical differential, where the paved surface of the roadway is higher than the surface of the shoulder;
<b>Surface</b>	the top of the roadway or shoulder;
<b>Snow Accumulation</b>	the natural accumulation of new fallen snow, slush, or wind-blown snow that covers more than half a lane width of a roadway;
<b>Debris</b>	any material or object on the roadway that is not an integral part of the roadway or has not been intentionally placed on the roadway by the Township and that it is reasonably likely to cause damage to a motor vehicle or injure a person in the motor vehicle;

### Winter Control

<b>Season</b>	the 15th day of November each year, through to April 1st the following year;
---------------	--

### Representative

<b>Roads</b>	a selection of roads which portray the condition of the remaining roads adjacent to, or in the area of the representative roads;
<b>MTO</b>	Kings Highway, or Province of Ontario owned and maintained through contracted services;
<b>County</b>	means county or regional government level;
<b>Hard Top Surface</b>	a roadway with a surface comprised of a layer of asphalt, concrete or asphalt emulsion;
<b>Boulevard</b>	for the purpose of this procedure means an urban area where the grass or earthed area(s) between the roadside curb or in the case of no curb, the back slope of the roadside ditch/swale and the property line;
<b>Loose-Top</b>	a roadway surfaced with materials other than asphalt, concrete or asphalt emulsion, typically refers to a gravel surfaced road;



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**SECTION 1 - WINTER CONTROL OPERATIONS**



## WINTER CONTROL OPERATIONS

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will strive, as is reasonably practicable, to provide safe and passable winter road conditions for vehicular and pedestrian traffic as set out in this level of service policy and within the resources provided by the Council of the Township of Puslinch.

### Winter Control Season:

The Township of Puslinch conducts winter control operations from 15th day of November each year, through to April 1st the following year (winter control season). The Public Works, Parks and Facilities Department will have sufficient winter control equipment and manpower available 7 days a week during the winter control season to respond to winter events.

### Winter Patrols:

The purpose of the winter patrol is to monitor and record weather and road conditions, and to mobilize winter control operations should a winter control response be deemed required by the patroller.

Winter Patrol of "representative roads" shall be completed by the patroller as conditions dictate no later than 3:00am to allow for initiating a response no later than 5:00am on weekdays. Patrols are conducted between 5:00 am 1:00 pm on weekends to initiate the necessary response.

### Roads and Municipal Parking Lots:

The Township will mobilize the forces and equipment necessary to permit the flow of traffic on Township winter maintained roads. Winter control operations will occur as required. Roads will be maintained in accordance with the Minimum Maintenance Standards (MMS), response time will be based on the roads assigned highway classification and the condition of accumulation which exist, both of which are defined within the MMS.

The following table lists the highway classification of roads based on the Average Annual Daily Traffic (AADT) and the posted or statutory speed limit (km/h).

Winter control operations on municipal parking lots will occur as required and will generally be completed prior to opening of regular business. Salt, sand, or a combination of both will be applied as conditions warrant.

The Director of Public Works, Parks, and Facilities or designate will be the primary individual responsible for making decisions regarding the most effective and efficient use of available resources. Weather reports and experience shall assist in making these decisions.



TABLE 1  
CLASSIFICATION OF HIGHWAYS

Average Annual Daily Traffic	Posted or Statutory Speed Limit (kilometres per hour)						
	91 - 100	81 - 90	71 - 80	61 - 70	51 - 60	41 - 50	1 - 40
15,000 or more	1	1	1	2	2	2	2
12,000 - 14,999	1	1	1	2	2	3	3
10,000 - 11,999	1	1	2	2	3	3	3
8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	3	3
5,000 - 5,999	1	2	2	3	3	3	3
4,000 - 4,999	1	2	3	3	3	3	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	4	4
1,000 - 1,999	1	3	3	3	4	4	5
500 - 999	1	3	4	4	4	4	5
200 - 499	1	3	4	4	5	5	5
50 - 199	1	3	4	5	5	5	5
0 - 49	1	3	6	6	6	6	6

Forces will be mobilized based predominately on current and forecasted weather conditions as well as snow accumulation, however, other factors may contribute to deploying such forces. Reaction time for responding to snow accumulation and ice formation will begin as soon as practicable after becoming aware of the fact. The depth of snow accumulation will be determined in accordance with the Ontario MMS. If the depth of snow accumulation on a roadway is less than or equal to the depth set out in the following table, the roadway is deemed to be in a state of repair with respect to snow accumulation.

TABLE 2  
SNOW ACCUMULATION AND RESPONSE TIME

Class of Highway	Accumulation Depth (cm)	Response Time (hr)
1	2.5	4
2	5	6
3	8	12
4	8	16
5	10	24

Road Classifications:

Please refer to Schedule A



Winter Weather Monitoring:

From October 1st to April 30, the Township will monitor the current and forecasted weather three times per calendar day, the morning, noon hour and evening. Weather reports will be electronically received and recorded.

Response Time for Icy Roads:

The minimum standards of the Township for treating icy roads is to deploy resources as soon as practicable after becoming aware of the fact that the roadway is icy and to treat the icy conditions within the time set out in Table 3 after becoming aware of the fact.

TABLE 3  
ICE FORMATION PREVENTION AND ICY ROADWAYS

Class of Highway	Time
1	3 hours
2	4 hours
3	8 hours
4	12 hours
5	16 hours

If the Township determines that there is a substantial probability of ice forming on a roadway the Township will deploy resources to prevent the formation of ice within the timeframe indicated in Table 3.

The Township may use ice blading techniques to reduce the hazard of icy surfaces on gravel roads, and salt, sand, or a combination of, to treat and reduce the hazard of icy hard top roads.

Priorities:

The sequence of winter control operations may give priority to a class of road which has a higher classification rank. During a major snowfall event, priority will be given to higher class roadways and roads which are thoroughfares for emergency vehicles and bus routes, local urban streets will follow. All roads within the Township do not have to be held to the same level of service, the level of service varies in accordance with the classification given to the road under Ontario Regulation 239/02 the Minimum Maintenance Standards.



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Sidewalks:

The Township shall mobilize the forces and equipment necessary to permit safe passage of pedestrian traffic on Township sidewalks. Accumulated snow will be removed and salt, sand, or a combination of both will be applied as conditions warrant to alleviate icy conditions.

Sod Damages:

Damages sod in urbanized areas will be repaired by Public Works staff with topsoil and seed only. The Township does not remediate properties which receive stones from adjacent gravel surfaced roads.

Exclusions:

Township forces will at all times attempt to meet the service levels, however, it is recognized that exceptionally heavy snowfall events may occasionally prevent this.

The Township does not provide 24 hour winter control operations, response time will be as dictated by the Minimum Maintenance Standard for Ontario Highways and the Highway Traffic Act Regulation 555/06 (hours of service).

The Township does not clear private driveways, parking lots or entrances.

Sidewalks are not maintained to a bare surface, but rather to provide a safe walking path for pedestrians. It is recognized that snow may be deposited onto private property during winter control operations on municipal sidewalks.



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**SECTION 2 - HARD TOP SURFACE MAINTENANCE**

## HARD TOP SURFACE MAINTENANCE

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will make every reasonable effort to maintain the Townships existing hard top surfaces in a condition which provides a smooth and safe riding surface, eliminates hazards to vehicular and pedestrian traffic, and to protect the Township's investments in hard top surfaces.

### Potholes:

The Public Works, Parks and Facilities Department will repair potholes on hard top surfaces and hard top surfaced shoulders at a minimum, in accordance with the MMS. If a pothole exceeds both the surface area and depth set out in the table below, the minimum service level is to repair the pothole within the time set out in the table below after becoming aware of the fact.

TABLE 4  
POTHOLES ON PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
1	600 cm <sup>2</sup>	8 cm	4 days
2	800 cm <sup>2</sup>	8 cm	4 days
3	1000 cm <sup>2</sup>	8 cm	7 days
4	1000 cm <sup>2</sup>	8 cm	14 days
5	1000 cm <sup>2</sup>	8 cm	30 days

TABLE 5  
POTHOLES ON PAVED SURFACE OF SHOULDERS

Class of Highway	Surface Area	Depth	Time
1	1500 cm <sup>2</sup>	8 cm	7 days
2	1500 cm <sup>2</sup>	8 cm	7 days
3	1500 cm <sup>2</sup>	8 cm	14 days
4	1500 cm <sup>2</sup>	10 cm	30 days
5	1500 cm <sup>2</sup>	12 cm	60 days

Potholes will be repaired with suitable materials which may include cold patching, hot mix patching or recycled asphalt patching. A pothole is determined to be repaired if it does not exceed the criteria in the table above.



### Shoulder Drop-offs:

Each year the Public Works, Parks and Facilities Department perform shoulder maintenance on hard top surfaced roadways. Shoulder maintenance includes the placement of granular or asphalt materials adjacent to the travelled portion of the roadway.

Apart from routine shoulder maintenance, if a shoulder drop-off is greater than the depth set out in the table below and is continuous for a distance greater than 20 meters the minimum standard is to repair the shoulder drop-off within the time set out in the table below after becoming aware of the fact.

TABLE 6  
SHOULDER DROP-OFFS

Class of Highway	Depth	Time
1	8 cm	4 days
2	8 cm	4 days
3	8 cm	7 days
4	8 cm	14 days
5	8 cm	30 days

The Township may choose to post a temporary sign warning drivers of the shoulder drop-off, within the time, after becoming aware of the fact, as set out in the above table. Repairs will be made within a reasonable time afterwards, as funds, equipment and materials are available to carry out the necessary repairs.

A shoulder drop-off shall be deemed to be repaired if its depth is equal to or less than the criteria listed in the above Table 8.

### Pavement Markings:

The Township will provide pavement markings which identify pedestrian crossing zones, school crossing zones and main intersection stop bars, and parking lines in municipal parking lots. Pavement marking will be remarked as required at the discretion of the Director of Public Works Parks and Facilities.

### Centerline Marking:

Centerline markings will be limited a single solid yellow line indicative of identifying traffic lanes and alerting drivers that passing is not permitted, centerline markings will be repainted every second year, or more frequent if determined by the Director of Public Works, Parks, and Facilities that the condition has faded and requires remarking.

### Street Cleaning:

The Public Works, Parks and Facilities Department may provide street sweeping to Township maintained urban streets which are constructed with curb and gutter systems. Street sweeping may be provided once per year, and will generally occur in the spring, only if determined necessary by the Director of Public Works, Parks, and Facilities. Street sweeping is provided to maintain the integrity of surface water conveyance along the gutter system, to



prevent unnecessary debris from entering the storm system, and in some cases to reduce dust.

Streets without curb and gutter systems will be cleaned at the discretion of the Director of Public Works, Parks, and Facilities.

#### Debris on Roadway:

If there is debris on a roadway, the minimum standard is to deploy resources, as soon as practicable after becoming aware of the fact, to remove the debris.

The Public Works, Parks and Facilities Department will clear roads of materials that are not an integral part of the roadway or have not been placed intentionally on the roadway by the Township, and are likely to cause damage.

If, in the event that debris is placed on a roadway, either purposely or inadvertently, the offending party may be invoiced, under the discretion of the Director of Public Works, Parks, and Facilities, for full cost recovery to the Township for expenses incurred when cleaning or clearing the debris from the road.

#### Surface Discontinuities:

Surface discontinuity means a vertical discontinuity creating a step formation at joints, or cracks in the paved surface of the roadways.

If a surface discontinuity on a roadway exceeds the height set out in Table 9, the minimum standard is to repair the surface discontinuity within the time set out in Table 9 after becoming aware of the fact.

TABLE 7  
SURFACE DISCONTINUITIES

Class of Highway	Height	Time
1	5 cm	2 days
2	5 cm	2 days
3	5 cm	7 days
4	5 cm	21 days
5	5 cm	21 days

Temporary signage may be posted to warn traffic of conditions which exist until repairs can be made.

A surface discontinuity on a roadway is deemed to be in a state of repair if its height is less than or equal to the height set out in Table 9, or if temporary signage is erected.

#### Utility Cuts

Utility Cuts are not permitted.



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### **SECTION 3 - GRAVEL SURFACE MAINTENANCE**

## GRAVEL SURFACE MAINTENANCE

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will make every effort reasonable to maintain the Townships existing gravel surfaced roads in a condition which provides a smooth and safe riding surface, eliminates hazards to vehicular and pedestrian traffic, and to protect the Townships investments in loose top surfaces.

### Potholes:

The Township will repair potholes on gravel surfaced roads at a minimum, in accordance with the MMS. If a pothole exceeds both the surface area and depth set out in the table below, the minimum service level is to repair the pothole within the time set out in the table below after becoming aware of the fact.

TABLE 8  
POT HOLES ON NON-PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
3	1500 cm <sup>2</sup>	8 cm	7 days
4	1500 cm <sup>2</sup>	10 cm	14 days
5	1500 cm <sup>2</sup>	12 cm	30 days

Potholes on gravel surfaced roads will be repaired with granular materials and spot grading efforts. A pothole is determined to be repaired if it does not exceed the criteria in the table above.

### Routine Grading:

The Township shall grade all gravel roads, at a minimum, in the spring and fall of each year. Grading may consist of multiple passes over an extended period until the desired results are achieved. Grading efforts shall be focused on promoting positive drainage and will generally attempt to achieve a crossfall ranging from 4 to 6% from the crown of the road.

### Spot Grading:

The Township shall perform spot grading of certain sections gravel surfaced roads which are deemed to be in need of repair. This will generally occur to remedy intersection washboarding, potholing, and uneven surfaces. Spot grading will generally occur following a rain event when gravel surfaces is most workable.

### Dust Suppressant Application:

The Township shall apply dust suppressants on gravel surfaced roads to protect the health and safety of the public by controlling dust and reducing the amount of granular float on the road surface.





Liquid dust suppressants shall be applied through contracted services on Township maintained gravel surfaced roads once per year, in the spring of each year. The application will be at a rate necessary to achieve desired results. Application rates may vary based upon factors such as road width, traffic volumes, existing surface conditions, etc.

#### Maintenance Gravel Application:

The Township shall add gravel to existing gravel surfaced roads in order to maintain the structural integrity of the road, to strive to provide a smooth surface free from imperfections, and to maintain the desired amount of crossfall, fines and workable material required to perform the required maintenance.

Maintenance gravel will be applied through contracted services at a rate necessary to maintain the integrity of the roadway. Application rates will be determined based on factors such as road width, traffic volumes, previous application rates, existing surface conditions, etc. Application rates may be adjusted by staff after considering the local conditions and maintenance requirement of the road. Maintenance gravel shall meet the specifications of the contract documents.

#### Debris on Roadway:

If there is debris on a roadway, the minimum standard is to deploy resources, as soon as practicable after becoming aware of the fact, to remove the debris.

The Township will clear roads of materials (except snow, slush, or ice) that are not an integral part of the roadway or have not been placed intentionally on the roadway by the Township, and are likely to cause damage.

If, in the event that debris is placed on a roadway, either purposely or inadvertently, the offending party may be invoiced for full cost recovery to the Township for expenses incurred when cleaning or clearing the debris from the road.

#### Exclusions:

The Township does not provide or apply maintenance gravel to private entrances.

The Township does not apply dust suppressants to private drives.

The Township does not grade private drives or entrances.



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**SECTION 4 - ROADSIDE SIGNS**

## ROADSIDE SIGNS

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will make every effort reasonable to maintain and provide proper roadside signage to control and safeguard vehicle and pedestrian traffic and to provide direction to the travelling public.

### Regulatory or Warning Signs:

The Township will ensure that all regulatory and warning signs are inspected for retro-reflectivity.

The minimum standard for the frequency of inspecting regulatory or warning signs to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection.

A sign that has been inspected and passed the retro-reflectivity requirements is deemed to be in a state of repair with respect to the retro-reflectivity requirements of the Ontario Traffic Manual until the next inspection is required.

If a regulatory or warning sign is illegible, improperly orientated, obscured or missing, the minimum standard is to repair the sign within the time set out in the Table below after becoming aware of the fact.

TABLE 9  
REGULATORY AND WARNING SIGNS

Class of Highway	Time
1	7 days
2	14 days
3	21 days
4	30 days
5	30 days

If any of the signs listed below are found to be illegible, improperly orientated, obscured, or missing, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact.

1. Checkerboard	9. Stop
2. Curve sign with advisory speed tab	10. Stop Ahead
3. Do not enter	11. Stop Ahead, New
4. Load Restricted Bridge	12. Traffic Signal Ahead, New
5. Low Bridge	13. Two-Way Traffic Ahead
6. Low Bridge Ahead	14. Wrong Way
7. One Way	15. Yield
8. School Zone Speed Limit	16. Yield Ahead



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**SECTION 5 - ROADSIDE MAINTENANCE**

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## ROADSIDE MAINTENANCE

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will strive, as is reasonably practicable, to provide safe and well maintained roadside conditions for vehicular and pedestrian traffic as set out in this level of service policy and within the resources provided by the Council of the Township of Puslinch.

### Roadside Grass Cutting:

The Township will undertake roadside grass cutting on all rural Township maintained roads, at a minimum twice per year, to improve visibility and to minimize encroachment of vegetation onto the travelled portion of the roadway.

Roadsides shall be cut by means of one pass with the roadside mower resulting in an approximate 1.2m cut, typically occurring in mid to late spring.

Certain sections of roadsides may be cut multiple time per year at the discretion of the Director of Public Works, Parks, and Facilities after considering vegetation growth, impeded visibility, and encroachment of vegetation.

### Tree Trimming and Removal:

Within the resources available, the Township will regularly inspect trees within the road allowance as part of routine patrols, and shall remove dead or visible hazardous trees located within the road allowance to ensure the safety of the public and to prevent damage to adjacent utilities and structures.

The Township will trim or remove trees and/or branches as necessary which create visual obstruction along the travelled portion of the road.

In the event of multiple downed trees and limbs, priority will be given to trees which are impeding the flow of traffic, or those which present a health and safety concern.

Sections 62 and 431 of the *Municipal Act*, 2001 empowers municipalities, with notice to the owner, to trim trees on private property where the branches extend over the right-of-way. If the tree is an immediate danger, then it may be removed immediately without notice. No notice, or consent is required to trim branches or roots which extend onto municipal property from trees which are located on private property.

### Brush Control:

The Township will control the growth of brush located within the road allowance if it is found to cause a visual hazard.

### Roadside Ditches:

Roadside ditches are intended to receive and convey road water only. The Township shall maintain roadside ditches such that they provide positive drainage of surface waters, but not to



a state which eliminates the ponding of surface waters within the ditch. The Township shall notify property owners of any work being done on a ditch.

Streetlights:

The minimum standard for frequency of inspecting all Township owned streetlights, including the arm inspections for streetlights, is to check to see that they are functioning once per calendar year.

For conventional streetlights, if three or more consecutive luminaries on a roadway are not functioning, the minimum standard is to repair within the time set out in Table 12.

Streetlights are deemed to be in a state of repair if the number of non-functioning consecutive streetlights does not exceed two.

TABLE 10  
STREET LIGHTS

Class of Highway	Time
1	7 days
2	7 days
3	14 days
4	14 days
5	14 days

Boulevard Maintenance and Planting:

In many cases the portion of property nearest the street in an urban setting is municipal property and is known as a boulevard. This area is the entrance point for many municipal services onto private lots and is strictly regulated as it may need to be accessed at any time to repair or improve services. The boulevard area provides snow storage in the winter and often contain underground water, sewer, gas, hydro, cable and telecommunications infrastructure in addition to above ground hydro telecommunications.

Municipal boulevards which are disturbed due to maintenance or construction activities performed by, or on behalf of the Township will be restored with topsoil and seed unless otherwise specified through contract.

Contractors working on utilities within the boulevard area shall restore any disturbed areas with topsoil and seed, unless otherwise specified, to the satisfaction of the Public Works, Parks and Facilities Department.

It is the property owner's responsibility to maintain the municipal boulevard. Property owners are encouraged to maintain the standard grassed municipal boulevard in front of their property. Property owners wishing to install alternatives to sod shall notify the Township in writing for approval prior to carrying out any works on the boulevard. Tree planting is not permitted within the boulevard.

The Township assumes no responsibility for the cost of repairs of any damages to the garden on the boulevard. No permanent installations such as in-ground irrigation systems, fencing are permitted. Placement of small rocks and stones within the boulevard require Township



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approval.

It is the responsibility of the property owner to locate their property line through their legal survey. Retaining walls or fences shall be set back a minimum 0.3 metres from any lot line abutting a street. Hedges shall be set back a minimum 1.0 metres from the front lot line. In the case of a corner lot, hedges shall be also set back a minimum 1.0 metres from the side lot line abutting the street.

The Township reserves the right with due notice to require that the boulevard be returned to grass at any time at the property owner's expense, failing which the Township may remove all non-compliant material and restore the boulevard to the grassed standard. The Township is to notify property owners of any work being done on a boulevard.

Exclusions:

The Township does not cut boulevard roadsides in urban areas.

The Township does not cut the entire road allowance, from property line to property line.

The Township does not spray for noxious weeds.

The Township does not remove healthy trees from the road allowance unless they pose or are expect to compromise the safety of the roadway.

The Township does not remove trees from private property, nor does the Township remove debris (limbs, branches etc.) from trees located on private property.

The Township does not provide outlet for drainage tile into roadside ditches.

The Township does not repair streetlights on a daily basis.

The Township does not provide street lighting on all roads.

The Township does not provide notification to abutting property owners of emergency or scheduled work being carried out on the municipal boulevard.



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**SECTION 6 - BRIDGES AND CULVERTS**



## BRIDGES AND CULVERTS

### Objective:

The Township of Puslinch Public Works, Parks and Facilities Department will strive to keep existing bridges and culverts in a state of repair to provide safety to the user, to protect the Townships investments and to extend the useful life span of the structures as set out in this level of service policy and within the resources provided by the Council of the Township of Puslinch.

### Bridge Inspections:

The Township will have all bridge structures inspected as required by *Ontario Regulation 104/97, Amended to O. Reg. 160/02*. All bridge structures will be inspected under the supervision of a Licensed Professional Engineer once every two years consistent with the Ontario Structure Inspection Manual (OSIM).

### Bridge and Culvert Maintenance:

The Township will maintain its inventory of bridges of culverts as recommended through the OSIM inspection reports. Bridge deck spalls shall be maintained in accordance with the Table below. If a bridge deck spall exceeds both the surface area and depth set out in Table 13, the minimum standards is to repair the bridge deck spall within the time set out in Table 13 after becoming aware of the fact.

TABLE 11  
BRIDGE DECK SPALLS

Class of Highway	Surface Area	Depth	Time
1	600 cm <sup>2</sup>	8 cm	4 days
2	800 cm <sup>2</sup>	8 cm	4 days
3	1,000 cm <sup>2</sup>	8 cm	7 days
4	1,000 cm <sup>2</sup>	8 cm	7 days
5	1,000 cm <sup>2</sup>	8 cm	7 days

A bridge deck spall is deemed to be in a state of repair if its surface area or depth is less than or equal to that set out in Table 13.

The Township will maintain and/or replace municipal culverts crossing roadways as necessary to ensure structural integrity and maintain the flow of water.

In the event that a private entrance culvert within the road allowance becomes obstructed and as a result impedes the flow of road water, the Township will notify the property owner if the obstruction causes a concern within the road allowance. Depending on specific circumstances, the Public Works, Parks and Facilities Department may repair or replace the culvert and allocated all related expenses to the property owner as deemed appropriate by the Director of Public Works, Parks, and Facilities.



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Surface Discontinuities:

If a surface discontinuity on a bridge deck exceeds five centimetres, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the surface discontinuity on the bridge deck.

Exclusions:

The Township does not inspect structures on private property.

The Township typically does not maintain or install private entrance culverts; unless capital improvements to the road abutting the entrance are undertaken.



**SECTION 7 – MISCELLANEOUS – PUBLIC WORKS**




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## MISCELLANEOUS

### Weather Monitoring:

From May 1 to September 30 the minimum standard of the Township is to monitor the current and forecasted weather conditions, once per day.

### Routine Patrolling:

The minimum standard for the frequency of routine patrolling of all road sections checking for conditions will be as indicated in Table 14. Routine patrolling will be completed by competent persons; the patrol route and findings will be recorded electronically or by hand.

Routine patrolling will consist of observing the conditions of the roadway, either by driving on or by electronically monitoring the roadway, and may be performed by persons responsible for patrolling or performing maintenance activities.

If it is determined by the Township that the weather indicates that there is substantial probability of snow accumulation on roadways, ice formation on roadways, or icy roadways, the minimum standard for patrolling also included patrolling representative roadways.

TABLE 12  
PATROLLING FREQUENCY

Class of Highway	Patrolling Frequency
1	3 times every 7 days
2	2 times every 7 days
3	once every 7 days
4	once every 14 days
5	once every 30 days

### Temporary Road Closures:

The Township shall notify all emergency agencies relating to temporary road closures resulting from municipal operations or municipal maintenance activities through the Township website. The Township will strive to provide reasonable notice of planned closures, however, it is realised that road closures on an emergency basis may be required.

The Township will temporarily close roads at the request of the Ontario Provincial Police and will deploy signs and barricades if requested to do so.

In the event of a temporary road closure for a private undertaking (construction or special event), the Township will undertake the necessary notifications, erect and remove the required barricades and/or signage. The Township may invoice for the related costs.



### Water on Roadway:

If more than half a lane width is covered with water having a depth of 5cm or more, the Township will deploy resources, as soon as practicable, after becoming aware of the fact, to lower the water level or to post temporary signage warning of the conditions, or to temporarily close the road section(s).

### Mailbox Policy:

The Township shall enforce Township Mailbox Policy 2020-001 regarding the installation of mailboxes along municipal roads. The Township shall only replace mailboxes damaged by the Township during snow removal operations in accordance with Mailbox Policy 2020-001. Mailboxes damaged by snow, ice or slush will not be replaced. Only mailboxes which have come into contact with Township plow equipment will be replaced in accordance with Township Mailbox Policy 2020-001.

### Sidewalk Repair:

The minimum Township standard for the frequency of inspecting sidewalks to check for surface discontinuity is once per calendar year.

Sidewalks are deemed to be in a state of repair with respect to surface discontinuity until the next inspection provided that the Township does not acquire actual knowledge that there is a presence of a surface discontinuity in excess of 2cm.

The Township will make reasonable measures to protect users of the sidewalk from discontinuity by making permanent or temporary repairs, alerting attention to the discontinuity, or preventing access to the area.

New or replaced sidewalk panels shall be at a width of 1.5m unless otherwise specified through contract or at the discretion of the Director of Public Works, Parks, and Facilities.

The construction or repairs of sidewalks will be subject to available funds through the annual budget.

The cost of repairing or replacing sidewalk panels which are broken or damaged during private construction or utility placement will be invoiced to the damaging party at the discretion of the Director of Public Works, Parks, and Facilities.

### Private Entrances:

The Township shall review private entrances as per By-law 2020-032. The Township will only approve new entrances considered appropriate under the terms of, and in compliance with By-law 2020-032.

The Township does not pay for any materials, labour or equipment relating to the construction or reconstruction of private entrances unless capital improvements are



made to the abutting road or if special circumstances arise, to which such decisions will be at the discretion of the Director of Public Works, Parks, and Facilities.

The Township does not maintain private entrances.

Waste Collection and Waste Diversion:

This is a service provided by Wellington County. The Township has no involvement.

Traffic Counting:

The Township will conduct a comprehensive traffic count study once every four years, during each term of Council. The most recent study shall dictate the AADT for road sections within the Township and shall be used to determine the classification of highway.

The Township may conduct more frequent traffic counts to determine localized traffic volumes under the discretion of the Director of Public Works, Parks, and Facilities.



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**SECTION 8 - PARKS**



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## PARKS

### Objective

The Township of Puslinch Public Works, Parks and Facilities Department will strive to keep all Township Parks in a state of repair to provide safety to the user, to enable activities and sporting events to take place generally consistent with that type of sporting event, and to protect the Townships investments and to extend the useful life span of the structures as set out in this level of service policy and within the resources provided by the Council of the Township of Puslinch.

### Play Space Inspections

The Township will undertake play space inspections monthly on play equipment which is located on municipal property. The Township will maintain play structures are maintained in a safe condition.

### Ball Diamonds

The Township will maintain ball diamonds in a good state of repair and in a condition typically necessary for the type of activity played in this type of facility.

All designated playing surfaces will be inspected weekly. The infield will be surface dragged once daily and any potholes filled. Batter's box and pitcher's mound will be hand raked as necessary. Outfield grass cutting and weed trimming along fence lines will be undertaken as necessary.

Bleachers where provided will be inspected weekly. Weed trimming under bleachers will be completed as needed.

Garbage will be collected weekly during the season of use.

Lights are available at PCC and Old Morriston Ball Park. Available for use as per the rental agreement.

The Township will maintain the washrooms as needed depending on usage of the facility.

### Soccer fields

The Township will maintain soccer pitches in a good state of repair and in a condition typically necessary for the type of activity played in this type of facility.

All designated playing surfaces will be inspected weekly.

Grass cutting and weed trimming will be undertaken as necessary.

Bleachers where provided will be inspected weekly. Weed trimming under bleachers will be done weekly.

Garbage will be collected weekly during the season of use.

Lights are available at PCC and Old Morriston Ball Park. Available for use as per the rental agreement.





Open Areas

All open areas will be inspected weekly. Grass cutting and weed trimming will be undertaken as necessary.

Garbage will be collected weekly during the season of use.



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**SECTION 9 - FACILITIES**



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## Facilities

### Objective

The Township of Puslinch Public Works, Parks and Facilities Department will strive to keep all Township facilities in a state of repair to provide safety to the user, to enable activities and events to take place generally consistent with community facilities, and to protect the Townships investments and to extend the useful life span of the structures as set out in this level of service policy and within the resources provided by the Council of the Township of Puslinch.

### Optimists Recreation Centre Rink

#### Winter Season

Ice will be installed commencing mid-December weather permitting and is generally kept until mid March weather permitting. Line painting is done once at the beginning of the season.

The ice is maintained and flooded daily. Changerooms are maintained and cleaned depending on the usage of the facility.

Rink boards and glass are inspected and maintained weekly. The curtains are inspected weekly, used as necessary depending on weather conditions.

The compressor and chiller are inspected daily.

The garbage is collected weekly.

#### Summer Season

The Changerooms are maintained and cleaned daily (depending on use and rentals). Rink floor, boards and glass are inspected and cleaned weekly. The curtains inspected weekly, used as necessary depending on weather conditions.

The garbage is collected weekly.

### Optimists Recreation Centre Gymnasium

Gymnasium floors are dry mopped regularly as required depending on use and rentals.

Washrooms / changerooms, kitchenette/party room are cleaned daily depending on use and on rentals.

Sporting equipment provided by Township is inspected weekly.



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Puslinch Community Centre

Alf Hales Room

The Alf Hales room will be cleaned daily, along with the main washrooms and front foyer depending on use and rentals.

Archie McRobert Room

The Archie McRobert Room will be cleaned daily (depending on rentals).

Kitchen

The Archie McRobert Room will be cleaned daily (depending on rentals).

Outdoor patio

The Outdoor patio inspected weekly during summer and cleaned as needed (depending on rentals).



## SCHEDULE A ROAD CLASSIFICATION CHART

Township Roads Minimum Maintenance Standard (MMS) Classification			
Ann St	5	Leslie Rd W	4
Back St	5	MacPherson's Ln	5
Beiber Rd	4	Main St	5
Boreham Dr	5	Maltby Rd E	4
Boyce Dr	5	Maple Leaf Ln	5
Bridle Path	5	Mason Dr	4
Calfass Rd	5	McClean Rd E	3
Carriage Ln	5	McClean Rd W	3
Carter Rd	5	McRae Station Rd	4
Cassin Ct	5	Midway Ln	4
Cathrine Ct	5	Nicholas Beaver Rd	4
Church St	5	Niska Rd	3
Cockburn St	5	Ochs St	5
Concession 1	4	Old Brock Rd	5
Concession 11	4	Old Ruby Ln	5
Concession 2	3	Pioneer Tr	4
Concession 4	4	Roszell Rd	4
Concession 7	3	Settlers Ct	5
Cook's Mill Rd	5	Sideroad 10 N	4
Currie Dr	5	Sideroad 10 S	4
Darkwood Rd	4	Sideroad 12 N	4
Daymond Dr	5	Sideroad 20 N	4
Deer View Rd	5	Sideroad 20 S	4
Elizabeth Pl	5	Sideroad 25 N	4
Ellis Rd	4	Sideroad 25 S	4
Farnham Rd	5	Small Road	4
Forestell Rd (CTY 35 TO Roszell)	4	Smith Rd	4
Fox Run Dr	5	Tawse Place	5
Gilmour Rd	4	Telfer Glen St	5
Gore Rd (Lennon to 35)	4	Townline Rd	3
Gore Rd (Cooper to Village Rd)	4	Travelled Rd	5
Hammersley Rd	5	Victoria Rd S	3
Hume Rd	4	Victoria St	5
Kerr Cr	4	Waston Rd S	3
Laing Ct	5	Winer Cr	4
Laird Rd W	4	Winer Rd	4





**REPORT REC-2022-014**

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TO: Mayor and Members of Council

PREPARED BY: Glenn Schwendinger CAO  
Mike Fowler, Director of Public Works, Parks, and Facilities  
Mary Hasan, Director of Finance/Treasurer  
Sarah Huether, Taxation and Customer Service Supervisor

PRESENTED BY: Glenn Schwendinger CAO

MEETING DATE: August 10, 2022

SUBJECT: Facility Rental Concerns  
File: F05 BUD

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**RECOMMENDATIONS**

**THAT Report REC-2022-014 regarding Facility Rental Concerns be received for information; and**

**THAT a mandatory Township staffing presence during weekend and statutory holiday rentals be implemented effective immediately at the Puslinch Community Centre; and**

**THAT an hourly fee be established effective immediately for full cost recovery associated with the position during weekend and statutory holiday rentals.**

**Purpose**

The purpose of the report is to inform Council with respect to trends being experienced with facility rentals, to provide some options for Council's consideration and to seek Council direction regarding Facility Rentals moving forward.

**Background**

The Township of Puslinch has the following facilities available for rental by the public.

- Puslinch Community Centre; Archie MacRobbie Hall and Alf Hales Room
- Puslinch Optimist Recreation Centre; Gymnasium and Arena

- Aberfoyle Soccer Pitch
- Aberfoyle Tennis Courts \*lit courts for evening rentals
- Aberfoyle Baseball Diamond \*lit diamond for evening rentals
- Aberfoyle Horse Paddock
- Morriston Meadows Picnic Pavilion
- Morriston Meadows Baseball Diamond
- Old Morriston Baseball Diamond \*lit diamond for evening rentals

This report will focus on the following:

- Puslinch Community Centre; Archie MacRobbie Hall and Alf Hales Room
- Puslinch Optimist Recreation Centre; Gymnasium and Arena

### Current usage/rentals

#### Puslinch Community Centre

- The Puslinch Community Centre is currently rented by a wide array of users including:
  - Community groups for community events and fundraisers
  - Religious congregations for services, luncheons, and fundraisers
  - Businesses for meetings, training, and staff parties
  - Individuals hosting private and public events such as weddings, craft shows, trade shows, intimate concerts, family parties, stag and does, funeral receptions, etc.
  - Childcare/preschool programming in the Alf Hales Room
- Most of the larger events at the Puslinch Community Centre are hosted on weekends and public holidays with the frequency of the rentals increasing during the summer months due to the summer being a traditional time to host these types of events.

#### Puslinch Optimist Recreation Centre

- The Puslinch Optimist Recreation Centre is currently rented by a wide array of users including:
  - Professional and recreational sports teams and recreational groups
  - Fitness groups for recreational classes such as Zumba, yoga, etc.
  - Individuals hosting birthday parties
  - Community groups for community events
  - The outdoor arena is available for skating and hockey over the winter months and transforms into a shaded space ideal for dryland training, ball hockey, dodgeball, indoor soccer, lacrosse, etc.



- The Puslinch Optimist Recreation Centre is currently rented on a regular basis with the frequency of the rentals slowing down during the summer months due to more recreational activities being performed outdoors.

### Current rental fee structure

#### Puslinch Community Centre

The current rental fee structure for the Puslinch Community Centre is included as Schedule A to this Report. It includes separate fees on a per hour and full day basis for the Archie MacRobbie Hall and Alf Hales Room. It also includes 75% reduced rates and 90% reduced rates for those organizations that meet the eligibility criteria in accordance with By-law No. 052-2021. There is also a 25% surcharge for non-resident and commercial rentals.

Council at its meeting held on May 4, 2022 authorized the increase of the security deposit for Puslinch Community Centre rentals from \$365 to \$750. The security deposit was recommended to be increased to \$750 for cost recoverability of damages at the Puslinch Community Centre. The security deposit is fully refundable after the function provided all terms of the rental agreement are adhered to and the access key card is returned. Outlined below are the comparator municipality deposits collected for similar types of rentals:

<b>Municipality</b>	<b>Security Deposit Amount</b>
Cambridge	\$350
Centre Wellington	Community Halls - \$150 Areas or Grounds – Large Event - \$1,000 Areas or Grounds – Small Event - \$500
Guelph	\$1,000 – less than 100 attendees \$2,000 – greater than 100 attendees
Guelph Eramosa	\$500 – Halls \$200 - Pavilions when gate key is issued
Hamilton	No Security Deposit Collected
Mapleton	\$200.00 - non-licensed events \$500.00 - licensed events; and \$1,000 - stag and doe fundraising events
Milton	No Security Deposit Collected
Wellington North	\$500

#### Puslinch Optimist Recreation Centre

The current rental fee structure for the Puslinch Optimist Recreation Centre is included as Schedule A to this Report. It includes separate fees on a per hour basis for the Arena Floor, Ice – Non-Prime, Ice – Prime, and Gymnasium. It also includes 75% reduced rates and 90% reduced rates for those organizations that meet the eligibility criteria in accordance with By-law No. 052-2021.

## **Discussion**

As Council is aware the facilities which are the focus of this report are operated as community centres. This is the basis of how these facilities are funded, staffed, resourced and intended to be utilized. The overall concept of a community centre is that it is provided for and funded by the community, for the community. Council has intentionally made the decision to keep rental rates low to enable as many people as possible to utilize these facilities. As these facilities are funded from rental revenues as well as the tax base, the community accepts that they subsidize or financially support these facilities to bridge the gap between the sum of all costs and rental revenues received. This is a common approach in many municipalities. Interest has been expressed recently to promote these facilities in an effort to increase utilization and in theory, revenue as well.

A challenge that is evolving in the municipal community centre area is that the usage of these facilities is changing. The types of rentals and types of activities taking place are changing for a number of reasons. The trend has been that the use of these facilities is moving from being community centres towards commercial social, recreation, and entertainment facilities.

This change in usage has resulted in a number of operational challenges. The following examples are provided in an effort to help council be aware of what is taking place in its facilities. These examples are not pointing to any specific rental or renters, they are a representation of trends being observed in what is unfortunately becoming the norm in many rentals:

- Failure to clean the facility (washroom, kitchen, Archie MacRobbie Hall and/or Alf Hales Room) to a reasonable standard as per the Rental Agreement.
- Removal of kitchen supplies after rentals.
- Failure to properly dispose of waste in the waste containers.
- Unauthorized use of areas within the facility that are not rented; locks have now been installed at the Alf Hales Room to restrict unauthorized access.
- Unauthorized use of outdoor areas at the Puslinch Community Centre that are not rented (ie. soccer fields, tennis courts, baseball diamond, etc.).
- Unauthorized use of other facilities that are not rented (ie. Puslinch Optimist Recreation Centre)
- Damage to cabinet locks to gain unauthorized access to supplies in the Alf Hales Room.
- Damage to areas within the facility (ie. holes in walls, broken projector screen, etc.).
- Increased costs associated with unnecessary calls to the Public Works on-call number which is to be used for emergency purposes.

Unfortunately the understandable approach of rate payers subsidizing low rental rates has increased the usage of the facilities by those benefitting from low rental rates while at the same time not having the commitment or dedication to the community facility or the financial reasonability to help subsidize the low rental rates. The unique location of these facilities along a major transportation corridor provides easy access to the facilities. When rental challenges occur which result in additional costs to the Township with individuals from within the community, cost recovery does have a few options. These options do not occur when external to the community.

Staff in no way want to make inappropriate comments or paint an inaccurate picture of users of the facility. As such a review of facility rentals was undertaken in 2019 prior to COVID closures.

Based on the analysis completed in 2019, of the Township's 1,210 customers within the Township's facility booking system, 844 or 70% of the renters had a non-Puslinch mailing address. It was recommended at that time that the Township implement a 25% surcharge for the Puslinch Community Centre in order to obtain a sustainable source of funding as it relates to required staffing resources, ongoing upkeep and maintenance of the facility, and future asset replacement/restoration. The surcharge implemented was in line with municipalities in the surrounding areas including Milton, Guelph and Hamilton as outlined below:

- Milton – Surcharge of 10%
- Guelph – Surcharge of 15%
- Hamilton – Surcharges ranging from 50% to 67% for commercial and non-resident facility rentals

Council at its meeting held on October 16, 2019 through Council Resolution No. 2019-355 adopted the non-resident surcharge for Puslinch Community Centre rentals for a period of 12 months with staff being required to report back on the impacts of the new fee structure on revenues. Due to the COVID-19 pandemic, the Township has had to issue several facility rental refunds/rebooking's due to the closure of the Township's facilities in 2020, 2021, and 2022. The Puslinch Community Centre was reopened in May 2022. It is recommended that staff report back on the impacts of the non-resident surcharge for Puslinch Community Centre rentals as part of its 2024 User Fees and Charges By-law review when there is more financial data available associated with the non-resident surcharge impacts.

As an example a more detailed analysis was undertaken with respect to a rental of one of the facilities. Challenges encountered which have become more common and were not necessarily unique to this rental were as follows:

- Garbage and water bottles thrown on the metal roof of the building.
- Interior furniture brought and left outside on the Puslinch Community Centre grounds.
- Barbeque coals on the Puslinch Community Centre grounds.

- Failure to clean the facility (washroom, kitchen, Archie MacRobbie Hall and Alf Hales Room) to a reasonable standard as per the Rental Agreement.
- Failure to properly secure the facility after the rental.
- Failure to properly dispose of waste in the waste containers with excessive garbage left on the Puslinch Community Centre grounds and in the hall.
- Unauthorized use of areas that are not rented.
- Damage to cabinet locks to gain unauthorized access to supplies.

The total rental revenue received for this rental for the Archie MacRobbie Hall and Alf Hales Room was \$636.47 (net of taxes). This was based on 2019 rental fees as the rental contract was created in August 2019. 2019 rental fees did not include a 25% non-resident surcharge. The rental was required to be deferred to 2022 due to COVID closures. If this contract had been created based on 2022 rental fees with the 25% non-resident surcharge, the rental revenue would have amounted to \$797.26 (net of taxes).

Following the rental, it took a total of 40 combined employee hours to return the facility and grounds to a condition that was suitable to be used for another rental. Typically, the total combined employee hours is 6 hours to clean the facility for the next rental. This equates to an estimated incremental cost of 34 hours or \$1,302. Additionally, administrative staff needed to spend approximately 4 hours dealing with administrative and deposit issues equating to an estimated incremental cost of \$4 hours or \$193. The security deposit of \$750 was not returned for this rental. This represents a net loss of \$745 by the Township for one rental.

### **Conclusion**

While the intent of subsidized low rates for community centres is a common practice, the transition to usage as commercial facilities has resulted in a financial situation that is not sustainable. Staff is seeking Council's direction on the following options:

1. Have mandatory Township staffing presence during weekend rentals and statutory holidays to minimize damage and risk exposure due to capacity exceedances, use of unauthorized areas of the facility, etc. This Township staffing presence would also overlook the Alf Hales Room which the Township has experienced problems and damages in the past.
2. Increase rental fees to cover true costs.
3. Increase security deposit requirements.
4. Rentals no longer permitted to individuals or groups where problems were encountered in previous rentals.

### **FINANCIAL IMPLICATIONS**

As discussed throughout this Report.

**APPLICABLE LEGISLATION AND REQUIREMENTS**

None

**ATTACHMENTS**

Schedule A – Puslinch Community Centre and Puslinch Optimist Recreation Centre 2022 fees –  
User Fees and Charges By-law No. 052-2021

**SCHEDULE I: OPTIMIST RECREATION CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES  
EFFECTIVE 2022**

TYPE OF REVENUE/USER	Unit/Descr	2021 RATE (NO TAX)	2022 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
<b>Arena Floor</b>	Per Hour	\$69.90	<b>\$71.30</b>	\$9.27	\$80.57	2.0%	T	Includes use of change rooms
<b>75% Reduced Rate - Arena Floor</b>	Per Hour	\$17.40	<b>\$17.75</b>	\$2.31	\$20.06	2.0%	T	Includes use of change rooms
<b>Ice - Non - Prime</b>	Per Hour	\$58.30	<b>\$59.47</b>	\$7.73	\$67.20	2.0%	T	Includes use of change rooms
<b>75% Reduced Rate - Ice - Non-Prime</b>	Per Hour	\$14.50	<b>\$14.79</b>	\$1.92	\$16.71	2.0%	T	Includes use of change rooms
<b>Ice - Prime</b>	Per Hour	\$167.50	<b>\$170.85</b>	\$22.21	\$193.06	2.0%	T	Includes use of change rooms
<b>Gymnasium</b>	Per Hour	\$31.80	<b>\$32.44</b>	\$4.22	\$36.66	2.0%	T	
<b>75% Reduced Rate - Gymnasium</b>	Per Hour	\$7.90	<b>\$8.06</b>	\$1.05	\$9.11	2.0%	T	
<b>90% Reduced Rate - Gymnasium</b>	Per Hour	\$3.16	<b>\$3.22</b>	\$0.42	\$3.64	1.9%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
<b>Rink Board Advertising</b>	Per Year	\$363.00	<b>\$370.26</b>	\$48.13	\$418.39	2.0%	T	
<b>75% Reduced Rate - Rink Board Advertising</b>	Per Year	\$90.70	<b>\$92.52</b>	\$12.03	\$104.55	2.0%	T	

**Note 1:**

- Ice - Non-Prime: Weekdays from 9:00 am to 5:00 pm
- Ice - Prime: Weekdays from 5:00 pm to 10:00 pm, Saturdays, Sundays

**SCHEDULE J: PUSLINCH COMMUNITY CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES  
EFFECTIVE 2022**

TYPE OF REVENUE/USER	Unit/Descr	2021 RATE (NO TAX)	2022 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Meeting Room	Per Hour	\$27.00	\$27.54	\$3.58	\$31.12	2.0%	T	Maximum 8 hour charge if renting with a full day booking of the Hall.
75% Reduced Rate - Meeting Room	Per Hour	\$6.70	\$6.83	\$0.89	\$7.72	1.9%	T	Maximum 8 hour charge if renting with a full day booking of the Hall.
90% Reduced Rate - Meeting Room	Per Hour	\$2.70	\$2.75	\$0.36	\$3.11	1.9%	T	Maximum 8 hour charge if renting with a full day booking of the Hall. Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Per Hour	\$58.00	\$59.16	\$7.69	\$66.85	2.0%	T	Minimum of a 3 hour booking required.
75% Reduced Rate - Hall - Non-Prime	Per Hour	\$14.50	\$14.79	\$1.92	\$16.71	2.0%	T	Minimum of a 3 hour booking required.
90% Reduced Rate - Hall - Non-Prime	Per Hour	\$5.80	\$5.91	\$0.77	\$6.68	1.9%	T	Minimum of a 3 hour booking required. Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Full Day Rental	\$394.40	\$402.29	\$52.30	\$454.59	2.0%	T	
75% Reduced Rate - Hall - Non-Prime	Full Day Rental	\$98.60	\$100.58	\$13.08	\$113.66	2.0%	T	
90% Reduced Rate - Hall - Non-Prime	Full Day Rental	\$39.40	\$40.19	\$5.22	\$45.41	2.0%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Prime	Full Day Rental	\$517.30	\$527.65	\$68.59	\$596.24	2.0%	T	
Commercial Rental	Surcharge	25% Surcharge	25% Surcharge			0.0%	T	Example - Auctions, Sale of Merchandise See Report FIN-2019-031
Non Resident Rental	Surcharge	25% Surcharge	25% Surcharge			0.0%	T	See Report FIN-2019-031
Hall - Set-up Fee	Per Hour	\$58.00	\$59.16	\$7.69	\$66.85	2.0%	T	Set-up is after 5:00 p.m. on Friday only and must include a Saturday rental. This service is only available if the hall is not booked 7 days prior to the event date.
Use of Kitchen Facilities - Non Prime	Per Hour	\$28.30	\$28.87	\$3.75	\$32.62	2.0%	T	Minimum of a 3 hour booking required.
Licensed Events Using Patio	Flat Rate	\$59.30	\$60.49	\$7.86	\$68.35	2.0%	T	Patio Fencing
Microphone	Flat Rate	\$25.90	\$26.42	\$3.43	\$29.85	2.0%	T	See Report FIN-2018-030
Projector	Flat Rate	\$25.90	\$26.42	\$3.43	\$29.85	2.0%	T	See Report FIN-2016-029
Facility Rental Security Deposit	Per Booking	\$365.00	\$365.00	\$0.00	\$365.00	0.0%	E	Deposit is fully refundable after function if there are no damages and key is returned.
Bartenders	Per Bartender	\$134.80	\$137.50	\$17.88	\$155.38	2.0%	T	Smart Serve Certified
Electronic Sign Advertising	Per Week	\$34.50	\$35.19	\$4.57	\$39.76	2.0%	T	No charge for Puslinch Community Centre rentals.

**SCHEDULE J: PUSLINCH COMMUNITY CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES  
EFFECTIVE 2022**

TYPE OF REVENUE/USER	Unit/Descr	2021 RATE (NO TAX)	2022 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
<b>75% Reduced Rate - Electronic Sign Advertising</b>	Per Week	\$8.60	<b>\$8.77</b>	\$1.14	\$9.91	2.0%	T	
<b>90% Reduced Rate - Electronic Sign Advertising</b>	Per Week	\$3.50	<b>\$3.57</b>	\$0.46	\$4.03	2.0%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).

**Note 1:** Hall rentals include the use of the kitchen facility (dishes, silverware, cooking utensils, dishwasher, coffee maker, etc. included)

**Note 2:** Hall - Non-Prime: Monday to Thursday and Sunday Rentals; Hall - Prime: Friday and Saturday



2022	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday							
10:00 AM	Adult/Senior Skate 10am-11am					Private Rental	Private Rental							
10:30 AM														
11:00 AM	Parents and Tots with sticks 11am-12pm				Adult Shinny	Private Rental	Private Rental							
11:30 AM														
12:00 PM	Family Skate 12pm-4:00pm													
12:30 PM														
1:00 PM														
1:30 PM														
2:00 PM														
2:30 PM														
3:00 PM														
3:30 PM														
4:00 PM								Stick & Puck Age 5-7	Stick & Puck Age 8-12	Shinny Age 8-12	Stick & Puck Age 5-7	Stick & Puck Age 8-12	League Rental	League Rental
4:30 PM										Shinny Age 13-17		League Rental	Private Rental	Private Rental
5:00 PM	Ice Maintenance	Ice Maintenance	Ice Maintenance	Ice Maintenance	League Rental	Private Rental	Private Rental							
5:30 PM	League Rental	League Rental		Ice Maintenance	Ice Maintenance	Ice Maintenance	Ice Maintenance							
6:00 PM	League Rental	League Rental	Private Rental	League Rental	Family Skate 6:30pm-8:30pm									
6:30 PM			Private Rental											
7:00 PM	League Rental	League Rental	Private Rental	League Rental										
7:30 PM	Private Rental		Private Rental											
8:00 PM	Private Rental	Private Rental	Private Rental	Private Rental	Private Rental	Private Rental	Private Rental							
8:30 PM	Private Rental													
9:00 PM	Private Rental	Private Rental	Private Rental	League Rental	Private Rental	Private Rental	Private Rental							
9:30 PM	CLOSED	CLOSED	CLOSED	League Rental	CLOSED	CLOSED	CLOSED							
10:00 PM														



Harden Environmental Services Ltd.  
4622 Nassagaweya-Puslinch Townline  
Moffat, Ontario, L0P 1J0  
Phone: (519) 826-0099 Fax: (519) 826-9099

Hydrogeological Assessment

Geochemistry

Phase I / II ESA

Regional Flow Studies

Contaminant Investigations

OLT Hearings

Water Quality Sampling

Groundwater & Surface Water  
Monitoring

Groundwater Protection  
Studies

Groundwater Modelling

Groundwater Mapping

Permits to Take Water

Environmental Compliance  
Approvals

Designated Substance Surveys

Our File: 0215

September 14, 2023

Township of Puslinch  
7404 Wellington Road 34  
Puslinch, Ontario N0B 2J0

Attention: Lynne Banks  
Development and Legislative Coordinator

Dear Lynne,

**Re: Blue Triton Brands – Aberfoyle Site  
2022 Annual Monitoring Report Review**

We have reviewed the 2022 Annual Monitoring Report for the Blue Triton Brands Aberfoyle site (WSP Canada Inc., dated March 2023). We have the following comments regarding hydrogeological aspects of the water taking.

**Comments on the 2022 Annual Monitoring Report**

1. Approximately 673 million liters of water was taken from well TW3-80 in 2022 (WSP Section 4.1). The annual taking is greater than in 2019, 2020 and 2021, and also exceeds the annual average taking of 667 million litres since 2002.
2. WSP stated in Section 4.1 that “Blue Triton committed to limit water takings to 90% of their monthly maximum permitted volume during the Level 1 Condition and 80% of their monthly maximum permitted volume during the Level 2 Condition” during a Level 1 or Level 2 Low Water Condition issued by the Grand River Low Water Response Team. A Level 1 Low Water Condition was declared on June 29, 2022 and was upgraded to a Level 2 Low Water Condition on July 21, 2022. No reduction in water taking by Blue Triton occurred in response to either Low Water Condition, as they were already pumping

below 80% of their monthly maximum permitted volume. From a compliance standpoint there is no violation. However, this response is problematic as it translates to no response from this commercial water bottling operator, while other water takers in the community (municipal, agricultural, aggregate and golf course), most of which are water takings that are returned to the environment rather than removed from the watershed, have mitigative measures to adhere to under the same Low Water Conditions (see Attachment 1). Responses to Low Water Conditions must be made by all water users in the community to be effective.

3. Blue Triton and TW3-80 are within a Water Quantity Protection Zone (WHPA-Q) with a significant risk level to municipal water takings. WSP indicated in Section 2.5 that Matrix Solutions had determined “TW3-80 was not found to interfere with the municipal wells’ ability to supply water. TW3-80 was estimated to be responsible for 0.1 m (1%) of the drawdown at the closest municipal well (Burke Well located approximately 7 km north-northeast of TW3-80.” Matrix solutions also modelled predicted changes in water levels under increased pumping up to the maximum PTTW taking of 3,600,000 L/day from Blue Triton and determined that additional drawdown at the Burke well would be approximately 0.02 m, which was interpreted as negligible.

Harden stresses that the Burke Well is 7 km away from TW3-80 and the drawdown effects on local water supplies and surface water features in Puslinch Township, in closer proximity to TW3-80, have not been discussed as part of this assessment.

4. WSP noted in Section 3.1.2 that “some private wells are open across multiple bedrock units (for example private wells with a finished depth in the Lower Bedrock Aquifer are typically open across the Upper and Lower Bedrock Aquifers)... these wells may represent a potential pathway for contaminants in the shallow groundwater system to move into the deeper strata. Monitoring of these private wells is no longer required under PTTW3133-C5BUH9.” The downward gradient induced by water takings from the lower aquifer by Blue Triton may cause downward movement of contaminants from the upper bedrock aquifer to the lower bedrock aquifer through local private multiple aquifer penetrating wells. In our opinion, this constant induced downward gradient represents a water quality threat to the lower aquifer and a water quantity threat to the upper aquifer. In our opinion, in the absence of the depressurization caused by Blue Triton, the volume of downward movement of groundwater would be negligible or caused only during pumping of the private wells, with the water takings captured by the pump rather than drawn

into the lower aquifer. It is our opinion that efforts to identify these wells and evaluate their impact on the quality of the lower aquifer within the sphere of influence of the Blue Triton well should be undertaken by Blue Triton.

5. WSP indicated in Section 4.3.3 that “surface water flow at SW1 and SW2 was not measurably affected by pumping.” While we agree that the measurements were not able to detect flow changes, we did notice a change in hydraulic gradient from upwards to downwards along a greater reach of Aberfoyle Creek during 2022. In addition, the monitoring conducted for Mill Creek Aggregates found reversals of hydraulic gradients into Mill Creek in the reach between Blue Triton property and the Hanlon Expressway.
6. WSP concluded in Section 5.0 that “No irreversible impacts have been observed due to pumping of the aquifer or deterioration of groundwater quantity or quality on neighbouring properties.” However, while Blue Triton does monitor two nearby private wells for water levels, no monitoring data on water quality is provided, either for onsite wells or neighbouring properties, as part of their monitoring report. In our opinion, the absence of regular water quality reporting as part of the ongoing monitoring program is important given the threat of contaminant migration into the Lower Bedrock Aquifer due to the constant induced downward gradient from pumping. We would like to see water quality monitoring added to the monitoring program in future, especially to monitor trends in the Upper and Lower Bedrock Aquifer units given the potential downward movement of contaminants under constant induced downward gradient conditions. The regular groundwater quality monitoring done by the Township of Puslinch confirms that salt contamination of the shallow aquifer located along the County Road 34 corridor is increasing. It is likely that similar contamination is occurring along the Brock Road corridor.
7. Groundwater levels respond to both water takings and annual recharge. As noted in Section 3.4, drought conditions persisted through most of 2022 and annual precipitation was 682 mm, with an estimated annual recharge of 85 mm, which is the lowest in the 15-year analysis period. WSP indicated in Section 4.2.2 that water levels were observed below historical ranges in some local wells, but that 2022 water levels within the lower bedrock aquifer were generally similar to those observed in 2018, when the annual pumping rate was similar. However, Harden observed that lower bedrock water levels on the hydrographs recovered in late 2018, while 2022 showed a marked reduction in water levels in the second half of 2022 that did not recover by the end of the year. Pumping rates in the latter half of 2022 are also higher than in some previous years (e.g., 2018, 2019, 2020), which may have exacerbated

the effects of drought conditions on water levels. WSP should look at these reduced water levels closely in 2023 to see if they rebound as drought conditions cease.

8. TW1-93 – the water level in this overburden well is consistently recorded as being less than Mill Creek elevations. This suggests a loss of water from Mill Creek to the overburden aquifer in this area contrary to nearby MP14S/D that shows an upward gradient. We recommend that the elevation of this monitor be verified, and an explanation of this condition be provided.
9. Other than for TW3-80, only five years of data is presented on the hydrographs despite there being data available to at least 2006. We recommend that long-term hydrographs for representative monitors in each aquifer unit (overburden, upper bedrock and lower bedrock) be included in the annual report. This will provide an ability for the residents of Puslinch Township to evaluate long term trends in groundwater levels.
10. We have attached a figure showing the longer-term hydrograph for MP14S/D. It is clear that there is a trend towards greater upward groundwater movement (from deep to shallow) beneath Mill Creek. This is a welcome observation for which there is no explanation in the monitoring report. Does Blue Triton have local knowledge as to why hydraulic gradients are increasing at MP14S/D?
11. The long-term hydrograph for MW10C/D is attached. There is an apparent decline in water levels over time. MW10D/D is on the fringe of the area of influence of TW3-80. This trend may be indicative of a slow enlargement of the area of influence of TW3-80 and bears further consideration.
12. The 2022 annual monitoring report received by Harden was not stamped/sealed by any of the authors. The use of a professional stamp/seal by a P.Geo. or P.Eng. authenticates geoscience documentation and is expected on a geoscience report of this size. We recommend that the authors review the guidelines on document authentication from Professional Geoscientists Ontario (PGO) and Professional Engineers Ontario (PEO).

## Summary Comments

The taking of water from TW3-80, other industrial water takings from the deep aquifer beneath Aberfoyle, the water taking by the City of Guelph and the water taking by the Region of Waterloo are reducing the hydrostatic pressure in the lower aquifer, a significant water supply aquifer for the Township of Puslinch. Other than the lowering of water levels in private wells near to the production wells, the regional implications of this reduced pressure is not clearly or obviously manifested in a measurable way such as streamflow in Mill Creek. However, groundwater models indicate that a reduction in baseflow to Mill Creek is one of the outcomes.

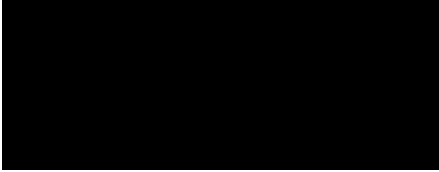
The water quality of the lower aquifer will be diminished by the induced movement of groundwater from upper aquifers. This is particularly likely along the Brock Road corridor through Aberfoyle where significant road salting efforts occur for the busy road and school area.

Our recommendations to the Township of Puslinch are as follows:

- 1) Request that Blue Triton provide responses to Comments 8, 10 and 11.
- 2) Request that Blue Triton participate in a regional analysis of the cumulative impact of water taking from the Lower Aquifer and impact assessment on baseflow to Mill Creek relative to non-pumping conditions.
- 3) Request that Blue Triton assist in the development of a plan to identify multiple aquifer penetrating wells within the TW3-80 area of influence, evaluate the movement of water through the wells and develop a mitigation plan. Greater efforts should be made to minimize the contamination of the lower aquifer given the observed salt contamination increase in this area.
- 4) The Township of Puslinch should consider a Bylaw prohibiting the construction of multiple aquifer penetrating wells in the areas of influence of the Region of Waterloo municipal wells, the City of Guelph municipal wells and the industrial wells in the Aberfoyle area. All existing multiple aquifer penetrating wells should be identified, evaluated, and retrofitted with liners if found to allow groundwater movement from the upper bedrock aquifers to the lower bedrock aquifers.

Please do not hesitate to contact us in regard to this review.

Harden Environmental Services Ltd.



Angela M. Mason, M.Sc., P.Geo., QP<sub>ESA</sub>  
Senior Hydrogeologist



Stan Denhoed, P.Eng., M.Sc.  
President

Attachments:

- 1 – Suggested Actions in Response to Low Water for Major Water Use Sectors
- 2 – Extended hydrographs for MW10C/D-09 and MP14S/D-07

## Suggested Actions in Response To Low Water For Major Water Use Sectors

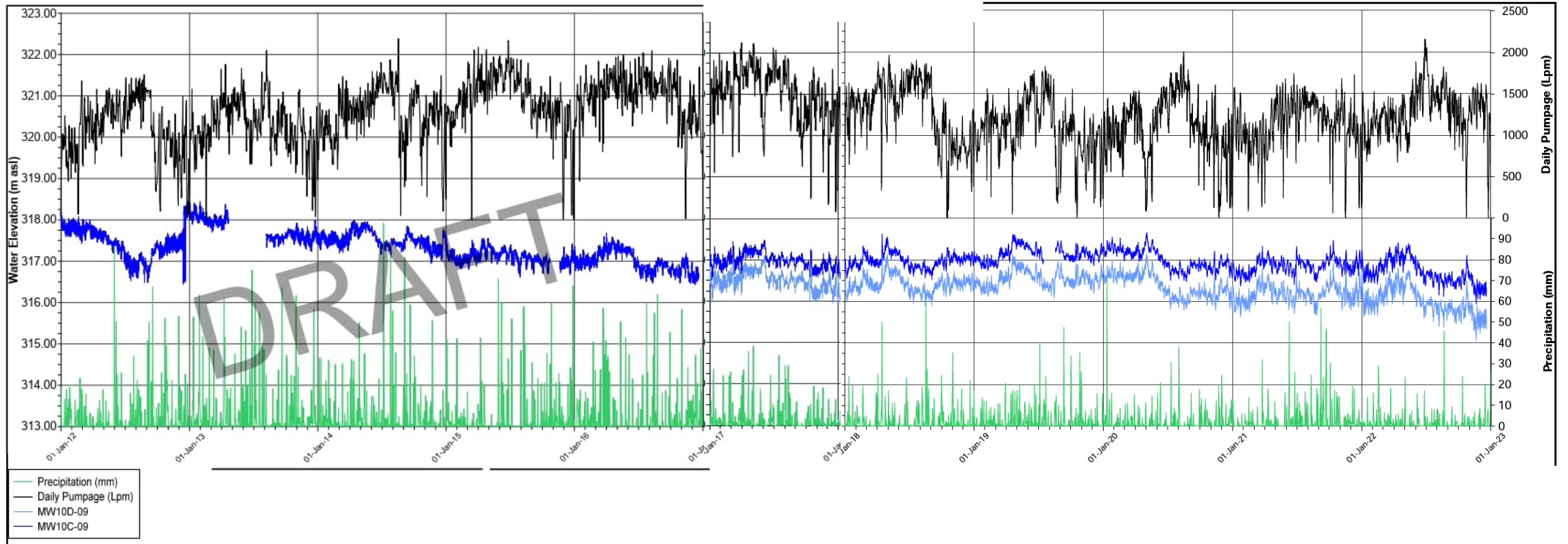
Flow Conditions	Municipal Users	Golf Course Users	Agricultural Users	Aggregate Users
<b>Normal Flows</b>	<ul style="list-style-type: none"> <li>➤ Use these periods to top up municipal water storage.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Use these periods to top up the water storage on the course</li> </ul>	<ul style="list-style-type: none"> <li>➤ Use these periods to top up water storage ponds and soil moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Stockpile washed materials to create reserves where practical.</li> <li>➤ Consider drought contingency options when designing/considering future phases.</li> </ul>
<b>Below Normal Flows</b> <b>Level 1 Condition</b> <u>Action target</u> Increase awareness. Reduce water use by 10%.	<ul style="list-style-type: none"> <li>➤ Actively encourage compliance with outdoor water use by-laws</li> <li>➤ Reduce water withdrawals for park and public lands irrigation by scheduling withdrawals, use of storage</li> </ul>	<ul style="list-style-type: none"> <li>➤ Make use of water storage on the course.</li> <li>➤ Withdraw water more slowly over a longer period of time i.e. reduce pumping rate,</li> <li>➤ Schedule surface water withdrawals with neighboring golf courses.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Mobilize a local agricultural water users group.</li> <li>➤ Withdraw water more slowly over a longer period of time eg. reduce pumping rate.</li> <li>➤ Schedule surface water withdrawals with neighboring water takers</li> </ul>	<ul style="list-style-type: none"> <li>➤ Where applicable closely monitor operating levels (eg. pond levels).</li> <li>➤ Reduce non-essential water use.</li> <li>➤ Increase surveillance of wash operations to identify and correct any water losses. (eg. leaky pipes)</li> <li>➤ Withdraw surface water more slowly over a longer period of time i.e. reduce pumping rate.</li> </ul>
<b>Critically Low Flows</b> <b>Level 2 Condition</b> <u>Action target</u> Reduce water use by 20%. Reduce surface pumping rate by 50%.	<ul style="list-style-type: none"> <li>➤ Maintain but minimize municipal supply withdrawals</li> <li>➤ Enforce outdoor water use by-laws</li> <li>➤ Implement outdoor water use bans where applicable.</li> <li>➤ Reduce park and public land irrigation through selective watering, scheduling, storage</li> <li>➤ Report actions taken to Water Response Team</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce water use on selected portions of the course.</li> <li>➤ Make use of water storage on the course.</li> <li>➤ Withdraw water more slowly over a longer period of time - reduce pumping rate.</li> <li>➤ Schedule surface water withdrawals with neighboring golf courses.</li> <li>➤ Report actions taken to sector representative</li> </ul>	<ul style="list-style-type: none"> <li>➤ Eliminate non-essential water use.</li> <li>➤ Further reduce pumping rate, make use of storage.</li> <li>➤ Irrigate dusk to dawn only.</li> <li>➤ Collectively co-ordinate surface water takings with other water takers.</li> <li>➤ Report actions taken to sector representative</li> </ul>	<ul style="list-style-type: none"> <li>➤ Eliminate non-essential water use.</li> <li>➤ Further reduce surface water pumping rate. Make use of water storage on site.</li> <li>➤ Where practical reduce below water excavations.</li> <li>➤ Report actions taken to sector representative</li> </ul>
<b>Extreme Low Flows</b> <b>Level 3 Condition</b> <u>Action Target</u> Reduce water use greater than 20% Reduce surface pumping greater than 50%.	<ul style="list-style-type: none"> <li>➤ Reduce municipal groundwater withdrawals to stabilize groundwater levels.</li> <li>➤ Reduce municipal surface water withdrawals to stabilize surface water flows.</li> <li>➤ Eliminate non-essential water use</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce water use by selected irrigation only.</li> <li>➤ Stop surface water withdrawals. Rely on storage.</li> <li>➤ Reduce groundwater withdrawals to stabilize groundwater levels.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce water use by selected irrigation only.</li> <li>➤ Implement all feasible measures to reduce stress to streams and groundwater aquifers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Further optimize wash water operations as much as practically possible.</li> <li>➤ Where possible cease surface water withdrawals and use stored water.</li> <li>➤ Where possible further reduce below water table extraction.</li> </ul>
<b>Declared Level 3</b>	<ul style="list-style-type: none"> <li>➤ Ministry's Discretion to Impose Water Restrictions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ministry's Discretion to Impose Water Restrictions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ministry's Discretion to Impose Water Restrictions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ministry's Discretion to Impose Water Restrictions</li> </ul>

### Notes

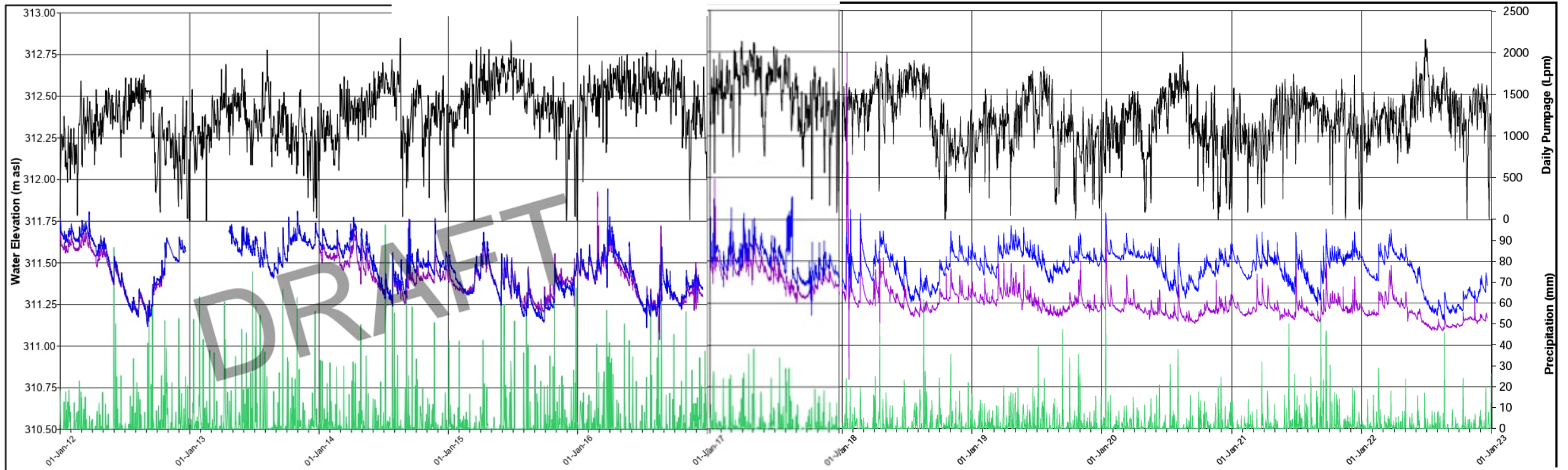
1. The above listed actions are suggestions for voluntary action; an individual's action in response to varying levels of low water will depend on the particular operation or source of water. Each operation is encouraged to develop a Low Water Response Plan particular to its own situation.
2. A particular watershed may progress through the Low Water Levels in response to a number of factors, including streamflow, precipitation and local water use. The local Water Response Team considers all factors when moving between Levels. Actions taken at a specific Level may halt the progression of reduced streamflows.
3. A Level 3 will only be declared when the Provincial Water Directors accept a Water Response Team's recommendation that the local situation cannot be managed through local voluntary action and requires provincial intervention. A Level 3 condition may exist without a Level 3 being declared.



MW10C/D-09 Extended Hydrograph



# MP14S/D-07 Extended Hydrograph



<p>— Precipitation (mm) — Daily Pumpage (Lpm) — MP14D-07 — MP14S-07</p>	<p>PROJECT <b>NESTLE WATERS CANADA</b> Town of Aberfoyle, Ontario</p>
<p>DATE DECEMBER 2016 DESIGN JH</p>	<p>TITLE <b>MP14 NEST HYDROGRAPH</b> 2016 ANNUAL MONITORING REI</p>



**REPORT**

**Blue Triton Brands Aberfoyle Site**  
*2022 Annual Monitoring Report*

Submitted to:

**Blue Triton Brands**

101 Brock Road South  
Puslinch, Ontario  
N0B 2J0

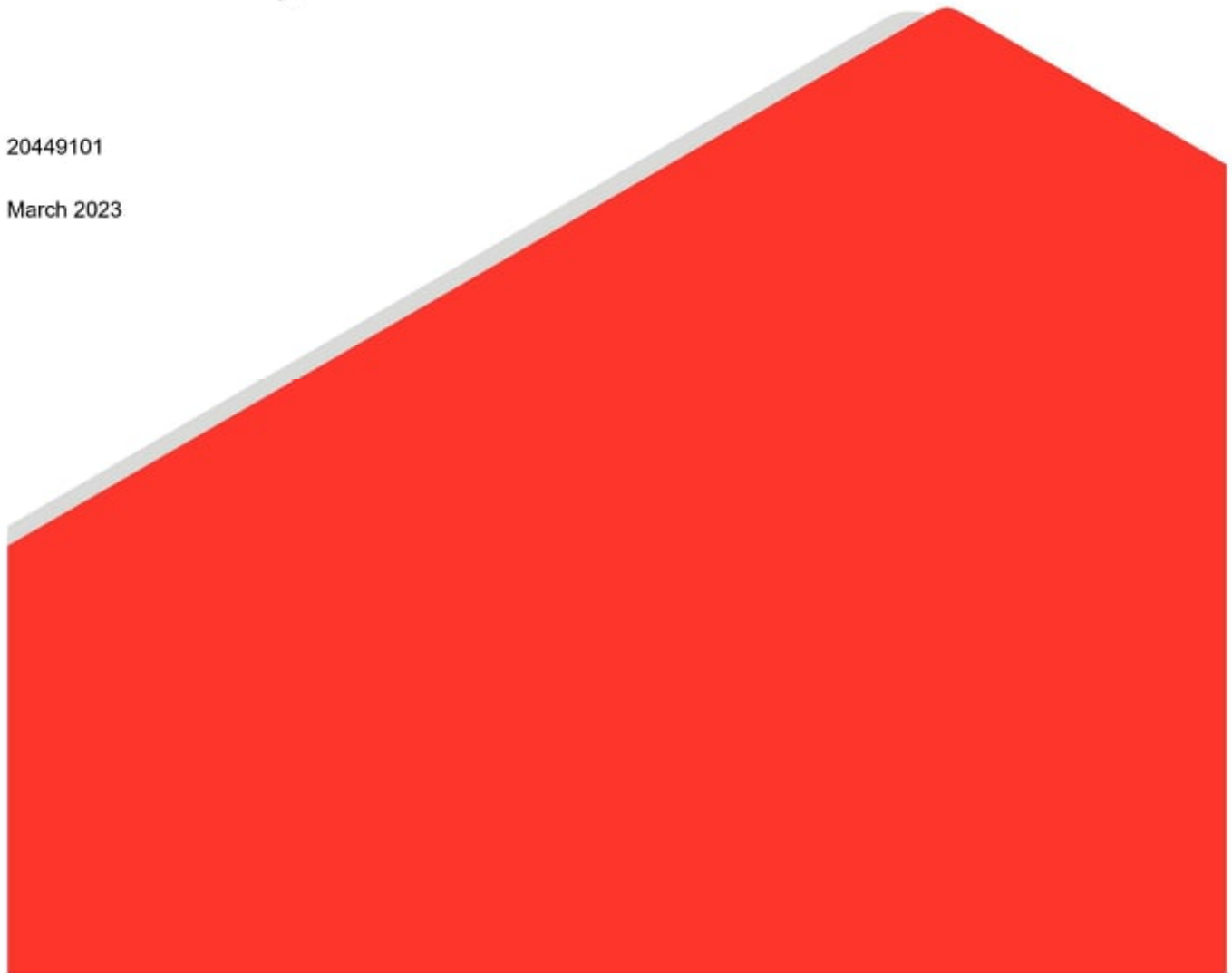
Submitted by:

**WSP Canada Inc.**

210 Sheldon Drive Cambridge, ON N1T 1A8

20449101

March 2023



## Distribution List

2 Copies - Blue Triton Brands

1 eCopy - MECP

1 eCopy - Puslinch Township

1 eCopy - WSP Canada Inc.

## Key Facts for 2022 Operations at Aberfoyle

Key facts for the 2022 operations at Aberfoyle are summarized below.

- 1) Blue Triton Brands (Blue Triton) continued to operate under the terms of Permit to Take Water (PTTW) 3133-C5BUH9 for well TW3-80.
- 2) Blue Triton has complied with all the conditions in the PTTW for the Aberfoyle well TW3-80 in 2022.
- 3) Comprehensive annual monitoring reports are prepared for the Aberfoyle well (TW3-80) under the conditions of the PTTW.
- 4) No complaints arising from the taking of water authorized under the PTTW were received in 2022.
- 5) The Grand River Low Water Response Team declared a Level 1 Low Water Condition for the entire Grand River Watershed, including Mill Creek, on June 29, 2022 and increased to a Level 2 Low Water Condition on July 21, 2022. The Level 2 Low Water Condition was in effect for the remainder of 2022. Blue Triton committed to limit water takings to 90% of their monthly maximum permitted volume during the Level 1 Condition and 80% of their monthly maximum permitted volume during the Level 2 Condition.
- 6) TW3-80 pumps water from the Lower Bedrock Aquifer which is overlain by a Middle Bedrock Aquitard, an Upper Bedrock Aquifer and an overburden aquifer/aquitard.
- 7) The total volume of water taken in 2022 from TW3-80 was 672,615,929 L, approximately 51% of the permitted annual volume assuming continuous well operation.
- 8) The daily water takings at TW3-80 ranged from 0 L to 3,111,753 L. The average daily water taking was 1,842,783 L. The maximum daily taking corresponded to approximately 86% of the permitted maximum daily taking and, on most days, was substantially less than the maximum permitted daily taking. Any daily water takings greater than 80% of the daily permitted amount occurred prior to the Level 2 Low Water Condition.
- 9) The variations in water levels in TW3-80 continue to be due mainly to short-term changes in the pumping rate and during 2022 were within the historical range of observed water levels. Ongoing pumping from TW3-80 has not led to a long-term water level decline in the well.
- 10) Water levels in the Lower Bedrock Aquifer around the property over both the short-term and long-term, continue to be influenced mainly by pumping of TW3-80. The effects of long-term variability in pumping are observed more in the wells closer to TW3-80 where mean annual water levels correlate with total annual water takings (i.e., increased water takings result in lower water levels). The influence of pumping decreases with distance from the pumping well. Water levels recover when pumping rates are reduced, an indication that the water taking is sustainable. There is also some influence on the water levels from recharge and external influences, to varying degrees. Water levels measured within this aquifer in 2022 are generally similar to the water levels measured in 2018 when the annual pumping was similar. The second half of 2022 was marked by drought conditions and the low amount of recharge to the Lower Bedrock Aquifer is evident in the data from wells further away from TW3-80, where some water levels were observed below their historical ranges.

- 11) Water levels in the Upper Bedrock Aquifer around the property are partly influenced by pumping from TW3-80 (i.e., there is hydraulic connection between the Upper Bedrock and Lower Bedrock Aquifers); however, the connection is limited (i.e., there is less response than in the Lower Bedrock Aquifer). The magnitude of influence varies based on distance from TW3-80 and existing hydrogeologic conditions, reflecting complexity in the subsurface. While there is an influence on water levels in the Upper Bedrock Aquifer from pumping TW3-80, there are also seasonal and long-term trends in the Upper Bedrock water levels that are reflective of recharge trends (i.e., lower water levels during years of below-average precipitation and higher water levels during years of above-average precipitation). This is reflected in 2022 by some of the lowest water levels measured in the monitoring wells during an extended period of below-average precipitation.
- 12) Water levels in the overburden are affected both by natural factors (recharge) and to a much lesser degree from pumping at TW3-80. The response to pumping in the overburden is muted compared to the responses in the Upper and Lower Bedrock Aquifers and only observed in the immediate vicinity of the pumping well. Some of the lowest water levels were recorded in the overburden wells during the second half of 2022 due to the below average precipitation but were within the range of water levels observed at the wells.
- 13) The water levels in the mini-piezometers generally increase in the spring, decline through the summer, and then increase in the fall. In addition to the seasonal trend, short-term changes ("spikes") in water level in the shallow groundwater are influenced by individual precipitation events. Overall, the water levels are influenced primarily by precipitation events, which overwhelm any changes due to pumping from TW3-80. Some of the lowest water levels over the past five years were measured in the mini-piezometers in the summer of 2022, reflecting a period of sustained below average precipitation.
- 14) Surface water levels in Aberfoyle Creek and Mill Creek fluctuate in response to natural processes (i.e., precipitation, snow melt and evapotranspiration) with no measurable effects from changes in pumping from TW3-80. In general, surface water levels are higher in the winter/spring and lower in the summer and then increase slightly into the fall. "Spikes" in the water levels are related to precipitation events or spring melt. Summer stream flows at SW1 and SW2 were the lowest observed over the past five years, reflecting a period of sustained below average precipitation. The effects of pumping TW3-80 could not be detected in the surface water flows observed at SW1 and SW2 in 2022.

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## **APPENDICES**

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Permit to Take Water Number 3133-C5BUH9

### **APPENDIX B**

TW3-80 Borehole Log

### **APPENDIX C**

TW3-80 Water Taking

### **APPENDIX D**

Groundwater Level Monitoring

### **APPENDIX E**

Surface Water Level Monitoring

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Technical Memoranda: Analysis of Potential Recharge at the Blue Triton Brands Aberfoyle Facility SWB Model 2022 Update and TW3-80 Drawdown Analysis

## 1.0 INTRODUCTION

Blue Triton Brands (Blue Triton), formerly Nestlé Waters Canada (Nestlé), has retained WSP Canada Inc. (WSP) to conduct the annual monitoring program and report preparation for the Blue Triton Aberfoyle Site as required by Permit To Take Water (PTTW) Number 3133-C5BUH9 issued by the Ministry of the Environment, Conservation and Parks (MECP). The PTTW is provided in Appendix A. The PTTW was issued on November 15, 2021 and replaces the previous PTTW 1381-95ATPY.

The location of the Aberfoyle Spring/Plant (Site) is shown on Figure 1.1. The PTTW authorizes water taking from one on-Site bedrock well located on Lot 23, Concession 7, Geographic Township of Puslinch, Wellington County, Ontario. Water from TW3-80 is taken for the purpose of bottling water.

The Aberfoyle bottling facility is located on a 46.75 hectare parcel owned by Blue Triton, approximately 5 km southeast of Guelph and 12 km northeast of Cambridge (Figure 1.1). The Aberfoyle facility consists of a bottling plant, warehouse, paved parking and access drives, ponds, and open fields, and is bordered by wooded areas, wetlands and aggregate operations.

A summary of the PTTW Conditions and where the information can be found in this report are outlined in Table 1:

**Table 1: Permit To Take Water Conditions**

Condition Number	Condition Description	Report Section
3.2	Identifies use, rates, time and total takings allowed.	3.1.1, 4.1, Appendix C
3.3	Low Water Response Plan	4.1
4.1	Maintain a daily record of all water takings including date, volume of water taken and rate at which it was taken.	Appendix C
4.2, 4.3, 4.5	Establish the specified groundwater and surface water monitoring programs including monitoring requirements and monitoring timing.	3.1.2, 3.1.3
4.4	Undertake wetland monitoring and redd surveys and submit results to Director.	Appendix H
4.6	Notify the Director of monitoring locations that become inaccessible or abandoned and provide a recommendation for replacement.	3.1.2.1, 3.1.3.1, 3.1.4
4.7	Prepare and submit an annual monitoring report to the Director, which presents and interprets the data collected under the conditions of the PTTW.	This report
4.8	Submit details of the bottling operations to the Director.	4.1
4.9.1, 4.9.2, 4.9.3	Establish a publicly accessible website and have select technical data available for download. [ <a href="https://bluetriton.ca/long-term-monitoring">https://bluetriton.ca/long-term-monitoring</a> ]	Not reported on; updated annually prior to March 31
4.10	Host an annual stakeholder meeting.	Not reported on; completed annually prior to September 30
5.1	Notify the local District Office of any complaint arising from the taking of water and proposed action to rectify the complaint.	4.1

Condition Number	Condition Description	Report Section
5.2	Supply water to anyone with a water supply (in effect prior to this taking) that has been negatively impacted.	Not applicable

Golder Associates Ltd. (now WSP) began monitoring at the Site in May 2014 on behalf of Nestlé and continues to monitor the site on behalf of Blue Triton. Prior to 2014, monitoring was performed by Conestoga Rovers and Associates (CRA) and Nestlé. The MECP has requested that the reporting follow the same outline and format as previous reports. The reporting of the geologic characterization has been updated to be consistent with the updated interpretation developed by the Ontario Geological Survey (Brunton, 2008, 2009; Brunton and Brintnell, 2011) rather than the previous geologic nomenclature. At some well locations there were insufficient data (i.e., core log, geophysical logs, detailed stratigraphic logging) to update to the new nomenclature. The bedrock has been divided into three units based on both the old and new nomenclature: Upper Bedrock Aquifer, Middle Bedrock Aquitard and Lower Bedrock Aquifer (as described in detail below).

The report is structured as follows:

- **Section 1.0:** Introduction including site location, history, and construction details for supply well TW3-80;
- **Section 2.0:** Regional setting including a description of topography, drainage, ecology, physiography, geology and hydrogeology;
- **Section 3.0:** Summary of 2022 field program including a description of field activities conducted in 2022;
- **Section 4.0:** Monitoring program results including a summary and analysis of the data collected in 2022;
- **Section 5.0:** Conclusions from the 2022 monitoring program; and
- **Section 6.0:** Recommendations from the 2022 monitoring program.

## 1.1 Historical Summary

TW3-80 was constructed in April 1980 for an aquaculture (fish farming) operation. In December 2000, the Perrier Group of America, a Nestlé Company, purchased the property. Nestlé has now been purchased by Blue Triton. Including the current PTTW, seven consecutive PTTWs have been issued for TW3-80 since Nestlé acquired the property, allowing for water takings for bottling water purposes. Additional investigations have been conducted over the years to determine if there have been any negative impacts on the natural environment and ensure that the water taking by Blue Triton is sustainable. These additional investigations have been requirements of previous permits and have been completed to the satisfaction of the MECP. Other than the on-going conditions of the PTTW, no additional studies were required in 2022.

## 1.2 Construction Details for Supply Well TW3-80

The borehole log for TW3-80 is provided in Appendix B. The glacial overburden at the well is 14.6 m thick and consists of a silt till to a depth of 12.2 m below grade, and 2.4 m of fine-to-medium sand overlying bedrock. Any coarse-grain sediments at surface may have been removed in the past.

The well was originally completed to a depth of 42.4 m below grade, 27.8 m into the bedrock. Conestoga Rovers and Associates (CRA, 2014) interpreted the bedrock through which TW3-80 was drilled as consisting of the Guelph Formation dolostone (14.6 to 16.8 m) and the Amabel Formation (Eramosa Member and underlying Unsubdivided Member) (16.8 to 42.4 m). Changes to the bedrock nomenclature have been made by the Ontario Geological Survey (OGS) (i.e., Brunton, 2008, 2009; Brunton and Brintnell, 2011). Based on the revised nomenclature, TW3-80 is interpreted to have been drilled through the Guelph, Eramosa, and Goat Island Formations and possibly into the Gasport Formation. The stratigraphy at TW3-80 is consistent with that of other wells in the area.

When TW3-80 was initially constructed in 1980; a 305 mm diameter steel casing was installed through the overburden and approximately 0.6 m into the top of rock, to a depth of 15.2 m, and cemented in place (CRA, 2014). The remainder of the well was completed as a 305 mm diameter open hole.

In 1999, the bottom 11.3 m of TW3-80 was sealed with gravel, bentonite grout, and a cement cap so that the well would pump water with more favourable natural water quality from within the Guelph to Goat Island/Gasport Formations. The revised finished depth is 31.1 m below grade.

To comply with Nestlé (now Blue Triton) water well construction standards, a liner was installed in the well in 2002. A 250 mm diameter stainless steel liner was installed inside the 305 mm steel casing and grouted in place, to a depth of 28.4 m. The revised open interval of TW3-80 is now 28.4 m to 31.1 m below grade and only allows pumping from the Goat Island/Gasport Formations. A schematic of the well construction is included on Figure 1.2.

## 2.0 REGIONAL SETTING

The following sections provide a summary of the regional and local topography, drainage, physiography, and overburden and bedrock geology/hydrogeology for the Site.

### 2.1 Topography and Drainage

Regional topography is characterized by northeast-southwest trending bands of hummocky terrain (Chapman and Putnam, 1984). Locally, the Blue Triton property is located in a relatively flat area between the Paris and Galt Moraines. Surface topography is shown on Figure 2.1. Within a 1 km radius of the Blue Triton property, ground surface elevations typically range from 310 to 330 masl (metres above sea level) with the lows occurring along Aberfoyle Creek and Mill Creek. The streambed elevation of the portion of Aberfoyle Creek that traverses Blue Triton's property is approximately 310.5 masl (+/- 1 m).

The Site is located within the Mill Creek Subwatershed (Figure 2.1) which forms part of the larger Grand River Watershed. Part of Mill Creek is located north of the Blue Triton property and generally flows in a southwesterly direction within the study area. A tributary of Mill Creek, referred to as Aberfoyle Creek, flows through the Site, also in a southwesterly direction, and confluences with Mill Creek west of the Blue Triton property. Aberfoyle Creek is located approximately 150 m to the northwest of TW3-80 at its nearest point. Mill Creek and Aberfoyle Creek are shown on Figure 2.1 along with other surface water and wetland features, which are described below.

As shown on Figure 2.1 several ponds exist, both natural and man-made, within a 1 km radius of the Blue Triton property. One such pond, referred to as the Aberfoyle Mill Pond, located east of and upstream from the Site, is created by a dam across Aberfoyle Creek. Most of the other ponds in the area appear to be man-made and are

off-line ponds (i.e., not connected to streams). Some of the ponds are the result of aggregate extraction below the water table. Some small on-Site ponds exist on the Blue Triton property.

In addition to the ponds, several wetland areas are also present within a 1 km radius of the Blue Triton property (Figure 2.1). Most of these wetlands are part of the Mill Creek Puslinch Wetland Complex and are considered provincially significant. Wetlands are present within the northwest part of the Blue Triton property.

## 2.2 Ecological Setting

The northwestern half of the Blue Triton property is in a natural condition and supports a diversity of forest and wetland habitats as well as a watercourse and fish habitat. Most of these habitats are relatively undisturbed and support a diverse range of flora and fauna, including some that are locally significant.

The wetland habitats along Aberfoyle Creek form part of the provincially significant Mill Creek Puslinch Wetland Complex.

Collectively, these natural features comprise part of an extensive natural heritage system of the headwaters of the Mill Creek watershed. This natural heritage system is recognized for its provincial, regional and local significance.

Aberfoyle Creek is a branch of Mill Creek that traverses the Blue Triton property. Its confluence with Mill Creek is immediately downstream from the Blue Triton property. Upstream of the Blue Triton property, Aberfoyle Creek flows through a 10 hectare pond, created by a dam constructed in the 1860's to power a grist mill. Outflows from the pond are controlled by a series of weirs. Upstream of mill pond, Aberfoyle Creek is a cold-water stream that contains both Brook Trout (*Salvelinus fontinalis*) and Brown Trout (*Salmo trutta*). However, during the summer the water is warmed in the Mill Pond so that downstream from the pond, through the Blue Triton property, the water temperature frequently exceeds the lethal temperature for these trout species. The most abundant fish species through the Blue Triton property are common cool-water species for which the water temperatures are suitable. Like the upper reaches of Aberfoyle Creek, Mill Creek is a cold-water stream that supports Brook Trout and Brown Trout.

## 2.3 Physiography

Chapman and Putnam (1984) define the physiographic region within which the Blue Triton property lies as the eastern limb of the Horseshoe Moraines. The existing landforms and most of the surficial soils in the area were created/deposited during the most recent glacial period, specifically the recession of the Lake Ontario ice lobe. During the recession of the Lake Ontario ice lobe, three distinct end moraines were formed in the area: the Paris Moraine, the Galt Moraine, and the Moffat Moraine (Karrow, 1987). The Paris Moraine is situated to the north of the property and the Galt Moraine is situated to the south of the property. These moraines are primarily composed of silty to sandy till and form the major drainage divides for the Mill Creek subwatershed. The Blue Triton property is situated mainly within an outwash gravel plain situated between the two moraines (Figure 2.2). The outwash gravel plain was likely formed by glacial meltwater associated with a halt in the ice retreat during the formation of the Galt Moraine.

## 2.4 Geology and Hydrogeology

The following sections provide a summary of the regional and local geology and hydrogeology. The regional interpretation is based on published mapping and information contained in the Mill Creek Subwatershed Study (CH2M Gore & Storrie, 1996). Detailed geologic information has also been obtained from logging of the stratigraphy by CRA at locations where monitoring wells were installed as part of previous field investigations.

The bedrock interpretation has been updated to follow the revised nomenclature of the OGS (Brunton, 2008 and 2009, Brunton and Brintnell, 2011).

### 2.4.1 Overburden Geology

The overburden ranges in thickness from 15 m in low-lying areas of the subwatershed near Mill Creek and Aberfoyle Creek to 35 m along the crests of the Paris and Galt Moraines (Drift Thickness Map P.535, M.A., Vos, 1968; CH2M Gore & Storrie, 1996).

The surficial overburden geology, as mapped by the OGS is shown on Figure 2.2. The surficial overburden of the area is characterized by the following units:

- Outwash gravel;
- Ice-contact gravel: kames and eskers; and
- Stoney, sandy silt till (Wentworth Till).

Regionally, the Paris and Galt Moraines, located north and south of the property, respectively, consist of Wentworth Till. Karrow (1987) describes the till as a buff-coloured, stony, sandy silt till. Located between the moraines are younger outwash gravel deposits and ice-contact gravel deposits. Deposits along parts of Aberfoyle Creek and Mill Creek are mapped as peat and muck (organic deposits). There are no bedrock outcrops within the study area.

The coarse-grained deposits between the moraines generally overlie the Wentworth Till. In some areas, particularly the central part of the Mill Creek subwatershed, the till is not present, and the coarse-grained deposits are continuous to bedrock. The surficial coarse-grained deposits are thinner and separated from the bedrock by the underlying till in the upper and lower reaches of the Mill Creek subwatershed. The site is located within the upper half of the watershed. Occasional coarse-grained deposits exist at various depths as lenses or discontinuous layers within or between till units (CH2M Gore & Storrie, 1996). A gravel layer is also present immediately above the bedrock in some locations, including at TW3-80.

Locally, within a 1 km radius of the property, the overburden is typically 10 m to 30 m thick and consists mainly of outwash gravel or ice-contact gravel deposits. As previously discussed, these coarse-grained deposits are situated between the moraines and are elongated in a southwest to northeast direction. The Wentworth Till is mapped as the surficial deposit along the moraines to the southeast (approximately 500 m) and northwest (approximately 2 to 2.5 km) of TW3-80.

### 2.4.2 Bedrock Geology

The bedrock surface is somewhat irregular, but generally dips to the southwest. The bedrock elevation in the vicinity of the Blue Triton property declines from approximately 306 masl northeast of the property (MW10-09) to 293 masl south of the property (MW16-12).

The regional bedrock geology is shown on Figure 2.3. As noted above, the bedrock nomenclature shown on Figure 2.3 has since been revised based on work by the OGS (Brunton, 2008 and 2009, Brunton and Brintnell, 2011). In summary, the previous Guelph Formation is now divided into the Guelph Formation and the Eramosa Formation (Stone Road Member and Reformatory Quarry Member); the previous Eramosa Member of the Amabel Formation is now the Vinemount Member of the Eramosa Formation; and the previous Unsubdivided Member of the Amabel Formation is now divided into the Goat Island, Gasport and Irondequoit Formations. The bedrock

hydrogeologic units underlying the property, which are relevant to the Blue Triton water taking, are composed of limestone, dolostone and shale sequences and are described as follows (from oldest to youngest).

- **Cabot Head Formation:** The Cabot Head Formation, readily distinguished by its grey-green colour, is a non-calcareous shale with thin interbeds of sandstone and limestone. Due to its low hydraulic conductivity, the top of the Cabot Head Formation is interpreted to be the base of the active groundwater flow system;
- **Merritton Formation:** The Merritton Formation consists of a pinkish-brown, finely crystalline dolostone unit with dark shaley partings. This unit is relatively thin where present in the area;
- **Rockway Formation:** The Rockway Formation is a greenish-grey fine crystalline argillaceous dolostone with shaley partings (Brunton, 2008). The thickness of the Formation is fairly consistent and typically less than 2 m.;
- **Irondequoit Formation:** This Formation is a thickly to medium-bedded crinoidal grainstone (Brunton, 2008). The unit has a fairly consistent thickness of approximately 3 m throughout the area; and
- **Gasport Formation:** The Gasport Formation is a cross-bedded crinoidal grainstone-packstone with sequences of reef mound and coquina (shell bed) lithofacies. This unit has commonly been referred to as the Amabel Formation (Unsubdivided Member) in previous studies in the area (Turner, 1978). Wells in the vicinity of the Blue Triton property are generally not drilled through the entire sequence. In and around the City of Guelph, the Formation varies in thickness from about 25 to over 70 m, and the upper sections of the reef mounds, the crinoidal grainstones and the coquina shell beds make this formation highly transmissive, where they are present (Golder, 2011).
- **Goat Island Formation:** The Goat Island Formation consists of two members; the lower Niagara Falls Member and the upper Ancaster Member. Based on the boreholes completed in the area, the Goat Island Formation is estimated to range in thickness from approximately 2 m to 15 m.:
  - **Goat Island Formation – Niagara Falls Member:** The Niagara Falls Member is a finely crystalline and cross laminated crinoidal grainstone with small reef mounds; and
  - **Goat Island Formation – Ancaster Member:** The Ancaster Member is a chert-rich, finely crystalline dolostone that is medium to ash grey in colour.
- **Eramosa Formation:** The Eramosa Formation consists of three members including, from oldest to youngest, the Vinemount Member, the Reformatory Quarry Member and the Stone Road Member:
  - **Eramosa Formation – Vinemount Member:** The Vinemount Member consists of thinly bedded, fine crystalline dolostone with shaley beds that give off a distinctive petroliferous odour when broken (Brunton, 2008). This dark grey to black dolostone unit was commonly identified in water well records as 'black shale' and mapped in previous studies in the City of Guelph as the Eramosa Member of the Amabel Formation. The shaley beds of this Formation significantly reduce the vertical permeability across this unit relative to the other Formations. The Vinemount Member ranges in thickness from approximately 4 m to 12 m in the area of the property;
  - **Eramosa Formation – Reformatory Quarry Member:** The Reformatory Quarry Member, is described by Brunton (2008) as light brown to cream coloured, pseudonodular, thickly bedded and coarsely crystalline dolostone. This unit is susceptible to karstification due to its uniform fine dolomite crystallinity (Brunton,

2008). This unit also often contains mud-rich and microbial mat-bearing lithofacies that may act as aquitard materials, reducing the vertical permeability across this unit; and

- Eramosa Formation – Stone Road Member: This cream coloured coarsely crystalline Upper Eramosa unit is not present in most of the area and can be difficult to distinguish from the Guelph Formation.
- Guelph Formation: The Guelph Formation is the upper bedrock unit in the study area and consists of medium to thickly bedded crinoidal grainstones and wackestones and reefal complexes (Brunton, 2008). The Guelph Formation is cream coloured and fossiliferous. The upper 0.3 m to 0.6 m is noted to be highly fractured and weathered. Based on data from borehole drilling, the Guelph Formation is typically less than 5 m thick in the vicinity of the property, which is thin relative to the regional scale thickness.

### 2.4.3 Hydrogeology

The interpretation and nomenclature for the bedrock formations has been revised (as indicated above); however, the interpretation of the hydrostratigraphy at the property and surrounding area has remained consistent. The hydrostratigraphy consists of the following from surface down:

- Overburden Aquifer/Aquitard;
- Upper Bedrock Aquifer (Guelph Formation, Reformatory Quarry Member of the Eramosa Formation);
- Middle Bedrock Aquitard (Vinemount Member of the Eramosa Formation and sometimes parts of the Reformatory Quarry Member of the Eramosa Formation and the Goat Island Formation); and
- Lower Bedrock Aquifer (Goat Island Formation and Gasport Formation).

The designations of aquifers and aquitards is a simplification of the hydrostratigraphy for conceptual purposes. In reality, the hydraulic properties of the bedrock are variable and at some locations of the hydraulic conductivity may be sufficiently small that locally a bedrock stratum act as an aquitard.

Two hydrostratigraphic cross-sections (A-A' and B-B') through the property are included on Figures 2.4 and 2.5 with the locations shown on Figure 2.2. Cross-section A-A' is oriented southwest to northeast roughly along Aberfoyle Creek and cross-section B-B' is oriented north to south through the property, crossing Aberfoyle Creek and including supply well TW3-80.

Based on the hydrostratigraphic interpretation around the property, the thickness of the hydrostratigraphic units is as follows: Overburden Aquifer/Aquitard – 7 to 35 m; Upper Bedrock Aquifer – 2 to 14 m; Middle Bedrock Aquitard – 4 to 12 m; and Lower Bedrock Aquifer – 46 to 58 m. As shown in cross-section A-A', TW3-80 is completed in the upper part of the Lower Bedrock Aquifer.

### 2.4.4 Groundwater Flow Under Non-Pumping Conditions

Non-pumping conditions have been observed prior to the start of pumping tests. In addition to the pumping tests, there are sometimes brief shutdowns during which water levels in the aquifers evolve towards non-pumping conditions. One such shutdown occurred in October 2010 for 3.4 days. CRA (2014) provided an interpretation of the non-pumping conditions in the overburden and bedrock groundwater levels measured on October 12, 2010, as discussed below and also compared to shutdowns that occurred in October 2004 and November 2006.

- The overburden water table interpretation is presented on Figure 2.6, which indicates that the direction of groundwater flow in the overburden is generally to the southwest, with local components of flow to the west



and south toward Aberfoyle Creek. CRA (2014) indicates that this flow configuration was similar to the pattern observed for October 2004 and November 2006 shutdowns;

- The Upper Bedrock Aquifer interpretation is shown on Figure 2.7 with the groundwater flow direction identified in a southwest, south, and southeast direction, which is reported to be similar to the pattern observed for October 2004 and November 2006 shutdowns; and
- The Lower Bedrock Aquifer interpretation is shown on Figure 2.8 with the groundwater flow direction to the southwest in the vicinity of supply well TW3-80, which is reported to be similar to the pattern observed for October 2004 and November 2006 shutdowns.

Groundwater in the Lower Bedrock Aquifer flows generally south in the direction of TW3-80. The Aberfoyle aquifer is interpreted to be recharged primarily within the northern portion of the Mill Creek subwatershed and the capture zone for TW3-80 is inferred to extend to the north-northeast of the well. The Lower Bedrock Aquifer extends beyond Aberfoyle to the southwest, and groundwater is inferred to discharge to the Grand River in the vicinity of Cambridge.

## 2.5 Source Water Protection

Since the passing of the Clean Water Act (2006), municipalities in Ontario have been required to develop source protection plans to protect their municipal sources of drinking water. These plans identify both water quality and water quantity risks to local drinking water sources and develop strategies to reduce or eliminate these risks. Potential and existing risks for a municipal source are identified within wellhead protection areas (WHPA). A WHPA is an area projected to ground surface that delineates the zone in an aquifer where groundwater is flowing to a municipal drinking water source (pumping well). These areas are defined to protect water quality. The Blue Triton Aberfoyle property and well TW3-80 are located more than 2.6 km from the closest WHPAs, which include the City of Guelph WHPA to the northwest and the Freelon WHPA to the southeast and east in the Lake Ontario Basin. The closest City of Guelph wells are the Burke Well, which is located approximately 7 km away from TW3-80, and the Downey Well, which is more than 8 km away from TW3-80. The Freelon Wells are more than 10 km from TW3-80.

In addition to protecting water quality, water quantity is also a concern and is considered under Water Quantity Protection Plans. A Water Quantity Risk Assessment is completed to ensure that future water needs of a community can be met. It identifies existing and potential water quantity threats and future activities that may limit municipal water supplies. This is important because when more water is taken from an area than can be naturally replenished, water supplies are threatened, and water shortages are possible. The Aberfoyle property falls within a Water Quantity Protection Zone (WHPA-Q) for the City of Guelph municipal wells. The WHPA-Q zone for the City of Guelph has been assigned a significant risk level (Matrix Solutions, 2017). The Tier 3 Assessment scenarios predicted that the City's municipal wells can meet current needs. However, the assessment predicted that the City's Queensdale municipal well would be unable to meet projected increased future demands under normal climate conditions and during prolonged drought (Matrix Solutions, 2017). The Queensdale municipal well is located approximately 12 km northwest of TW3-80. The Tier 3 Assessment also assigned a high level of uncertainty to the results of the analyses for the City's Arkell Well 1, which is located approximately 10 km north of TW3-80. It is for these reasons that the City's WHPA-Q has been assigned a significant risk level with respect to water quantity. The Source Protection Committee reviewed all existing water takings within the WHPA-Q to evaluate their contribution to water quantity stress in the area. The study showed that municipal wells have the greatest impact on themselves (i.e., pumping at a municipal well influences the water levels in other municipal

wells). TW3-80 was not found to interfere with the municipal wells' ability to supply water (Matrix Solutions, 2018). TW3-80 is estimated to be responsible for 1% of the drawdown at the closest municipal well (Burke Well located approximately 7 km north-northeast of TW3-80) (Matrix Solutions, 2018). With a drawdown in the order of approximately 10.8 m at the Burke Well, pumping from TW3-80 is estimated to be responsible for approximately 0.1 m of the drawdown observed at the Burke Well.

An assessment of the potential cumulative impacts that could be caused by the bottled water takings at the Blue Triton facilities at Aberfoyle was also conducted as part to the Interim Procedural and Technical Guidance Document for Bottled Water Renewals: Permit to Take Water Applications and Hydrogeological Study Requirements (Ontario Ministry of the Environment and Climate Change Operations Division, April 2017). Matrix Solutions (2019) ran modelling scenarios to estimate the potential additional drawdown caused by an increase in the TW3-80 pumping from the current average to the maximum permitted rate. The additional drawdown at the City of Guelph Burke Well was predicted to be less than 0.02 m, well below the 2 m threshold to account for the natural seasonal variability beyond the effects of municipal pumping. As such, the groundwater withdrawal from TW3-80 has been assessed to not significantly interfere with existing municipal uses in the City of Guelph.

Matrix Solutions (2019) also analyzed how water levels would change if Blue Triton increased its pumping and there was a reoccurrence of the period of sustained below-average precipitation that was observed in the early to mid-1960s. The analysis showed that the effects of the increased pumping are predicted to be negligible.

### 3.0 SUMMARY OF 2022 FIELD PROGRAM

This section describes the field activities performed in 2022 associated with PTTW 3133-C5BUH9 for TW3-80.

#### 3.1 Groundwater and Surface Water Monitoring Program

Groundwater and surface water monitoring was initiated in 2000 and has evolved over the years with the objectives to 1) characterize the existing hydrogeologic setting, and 2) document potential long-term changes to the groundwater and surface water resources in the area. The monitoring program includes measurement and record-keeping of water takings, groundwater levels, mini-piezometer levels, surface water levels, surface water flows and surface water temperatures. The monitoring program for PTTW 3133-C5BUH9 includes the following instrumentation, with the locations shown on Figures 3.1 through 3.3:

- Groundwater levels and pumping volumes in 1 production well;
- Groundwater levels in 43 monitoring wells at 18 sites (17 consisting of multiple monitoring intervals) with monitors in the Lower Bedrock Aquifer, Upper Bedrock Aquifer, and overburden;
- Groundwater levels in 2 private wells;
- Shallow groundwater levels in 8 mini-piezometers with a total of 16 monitors;
- Surface water levels at 5 stations;
- Stream flow at 2 locations; and
- Stream temperature at 6 locations.

### 3.1.1 Water Taking

Water taking from TW3-80 in 2022 was measured using a Krohne magnetic flow meter wired to an Allen Bradley industrial Programmable Logic Controller. The instantaneous flow and cumulative volume pumped are recorded every minute. The flow meter was calibrated on October 26, 2022 by Endress+Hauser.

The daily volumes taken from supply well TW3-80 in 2022 are provided in Appendix C.

### 3.1.2 Groundwater Monitoring Program

Groundwater levels have been measured at various locations for varying periods of time on-Site and off-Site since December 1980. Following the purchase of the Site by the Perrier Group of America, a monitoring program was initiated in December 2000. Modifications to the monitoring program have been made over time as a result of PTTW requirements, well abandonments, physical inaccessibility to wells, and changes in property ownership. During the 2022 monitoring period, none of the wells required as part of the monitoring program became inaccessible. All the existing monitoring locations and the decommissioned or unused wells are shown on Figure 3.4.

The monitoring locations for the 2022 groundwater monitoring program are shown on Figures 3.1 and 3.2 and are summarized below.

#### **Overburden Monitors**

- MW2D-07, MW2E-07, MW4C-07, MW10A-09, TW1-93, MW-S, PCC-S, PCC-I.

#### **Bedrock Monitors**

##### **Upper Bedrock Aquifer Monitors**

- MW2C-07, MW4B-07, MW6B-08, MW7B-08, MW8B-08, MW10B-09, MW14B-11, MW14C-11, MW15B-12, MW16B-12, MW17B-12, MW18B-12, MW19-18-7, MW20-19-7, MW21-18-4, MW-D, MW-I, PCC-D, Private Well "Y".

##### **Lower Bedrock Aquifer Monitors**

- TW3-80 (Production Well), TW2-11, MW2A-07, MW2B-07, MW4A-07, MW6A-08, MW7A-08, MW8A-08, MW10C-09, MW10D-09, MW14A-11, MW15A-12, MW16A-12, MW17A-12, MW18A-12, MW19-18-4, MW20-19-5, MW21-18-3, PW5.

Some private wells are open across multiple bedrock units (for example private wells with a finished depth in the Lower Bedrock Aquifer are typically open across the Upper and Lower Bedrock Aquifers). Wells constructed in this manner have been grouped with the lowermost unit in which they are installed. It should be noted that water levels measured in wells open to multiple aquifer units represent average water levels that are not representative of the levels in any of the individual aquifer units. In addition, these wells may represent a potential pathway for contaminants in the shallow groundwater system to move into the deeper strata. Monitoring of these private wells is no longer required under PTTW3133-C5BUH9. None of the wells that Blue Triton owns are open across multiple aquifer units.

Water levels were measured at all locations quarterly under PTTW 3133-C5BUH9. Where required by the PTTW, dataloggers are used to record water levels at 60-minute intervals and downloaded quarterly. The groundwater levels measured in 2022 are presented in Appendix D.

### **3.1.2.1 Missing Data**

There were no missing data from the 2022 groundwater monitoring.

### **3.1.3 Surface Water Monitoring Program**

The monitoring locations for the 2022 surface water monitoring program are shown on Figure 3.3 and are summarized below.

#### **Surface Water Levels**

Measurement of surface water levels was initiated in December 2001 as part of the Nestlé (now Blue Triton) monthly monitoring program. In 2022, surface water levels were measured at the following locations:

- Aberfoyle Creek:
  - SW1 - located within the upstream part of the Blue Triton property;
  - SW2 - located within the downstream part of the Blue Triton property; and
  - SW3 - located at Gilmour Road, upstream of the Blue Triton property.
- Mill Creek:
  - SW4 - located on Mill Creek at Maple Leaf Lane, upstream of the confluence with Aberfoyle Creek; and
  - SW5 - located on Mill Creek at McLean Road, downstream of the Blue Triton property.

Water levels are measured at all locations during the third week of each month using a water level meter. At SW1 and SW2, dataloggers are used to record water levels at 60-minute intervals, which are also downloaded once a month. The surface water levels for 2022 are presented in Appendix E.

#### **Stream Flow**

Measurement of stream flow was initiated in December 2001 as part of the Nestlé (now Blue Triton) monthly monitoring program. Stream flow is measured at SW1 (upstream part of Blue Triton property) and SW2 (downstream part of Blue Triton property) in Aberfoyle Creek during the third week of each month. Despite the proximity of these onsite stations to one another, and the small difference in contributing drainage area between them, stream flows are measured at SW1 and SW2 to monitor for changes that could potentially be attributed to pumping at TW3-80. In 2022, stream flow velocities were measured using a Hach electromagnetic flow meter and the stream flows were calculated using the cross-sectional area-velocity method. The stream flow calculations for 2022 are presented in Appendix F.

In addition to the monthly stream flow measurements, water levels at SW1 and SW2 are logged continuously (hourly). The monthly surface water elevations ("stage") and stream flow measurements ("discharge") collected in 2022 are used to update and/or re-establish the stage-discharge relationships (rating curves) at SW1 and SW2. The rating curves are then used to infer continuous records of stream flow from the continuous water level measurements at SW1 and SW2. It should be noted that since the conditions of the stream channels at SW1 and SW2 change through time, updated rating curves are generally required for each year.

#### **Mini-Piezometers**

Mini-piezometers were initially installed in 2004 with additional mini-piezometers being installed since that time. In 2022, water levels were measured in mini-piezometers at eight locations, each containing a shallow and a deep

monitor (see locations on Figure 3.3). The mini-piezometer nests are located along Aberfoyle Creek upstream of the Blue Triton property to Mill Creek downstream of the confluence of the two creeks as follows.

- MP1-16S/D;
- MP16S/D-08;
- MP6S-08/D-04;
- MP12S/D-04;
- MP14S/D-07;
- MP8S/D-04,
- MP17S/D-11; and
- MP18S/D-11.

Water levels were measured at all locations quarterly under PTTW 3133-C5BUH9. Where required by the PTTW, dataloggers are used to record water levels at 60-minute intervals and downloaded quarterly. The water levels measured in 2022 are presented in Appendix E.

### **Temperature**

Measurement of surface water temperature began in 2005. In 2022, surface water temperature was measured at six locations along Aberfoyle Creek. The most upstream location is situated at Brock Road with the remainder of the sites located on the Blue Triton property downstream of Brock Road. Beginning upstream and moving downstream, the stream temperature sites are as follows (see locations on Figure 3.3).

- ST6-08;
- ST1-05;
- ST2-05;
- ST3-05;
- ST4-05; and
- ST5-05.

The dataloggers are located at the sediment-water interface with temperature data measured and logged at 30-minute intervals using Stowaway Tidbit® dataloggers or HOBO Tidbit MX dataloggers. Two dataloggers are installed at each site. Air temperature is also measured in a shaded area at ST1-05 at 30-minute intervals.

C. Portt and Associates Ltd. (2011) conducted a review of the appropriateness of the methodology for the temperature monitoring program. The report was approved by the MECP in October 2011 and recommendations from the report were implemented by CRA at that time and continued by Golder Associates Ltd. (now WSP) since May 2014. The temperature data are analyzed by C. Portt and Associates using ThermoStat software. A report on the surface water temperature is included as Appendix G.

### 3.1.3.1 Missing Data

The following table provides a list and description of missing data from the 2022 surface water monitoring. The missing data are technically not missing but rather were affected by winter conditions. The water levels in the mini-piezometers are close to surface and can become frozen in the winter. Slow moving water in the creeks can also become frozen in the winter. The water level is not necessarily representative of the actual water level under these frozen winter conditions. The issues were temporary and have been resolved.

**Table 2: Missing Surface Water Data from the 2022 Monitoring**

Monitoring Location	Missing Data	Comments
SW2	Frozen	Frozen in January
SW3	Not missing	New culvert installed in August
SW4	Frozen	Frozen in January
MP1-16D	Frozen	Frozen in December
MP14D-07	Frozen	Frozen in December

### 3.1.4 Notification Regarding Locations Which Become Inaccessible

None of the monitoring locations required in PTTW 3133-C5BUH9 have become inaccessible or removed from the monitoring program.

## 3.2 Biological Monitoring

Biological monitoring undertaken on the Blue Triton Aberfoyle property in 2022 was completed in accordance with the requirements of the PTTW for the site and under the guidance of recommendations provided in the 2021 Biological Monitoring Report (Beacon Environmental, 2022). Monitoring of terrestrial resources (vegetation and wildlife) was completed by Beacon Environmental and monitoring of aquatic resources (salmonid redd survey reaches of Aberfoyle Creek) was completed by C. Portt and Associates. The findings of the 2022 Biological Monitoring Program are presented in the 2022 Biological Monitoring Program Report (Beacon Environmental, 2023) which is included in Appendix H.

## 3.3 Surveying

SW2 was re-surveyed in 2022 due to heaving of the monitor. SW3 was also re-surveyed in 2022 following the construction of a new culvert at the road crossing.

## 3.4 Precipitation

Prior to 2021, precipitation data were obtained from Environment Canada from the Kitchener/Waterloo (KW) Station or the Waterloo Wellington Station (not recorded since April 2017), both of which reported total daily precipitation over the entire year. Based on reviews of the data it has been concluded that the KW Station may have underestimated the total precipitation since 2017. Environment Canada has been notified of this discrepancy and the data are under review. As such precipitation data were obtained from the Grand River Conservation Authority for the Shades Mill Station and are used in this report. The same data were used for the analysis of the potential recharge presented in Appendix I.

The following table provides a summary of the annual precipitation. The annual 20-year average (2001-2020) precipitation from the Shades Mill Station is 943.7 mm. For comparison, the annual 30-year average (1981-2010) precipitation from the Waterloo Wellington Station 916.5 mm. The total precipitation measured in 2022 was 682.3 mm, which is almost 28% below the average. This is the lowest annual precipitation over the past 22 years. Annual precipitation is also shown graphically on Figure 3.5 along with the 20-year average.

**Table 3: Annual Precipitation**

Year	Precipitation (mm)	% Difference from Average
2001	829.5	-12.1
2002	727.3	-22.9
2003	911.9	-3.4
2004	840.5	-10.9
2005	854.8	-9.4
2006	1180.5	25.1
2007	726.3	-23.0
2008	1200.8	27.2
2009	1011.0	7.1
2010	921.5	-2.4
2011	1023.9	8.5
2012	807.1	-14.5
2013	1108.1	17.4
2014	898.7	-4.8
2015	839.4	-11.1
2016	937.8	-0.6
2017	1091.8	15.7
2018	1048.6	11.1
2019	1058.9	12.2
2020	856.45	-9.2
2021	1022.8	8.4
2022	682.3	-27.7
Average (2001-2020)	943.7	

The monthly precipitation for 2022 is included in Table 5. Below average precipitation was recorded during nine months year. Above average precipitation was recorded in February, August and December with most of the precipitation coming in February. With the exception of August, below average precipitation was recorded from March through November.

**Table 4: Monthly Precipitation 2022**

Month	Precipitation (mm)	Average from 2001-2020 (mm)	% Difference from Average
January	36.6	71.4	-48.7
February	109.7	63.3	73.2
March	64.4	64.6	-0.3
April	36.6	81.0	-54.8
May	55.1	81.4	-32.3
June	57.2	82.2	-30.5
July	33.0	95.3	-65.4
August	87.0	77.4	12.3
September	28.4	81.6	-65.2
October	48.9	93.2	-47.5
November	34.6	75.8	-54.3
December	90.8	76.5	18.7

It is noted that in 2017, Nestlé (now Blue Triton) benefited from an exchange with the consulting hydrogeologist for Puslinch Township regarding the assessment of precipitation data from stations in the general area of the Aberfoyle facilities (memorandum prepared by Harden Environmental Services Inc. for Puslinch Township, May 12, 2017). It is recognized that there are differences between the amounts of precipitation recorded at the different stations. It is impossible to obtain a perfectly representative estimate of the annual precipitation over the full extent of the area of contribution for the Blue Triton Aberfoyle well. What is most important is that adopting a consistent approach from year to year allows an assessment of the differences with respect to long-term average conditions (30-year climate normals). An analysis of precipitation trends was conducted to see if there is a correlation with water level trends. We note that the actual influence on water levels (groundwater) would be due to recharge and not total precipitation, and that recharge is controlled by more than just precipitation. However, in the absence of detailed recharge data in the area, the use of precipitation totals allows for some comparison of long-term trends in water levels, particularly in the shallow monitors (overburden and mini piezometers).

An independent soil water balance analysis was conducted by S.S. Papadopoulos & Associates to estimate annual average rates of potential recharge over the region surrounding TW3-80. The SWB code of the United States Geological Survey was applied (Westenbroek et al., 2010) with the records of precipitation data compiled since 2008. The results of the analysis suggested that the annual average potential recharge is about 17% of the annual precipitation. The estimated annual potential recharge for 2022 is 85 mm with an annual precipitation of 682 mm. The potential recharge for 2022 is the lowest estimated over the 15-year period of analysis. The estimated annual potential recharge is consistent with the trends inferred from the previous analyses. The updated analyses are documented in a technical memorandum included in Appendix I.



## 4.0 MONITORING PROGRAM RESULTS

### 4.1 Water Taking for TW3-80

Water taking at the Blue Triton Aberfoyle Site in 2022 continues to be governed by PTTW 3133-C5BUH9, which permits water to be taken from one well as outlined in Table 6.

**Table 5: Permitted Water Takings at Aberfoyle**

Source	Maximum Rate	Maximum Number of Hours of Water Taking per Day	Maximum Daily Water Taking	Maximum Number of Days of Water Taking per Year
TW3-80	2,500 L/min	24	3,600,000 L	365

The daily water takings for 2022 are tabulated in Table C1 in Appendix C. The daily water taking at TW3-80 ranged from 0 L to 3,111,753 L; the latter is 86% of the permitted taking. The average daily taking was 1,842,783 L. During 2022, the instantaneous flow rates and the daily takings were always below the limits of the PTTW (i.e., less than 2,500 L/min and 3,600,000 L, respectively).

The total volume of water taken each year from 2001 to 2022 is presented on Figure 4.1. The total volume of water taken in 2022 from TW3-80 was 672,615,929 L. In 2022, the total volume taken was approximately 51% of the permitted volume. The total pumping from TW3-80 in 2022 was similar to the total annual water taking in 2018 and has increased over the past four years (since 2019). Since 2002, the groundwater taking has ranged from approximately 43% to 67% of the permitted taking.

The monthly water takings for the past 5 years are presented on Figure 4.2. The monthly water takings in 2022 from TW3-80 ranged from 43,624,837 L in January to 69,800,641 L in July. In 2022, the monthly water takings generally increased during the first half of the year (with the exception of the high water takings in March), with the peak water taking in July, and then varied during the last four months of the year. In general, the monthly water taking amounts and trends over the year were higher in the summer and November and December 2022 compared to the previous year.

The Grand River Low Water Response Team declared a Level 1 Low Water Condition for the entire Grand River Watershed, including Mill Creek, on June 29, 2022 and increased to a Level 2 Low Water Condition on July 21, 2022. The Level 2 Low Water Condition was in effect for the remainder of 2022. Blue Triton committed to limit water takings to 90% of their monthly maximum permitted volume during the Level 1 Condition and 80% of their monthly maximum permitted volume during the Level 2 Condition. Blue Triton's monthly water takings were below 65% of the permitted monthly amount from June to the end of the year. The daily water takings were below 87% of the permitted daily amount during the Level 1 Water Condition and below 74% during the Level 2 Water Condition. In addition, as per Condition 3.3, Blue Triton's Low Water Response Program was implemented, which included an increase in monitoring and review of data from MW2-07 from quarterly to monthly. As per council resolution (April 13, 2022), Blue Triton also notified the Township of Puslinch and the Township Hydrogeologist (Harden Environmental) that a Level 1 and Level 2 Low Water Condition was declared for the entire Grand River Watershed.

Condition 4.8 of the PTTW requires details of the bottling operations such as location and name of facilities where water is delivered in bulk containers, if bulk water is containerized at the receiving location, the size of the

containers into which the water is transferred, and total volume of water transported in bulk to each remote facility. Blue Triton has indicated that no water was shipped in bulk (container greater than 20 litres) in 2022.

As per Condition 5.1, Blue Triton has indicated that no complaints arising from the taking of water authorized under this PTTW were received in 2022.

## 4.2 Groundwater Monitoring Program

The groundwater levels measured manually in 2022 at the monitoring wells are tabulated in Table D1 in Appendix D. Hydrographs with the manual or transducer water level data are also included in Appendix D. In addition to the water levels, the hydrographs include the daily pumping volumes at TW3-80 and daily precipitation as recorded at the Shades Mill meteorological station.

### 4.2.1 TW3-80

Water levels and average daily pumping rates for TW3-80, along with daily precipitation, from 2018 through 2022 are shown on Figure D1a (Appendix D).

Water levels measured in 2022 at TW3-80 range from approximately 297.5 to 312.4 masl (or approximately 18.9 to 4.0 m below ground surface) under pumping and non-pumping conditions, respectively. These variations in water levels are mainly due to changes in the pumping rate and are within the historical range of water levels observed at TW3-80. An analysis of monthly average water levels at TW3-80 versus average pumping at TW3-80 was undertaken to assess how pumping water levels are related to pumping rates. A linear regression of the data indicates that pumping rate accounts for approximately 89% of the variation in water levels in TW3-80. A technical memorandum on the analysis is included in Appendix I.

Operation records of TW3-80 indicate that the well is seldom shut-down for significant periods of time and, consequently, there are few fully recovered non-pumping water levels available. Based on previous shutdowns, CRA (2014) indicates that the non-pumping water levels are approximately 311 to 313 masl or 5.4 to 3.4 m below ground surface. The estimated non-pumping water levels (partially recovered conditions following shutdown of the pump) measured in 2022 range from approximately 307 to 312 masl. The non-pumping water levels have been similar over the past five years (2018 through 2022) and higher than the previous three years (2015 through 2017) when the water takings were higher. The non-pumping water levels in 2022 are most similar to the non-pumping water levels in 2018 when the annual water takings were similar. It should be noted that non-pumping water levels do not represent "true" conditions that would be observed if there was no pumping at TW3-80 for an extended period. Instead, they represent partially recovered conditions, with the amount of recovery dependent on the average pumping rate before the pumping stopped, how much time has elapsed before pumping resumes and whether there is a background (seasonal) trend in the water levels. The results of the analysis presented in Appendix I suggest that the fully recovered non-pumping level in TW3-80 is about 313 m.

The pumping water levels in 2022 range from approximately 298 to 307 masl. Based on a static water level of 313 masl, the estimated drawdown at the well in 2022 ranged from approximately 6 to 15 m. The total available drawdown to the top of the pump intake is about 20.7 m (based on a static water elevation of 313 masl and a top of pump intake elevation of 292.3 masl). Referring to Figure 1.2, the top of the Lower Bedrock Aquifer is at an elevation of approximately 292.3 masl. The pumping levels in 2022 ranged from about 5 to 15 m above the top of the aquifer; confirming that the aquifer remained under confined conditions throughout 2022.

The records of average monthly water levels, monthly withdrawals and monthly precipitation between 2006 and 2022 are shown on the hydrograph for TW3-80 (Figure D1b). The hydrograph extends back to 2006 to include

the period of increased pumping up to 2008. The data provide important insights into the performance of the well and the long-term sustainability of pumping. The water levels and pumping volumes can be categorized into four periods with a year of transition between each period as follows: 2006 through 2007 when pumping rates were higher and water levels were lower; 2009 through 2013 when pumping rates were lower and water levels were higher; 2015 through 2017, when pumping rates were higher and water levels were lower; and 2019 to 2021, when pumping rates have been lower and water levels higher. In 2022, the pumping and trends are similar to the transition years (e.g., 2014 and 2018). In general, the water level changes in TW3-80 correspond to the changes in the overall water taking from the well (i.e., lower water levels during periods of higher water takings (e.g., 2007) and higher water levels during periods of lower water takings (e.g., 2011)). Overall, the water levels respond to pumping as expected and the on-going groundwater taking at TW3-80 has not led to a long-term declining trend in the TW3-80 water levels. The capacity of the well has not changed through time.

### 4.2.2 Lower Bedrock Aquifer

The regional groundwater potentiometric surface in the Lower Bedrock Aquifer is shown on Figure 4.3. The potentiometric surface was prepared based on the water levels measured on July 24, 2022. This represents a time when the highest pumping volumes were recorded at TW3-80 and monthly precipitation was below average for the month of July. A review of the potentiometric surface on July 24, 2022, indicates groundwater flow toward TW3-80 from the northeast, north and northwest. The greater hydraulic connection with the area toward MW7-08 is evident in the potentiometric surface under pumping conditions. It is estimated that the water elevation contours return to the regional mean southerly flow pattern approximately 1.5 km south of the Site.

Hydrographs for wells completed in the Lower Bedrock Aquifer are included on Figures D2 through D17 in Appendix D.

The findings from a review of the hydrographs of wells completed in the Lower Bedrock Aquifer are summarized below.

- Water levels measured within this aquifer in 2022 are generally similar to the water levels measured in 2018 when the annual pumping was similar. Most of the water levels in the wells were within the range measured over the past years with the following exceptions. Water levels in the wells with a strong hydraulic connection to TW3-80 (MW2A-07, MW4A-07) had a brief decline in water levels at the end of June when pumping at TW3-80 increased. Following the decrease in water levels, the pumping was reduced and water levels returned to levels within the historical range. Water levels in some of the distant downgradient wells (MW15A-12, MW16A-12, MW17A-12) and a distant well to the northeast (MW10-D-09) were below the historical range of water levels during the second half of the year. A similar trend of low water levels during the second half of the year, although within the historical range of water levels, was observed at the other monitoring wells completed in the Lower Bedrock Aquifer. Water levels in these wells are partially influenced by the pumping at TW3-80 and also by the lack of recharge during most of 2022. Water levels in MW8A-08 (considered to provide some indication of background conditions) have been similar over the past five years;
- Water levels in portions of the Lower Bedrock Aquifer near TW3-80 are influenced by short-term fluctuations in TW3-80 pumping. The short-term pumping effects are evident with the water levels fluctuating in response to daily changes in pumping rates and are observed in monitoring wells closest to TW3-80 (e.g., MW2A-07 and MW4A-07). In comparison, wells located further away (upgradient – MW6A-08, MW8A-08, MW10C-09 and MW10D-09; downgradient – MW15A-12, MW16A-12 and MW17A-12) show only minor differences between the daily high and low water levels;

- Water levels in the Lower Bedrock Aquifer are also influenced by longer term trends in the TW3-80 pumping. The long-term pumping effects are evident in the wells closer to TW3-80 where water level changes from year to year correlate with overall annual water takings (i.e., increased annual water takings result in lower average water levels). During periods of reduced pumping, the water levels recover with no long-term increasing or decreasing trends. These effects of variations in total annual pumping decrease with distance from TW3-80, as can be seen by comparing the hydrographs for MW2A-07 against hydrographs for wells further from TW3-80 (e.g., MW8A-08). This is evident with the observed rise in water levels since September 2018 at MW2A-07, which correlates with an overall decrease in pumping at TW3-80 followed by the decrease in water levels in May 2022, which correlates with an overall increase in pumping at TW3-80. The start of a decreasing water level trend in the monitoring wells further away from TW3-80 is not related to pumping at TW3-80;
- As in previous years there appears to be a stronger hydraulic connection with TW3-80 at MW7A-08 (located approximately 1,050 m north of TW3-80) compared to the connection between TW3-80 and MW14A-11 (located approximately 750 m northwest of TW3-80) and TW3-80 and MW18A-12 (located approximately 750 m southwest of TW3-80). The response at MW7A-08 suggests that the zone of influence extends further upgradient toward MW7-08, as opposed to downgradient toward MW18-12. This interpreted hydraulic connection is consistent with previous years; and
- Another difference to these trends is at MW10C/D-09 (located approximately 1,230 m north east of TW3-80) and at MW16A-12 (located approximately 1,650 m south of TW3-80), where less seasonal change is evident. This is consistent with previous years. These wells are located further away from TW3-80 and may be influenced by external sources.

In summary, the water levels in the onsite monitoring wells in the Lower Bedrock Aquifer are influenced primarily by pumping at TW3-80. The effects of pumping at TW3-80 diminish with distance from the well, and beyond about a kilometre water levels are predominantly affected by other influences. In addition, water levels recover when pumping rates are reduced, as has been observed since September 2018 and decrease when pumping rates are increased, as has been observed since June 2022. In 2022, the low amount of recharge to the Lower Bedrock Aquifer is evident during the second half of the year in the wells further away from TW3-80. No long-term trends in the water levels due to pumping TW3-80 have been observed over the last five years.

### 4.2.3 Middle Bedrock Aquitard

Hydrographs for wells completed in the Middle Bedrock Aquitard are included on Figure D18 in Appendix D. One well is monitored within this unit (MW2B-07), which is sealed within the Middle Bedrock Aquitard but close to the top of the Lower Bedrock Aquifer.

The results of a review of the hydrograph of MW2B-07 completed in the Middle Bedrock Aquitard are summarized below:

- Water levels measured within this aquitard in 2022 are similar to the water levels measured in 2018 and lower than the water levels observed during the previous three years (2019 through 2021). The water levels are within the historical range measured at this well; and
- The water levels in MW2B-07 follow a similar trend as the water levels in the Lower Bedrock Aquifer from year to year and respond to pumping at TW3-80. However, the response to pumping is less compared to the response in the lower bedrock aquifer. This is consistent with the interpretation that the bottom of the screen is only 2 m above the contact between the Middle Bedrock Aquitard and the Lower Bedrock Aquifer.

#### 4.2.4 Upper Bedrock Aquifer

The regional groundwater potentiometric surface in the Upper Bedrock Aquifer is shown on Figure 4.4. The potentiometric surface was prepared based on the water levels measured on July 24, 2022. This represents a time in 2022 when the highest pumping volumes were recorded at TW3-80 and monthly precipitation was below normal for the month of July. A review of the potentiometric surface on July 24, 2022, indicates groundwater flow toward TW3-80 from the northeast, north and northwest. The greater hydraulic connection with the area toward MW7-08 is evident in the potentiometric surface under pumping conditions.

Hydrographs for wells completed in the Upper Bedrock Aquifer are included on Figures D19 through D31 in Appendix D.

The findings from a review of the hydrographs of wells completed in the Upper Bedrock Aquifer are summarized below:

- With the exception of MW7B-08 and MW15B-12, water levels measured in the Upper Bedrock Aquifer in the summer and early fall of 2022 are lower than those measured over the past five years due to the below-average precipitation that occurred for most of the year. The lowest water levels since monitoring began were measured at MW16B-12, MW17B-12 and MW18B-12, all downgradient of TW3-80. Water levels generally began to rise in February and then declined from April through July. The water levels in the monitoring wells during the remainder of the year varied from increasing to stable to decreasing as some areas were influenced by the significant precipitation event in August;
- Water levels in the Upper Bedrock Aquifer around the Site show some effects of pumping at TW3-80 (i.e., there is hydraulic connection between the Lower Bedrock and Upper Bedrock Aquifers); however, the connection is limited (i.e., less response than in the Lower Bedrock Aquifer). The extent of influence varies based on distance from TW3-80 and existing hydrogeologic conditions (i.e., complexity in the subsurface geologic structure and properties);
- The relationship between the long-term average pumping rates and water levels (i.e., higher water levels during periods of decreased pumping since September 2018 and lower water levels during periods of increased pumping since June 2022) is only observed in the monitoring wells on the property (e.g., MW2C-07 and MWI/D) and MW7B-08 (upgradient);
- Typically, wells further away from TW3-80 show less effect from pumping, although this is not always the case. The greatest influence from pumping is observed at MW2C-07 and MW7B-08. There appears to be a stronger hydraulic connection between TW3-80 and MW7B-08 (located approximately 1,050 m north of TW3-80) compared to the connection between TW3-80 and MW4B-07 (located approximately 330 m northwest of TW3-80). This is also consistent with previous years and points to complexity in the subsurface;
- While there is an influence on water levels in the Upper Bedrock Aquifer from pumping TW3-80, there are also long-term water level fluctuations that are reflective of variations in recharge (i.e., lower water levels during years of below-average precipitation (such as 2022) and higher water levels during years of above-average precipitation); and
- There are also seasonal influences observed in the water levels in the Upper Bedrock Aquifer. For example, melt events and significant precipitation events influence the water levels in the Upper Bedrock Aquifer. Recharge to the aquifer has more of an effect than pumping during these events (i.e., the changes in water level are more reflective of the wet spring/dry summer and fall compared to the total pumping).

In summary, the water levels in the onsite monitoring wells in the Upper Bedrock Aquifer are influenced by pumping at TW3-80 but to a lesser degree than water levels in the Lower Bedrock Aquifer due to a lower permeability bedrock layer that exists between the two aquifers. There is also an influence on water levels reflective of trends in recharge. This is reflected in 2022 by some of the lowest water levels measured in the monitoring wells during a time of below normal precipitation for an extended period. The long-term monitoring data, which show that water levels recover when pumping rates are reduced, are consistent with the interpretation that the water taking is sustainable.

#### 4.2.5 Overburden

The potentiometric surface of the overburden plotted in Figure 4.5 is also based on water levels measured on July 24, 2022, during the month of highest pumping and lowest precipitation. A review of the potentiometric surface on July 24, 2022, indicates that groundwater flow is generally in a southerly direction with potentially some flow towards Aberfoyle Creek. We note that there is both lateral and vertical flow in the overburden. An interpretation of the lateral flow in the overburden is shown in Figure 4.5, while vertical gradients in the shallow overburden along the creek are discussed below. Shallow groundwater flow directions are more variable locally than the deeper bedrock flow systems as they are more influenced by topography and interactions with surface features.

Hydrographs for wells completed in the overburden are included on Figures D32 through D36 in Appendix D. The intermediate and deep overburden wells are installed in the till, in sand and gravel within or below the till, or deep within the surficial sand and gravel aquifer. Shallow overburden wells are typically installed in the upper portion of the surficial sand gravel.

Findings from a review of the hydrographs of wells completed in the overburden are summarized below:

- Similar to the water levels in the Upper Bedrock Aquifer, the water levels in the overburden generally began to rise in February and then declined from April through July. The water levels in the monitoring wells during the remainder of the year varied from increasing to stable to decreasing;
- Some of the lowest water levels were recorded in the overburden wells during the second half of 2022 due to the below average precipitation but were within the range of water levels observed at the wells. There is no significant overall increasing or decreasing trend; and
- Water levels in the overburden are affected by natural factors (recharge), and to a lesser degree by pumping at TW3-80. The response to pumping in the overburden is muted compared to the response in Upper and Lower Bedrock Aquifers but for monitoring wells immediately adjacent to TW3-80 there is a correlation with long-term variations in pumping.

In summary, the water levels in the overburden are influenced by weather events and to a lesser degree, pumping at TW3-80. The influence of pumping on water levels in the overburden is less than the influence of pumping on water levels in both the Upper and Lower Bedrock Aquifers. There are no long-term declining trends in the overburden water levels. The fact that water levels recover when pumping rates are reduced and there are no long-term declining trends is a line of evidence that the water taking is sustainable.

#### 4.2.6 Vertical Gradients

Vertical gradients between the Lower Bedrock Aquifer and the Upper Bedrock Aquifer are plotted on Figures D37 through D50 in Appendix D; the gradients are inferred from multi-level monitoring wells completed in both units.

Note that a positive gradient is calculated when the water level in the upper aquifer exceeds the level in the lower aquifer. Under these conditions, the mean direction of vertical groundwater flow is downwards.

In general, based on a review of the graphs for the multi-level monitoring well locations, a dampened response in the Upper Bedrock Aquifer relative to the response in the Lower Bedrock Aquifer is evident. At locations where the positive gradient increases when pumping increases, this is due to the fact that water levels in the Lower Bedrock Aquifer respond more to pumping than do the water levels in the Upper Bedrock Aquifer.

A description of the gradients at the Site is as follows:

- MW2A/C-07 – positive gradient (potential downward flow) that increases with increased pumping. There are brief periods in 2022 and other years when the gradient is reversed, coinciding with reduced pumping. The long-term gradient trend correlates with the long-term pumping trend (i.e., the increased pumping during the second half of 2022 compared to the previous three years has resulted in an increase in the positive gradient). Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping (i.e., higher pumping during the summer months). Daily changes in the vertical gradient are greater than at wells further away from TW3-80;
- MW4A/C-07 – positive gradient (potential downward flow) that increases with increased pumping. The long-term gradient trends and seasonal changes in vertical gradient are also evident and similar to those observed at MW2-07. The daily changes in the vertical gradient are less than at MW2-07;
- MW6A/B-08 – positive gradient (potential downward flow) that has been relatively consistent over the past five years with a slight decrease since September 2018 correlating to the decrease in pumping over the same time period and a slight increase during the second half of 2022 correlating to the increase in pumping over the same time period;
- MW7A/B-08 – positive gradient (potential downward flow) that increases with increased pumping. There is a daily fluctuation in the positive gradient that relates to the daily pumping at TW3-80. There is some correlation between the long-term change in the gradient and the long-term changes in pumping of TW3-80 (i.e., the increased pumping during the second half of 2022 compared to the previous three years has resulted in an increase in the positive gradient);
- MW8A/B-08 – negative gradient (potential upward flow) that occasionally reverses to a positive gradient (potential downward flow) mainly during the summer. Since September 2018 the gradient has been negative with the exception of some positive gradients during the summer of 2020, 2021 and 2022 when pumping from TW3-80 was higher. Similar to MW6-08 the gradient has been relatively consistent over the past five years with a slight decrease since September 2018 correlating to the decrease in pumping over the same time period and a slight increase during the second half of 2022 correlating to the increase in pumping over the same time period;
- MW10B/C-09 – positive gradient (potential downward flow) that does not change with seasonal pumping fluctuations. The gradient has been consistent over the past five years and the change in total pumping in 2022 was not observed in the gradient;
- MW14A/C-11 – positive gradient (potential downward flow) that increases with increased pumping and correlates with the long-term pumping trend. Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping;

- MW15A/B-12 – negative gradient (potential upward flow) that does not change with increased pumping. There has been a slight decrease in the vertical gradient since the second half of 2021 that does not correlate with pumping at TW3-80;
- MW16A/B-12 – positive gradient (potential downward flow) with minor changes related to seasonal changes in pumping;
- MW17A/B-12 – positive gradient (potential downward flow) that reverses to a negative gradient (potential upward flow) during times of decreased pumping. Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping;
- MW18A/B-12 – negative gradient (potential upward flow) that reverses to a positive gradient (potential downward flow) during times of increased pumping. Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping;
- MW19-18-4/7 – positive gradient (potential downward flow) with minor change related to seasonal changes in pumping;
- MW20-19-5/7 – positive gradient (potential downward flow) that increases with increased pumping. Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping; and
- MW21-18-3/4 – positive gradient (potential downward flow) that increases with increased pumping. Seasonal changes in vertical gradient are also evident and correspond to the seasonal changes in pumping.

Most of the area around TW3-80 is characterized by positive gradients (downward flow) in the bedrock. A negative gradient (upward flow) is present at wells further away from TW3-80 (i.e., at MW15-12 to the west and MW8-08 to the north). Over the past five years, a negative gradient (upward flow) is also present at MW2-07 (close to TW3-80), and MW17-12 and MW18-12 (to the south) when pumping at TW3-80 has been lower.

### 4.3 Surface Water Monitoring Program

The surface water monitoring program includes measurement of mini-piezometer and surface water levels, surface water flows and surface water temperatures. The surface water levels measured in 2022 are presented in Appendix E along with hydrographs of the water levels. Surface water flows are tabulated and graphed in Appendix F. The hydrographs also include the daily pumping volumes at TW3-80 and daily precipitation as recorded at the Shades Mill meteorological stations. Surface water temperatures are discussed in Section 4.3.4 and Appendix G.

#### 4.3.1 Mini-Piezometer Water Levels

Hydrographs for the mini-piezometer locations are presented on Figures E1 through E8 in Appendix E with the “a” figures including data for the last 5 years (2018 through 2022) and the “b” figures including data for 2022 only.

The findings from a review of the hydrographs for the mini-piezometers are summarized below.

- A new mini-piezometer nest (MP1-16) was installed in Aberfoyle Creek at the Blue Triton Gilmour Road property in April 2016 to monitor background conditions upstream of the Site. In 2018, the casing at MP1-16 was extended so that the mini-piezometer doesn't flow (when not frozen). For the 2022 analysis, MP1-16 is considered to represent background conditions;



- The variation in water levels at MP1-16 over 2022 was approximately 0.5 m in both the deep piezometer and the shallow piezometer with spikes related to precipitation and/or snowmelt events. Water levels in MP1-16D were the lowest observed in the past five years but within the historical range. In 2022 the water levels rose in February to a peak in late March, followed by a decline into June and July, stable through to the beginning of October and then rising to the end of the year. These changes in water level are influenced by natural seasonal patterns. Lower water levels were observed during the second half of the year due to the below average precipitation recorded through most of the year. The potential for vertical flow at the MP1-16 nest is consistently upwards in 2022, similar to previous years (i.e., as shown in Figure E1a/b, water levels in MP1-16D exceed those in MP1-16S);
- There are five mini-piezometer nests situated on the Blue Triton Aberfoyle property (MP16, MP6, MP12, MP14, MP8) and two located downstream of the confluence of Aberfoyle Creek and Mill Creek (MP17, MP18). These mini-piezometer nests, located upgradient and downgradient of TW3-80, showed fluctuations of approximately 0.4 m to 0.9 m during 2022. The trends in water levels at the mini-piezometers were similar to those observed at MP1-16. The similarity in water level fluctuations indicates that changes in water levels correspond more with natural events rather than changes in pumping in TW3-80 and are mainly due to precipitation, snow melt and evaporation;
- Some of the lowest water levels were measured in the mini-piezometers in the summer of 2022 compared to the past five years, however, with the exception of MP14-07 and MP18D-11 these water levels are within the historical ranges. The low water levels are attributed to the below average precipitation recorded during most of the year;
- The water levels have generally increased in the spring, declined through the summer, and then increased in the fall (although there was less of an increase in the fall of 2022); and
- In addition to the seasonal trends, short-term changes (“spikes”) in water level in the shallow groundwater reflect the influence of precipitation. There were less spikes in the water levels in 2022 compared to previous years due to the lack of precipitation events in 2022.

Shallow gradients observed in the mini-piezometers are shown on Figures E9 through E11 in Appendix E with the “a” figures including data for the last 5 years (2018 through 2022) and the “b” figures including data for 2022 only. Beginning upstream and moving downstream, the vertical gradients are as follows:

- MP1-16 – strong negative gradient (potential upward flow) in 2022 and over the past five years. In the past there have been several short-term decreases in the negative gradient caused by rapidly rising surface water elevations following precipitation events, however these were less evident in 2022 due to the lack of precipitation events;
- MP16 – no gradient measured in 2022. Over the past five years, the gradient has varied from a weak negative gradient (potential upward flow) to a weak positive gradient (potential downward flow) that has remained close to no gradient. There is less “noise” in the data following the spring of 2019;
- MP6 – weak negative gradient (potential upward flow) that declined during the year and reversed to a weak positive gradient (potential downward flow) in the summer. The gradient has been similar over the past five years;

- MP12 – weak negative gradient (potential upward flow) that increased during the spring and then decreased and changed to a weak positive gradient (potential downward flow) in July. Over the previous three years the gradient was mostly negative. The change to positive during the second half of 2022 is due to the below average precipitation in 2022;
- MP14 – strong negative gradient (potential upward flow) in 2022. Historically the gradient is reduced during the summer but generally remains negative, which is what was also reflected in 2022;
- MP8 – weak negative gradient (potential upward flow) after mid-January that became stronger in the fall. Historically there has been a weak negative gradient (potential upward flow) at this location. There is less “noise” in the data following the spring of 2019; and
- MP17 and MP18 – weak positive gradient (potential downward flow) that reversed to a weak negative gradient (potential upward flow) in the spring of 2022. Over the past five years, with the exception of 2021, there has generally been a weak negative gradient (potential upward flow) during the first half of the year and then a weak positive gradient (potential downward flow) during the second half of the year.

The water levels in the mini-piezometers on July 20, 2022 are plotted on Figure 4.6 which is during the month of highest pumping and lowest precipitation. Review of the water levels on July 20, 2022 indicates that there is a strong negative gradient (potential upward flow) at MP1-16 located upstream of Aberfoyle Mill Pond. There is essentially no gradient at the three piezometers (MP16, MP6, MP12) upgradient of TW3-80 and then a strong negative gradient at MP14 near the middle of the property. Further downstream before the confluence with Mill Creek, there is a weak negative gradient at MP8 and then after the confluence, the gradient changes to weak positive gradient at MP17 and MP18. These gradients are similar to those observed in the past.

### 4.3.2 Surface Water Levels

Hydrographs for the surface water level monitoring locations are included on Figures E12 through E16 in Appendix E with the “a” figures including data for the last 5 years (2018 through 2022) and the “b” figures including data only for 2022.

A review of the hydrographs for the surface water level monitoring locations indicates the following:

- Surface water levels in the creeks fluctuate in response to precipitation, snow melt and evapotranspiration with no measurable effects from pumping at the current rates;
- In general, surface water levels have been higher in the winter/spring and lower in the summer and then have increased slightly into the fall. The trends were similar in 2022. In general, surface water levels at the on-Site stations (SW1 and SW2) and off-Site stations (SW3, SW4 and SW5) were similar throughout the year, with a rise in water levels observed in February and March followed by a decline in water levels into the summer and higher water levels again in the fall. Higher water levels were observed at all four of the five stations (possible erroneous water level at SW4 in October) in October which corresponded to a major precipitation event;
- The summer water levels were low, similar to past five years but within the historical range with the exception of the SW4 water level in October and the SW3 water level in November. Looking at the overall trend in the water levels, it is possible that these water levels may be erroneous; and
- It should be noted that the measuring point at SW2 was resurveyed in February 2022. Following the correction, the water levels at SW2 appear to be higher than the previous five years. It appears that the

change in the measuring point elevation may have occurred as far back as 2018 and may have been a slow change possibly due to slight heaving of the monitor each year.

The water levels at the surface water stations on July 20, 2022 are included on Figure 4.6, during the month of highest pumping and lowest precipitation. Review of the water levels on July 20, 2022 indicates that surface water features varied in elevation from approximately 317.32 masl at SW3 to 307.21 masl at SW5 with surface water levels across the Site ranging from 311.34 masl (SW1) to 310.37 masl (SW2).

It is important to note that the stream flow provides a more reliable data set for investigating the potential impacts of pumping compared to an analysis of stream water levels, which can be affected by channel geometry. An analysis of stream flow is presented in the following section.

### 4.3.3 Surface Water Flow

The monthly stream flow data collected in 2022 are summarized in Appendix F. Stream flow has been measured at SW1 and SW2 since December 2001. SW1 is located along Aberfoyle Creek near the upstream part of the property while SW2 is located along Aberfoyle Creek near the downstream part of the property.

Stage-discharge curves are developed for SW1 and SW2 which show the relationship between surface water elevation (stage) and stream flow (discharge). The stage-discharge relationship was used to convert the continuous measurements of stream stages to stream flows. Due to changing stream conditions, individual stage-discharge curves sometimes need to be created for individual years or a series of years. This is done because a review of the discrete flow and water level measurement results indicates that the hydraulic controls at the gauging stations have changed subtly. In 2022, the stage-discharge curves were updated at both stations. The stream geometry appears to have changed slightly at SW1 resulting in the need for a new stage-discharge curve. A new stage-discharge curve was also developed for SW2 based on the revised surveyed elevation at the monitor. These new stage-discharge curves were developed to represent continuous flows in 2022 at SW1 and SW2 to provide a better fit to the data. Stage-discharge curves were developed by estimating the level at which zero flow would occur (i.e.,  $y_0$ ) at each station. This was estimated using the available low-flow measurements collected over the monitoring period. Historical data were included for comparison and to include measured data over a larger range of stream discharge conditions. Power functions were used to develop a best fit curve for the measured data at each station. Data outliers were evaluated with a lower confidence due to suspected winter conditions or measurement error. The updated stage-discharge curves for SW1 and SW2 are presented on Figures F1 and F2, respectively. Flow data from previous years were estimated using historic stage-discharge curves that best fit the monitoring data collected during those years (as presented in previous reports).

Graphs of estimated stream flow at SW1 and SW2, along with pumping rates and precipitation, are presented on Figure F3 in Appendix F with the "a" figure including data for the last 5 years (2018 through 2022) and the "b" figure including data for 2022. The updated stage-discharge relationship was used to estimate stream flow from the continuous water level elevation data in 2022. It should be noted that historically there are a few occasions when flow was estimated at SW1 and SW2 for stream elevations outside of the observed stage-discharge curve relationship (typically flows exceeding approximately 1,200 L/s), including some in February 2022.

Review of the flow data indicates the following:

- In 2022, stream flow measured in the field (during monthly monitoring) at SW1 ranged from 20.5 L/s (August) to 604.5 L/s (March) and at SW2 stream flow ranged from 19.5 L/s (August) to 648.5 L/s (March);

- The trends in surface water flow at SW1 and SW2 over the year are similar. This is consistent with previous years and as expected over the ~900 m reach of creek;
- In 2022, stream flow was higher in the late winter and spring following precipitation and melt events and then was lower through the summer with less variability in flow. The stream flow rose in October and then was relatively constant to the end of the year;
- The 2022 summer stream flows at SW1 and SW2 were some of the lowest observed over the past five years. The summer low flows were similar to those observed in 2018 but lasted for a longer period in 2022;
- The calculated flows, using the rating curves, indicate that flow at SW2 is typically greater than the flow at SW1 during the spring and similar during the summer (i.e., flow at SW1 and SW2 are essentially equal at low flows, when overland runoff is not present, and flow at SW2 is marginally higher than SW1 at moderate to high flows). It should be noted that the contributing drainage area between SW1 and SW2 is small in comparison to the total drainage area upstream of the site. This means that the expected increase in flow based on increase in drainage area will also be small and that stream flows at SW1 and SW2 will be similar and differences are likely to be within the margin of error for flow measurements in natural open channels; and
- Apparent flow is sometimes slightly lower at SW2 compared to SW1. This can sometimes be due to manual flow measurement accuracy or changed hydraulic controls. With respect to stream conditions, the channel cross section at SW1 is relatively stable from year to year and has a silty bed composition. This type of channel is less prone to underestimating flow due to irregularities. In contrast, the channel cross section at SW2 is wide, very shallow during low flow, has a cobbly substrate and the bed is mobile, often changing from year to year. The presence of large cobbles in the bed at SW2 introduces flow irregularities that cause additional error to flow measurements, especially at low flow conditions. In addition, flow through the coarse substrate, known as gauge underflow, is likely occurring at SW2. The magnitude of gauge underflow and the error it introduces cannot be measured using standard stream flow measurement techniques, but the relative error is larger for shallow depths of flow (when the flow above the bed is small) and less significant for deeper flows (when the flow above the bed is large). For this reason, discrete measurements can significantly underestimate the flow at SW2 during low water conditions.

There have been no significant effects observed on Aberfoyle Creek adjacent to the site since 2008 (when continuous monitoring began), which included nine Low Water Advisories over that time.

It was noted in CRA (2014) that pumping tests conducted in 2004, 2007, and 2010 indicated that surface water flow at SW1 and SW2 was not measurably affected by pumping. The on-going monitoring confirms this conclusion and shows that the stream flows are influenced primarily by precipitation events and fluctuate seasonally.

#### **4.3.4 Surface Water Temperature**

Surface water temperature was monitored at six stations across the Blue Triton property.

The average daily water and air temperature data for 2018 through 2022 are shown on Figure G1a and for 2022 on Figure G1b. Review of the data indicates the following:

- The seasonal trend in stream temperature levels in 2022 is similar to previous years;

- Average daily ambient air temperature ranged from -17.6°C (2.2 °C colder than 2021) to 25.2 °C (0.7°C warmer than 2021) in 2022;
- Average daily surface water temperature ranged from 0.2°C to 27.0°C at the upstream end of the property (ST6-08) and from -0.2°C to 25.4°C at the downstream end of the property (ST5-05). Surface water temperatures generally decrease, across the Site, moving downstream; and
- Air temperature significantly influences stream temperature as seen by the strong correlation between the two. The correlation is not evident during the winter months when air temperature typically drops below 0°C and surface water temperature remains relatively constant around 0°C.

The surface water temperature data were provided to C. Portt and Associates, and the results were incorporated in their report, which is also included in Appendix G.

The mill pond on Aberfoyle Creek has a major influence on the temperature of the creek and its fish community. During the summer, the water in the mill pond, upstream from Brock Road, becomes warm and, as a consequence, the creek is warm through the Blue Triton property. In the C. Portt and Associates report it is concluded that:

In 2022, mean summer (June – August) air temperature was intermediate among those observed during the period 2007 – 2022. The overall pattern of water temperature suitability for the fish species found in the Aberfoyle Branch of Mill Creek from Brock Road downstream through the Blue Triton property in 2022 are consistent with previous years. Water temperatures during the June 1 – August 31 period are usually too warm for coldwater species such as brook trout and brown trout and too cold for warmwater species such as largemouth bass. The water temperatures during this period are most favourable for species such as common shiner which have intermediate thermal requirements. During the summer, the water in the mill pond upstream from Brock Road becomes warm and, although the creek temperature decreases with distance downstream, it frequently exceeds the ultimate upper incipient lethal temperature for brook trout and brown trout at the furthest downstream temperature monitoring site.

The relationships between air temperature and water temperature were consistent with those observed in previous years at the three upstream sites but the 2022 stream temperatures were lower than predicted from the mean water temperature versus mean air temperature relationship at the three downstream sites. Stream flow in 2022 was the lowest during the period for which temperature data are available but the data do not demonstrate a relationship between flow and residuals of the water temperature versus air temperature relationship.

#### **4.4 Biological Monitoring Program**

In the 2022 Biological Monitoring Program Report for the Aberfoyle property (Beacon Environmental, 2023) it is concluded that:

In summary, the findings suggest that there have not been any significant changes to the various terrestrial and aquatic parameters being monitored on the Aberfoyle property. Species richness, abundance, and distribution are generally within the range expected and attributable to natural variation and succession. The subject property continues to support high quality terrestrial and

wetland habitats that support a diverse range of native wildlife. The aquatic environment is strongly influenced by the thermal loading from the Aberfoyle Mill Pond.

The report also includes recommendations for continued biological monitoring in 2023. Details are included in the report which can be found in Appendix H.

## 5.0 CONCLUSIONS

The following conclusions are provided based on the results of the 2022 monitoring program.

- 1) Blue Triton has complied with all the conditions in the existing permit for the Aberfoyle well TW3-80.
- 2) TW3-80 has been operated in accordance with the pumping limits outlined in the PTTW. The daily water taking at TW3-80 in 2022 ranged from 0 L to 3,111,753 L. The average daily taking in 2022 was 1,842,783 L. The total volume of water taken in 2022 from TW3-80 was 672,615,929 L or 51% of the permitted volume.
- 3) The interpreted non-pumping water levels in TW3-80, which obtains water from the Lower Bedrock Aquifer, ranged from approximately 307 to 312 masl in 2022 and the interpreted water levels under variable pumping conditions ranged from approximately 298 to 307 masl. The drawdown at the well ranged from approximately 15 m to 6 m in 2022. Historical and current records indicate that long-term water levels generally correlate with the monthly pumping volumes (i.e., higher water levels during months of lower pumping and lower water levels during months of higher pumping). At all times the water level in TW3-80 remained above the top of the Lower Bedrock Aquifer.
- 4) The trends of water level variations within the Lower Bedrock Aquifer are stable with nearby monitoring wells in the Lower Bedrock Aquifer fluctuating in response to variations in pumping at TW3-80. Some of the lowest water levels were observed in the Lower Bedrock Aquifer in 2022. Water levels in these wells are partially influenced by the pumping at TW3-80 and also by the lack of recharge during most of 2022. The groundwater taking from TW3-80 has not led to a long-term declining trend in the aquifer water levels.
- 5) The muted responses at monitoring wells in the Upper Bedrock Aquifer relative to the Lower Bedrock Aquifer confirm that the Middle Bedrock Aquitard limits the effect of pumping on overlying units. The water levels in the Upper Bedrock Aquifer and overburden aquifer show seasonal trends that are reflective of spring melt and precipitation. Some of the lowest water levels were observed in these aquifers in 2022 due to the below average precipitation measured during most of 2022. Unacceptable impacts (i.e., long-term declining trends) to the Upper Bedrock Aquifer and overburden aquifer have not been observed.
- 6) Surface water levels fluctuate in response to precipitation, snow melt and evapotranspiration.
- 7) The water taking does not hinder the ability of the water resource to support existing natural functions of the ecosystem. The groundwater withdrawals do not result in physical and ecological impacts to the adjacent Aberfoyle Creek and wetlands.
- 8) The water taking does not prevent other water users from continuing their established pattern of use. The groundwater withdrawals from TW3-80 do not interfere with existing municipal uses or private uses. There have been no well interference complaints at Aberfoyle due to the water taking from TW3-80.

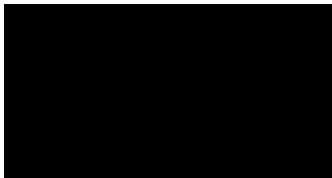
- 9) No irreversible impacts have been observed due to pumping of the aquifer or deterioration of groundwater quantity or quality on neighbouring properties.
- 10) Based on the monitoring data collected, the 2022 water takings from TW3-80 are sustainable.

## **6.0 RECOMMENDATIONS**

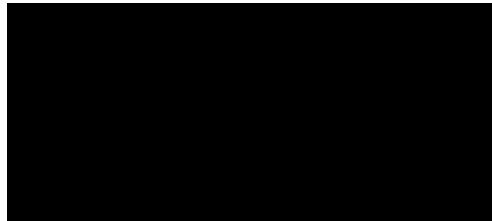
No changes to the existing monitoring program are recommended.

# Signature Page

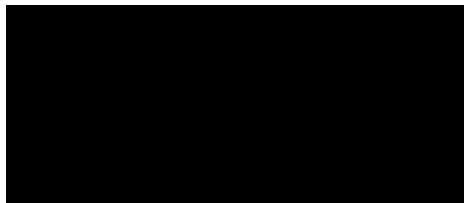
## WSP Canada Inc.



Greg Padusenko, M.Sc., P.Eng., P.Geo.  
*Senior Hydrogeologist*



Kevin MacKenzie, M.Sc., P.Eng.  
*Senior Hydrologist*



John Piersol, M.Sc., P.Geo.  
*Senior Hydrogeologist*

GRP/JAP/KM/II



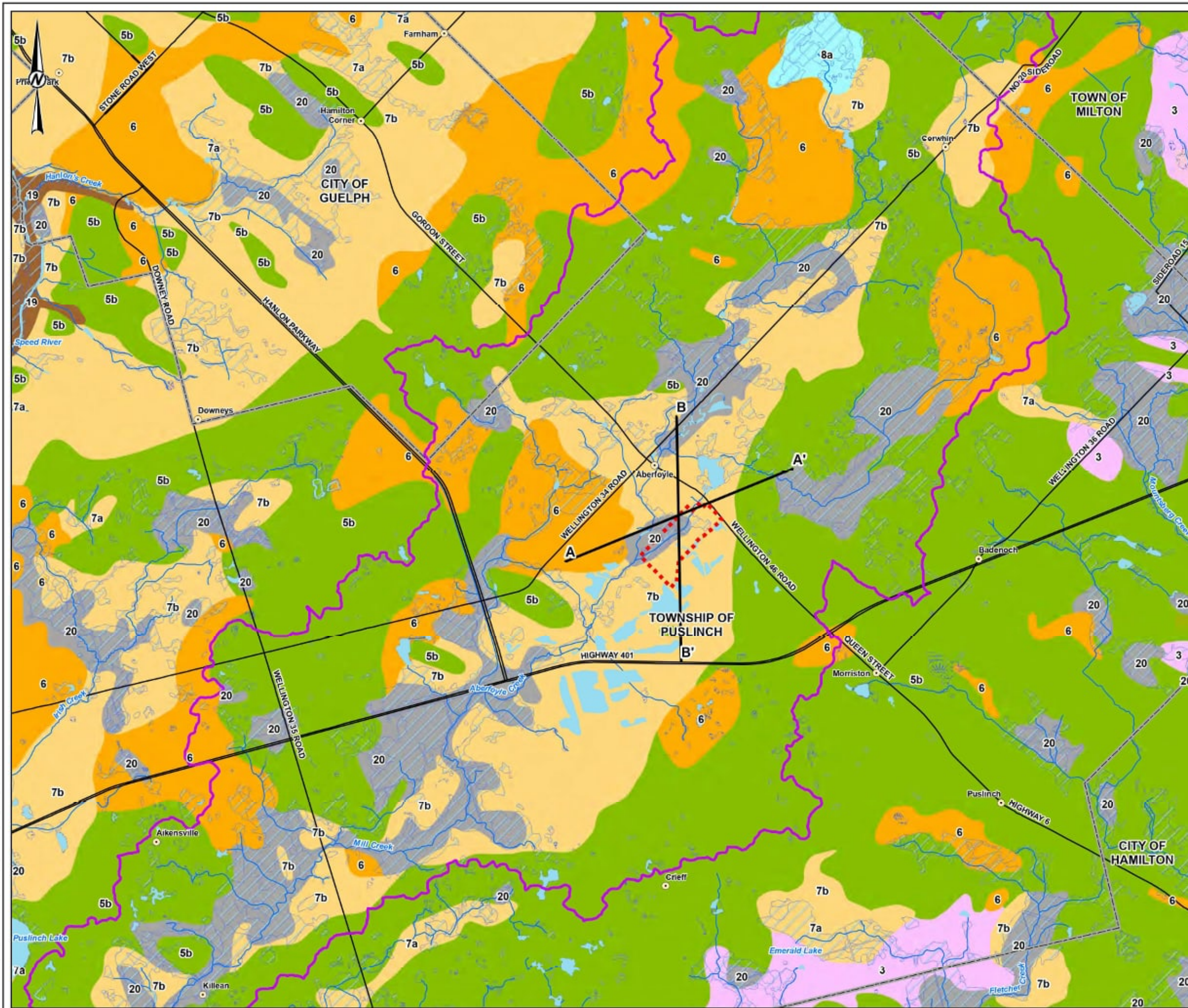
**FIGURES**

Figures 1.1 to 4.6









- LEGEND**
- City / Town
  - Cross-Section Location
  - Main Road /Highway
  - Watercourse
  - Waterbody
  - Wetland
  - Provincially Significant Wetland
  - Mill Creek Sub-Watershed
  - Municipal Boundary
  - Property Boundary
  - 3: Paleozoic bedrock
  - 5b: Stone-poor, carbonate-derived silty to sandy till
  - 6: Ice-contact stratified deposits
  - 7a: Sandy deposits
  - 7b: Gravelly deposits
  - 8a: Massive-well laminated
  - 19: Modern alluvial deposits
  - 20: Organic deposits



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<b>CLIENT</b>	
BLUE TRITON BRANDS	
<b>PROJECT</b>	
2022 ANNUAL REPORT	
<b>TITLE</b>	
REGIONAL QUATERNARY GEOLOGY	
<b>CONSULTANT</b>	
YYYY-MM-DD	2023-01-30
DESIGNED	ST
PREPARED	SA
REVIEWED	GP
APPROVED	JP



PROJECT NO. 20449101	CONTROL 0019	REV. 1.0	FIGURE <b>2.2</b>
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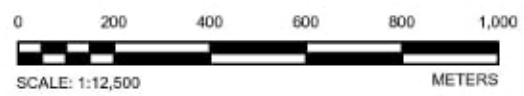






**LEGEND**

- Production Well
- Monitoring Well (Bedrock)
- Private Well (Bedrock)
- Watercourse
- Property Boundary



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**CLIENT**  
 BLUE TRITON BRANDS

**PROJECT**  
 2022 ANNUAL REPORT

**TITLE**  
 2022 BEDROCK MONITORING LOCATIONS

CONSULTANT	YYYY-MM-DD	2023-01-30
	DESIGNED	ST
	PREPARED	SA
	REVIEWED	GP
	APPROVED	JP

PROJECT NO. 20449101	CONTROL 0019	REV. 1.0	FIGURE 3.1
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**LEGEND**

- Production Well
- Monitoring Well (Overburden)
- Watercourse
- Property Boundary



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**CLIENT**  
 BLUE TRITON BRANDS

**PROJECT**  
 2022 ANNUAL REPORT

**TITLE**  
 2022 OVERBURDEN MONITORING LOCATIONS

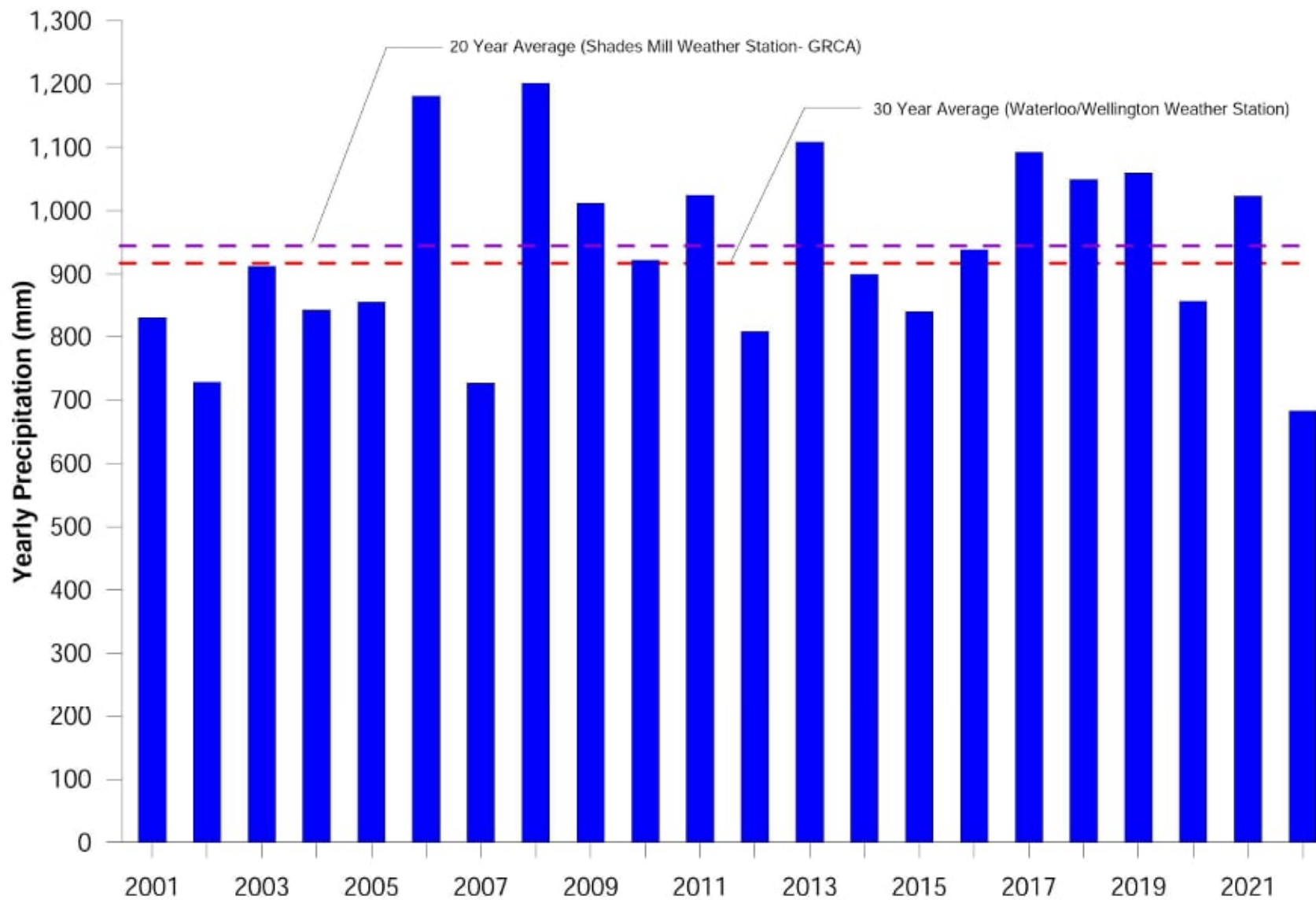
CONSULTANT	YYYY-MM-DD	2023-01-30
	DESIGNED	ST
	PREPARED	SA
	REVIEWED	GP
	APPROVED	JP

PROJECT NO. 20449101 CONTROL 0019 REV. 1.0 FIGURE 3.2

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Guelph, Ontario

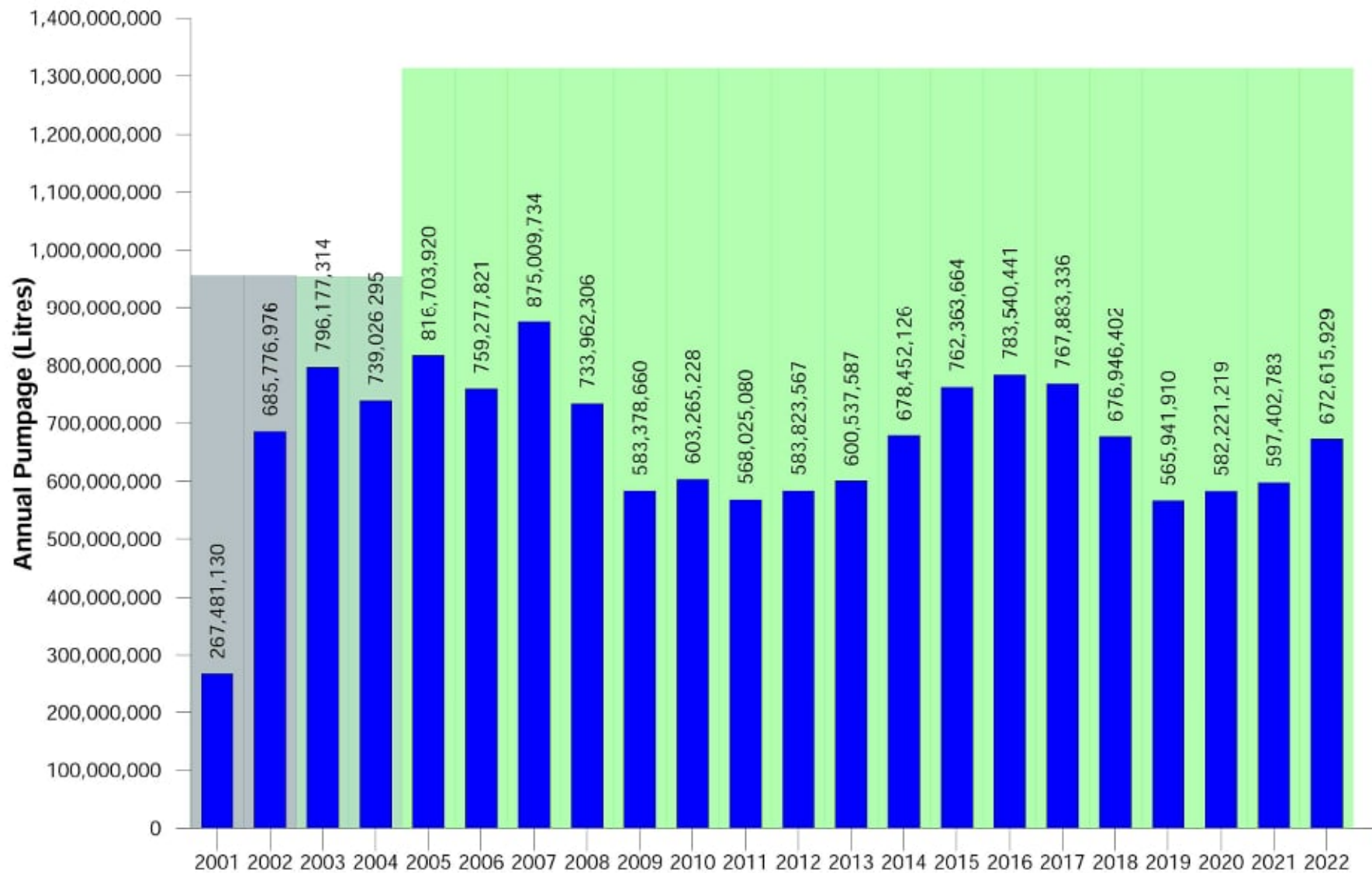
**TITLE HISTORICAL YEARLY PRECIPITATION (2001 TO 2022)**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1000)      REV A      FIGURE 3.5



DATE JANUARY 2023  
DESIGN SK  
REVIEW GP  
APPROVED GP



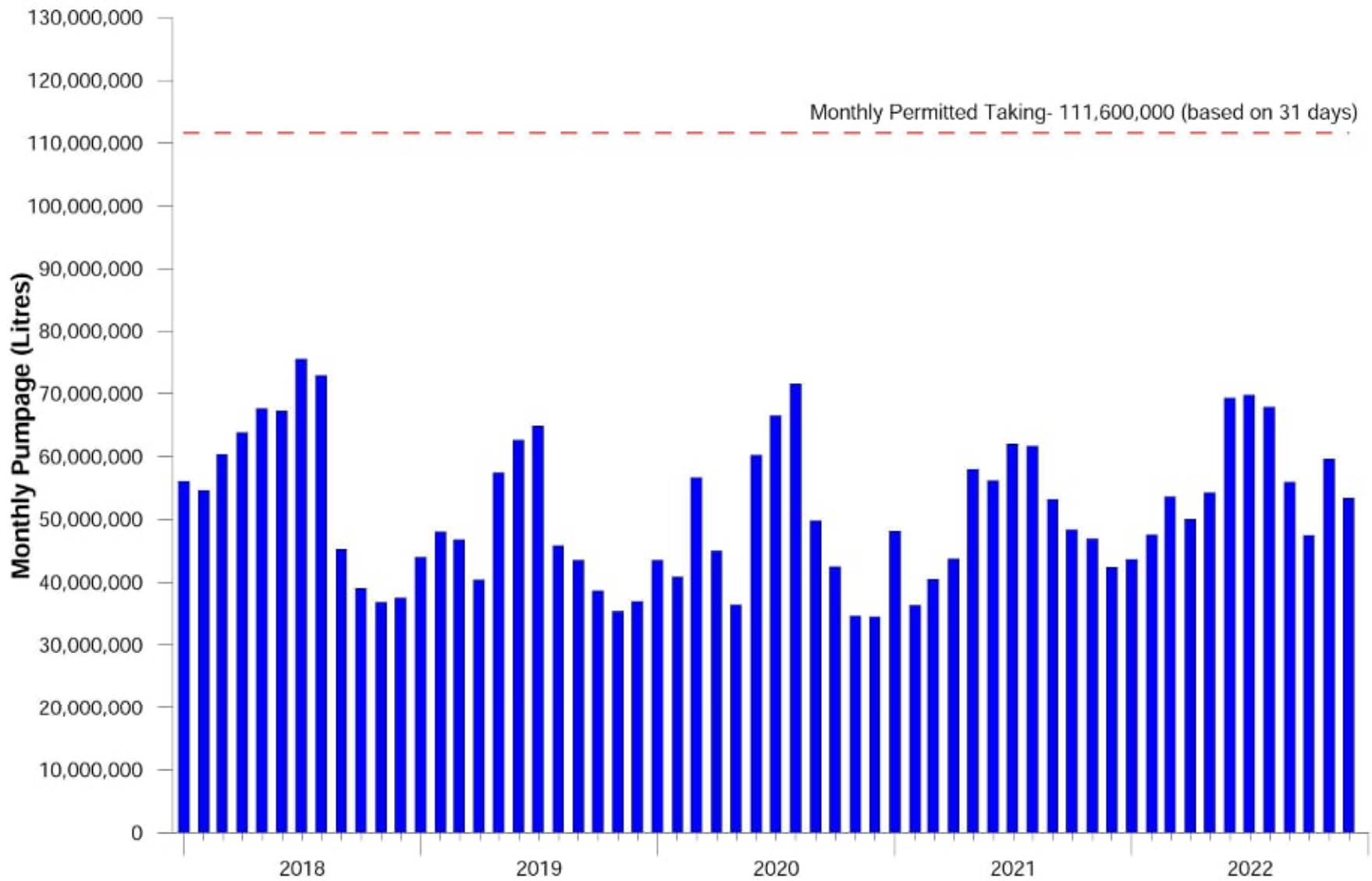


DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

**PROJECT**  
**BLUE TRITON BRANDS**  
 Guelph, Ontario

**TITLE**  
**TW3-80 ANNUAL WATER TAKING (2001 TO 2022)**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO.	REV	FIGURE
20449101 (1100)	A	4.1



PROJECT

**BLUE TRITON BRANDS**  
Guelph, Ontario

TITLE

**TW3-80 MONTHLY WATER TAKING (2018 TO 2022)  
2022 ANNUAL MONITORING REPORT**

PROJECT NO.

20449101 (1100)

REV

A

FIGURE

4.2



DATE JANUARY 2023

DESIGN KS

REVIEW GP

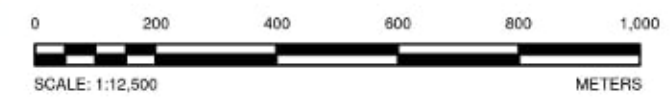
APPROVED GP





**LEGEND**

- Production Well
- Monitoring Well (Bedrock)
- Private Well (Bedrock)
- Watercourse
- Water Elevation Contour (masl)
- Water Level Elevation (July 24, 2022)
- Property Boundary



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CLIENT  
**BLUE TRITON BRANDS**

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PROJECT  
**2022 ANNUAL REPORT**

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TITLE  
**POTENTIOMETRIC SURFACE OF UPPER BEDROCK AQUIFER (JULY 2022)**

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CONSULTANT	YYYY-MM-DD	2023-01-30
	DESIGNED	ST
	PREPARED	SA
	REVIEWED	GP
	APPROVED	JP

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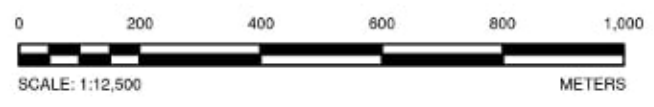
PROJECT NO.	CONTROL	REV.	FIGURE
20449101	0019	1.0	<b>4.4</b>

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25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN INDICATED FROM:



- LEGEND**
- Production Well
  - Monitoring Well (Overburden)
  - Watercourse
  - Water Elevation Contour (masl)
  - 311.4 Water Level Elevation (July 24, 2022)
  - Property Boundary



**REFERENCE(S)**  
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CLIENT  
**BLUE TRITON BRANDS**

PROJECT  
**2022 ANNUAL REPORT**

TITLE  
**POTENTIOMETRIC SURFACE OF OVERBURDEN (JULY 2022)**

CONSULTANT	YYYY-MM-DD	2023-01-30
	DESIGNED	JMC
	PREPARED	SA
	REVIEWED	GP
	APPROVED	JP

PROJECT NO. CONTROL REV. FIGURE  
 20449101 0019 1.0 4.5

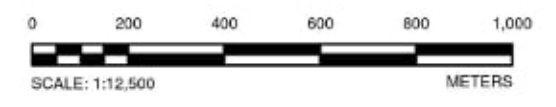
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN INDICATED FROM 25mm





- LEGEND**
- Piezometer
  - Surface Water Station
  - Watercourse
  - 311.5 Water Level Elevation (July 20, 2022)
  - Property Boundary



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**CLIENT**  
 BLUE TRITON BRANDS

**PROJECT**  
 2022 ANNUAL REPORT

**TITLE**  
 SURFACE WATER ELEVATIONS (JULY 2022)

CONSULTANT	YYYY-MM-DD	2023-01-30
	DESIGNED	JMC
	PREPARED	SA
	REVIEWED	GP
	APPROVED	JP

PROJECT NO. 20449101	CONTROL 0019	REV. 1.0	FIGURE 4.6
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 21mm

**APPENDIX A**

**Permit to Take Water Number  
3133-C5BUH9**

**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: (289) 830-5867

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

Division des évaluations et des  
permissions environnementales  
Réaménagement des friches  
contaminées et réglementation des  
prélèvements d'eau  
Unité de la réglementation des  
prélèvements d'eau  
1er étage, 135 av. St. Clair O  
Toronto, ON  
M4V 1P5  
Tél:(289) 830-5867



November 15, 2021

Triton Water Canada Holdings, Inc.  
101 Brock Rd S  
Puslinch, Ontario, N0B 2J0  
Canada

Dear Andreanne Simard:

**RE:** Permit To Take Water No. 3133-C5BUH9  
101 Brock Rd S, Puslinch, County of Wellington  
Reference Number 3572-A8XGCE

Please find attached a Permit to Take Water which authorizes the withdrawal of water in accordance with the application for this Permit to Take Water, dated April 1, 2016 and signed by Andreanne Simard.

**This Permit expires on November 15, 2026.** Authorized rates and amounts are indicated on Table A. This Permit cancels and replaces Permit Number 1381-95ATPY, issued on December 19, 2013

Section 9(3) of Ontario Regulation 387/04 (Water Taking and Transfer) requires all holders of a permit to report daily water taking amounts annually, in a manner and form approved by the Director (<https://www.lrcsde.lrc.gov.on.ca/wtrs/>). For the purpose of s. 9(3), such reports shall be submitted electronically to the Water Taking Reporting System (WTRS) electronic database or via hard copy, as described in the Technical Bulletin entitled "Permit to Take Water Program Monitoring and Reporting of Water Takings", dated November 2010, PIBs 6003e (<https://archive.org/details/std01079790.ome/mode/2up>).

If you have questions about reporting requirements, please call the WTRS Help Desk at 416-235-6322 (toll free: 1-877-344-2011) or by email, [WTRSHelpdesk@ontario.ca](mailto:WTRSHelpdesk@ontario.ca). It is preferred that you submit your data directly and electronically to the WTRS. Where this is impracticable, please contact the WTRS Help Desk to arrange for written submission of your data.



Condition 1.4 specifically indicates that this Permit is not transferable to another party. Any queries regarding a change in owner/operator should be made to the Permit to Take Water Evaluator at the above address.

Take notice that in issuing this Permit, terms and conditions pertaining to the taking of water and to the results of the taking have been imposed. The terms and conditions have been designed to allow for the development of water resources, while providing reasonable protection to existing water uses and users.

Yours truly,



---

Gregory Meek  
Supervisor (Acting), Permit To Take Water  
Director, Section 34.1, Ontario Water Resources Act, R.S.O. 1990  
Environmental Permissions Branch

File Storage Number: -

**PERMIT TO TAKE WATER**  
Ground Water  
NUMBER 3133-C5BUH9

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

Triton Water Canada Holdings, Inc.  
101 Brock Rd S  
Puslinch, Ontario  
N0B 2J0

*For the water taking from:* One Drilled Well (TW3-80)

*Located at:* 101 Brock Rd S  
Puslinch, County of Wellington

*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 Guelph District Office.
- (e) "Permit" means this Permit to Take Water No. 3133-C5BUH9 including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means Triton Water Canada Holdings, 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 April 1, 2016 and signed by Andreanne Simard, 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 **November 15, 2026**. 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	TW3-80	Well Drilled	Bottled Water	Commercial	2,500	24	3,600,000	365	17 569053 4812797
							<b>Total Taking:</b>	3,600,000	

- 3.3 It is the responsibility of the Permit Holder to keep advised of any Low Water Advisory within the jurisdiction of the Grand River Conservation Authority. For the purpose of this condition, Low Water Advisory means a Level 1, Level 2, or Level 3 low water condition as defined by the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) in their Low Water Response Program, as may be amended from time to time by the MNDMNRF.

When a Low Water Advisory exists within the Grand River Conservation Authority watershed, the Permit Holder shall undertake measures outlined in the Low Water Response Plan, as described in **Item 6 of Schedule A**.

#### **4. Monitoring**

- 4.1 Under section 9 of O. Reg. 387/04, and as authorized by subsection 34(6) of the *Ontario Water Resources Act*, 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 establish the following groundwater monitoring program for the duration of the Permit:

##### **Bedrock Wells**

- (i) Continuous monitoring of groundwater levels in the following bedrock and overburden monitoring wells:

##### **Upper Bedrock**

- MW2C-07
- MW4B-07

- MW-D
- PCC-D
- MW6B-08
- MW7B-08
- MW8B-08
- MW10B-09
- MW14B-11
- MW14C-11
- MW15B-12
- MW16B-12
- MW17B-12
- MW18B-12
- MW19-18-7
- MW20-19-7
- MW21-18-4
- Private well "Y" MOE WWR #67-09669 (continuous monitoring is subject to owner's concurrence)
- MW-I

Lower bedrock

- TW3-80 (67-07290)
- TW2-11
- MW2A-07
- MW2B-07
- MW4A-07
- MW6A-07
- MW7A-08
- MW8A-08
- MW10C-09
- MW-10D-09
- MW14A-11
- MW15A-12
- MW16A-12
- MW17A-12
- MW18A-12
- MW19-18-4
- MW20-19-5
- MW21-18-3
- PW5 (continuous monitoring is subject to owner's concurrence)

Overburden Wells

- TW1-93
- MW-S
- PCC-S
- PCC-I

- MW2D-07
- MW2E-07
- MW4C-07
- MW10A-09

4.3 The Permit Holder shall establish the following surface water monitoring program for the duration of the Permit:

**Surface Water Levels**

(i) Continuous monitoring of water levels at the following locations:

- SW1
- SW2

(ii) Monthly monitoring of water levels at the following locations:

- SW3
- SW4
- SW5

**Stream Flow**

(iii) Monthly monitoring of flow, encompassing a range of flow conditions, and the development of a stage-discharge curve at the following surface water locations:

- SW1
- SW2

**Multi-level Piezometers**

(iv) Continuous monitoring of multi-level piezometers at the following locations:

- MP16S/D-08
- MP6S-08/D -04
- MP12S/D-04
- MP14S/D-07
- MP8S/D-04
- MP1-16S/D
- MP17S/D-11
- MP18S/D-11

**Temperature**

(v) Continuous monitoring of temperature at the sediment-water interface at the following locations:

- ST6-08
- ST1-05/AT-01
- ST2-05
- ST3-05
- ST4-05
- ST5-05

- 4.4 The Permit Holder shall undertake wetland monitoring and redd surveys as recommended in "2010 Biological Monitoring Program Final Report" by C. Portt and Associates dated January 28, 2011. Results from the wetland and redd surveys shall be submitted to the Director as a part of the annual monitoring report required under Condition 4.7.
- 4.5 Continuous monitoring shall be datalogged at 60 minute intervals and downloaded quarterly, however, the daily minimum water levels can be used to evaluate the water level variation with respect to pumping to improve the data handling and presentation.

Where monthly monitoring data is datalogged, this data shall also be downloaded on a quarterly basis.

- 4.6 The Permit Holder shall identify to the Director in writing, within 15 days of any monthly monitoring event, any monitoring locations identified in Conditions 4.2 and 4.3 which become permanently inaccessible and/or abandoned along with a recommendation for replacement monitoring locations. This shall exclude wells that become temporarily inaccessible, i.e., due to frozen conditions. Upon approval of the Director the monitoring program shall be appropriately modified.
- 4.7 The Permit Holder shall submit to the Director, an annual monitoring report which present and interprets the monitoring data to be collected under the Terms and Conditions of this Permit. This report shall be prepared, signed and stamped by a licensed professional geoscientist or a licensed professional engineer specializing in hydrogeology who shall take responsibility for its accuracy. Surface water impact assessment shall be conducted by a qualified surface water scientist who shall co-sign the report as responsibility for the accuracy of the surface water portion. The report shall be submitted to the Director by March 31 of each calendar year and include monitoring data for the 12 month period ending December 31 of the previous year.
- 4.8 The Permit Holder shall submit to the Director as part of the annual monitoring report, details of the bottling operations involved with water taking under this Permit to Take Water to indicate compliance with OWRA Section 34.3. These details shall include:
- Location and name of the facilities to which water is delivered in bulk containers greater than 20 L from this source,
  - If the bulk water is containerized at the receiving location,
  - The size of container(s) into which the water is transferred at the receiving location, and
  - Total volume of the water transported in bulk in each calendar year to each remote facility.
- 4.9.1 Prior to December 31, 2021, the Permit Holder shall establish a publicly accessible internet Website, with no user, access or registration fees, and shall maintain the website for the duration of this permit. Following the establishment of the Website, the Permit Holder shall notify the Director in writing, of the Website URL address.
- 4.9.2 By December 31, 2021, the Permit Holder shall upload and make available for download the following information:



- all technical documentation submitted to support the Permit To Take Water application, items listed in Schedule A of this Permit;
- a plain language executive summary of the water taking activity; and,
- the well interference protocol.

4.9.3 By March 31 of each calendar year (until March 31, 2027) the Permit Holder shall upload and make available for download the following information to the Website:

- the monitoring report required by Condition 4.7 for the 12-month period ending December 31 of the previous year.
- The daily water taking records collected as required by Condition 4.1, uploaded in a suitable electronic format (e.g. Microsoft Excel) for the 12-month period ending December 31 of the previous year.

4.10 By September 30 of each calendar year (until September 30, 2027), the Permit Holder shall host an annual stakeholder meeting. The meeting will provide an opportunity for the Permit Holder to inform stakeholders of the Permit and the results of the annual monitoring report (for the 12-month period ending December 31 of the previous year), to receive submissions from stakeholders and the public, and to answer questions concerning the water taking.

The Permit Holder shall also directly notify the following stakeholders:

- The Director
- The City of Guelph
- The Grand River Conservation Authority
- Credit Valley Conservation Authority
- The Township of Puslinch
- The Six Nations of the Grand River
- The Mississaugas of the New Credit First Nation
- The Haudenosaunee Confederacy Chiefs Council (via the Haudenosaunee Development Institute)
- The Wellington Water Watchers
- Council of Canadians

The meeting may be held virtually and/or at suitable accessible and public venue within the County of Wellington.

A copy of the meeting invitations, agenda and minutes shall be submitted to the Director within 30 days of the meeting.

## **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 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).

### **6.1 Subsection 4 (4) in the Water Taking and Transfer Regulation (Ontario Regulation 387/04) ("Regulation") sets out priorities of water use that the Director will take into account as a last resort to avoid or resolve conflict among water users in the event of a shortage of water resources in an area. The four priority of use categories set out in subsection 4 (2) of the regulation, are as follows:**

- Priority 1 – Environment, drinking water, and Farm animal production;
- Priority 2 – Agricultural;
- Priority 3 – Industrial and commercial and other (including water bottling); and
- Priority 4 – Aesthetic

In the event of an urgent shortage of water resources in the Puslinch area, the Director may amend this Permit prioritize water takings in Priority categories 1 and 2.

The Director may also require the Permit Holder to investigate and resolve interferences that occur between existing water takings, working with the affected water users to identify potential solutions.

*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  
Floor 1, 135 St Clair Ave W  
Toronto, ON  
M4V 1P5*

***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 1381-95ATPY, issued on 2013/12/19.

Dated at Toronto this 15th day of November, 2021.



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

## Schedule A

This Schedule "A" forms part of Permit To Take Water 3133-C5BUH9, dated November 15, 2021.

1. Report titled "Nestle Waters Canada – Aberfoyle, Technical Study for Permit to Take Water Renewal Application", signed by Greg Padusenko, M.Sc., P.Eng., P.Geo. and John Piesol, M.Sc., P.Eng. of Golder Associates Ltd., Christopher J. Neville, M.Sc., P.Eng. of S.S. Papadopulos & Associates, Inc. and Ken Ursic, M.Sc. of Beacon Environmental, dated June 2019.
2. Report titled "Nestle Waters of Canada Aberfoyle Site, 2020 Annual Monitoring Report", signed by Greg Padusenko, M.Sc. P.Eng., P.Geo, and Kevin MacKenzie, P.Eng. and John Piersol, M.Sc. P.Geo. of Golder Associates Limited, dated March 2021.
3. Memo titled "Nestle Waters Canada Aberfoyle 2016 Annual Monitoring Report", prepared by Sarah Day, Surface Water Specialist, Technical Support Section, West Central Region, Ministry of the Environment and Climate Change, dated September 18, 2017.
4. Report titled "Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fish: 2006 to 2020:", signed by Cam Portt and Jim Reid of C. Portt & Associates, dated February 2021.
5. Report titled "2020 Biological Monitoring Program, Nestle Waters Canada, Aberfoyle Property", signed by Anna Cunningham, B. Sc, and Ken Ursic, M. Sc. of Beacon Environmental Limited, dated February 2021. Project No. 216114.
6. Technical Memorandum "Low Water Response Plan For Aberfoyle TW3-80" prepared by Greg Padusenko and John Piersol of Golder Associates Ltd., dated October 19, 2021, Project No. 20449101 (1000).

**APPENDIX B**

**TW3-80 Borehole Log**

Attachment 2

Project Name: ABERFOYLE FISHERIES  
 Job No. 979-653  
 Client: CUSTOM AGGREGATE  
 Borehole Type: 12" Ø Cable Tool  
 Location: Pit No. 1, Aberfoyle

Borehole No. TW3-80  
 Date Completed April 14/80  
 Geologist/Engineer A.V.N.  
 Elevation 1040.90, top of casing

Depth (Elev.)	Stratigraphy	Profile		Penetration Test Blows/Foot	Piezometer or Standpipe Installation				
		Description & Remarks	Sample						
		Number	Type	20	40	60	80		
0		(316.7 m amsl)						12" Ø steel casing to rock grouted to 20' from surface	
(1039)		Brown clayey-silt till containing some sand and small gravel							
40		(304.5 m amsl)							
45		fine - medium sand (303.0 m amsl)							
48		fine sand matrix w/sand and gravel (302.1 m amsl)							
80		Eramosa member of the Guelph formation * Black dolomite slightly crystalline solid							12" Ø Drive shoe seated into rock
(959)		(292.3 m amsl)							
139		Saw Warton formation of the Amabel Group light - medium grey dolomite slightly crystalline fractured water bearing zone							
(900)		(274.3 m amsl)							
		N.B. Static level, 11.42 ft. below top of casing on April 15/80 BLEV. = 1029.48							

FIGURE 2.3

\* Based on driller's log, Guelph Fm. interpreted to occur from El. 302.1 to 299.9 m amsl.  
 Eramosa from 299.9 to 292.3 m amsl.





*TW # 25/10*

The Ontario Water Resources Act  
**WATER WELL RECORD**

*NOE # 67-07290*

18/10

NAME OF OWNER: **Wellington** ADDRESS: **Fuelinoh** CITY: **Con 7** DISTRICT: **23. 2**

NAME OF CONTRACTOR: **Lilcott, Mr. John** ADDRESS: **R.R. #3, Guelph, Ontario.** DATE: **14 - APR - 80**

**LOG OF OVERBURDEN AND BEDROCK MATERIALS - (SEE INSTRUCTIONS)**

GENERAL COLOR	SOIL CONDITION	BEDROCK MATERIALS	GENERAL DESCRIPTION	DEPTH (FEET)	
				FROM	TO
Brown	Clay	Stones		0	20
Brown	sand	Gravels		20	47
H. Br.		Rock		47	55
D. Br.		Rock		55	75
Black		Rock		75	85
H. Br.		Rock		85	95
Grey & Br.		Rock		95	135
D. Grey		Rock		135	139
<b>Total Depth</b>					<b>139</b>

12" shoe

<p><b>WATER RECORD</b></p> <p>DATE: 11-68</p> <p>DEPTH: 50</p> <p>TEMP: 11.5</p>	<p><b>CASING &amp; OPEN HOLE RECORD</b></p> <p>12" 250 D 48</p> <p>12" 48 139</p>	<p><b>PLUGGING &amp; SEALING RECORD</b></p> <p>102 11 Cement</p> <p>118 120 Bentonite Grout</p> <p>130 139 Portland Gravel</p>
--	---	--

**LOCATION OF WELL**

IN ORDER TO SHOW EXACT LOCATION OF WELL FROM ROAD AND OTHER MARKS, INDICATE NORTH BY ARROW

*Push Test No. 25*

**FINAL STATUS OF WELL**

Abandoned  Abandoned - restricted supply

Inactive  Abandoned - open supply

Inactive - restricted supply  Inactive - open supply

Inactive - restricted supply  Inactive - open supply

Inactive - restricted supply  Inactive - open supply

**CONTRACTOR'S COPY**

NAME OF CONTRACTOR: **Graham Well Drilling Ltd.** ADDRESS: **2936**

CITY: **Guelph, Ont.**

NAME OF CONTRACTOR: **J. Hawkins 220**

DATE: **30 - APR - 80**

**OFFICE USE ONLY**

**APPENDIX C**

**TW3-80 Water Taking**

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Jan-22	56,828	39	215,118	149.4
02-Jan-22	69,990	49	264,941	184.0
03-Jan-22	384,561	267	1,455,722	1010.9
04-Jan-22	579,720	403	2,194,478	1523.9
05-Jan-22	518,380	360	1,962,281	1362.7
06-Jan-22	494,446	343	1,871,682	1299.8
07-Jan-22	480,624	334	1,819,359	1263.4
08-Jan-22	310,811	216	1,176,545	817.0
09-Jan-22	409,536	284	1,550,263	1076.6
10-Jan-22	438,713	305	1,660,709	1153.3
11-Jan-22	376,204	261	1,424,085	988.9
12-Jan-22	323,506	225	1,224,604	850.4
13-Jan-22	347,380	241	1,314,976	913.2
14-Jan-22	357,379	248	1,352,825	939.5
15-Jan-22	268,855	187	1,017,726	706.8
16-Jan-22	355,044	247	1,343,988	933.3
17-Jan-22	291,322	202	1,102,775	765.8
18-Jan-22	309,330	215	1,170,940	813.2
19-Jan-22	497,661	346	1,883,849	1308.2
20-Jan-22	399,089	277	1,510,717	1049.1
21-Jan-22	297,858	207	1,127,514	783.0
22-Jan-22	368,981	256	1,396,746	970.0
23-Jan-22	343,408	238	1,299,941	902.7
24-Jan-22	302,229	210	1,144,059	794.5
25-Jan-22	351,351	244	1,330,008	923.6
26-Jan-22	428,134	297	1,620,662	1125.5
27-Jan-22	455,583	316	1,724,570	1197.6
28-Jan-22	377,174	262	1,427,757	991.5
29-Jan-22	465,125	323	1,760,688	1222.7
30-Jan-22	435,747	303	1,649,479	1145.5
31-Jan-22	429,499	298	1,625,829	1129.0

**TABLE C1  
TW3-80 DAILY WATER TAKING  
BLUE TRITON BRANDS  
ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Feb-22	407,287	283	1,541,750	1070.7
02-Feb-22	376,240	261	1,424,222	989.0
03-Feb-22	535,192	372	2,025,921	1406.9
04-Feb-22	489,899	340	1,854,470	1287.8
05-Feb-22	589,738	410	2,232,398	1550.3
06-Feb-22	491,993	342	1,862,395	1293.3
07-Feb-22	429,769	298	1,626,851	1129.8
08-Feb-22	461,278	320	1,746,128	1212.6
09-Feb-22	415,561	289	1,573,070	1092.4
10-Feb-22	473,749	329	1,793,335	1245.4
11-Feb-22	457,882	318	1,733,269	1203.7
12-Feb-22	479,785	333	1,816,183	1261.2
13-Feb-22	505,387	351	1,913,097	1328.5
14-Feb-22	422,237	293	1,598,340	1110.0
15-Feb-22	399,760	278	1,513,257	1050.9
16-Feb-22	332,021	231	1,256,836	872.8
17-Feb-22	438,662	305	1,660,516	1153.1
18-Feb-22	378,385	263	1,432,342	994.7
19-Feb-22	408,245	284	1,545,373	1073.2
20-Feb-22	463,800	322	1,755,675	1219.2
21-Feb-22	481,529	334	1,822,785	1265.8
22-Feb-22	335,348	233	1,269,431	881.5
23-Feb-22	358,456	249	1,356,903	942.3
24-Feb-22	492,448	342	1,864,119	1294.5
25-Feb-22	457,036	317	1,730,067	1201.4
26-Feb-22	504,756	351	1,910,709	1326.9
27-Feb-22	461,363	320	1,746,449	1212.8
28-Feb-22	507,262	352	1,920,195	1333.5

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume</b> (US gpd)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (US gpm)	<b>Volume</b> (L/day)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (L/min)
01-Mar-22	486,696	338	1,842,345	1279.4
02-Mar-22	500,292	347	1,893,810	1315.1
03-Mar-22	476,530	331	1,803,862	1252.7
04-Mar-22	499,481	347	1,890,739	1313.0
05-Mar-22	534,664	371	2,023,924	1405.5
06-Mar-22	507,512	352	1,921,143	1334.1
07-Mar-22	505,451	351	1,913,340	1328.7
08-Mar-22	513,573	357	1,944,083	1350.1
09-Mar-22	415,559	289	1,573,060	1092.4
10-Mar-22	385,250	268	1,458,331	1012.7
11-Mar-22	489,577	340	1,853,249	1287.0
12-Mar-22	477,598	332	1,807,905	1255.5
13-Mar-22	475,875	330	1,801,384	1251.0
14-Mar-22	426,345	296	1,613,891	1120.8
15-Mar-22	349,653	243	1,323,578	919.2
16-Mar-22	405,138	281	1,533,613	1065.0
17-Mar-22	559,393	388	2,117,531	1470.5
18-Mar-22	351,951	244	1,332,280	925.2
19-Mar-22	415,592	289	1,573,188	1092.5
20-Mar-22	345,219	240	1,306,795	907.5
21-Mar-22	388,927	270	1,472,247	1022.4
22-Mar-22	508,108	353	1,923,398	1335.7
23-Mar-22	447,459	311	1,693,815	1176.3
24-Mar-22	553,831	385	2,096,476	1455.9
25-Mar-22	455,558	316	1,724,475	1197.6
26-Mar-22	500,454	348	1,894,422	1315.6
27-Mar-22	492,942	342	1,865,989	1295.8
28-Mar-22	394,081	274	1,491,758	1035.9
29-Mar-22	396,121	275	1,499,482	1041.3
30-Mar-22	551,728	383	2,088,517	1450.4
31-Mar-22	364,772	253	1,380,812	958.9

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Apr-22	499,770	347	1,891,835	1313.8
02-Apr-22	489,418	340	1,852,649	1286.6
03-Apr-22	482,365	335	1,825,948	1268.0
04-Apr-22	487,454	339	1,845,212	1281.4
05-Apr-22	436,713	303	1,653,139	1148.0
06-Apr-22	446,579	310	1,690,485	1173.9
07-Apr-22	434,157	301	1,643,461	1141.3
08-Apr-22	516,699	359	1,955,918	1358.3
09-Apr-22	351,002	244	1,328,688	922.7
10-Apr-22	343,882	239	1,301,735	904.0
11-Apr-22	380,265	264	1,439,459	999.6
12-Apr-22	255,293	177	966,389	671.1
13-Apr-22	310,890	216	1,176,844	817.3
14-Apr-22	413,142	287	1,563,914	1086.1
15-Apr-22	381,526	265	1,444,231	1002.9
16-Apr-22	464,031	322	1,756,546	1219.8
17-Apr-22	508,957	353	1,926,610	1337.9
18-Apr-22	396,434	275	1,500,666	1042.1
19-Apr-22	439,994	306	1,665,556	1156.6
20-Apr-22	349,893	243	1,324,489	919.8
21-Apr-22	307,567	214	1,164,268	808.5
22-Apr-22	519,346	361	1,965,936	1365.2
23-Apr-22	490,348	341	1,856,170	1289.0
24-Apr-22	489,125	340	1,851,540	1285.8
25-Apr-22	445,490	309	1,686,361	1171.1
26-Apr-22	572,355	397	2,166,598	1504.6
27-Apr-22	537,933	374	2,036,297	1414.1
28-Apr-22	467,780	325	1,770,738	1229.7
29-Apr-22	426,127	296	1,613,064	1120.2
30-Apr-22	564,519	392	2,136,935	1484.0

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-May-22	566,627	393	2,144,915	1489.5
02-May-22	538,578	374	2,038,737	1415.8
03-May-22	506,560	352	1,917,536	1331.6
04-May-22	523,547	364	1,981,840	1376.3
05-May-22	359,142	249	1,359,500	944.1
06-May-22	418,723	291	1,585,038	1100.7
07-May-22	379,964	264	1,438,318	998.8
08-May-22	448,713	312	1,698,561	1179.6
09-May-22	300,233	208	1,136,505	789.2
10-May-22	359,418	250	1,360,544	944.8
11-May-22	389,524	271	1,474,506	1024.0
12-May-22	299,762	208	1,134,723	788.0
13-May-22	340,922	237	1,290,531	896.2
14-May-22	393,356	273	1,489,013	1034.0
15-May-22	376,330	261	1,424,565	989.3
16-May-22	323,716	225	1,225,397	851.0
17-May-22	443,035	308	1,677,067	1164.6
18-May-22	555,742	386	2,103,713	1460.9
19-May-22	422,380	293	1,598,880	1110.3
20-May-22	531,374	369	2,011,468	1396.9
21-May-22	585,206	406	2,215,245	1538.4
22-May-22	511,594	355	1,936,593	1344.9
23-May-22	464,023	322	1,756,516	1219.8
24-May-22	583,326	405	2,208,127	1533.4
25-May-22	639,830	444	2,422,020	1682.0
26-May-22	600,601	417	2,273,522	1578.8
27-May-22	519,595	361	1,966,881	1365.9
28-May-22	461,127	320	1,745,555	1212.2
29-May-22	489,025	340	1,851,161	1285.5
30-May-22	562,186	390	2,128,104	1477.8
31-May-22	448,174	311	1,696,522	1178.1

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume</b> (US gpd)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (US gpm)	<b>Volume</b> (L/day)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (L/min)
01-Jun-22	442,642	307	1,675,580	1163.6
02-Jun-22	531,293	369	2,011,163	1396.6
03-Jun-22	719,125	499	2,722,184	1890.4
04-Jun-22	655,636	455	2,481,852	1723.5
05-Jun-22	574,225	399	2,173,675	1509.5
06-Jun-22	573,875	399	2,172,351	1508.6
07-Jun-22	452,923	315	1,714,499	1190.6
08-Jun-22	613,368	426	2,321,850	1612.4
09-Jun-22	542,905	377	2,055,117	1427.2
10-Jun-22	585,278	406	2,215,518	1538.6
11-Jun-22	575,320	400	2,177,824	1512.4
12-Jun-22	633,454	440	2,397,883	1665.2
13-Jun-22	645,992	449	2,445,346	1698.2
14-Jun-22	666,775	463	2,524,018	1752.8
15-Jun-22	493,192	342	1,866,936	1296.5
16-Jun-22	558,348	388	2,113,575	1467.8
17-Jun-22	665,203	462	2,518,064	1748.7
18-Jun-22	640,403	445	2,424,187	1683.5
19-Jun-22	661,923	460	2,505,650	1740.0
20-Jun-22	656,202	456	2,483,993	1725.0
21-Jun-22	532,902	370	2,017,253	1400.9
22-Jun-22	481,195	334	1,821,518	1264.9
23-Jun-22	465,142	323	1,760,753	1222.7
24-Jun-22	508,286	353	1,924,071	1336.2
25-Jun-22	686,831	477	2,599,937	1805.5
26-Jun-22	738,988	513	2,797,373	1942.6
27-Jun-22	634,304	440	2,401,099	1667.4
28-Jun-22	822,039	571	3,111,753	2160.9
29-Jun-22	741,163	515	2,805,606	1948.3
30-Jun-22	821,877	571	3,111,141	2160.5



**TABLE C1  
TW3-80 DAILY WATER TAKING  
BLUE TRITON BRANDS  
ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Jul-22	784,638	545	2,970,177	2062.6
02-Jul-22	720,347	500	2,726,809	1893.6
03-Jul-22	747,937	519	2,831,248	1966.1
04-Jul-22	783,416	544	2,965,551	2059.4
05-Jul-22	718,337	499	2,719,200	1888.3
06-Jul-22	676,959	470	2,562,567	1779.6
07-Jul-22	651,413	452	2,465,865	1712.4
08-Jul-22	652,587	453	2,470,309	1715.5
09-Jul-22	659,798	458	2,497,606	1734.4
10-Jul-22	584,651	406	2,213,144	1536.9
11-Jul-22	581,106	404	2,199,724	1527.6
12-Jul-22	473,414	329	1,792,066	1244.5
13-Jul-22	511,585	355	1,936,557	1344.8
14-Jul-22	449,609	312	1,701,954	1181.9
15-Jul-22	442,635	307	1,675,554	1163.6
16-Jul-22	527,863	367	1,998,176	1387.6
17-Jul-22	608,829	423	2,304,667	1600.5
18-Jul-22	528,439	367	2,000,359	1389.1
19-Jul-22	484,384	336	1,833,593	1273.3
20-Jul-22	660,270	459	2,499,392	1735.7
21-Jul-22	615,872	428	2,331,330	1619.0
22-Jul-22	638,793	444	2,418,092	1679.2
23-Jul-22	537,181	373	2,033,450	1412.1
24-Jul-22	581,047	404	2,199,503	1527.4
25-Jul-22	572,181	397	2,165,941	1504.1
26-Jul-22	568,175	395	2,150,777	1493.6
27-Jul-22	509,228	354	1,927,636	1338.6
28-Jul-22	518,032	360	1,960,965	1361.8
29-Jul-22	519,485	361	1,966,465	1365.6
30-Jul-22	582,758	405	2,205,977	1531.9
31-Jul-22	548,418	381	2,075,988	1441.7

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Aug-22	606,162	421	2,294,570	1593.5
02-Aug-22	608,741	423	2,304,334	1600.2
03-Aug-22	529,474	368	2,004,277	1391.9
04-Aug-22	558,618	388	2,114,596	1468.5
05-Aug-22	606,946	421	2,297,541	1595.5
06-Aug-22	487,356	338	1,844,841	1281.1
07-Aug-22	570,291	396	2,158,785	1499.2
08-Aug-22	495,078	344	1,874,073	1301.4
09-Aug-22	548,898	381	2,077,803	1442.9
10-Aug-22	532,599	370	2,016,104	1400.1
11-Aug-22	501,529	348	1,898,492	1318.4
12-Aug-22	450,784	313	1,706,401	1185.0
13-Aug-22	631,056	438	2,388,804	1658.9
14-Aug-22	584,204	406	2,211,451	1535.7
15-Aug-22	525,818	365	1,990,438	1382.2
16-Aug-22	626,310	435	2,370,840	1646.4
17-Aug-22	645,356	448	2,442,938	1696.5
18-Aug-22	595,779	414	2,255,268	1566.2
19-Aug-22	638,231	443	2,415,964	1677.8
20-Aug-22	695,434	483	2,632,502	1828.1
21-Aug-22	657,769	457	2,489,926	1729.1
22-Aug-22	631,315	438	2,389,787	1659.6
23-Aug-22	540,587	375	2,046,342	1421.1
24-Aug-22	543,185	377	2,056,176	1427.9
25-Aug-22	553,951	385	2,096,932	1456.2
26-Aug-22	580,938	403	2,199,089	1527.1
27-Aug-22	630,970	438	2,388,482	1658.7
28-Aug-22	670,206	465	2,537,005	1761.8
29-Aug-22	620,943	431	2,350,525	1632.3
30-Aug-22	570,688	396	2,160,286	1500.2
31-Aug-22	502,468	349	1,902,048	1320.9

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume</b> (US gpd)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (US gpm)	<b>Volume</b> (L/day)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (L/min)
01-Sep-22	483,049	335	1,828,539	1269.8
02-Sep-22	563,260	391	2,132,170	1480.7
03-Sep-22	496,720	345	1,880,287	1305.8
04-Sep-22	400,577	278	1,516,349	1053.0
05-Sep-22	490,659	341	1,857,345	1289.8
06-Sep-22	594,746	413	2,251,357	1563.4
07-Sep-22	391,009	272	1,480,131	1027.9
08-Sep-22	600,334	417	2,272,512	1578.1
09-Sep-22	371,896	258	1,407,778	977.6
10-Sep-22	434,676	302	1,645,427	1142.7
11-Sep-22	459,107	319	1,737,910	1206.9
12-Sep-22	524,642	364	1,985,985	1379.2
13-Sep-22	543,780	378	2,058,431	1429.5
14-Sep-22	581,977	404	2,203,021	1529.9
15-Sep-22	482,474	335	1,826,362	1268.3
16-Sep-22	484,316	336	1,833,336	1273.1
17-Sep-22	463,059	322	1,752,867	1217.3
18-Sep-22	587,733	408	2,224,812	1545.0
19-Sep-22	585,594	407	2,216,713	1539.4
20-Sep-22	457,619	318	1,732,275	1203.0
21-Sep-22	312,379	217	1,182,481	821.2
22-Sep-22	570,457	396	2,159,415	1499.6
23-Sep-22	555,574	386	2,103,074	1460.5
24-Sep-22	574,446	399	2,174,512	1510.1
25-Sep-22	512,530	356	1,940,137	1347.3
26-Sep-22	396,534	275	1,501,043	1042.4
27-Sep-22	541,776	376	2,050,842	1424.2
28-Sep-22	426,246	296	1,613,514	1120.5
29-Sep-22	465,977	324	1,763,913	1224.9
30-Sep-22	424,665	295	1,607,531	1116.3

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Oct-22	531,808	369	2,013,112	1398.0
02-Oct-22	556,290	386	2,105,785	1462.4
03-Oct-22	437,081	304	1,654,532	1149.0
04-Oct-22	326,593	227	1,236,289	858.5
05-Oct-22	458,720	319	1,736,443	1205.9
06-Oct-22	485,341	337	1,837,216	1275.8
07-Oct-22	554,651	385	2,099,580	1458.0
08-Oct-22	573,912	399	2,172,493	1508.7
09-Oct-22	485,951	337	1,839,522	1277.4
10-Oct-22	391,276	272	1,481,140	1028.6
11-Oct-22	385,166	267	1,458,011	1012.5
12-Oct-22	438,417	304	1,659,588	1152.5
13-Oct-22	363,784	253	1,377,073	956.3
14-Oct-22	261,214	181	988,801	686.7
15-Oct-22	508,158	353	1,923,588	1335.8
16-Oct-22	466,919	324	1,767,481	1227.4
17-Oct-22	436,435	303	1,652,085	1147.3
18-Oct-22	402,185	279	1,522,436	1057.2
19-Oct-22	410,271	285	1,553,043	1078.5
20-Oct-22	457,701	318	1,732,585	1203.2
21-Oct-22	452,902	315	1,714,419	1190.6
22-Oct-22	430,450	299	1,629,431	1131.5
23-Oct-22	137,624	96	520,962	361.8
24-Oct-22	0	0	0	0.0
25-Oct-22	184,091	128	696,859	483.9
26-Oct-22	285,094	198	1,079,199	749.4
27-Oct-22	296,739	206	1,123,279	780.1
28-Oct-22	446,600	310	1,690,565	1174.0
29-Oct-22	457,637	318	1,732,342	1203.0
30-Oct-22	447,559	311	1,694,196	1176.5
31-Oct-22	482,424	335	1,826,174	1268.2

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

<b>Date</b>	<b>Volume (US gpd)</b>	<b>Average Flow Rate Over Time Taken (US gpm)</b>	<b>Volume (L/day)</b>	<b>Average Flow Rate Over Time Taken (L/min)</b>
01-Nov-22	563,328	391	2,132,429	1480.9
02-Nov-22	490,576	341	1,857,031	1289.6
03-Nov-22	544,947	378	2,062,847	1432.5
04-Nov-22	524,721	364	1,986,283	1379.4
05-Nov-22	488,044	339	1,847,446	1282.9
06-Nov-22	440,823	306	1,668,694	1158.8
07-Nov-22	486,554	338	1,841,807	1279.0
08-Nov-22	426,376	296	1,614,009	1120.8
09-Nov-22	519,526	361	1,966,617	1365.7
10-Nov-22	584,805	406	2,213,728	1537.3
11-Nov-22	597,131	415	2,260,387	1569.7
12-Nov-22	587,555	408	2,224,136	1544.5
13-Nov-22	603,043	419	2,282,764	1585.3
14-Nov-22	488,749	339	1,850,117	1284.8
15-Nov-22	474,188	329	1,794,995	1246.5
16-Nov-22	480,867	334	1,820,277	1264.1
17-Nov-22	546,656	380	2,069,318	1437.0
18-Nov-22	594,844	413	2,251,730	1563.7
19-Nov-22	590,748	410	2,236,224	1552.9
20-Nov-22	561,802	390	2,126,652	1476.8
21-Nov-22	461,715	321	1,747,779	1213.7
22-Nov-22	408,116	283	1,544,887	1072.8
23-Nov-22	415,607	289	1,573,244	1092.5
24-Nov-22	619,141	430	2,343,704	1627.6
25-Nov-22	589,387	409	2,231,071	1549.4
26-Nov-22	578,954	402	2,191,580	1521.9
27-Nov-22	523,432	363	1,981,403	1376.0
28-Nov-22	542,108	376	2,052,099	1425.1
29-Nov-22	488,501	339	1,849,176	1284.2
30-Nov-22	531,361	369	2,011,419	1396.8

**TABLE C1**  
**TW3-80 DAILY WATER TAKING**  
**BLUE TRITON BRANDS**  
**ABERFOYLE, ONTARIO**

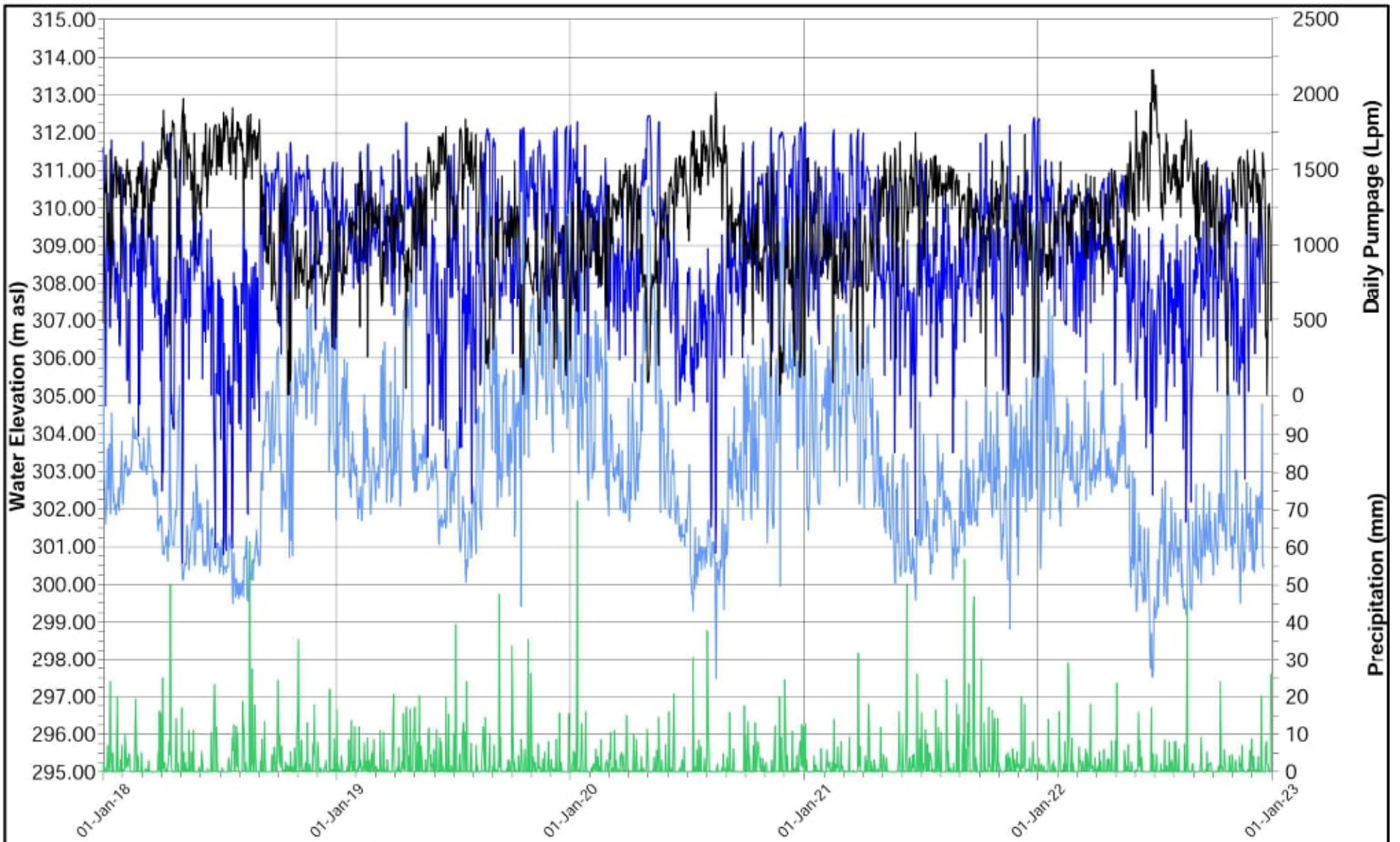
<b>Date</b>	<b>Volume</b> (US gpd)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (US gpm)	<b>Volume</b> (L/day)	<b>Average Flow</b> <b>Rate Over</b> <b>Time Taken</b> (L/min)
01-Dec-22	502,030	349	1,900,388	1319.7
02-Dec-22	571,981	397	2,165,183	1503.6
03-Dec-22	461,780	321	1,748,026	1213.9
04-Dec-22	566,864	394	2,145,813	1490.1
05-Dec-22	619,211	430	2,343,968	1627.8
06-Dec-22	580,471	403	2,197,321	1525.9
07-Dec-22	541,458	376	2,049,640	1423.4
08-Dec-22	521,932	362	1,975,726	1372.0
09-Dec-22	487,306	338	1,844,654	1281.0
10-Dec-22	560,329	389	2,121,073	1473.0
11-Dec-22	542,646	377	2,054,136	1426.5
12-Dec-22	346,513	241	1,311,694	910.9
13-Dec-22	534,679	371	2,023,979	1405.5
14-Dec-22	527,801	367	1,997,943	1387.5
15-Dec-22	406,805	283	1,539,922	1069.4
16-Dec-22	495,401	344	1,875,297	1302.3
17-Dec-22	496,108	345	1,877,972	1304.1
18-Dec-22	612,643	425	2,319,103	1610.5
19-Dec-22	594,298	413	2,249,663	1562.3
20-Dec-22	549,258	381	2,079,166	1443.9
21-Dec-22	568,990	395	2,153,862	1495.7
22-Dec-22	457,444	318	1,731,614	1202.5
23-Dec-22	145,608	101	551,188	382.8
24-Dec-22	162,858	113	616,485	428.1
25-Dec-22	0	0	0	0.0
26-Dec-22	196,498	136	743,824	516.5
27-Dec-22	475,208	330	1,798,859	1249.2
28-Dec-22	484,474	336	1,833,934	1273.6
29-Dec-22	464,942	323	1,759,996	1222.2
30-Dec-22	430,682	299	1,630,306	1132.2
31-Dec-22	187,657	130	710,358	493.3

Notes:

1. All volumes measured with a flow meter and recorded on a datalogger.

**APPENDIX D**

**Groundwater Level Monitoring**



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— TW3-80 Daily Max  
— TW3-80 Daily Min



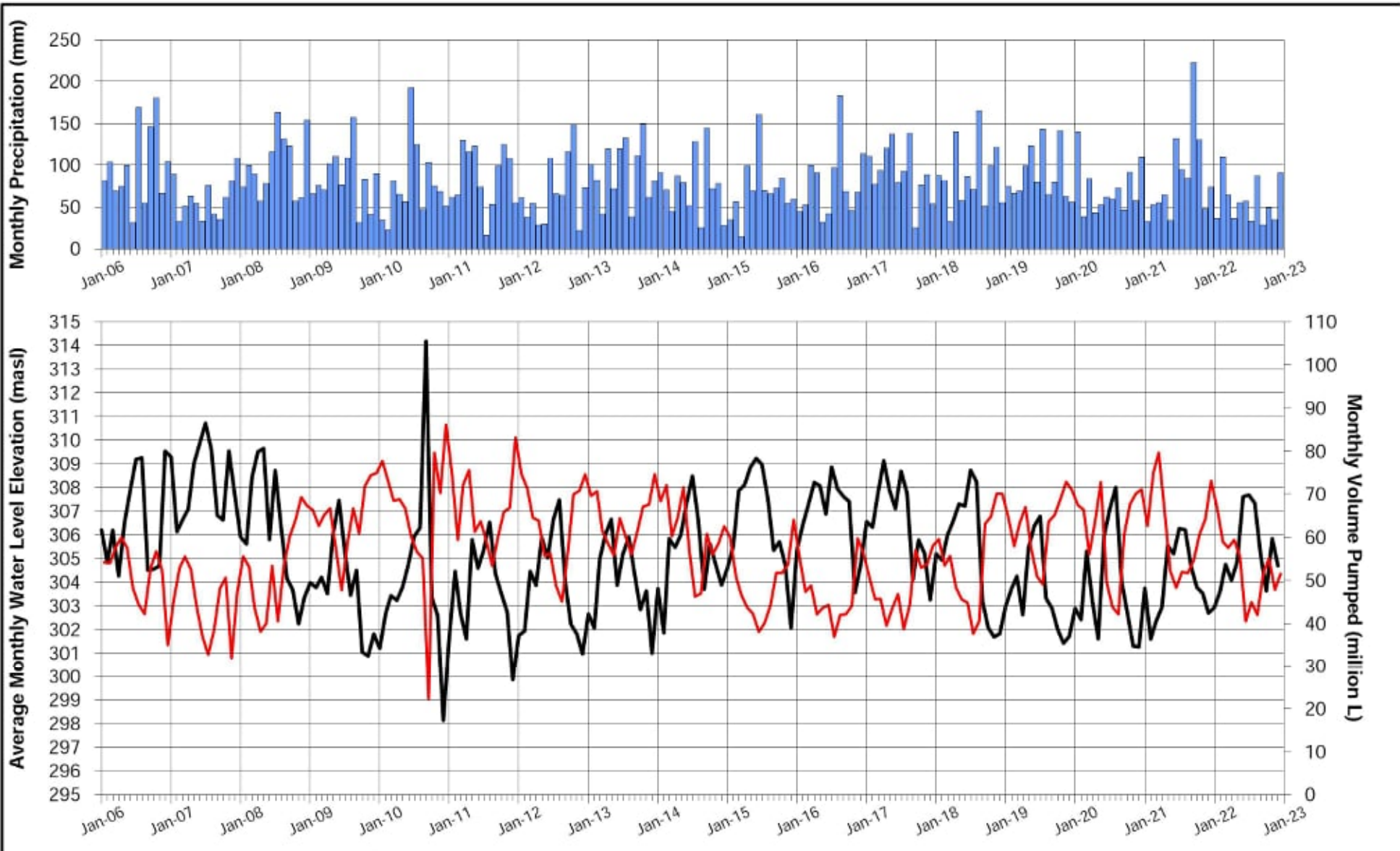
DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**HYDROGRAPH FOR TW3-80**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE D1a





— Volume Pumped (L)  
 — TW3-80

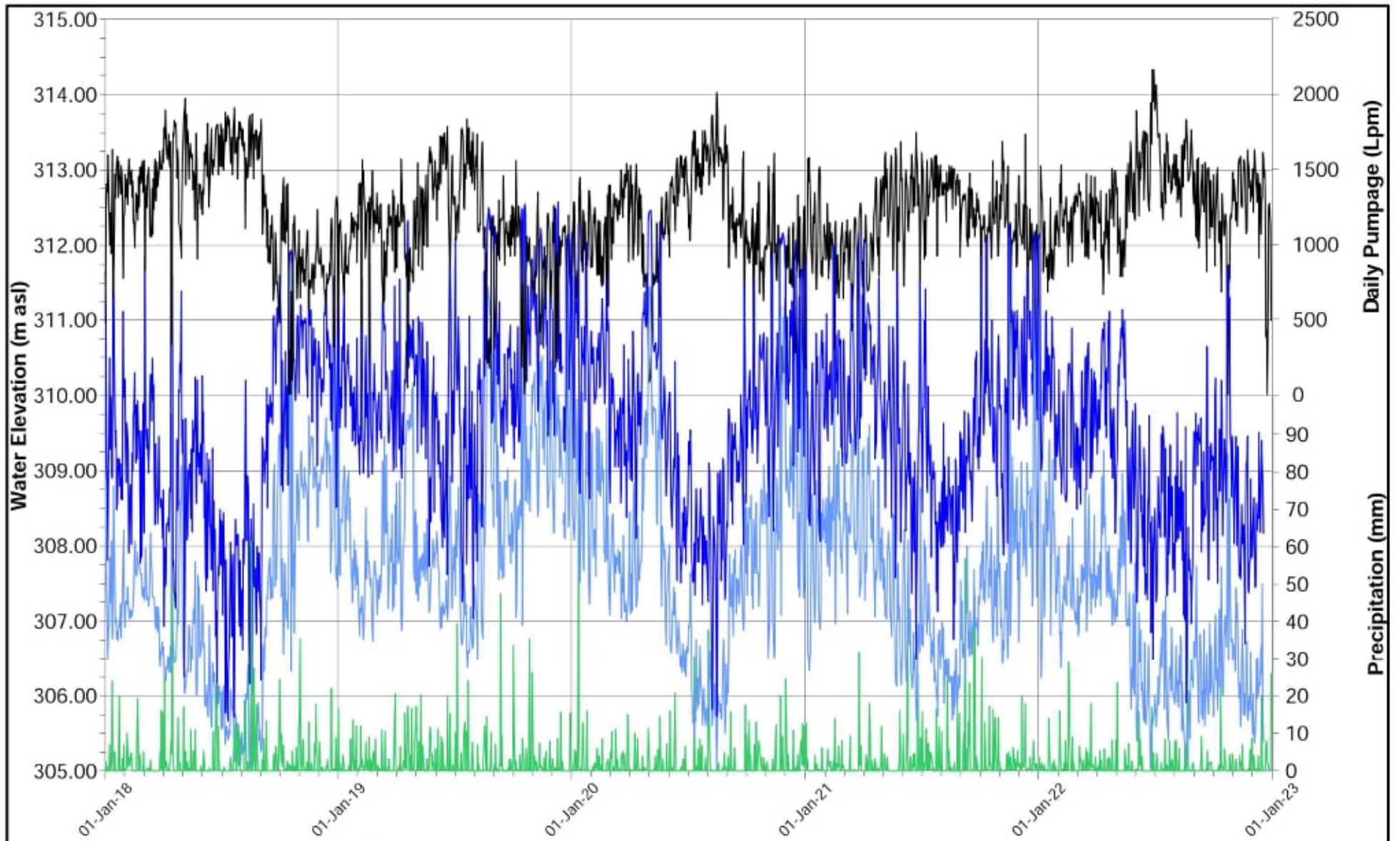
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario



DATE JANUARY 2023  
 DESIGN KJ  
 REVIEW GP  
 APPROVED GP

**TITLE**  
**AVERAGE MONTHLY WATER LEVELS TW3-80**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE D1b



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW2A-07 Daily Min
- MW2A-07 Daily Max



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

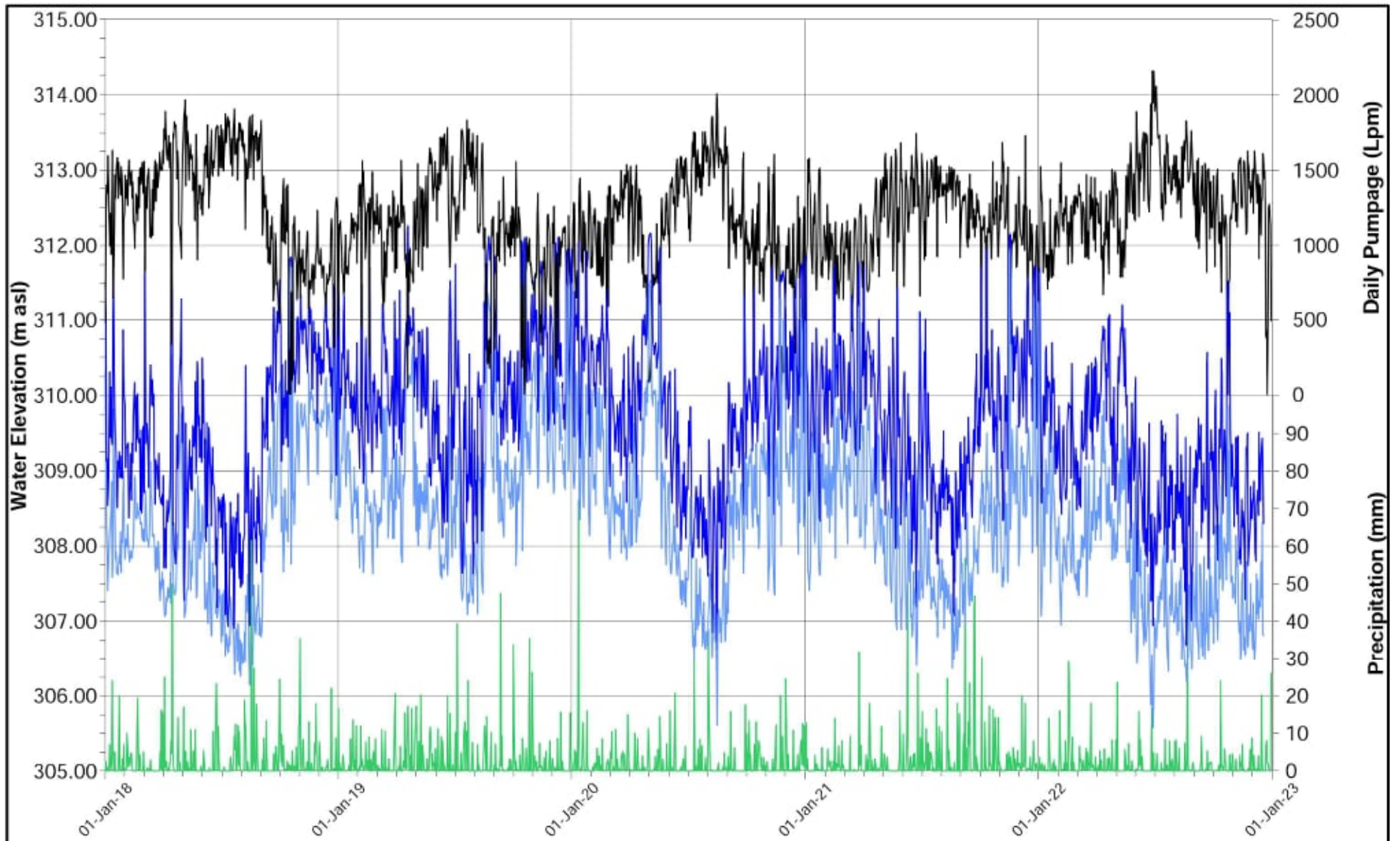
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
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**FIGURE**  
 D2



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW4A-07 Daily Max
- MW4A-07 Daily Min



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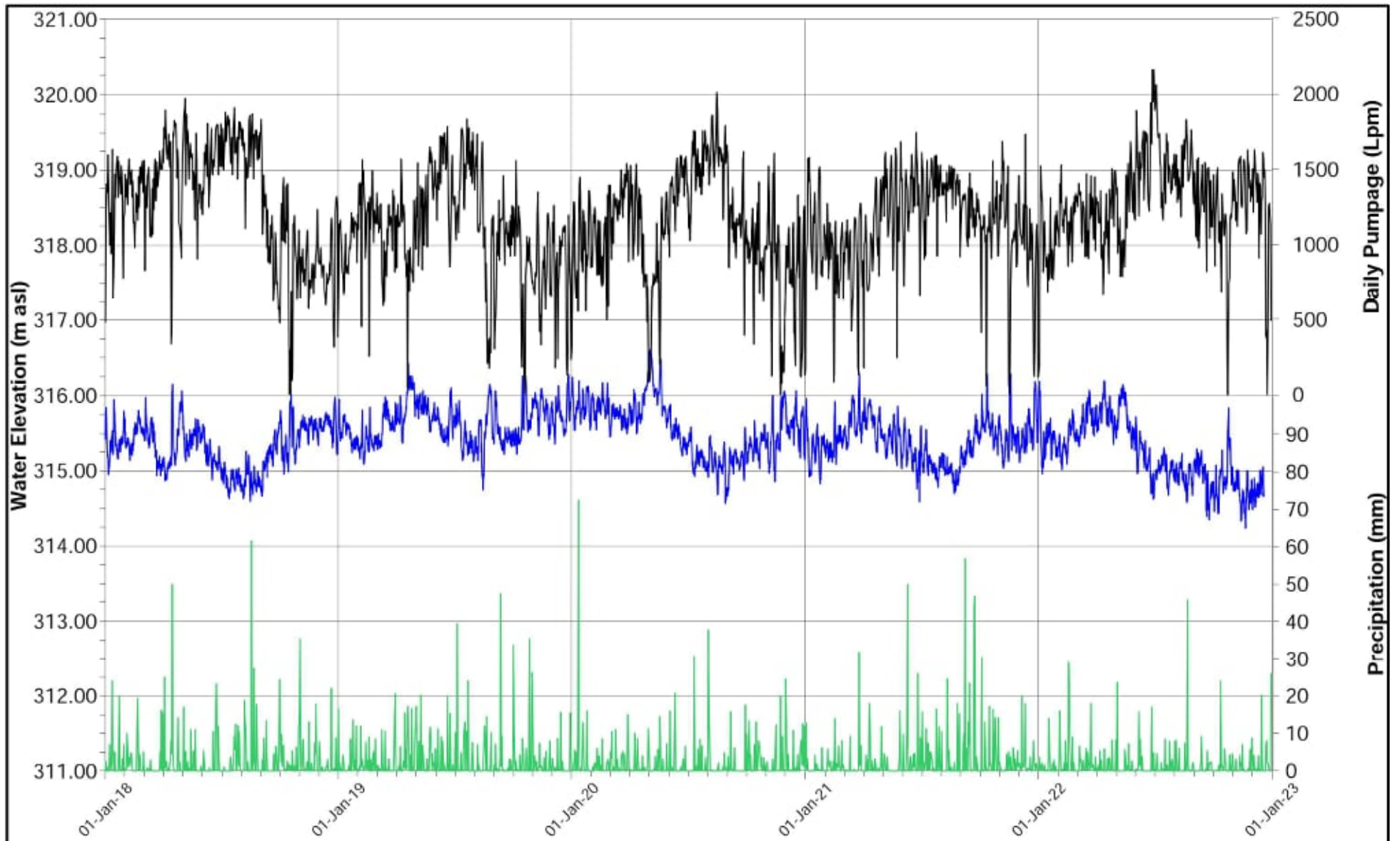
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 Town of Aberfoyle, Ontario

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**FIGURE**  
 D3



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW6A-08

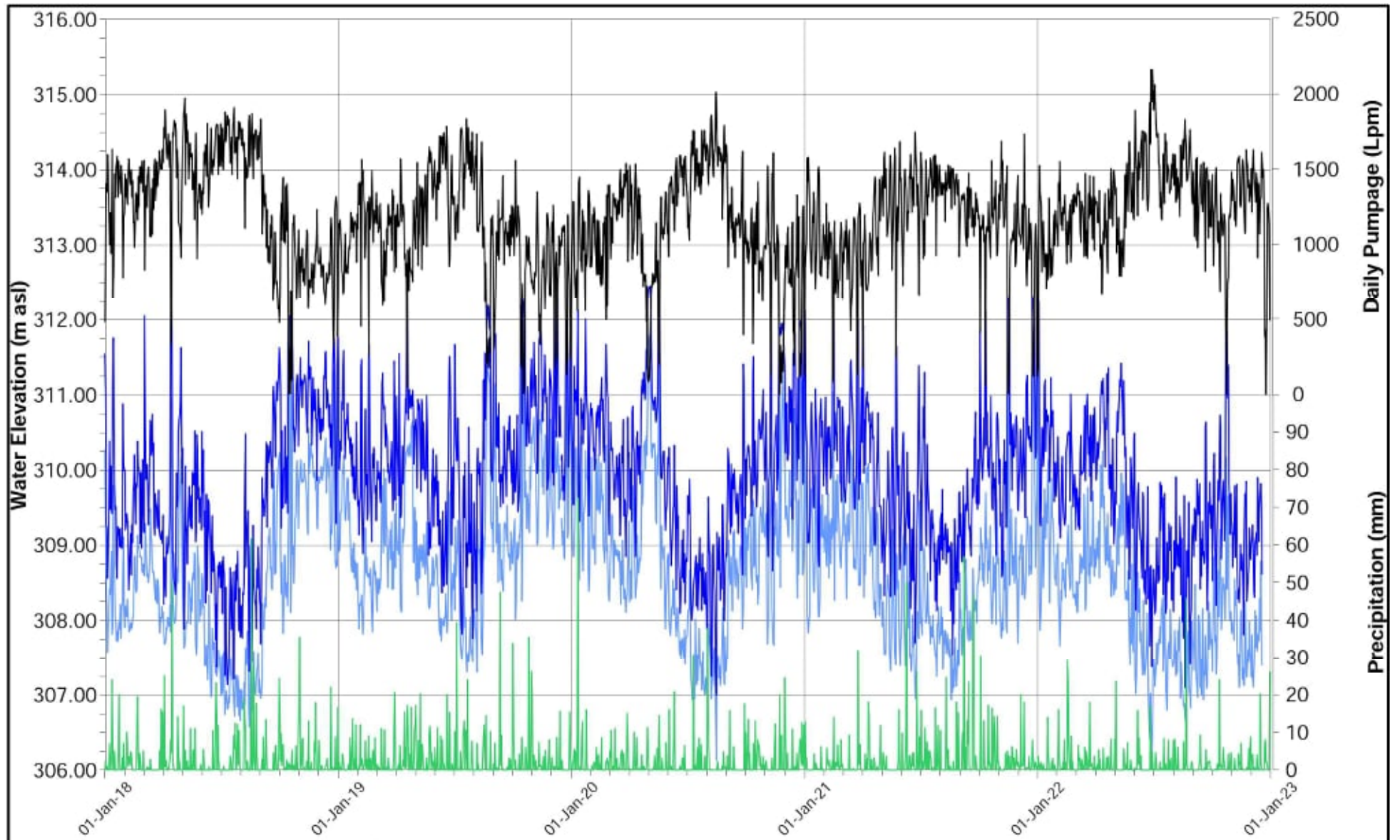
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW7A-08 Daily Max
- MW7A-08 Daily Min



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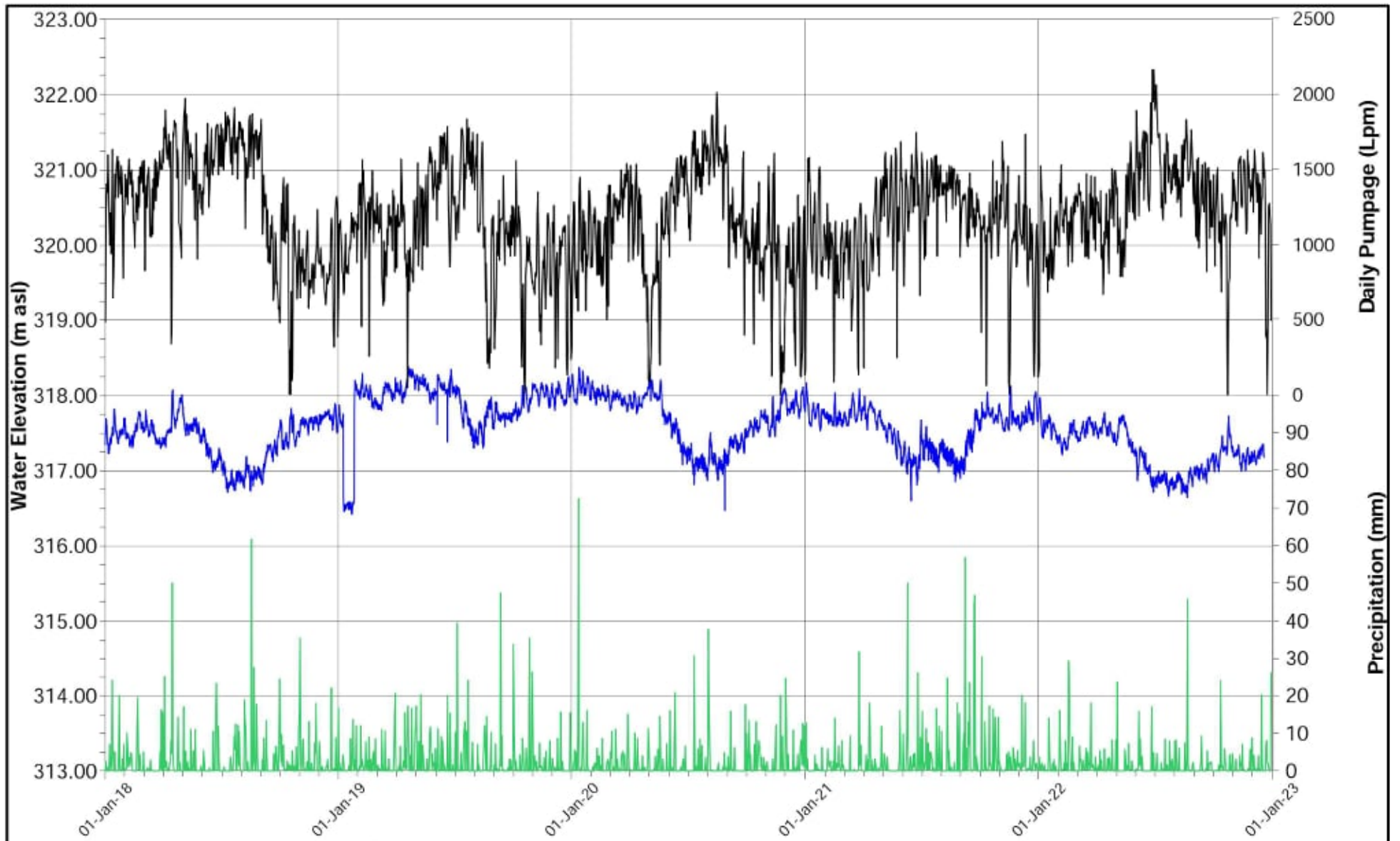
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FIGURE D5



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW8A-08

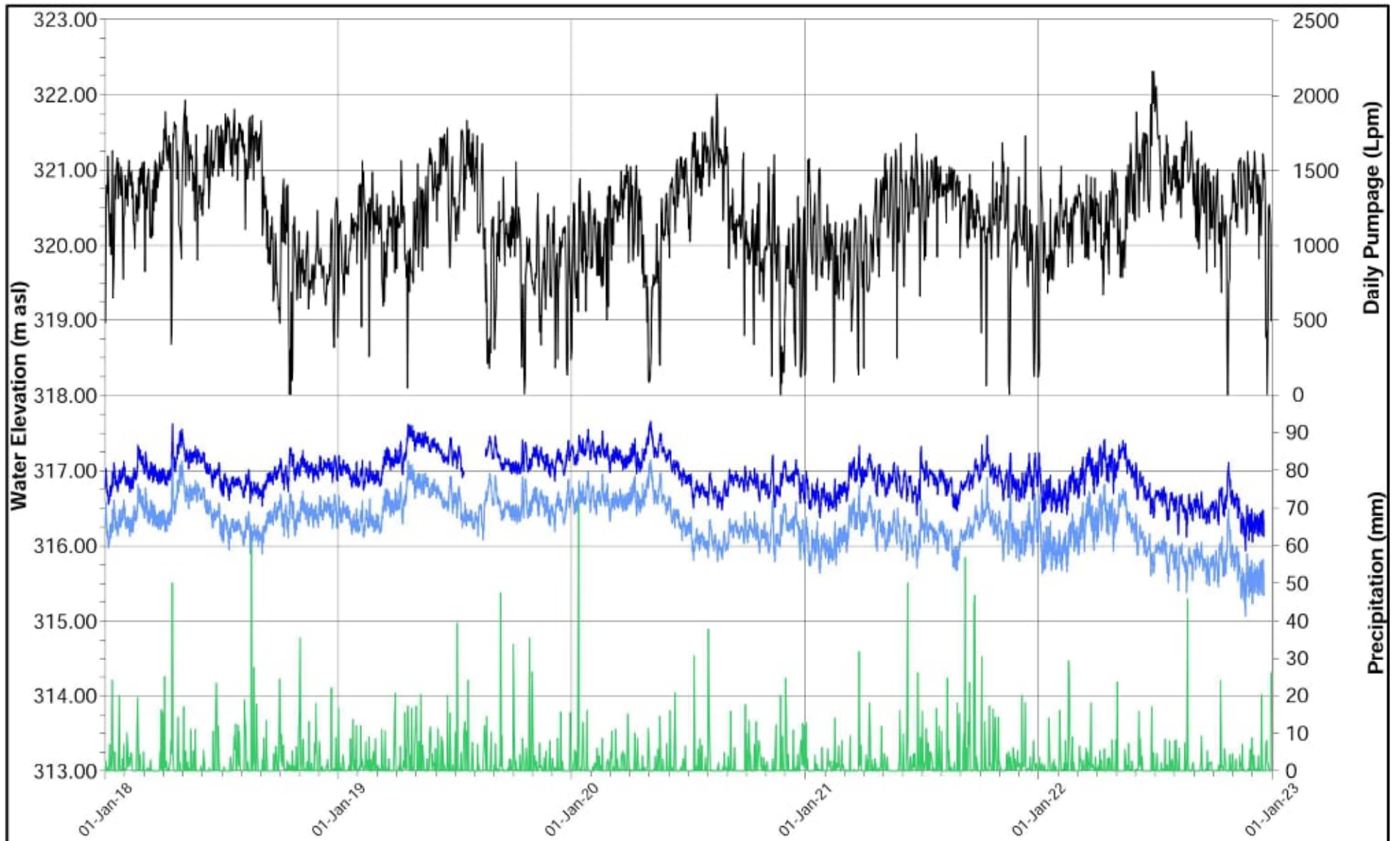
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW10D-09
- MW10C-09



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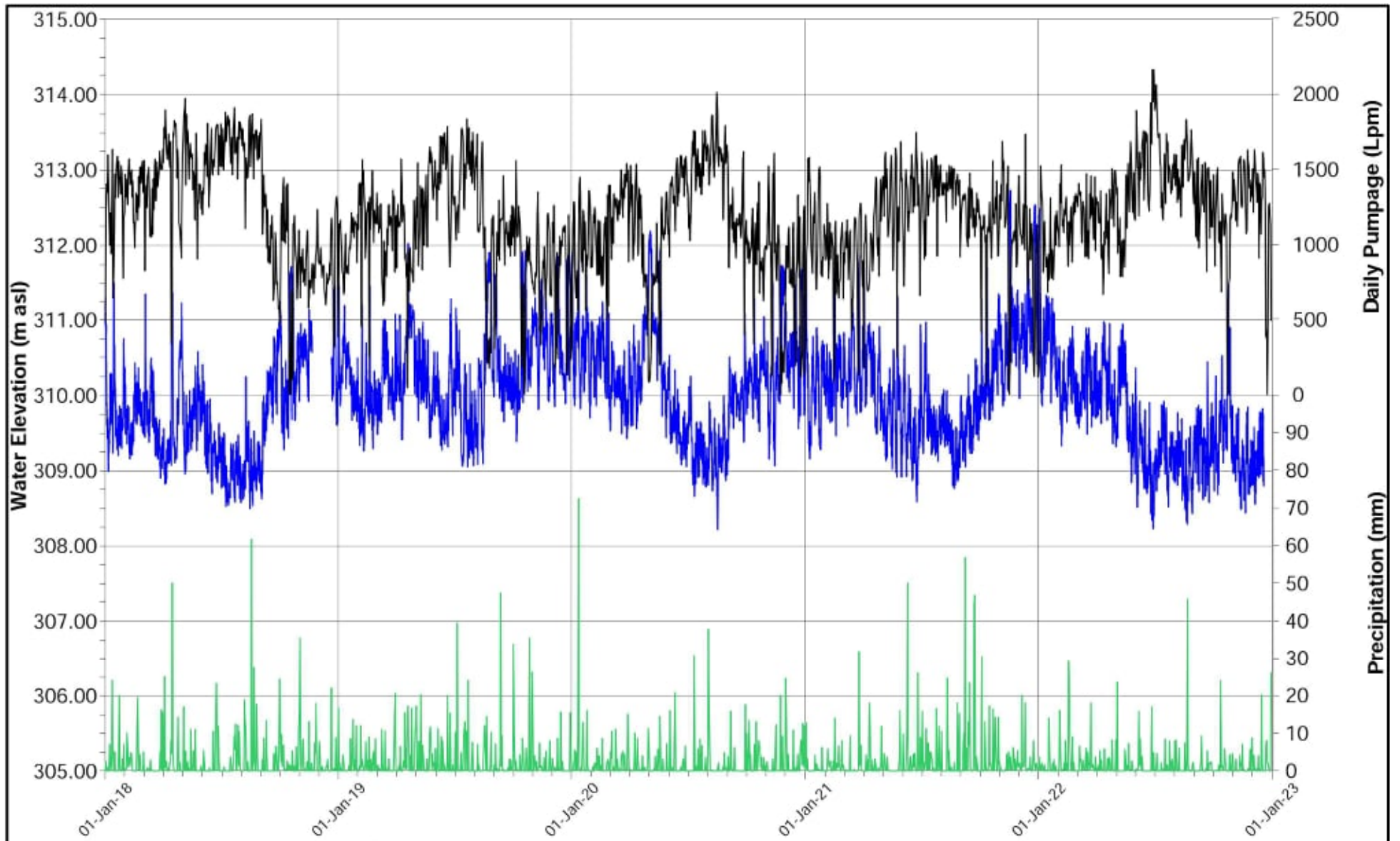
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FIGURE D7



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW14A-11



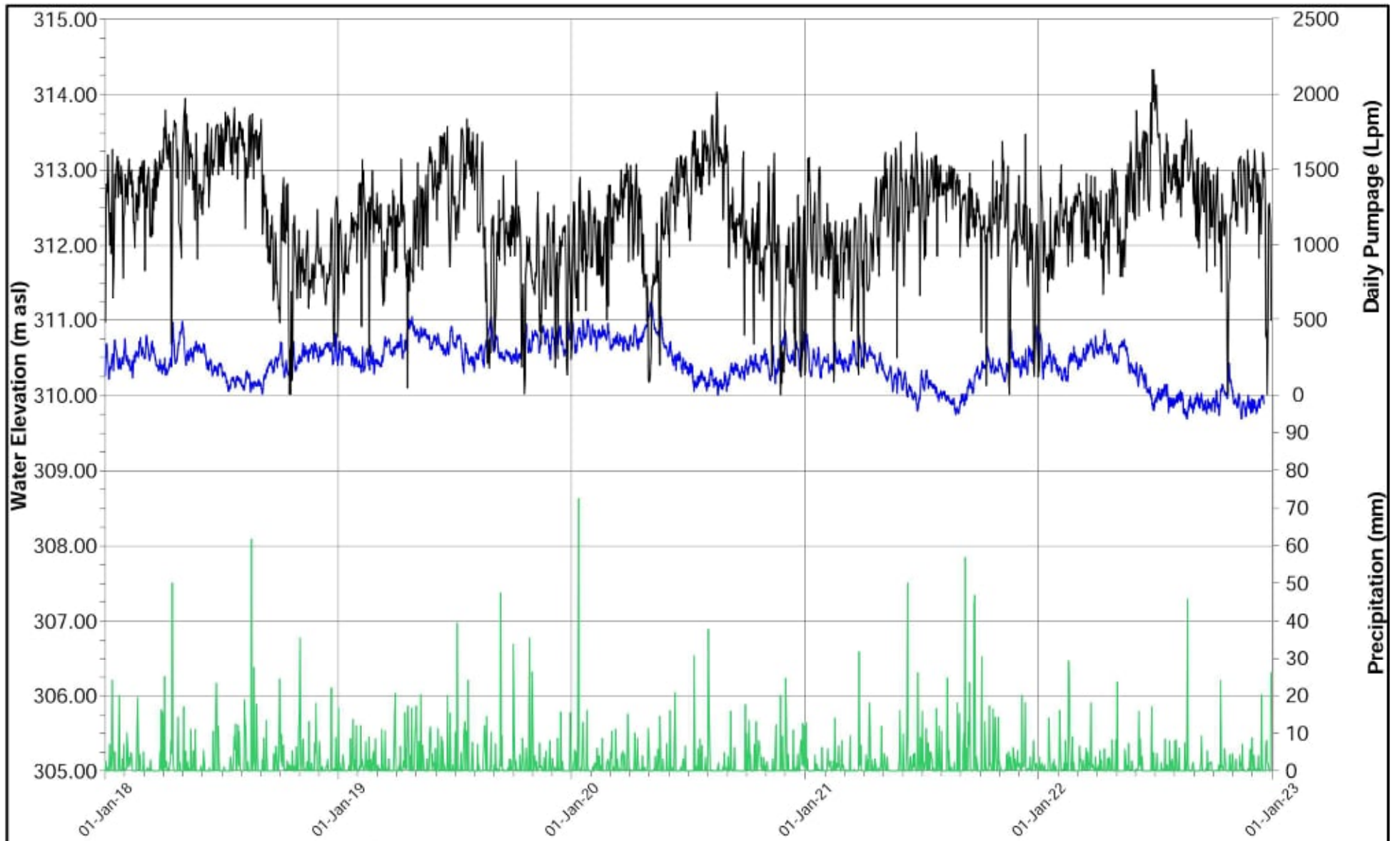
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW15A-12

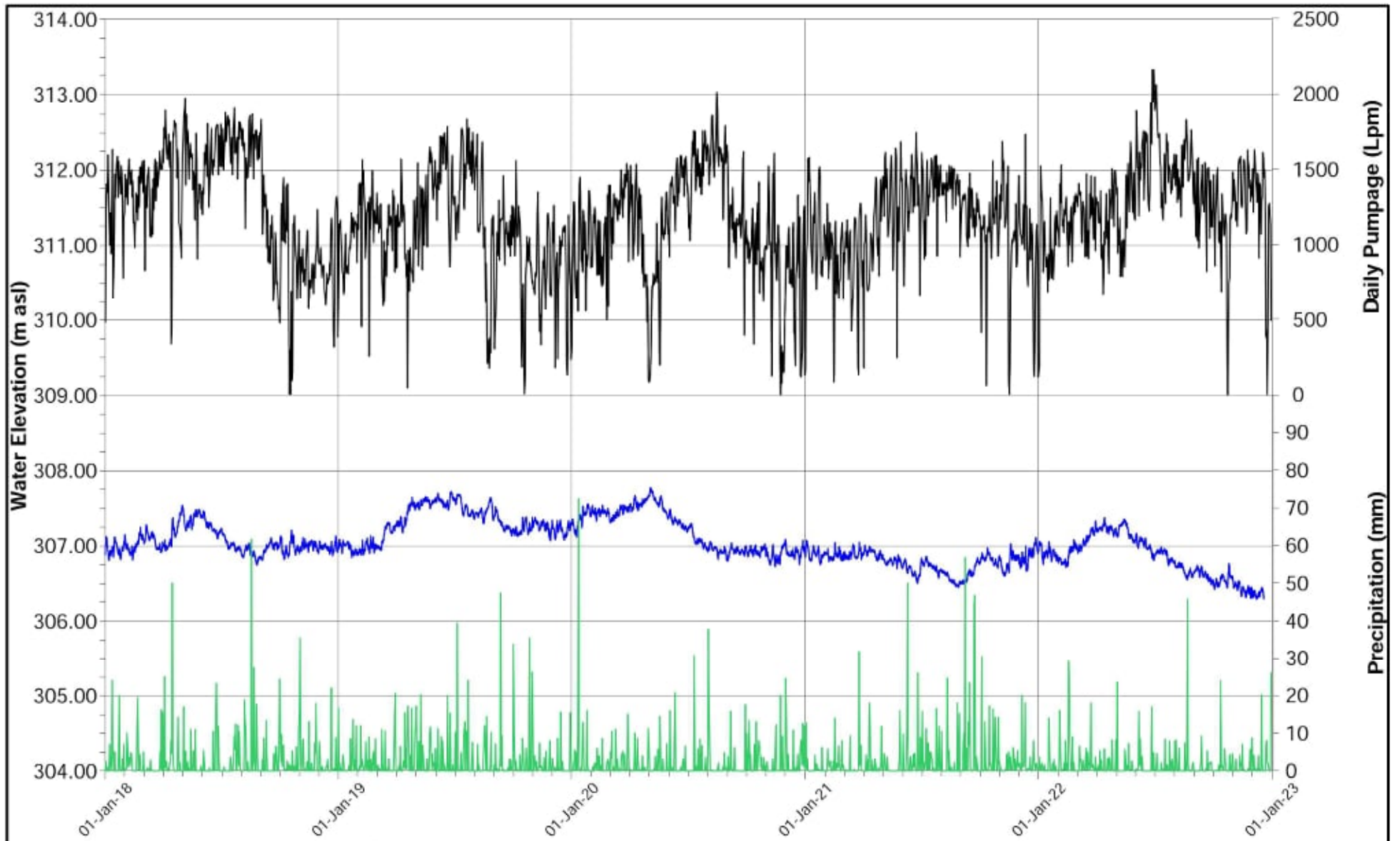
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW16A-12

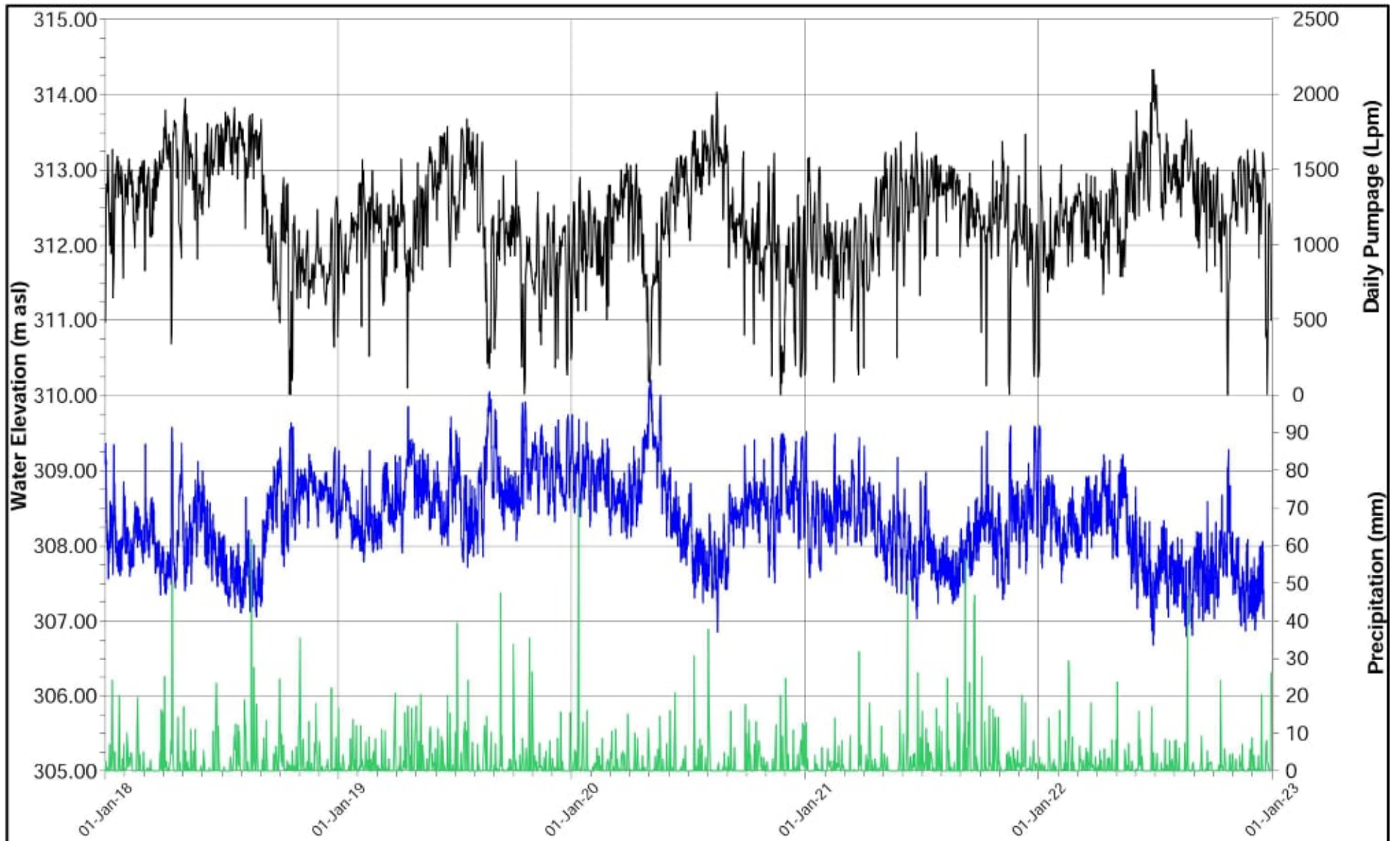
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW17A-12

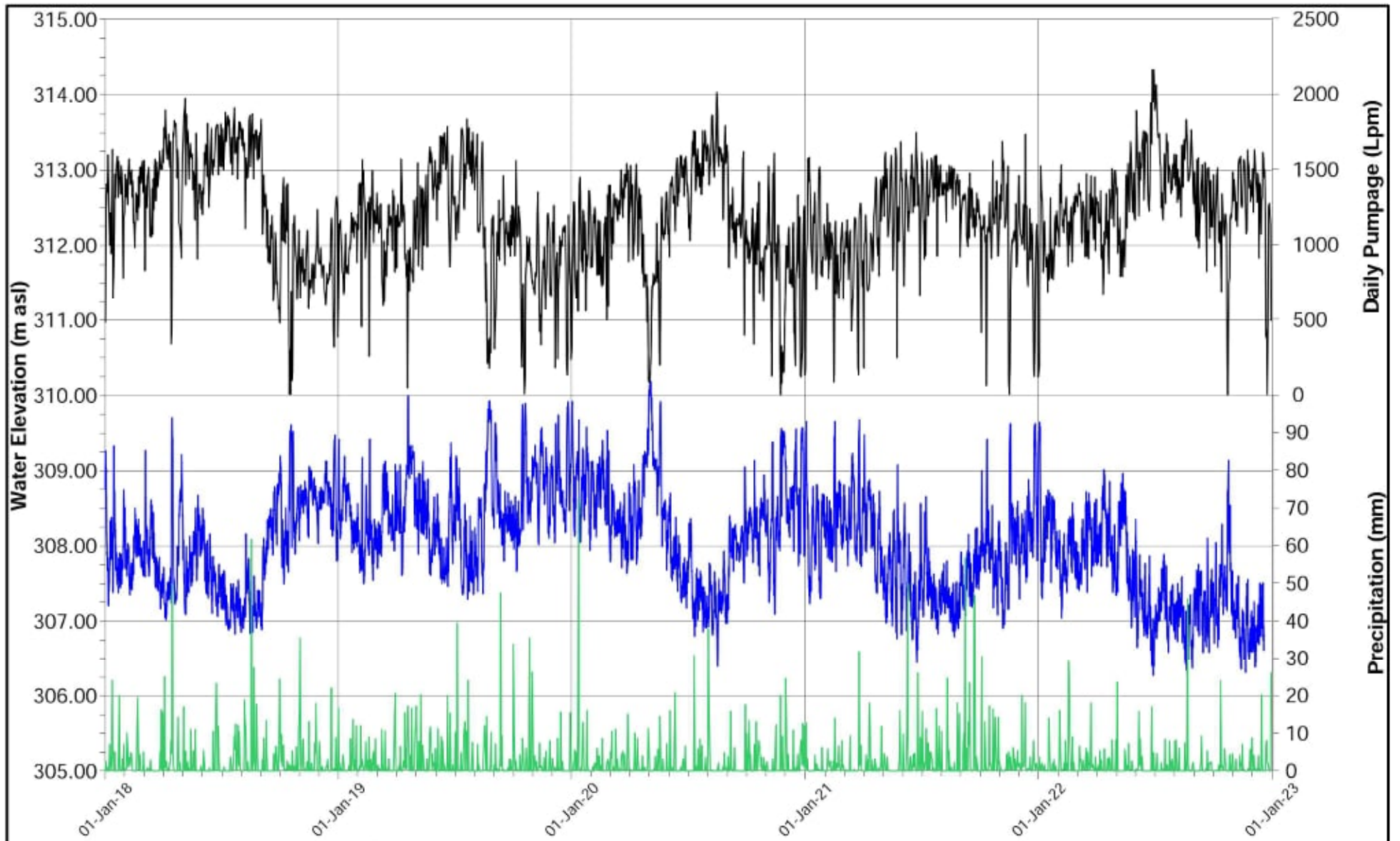
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW18A-12

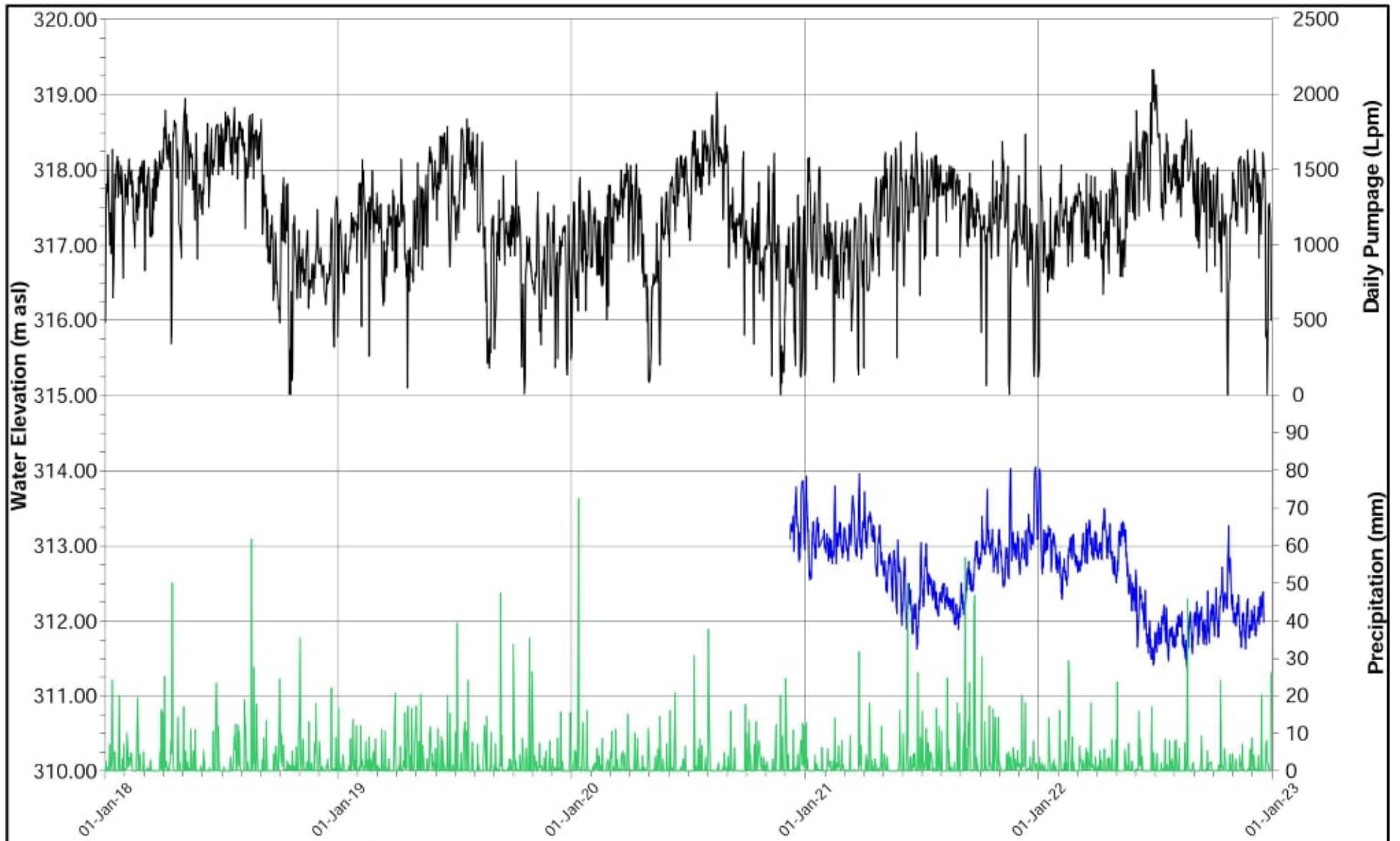
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW19-18-4



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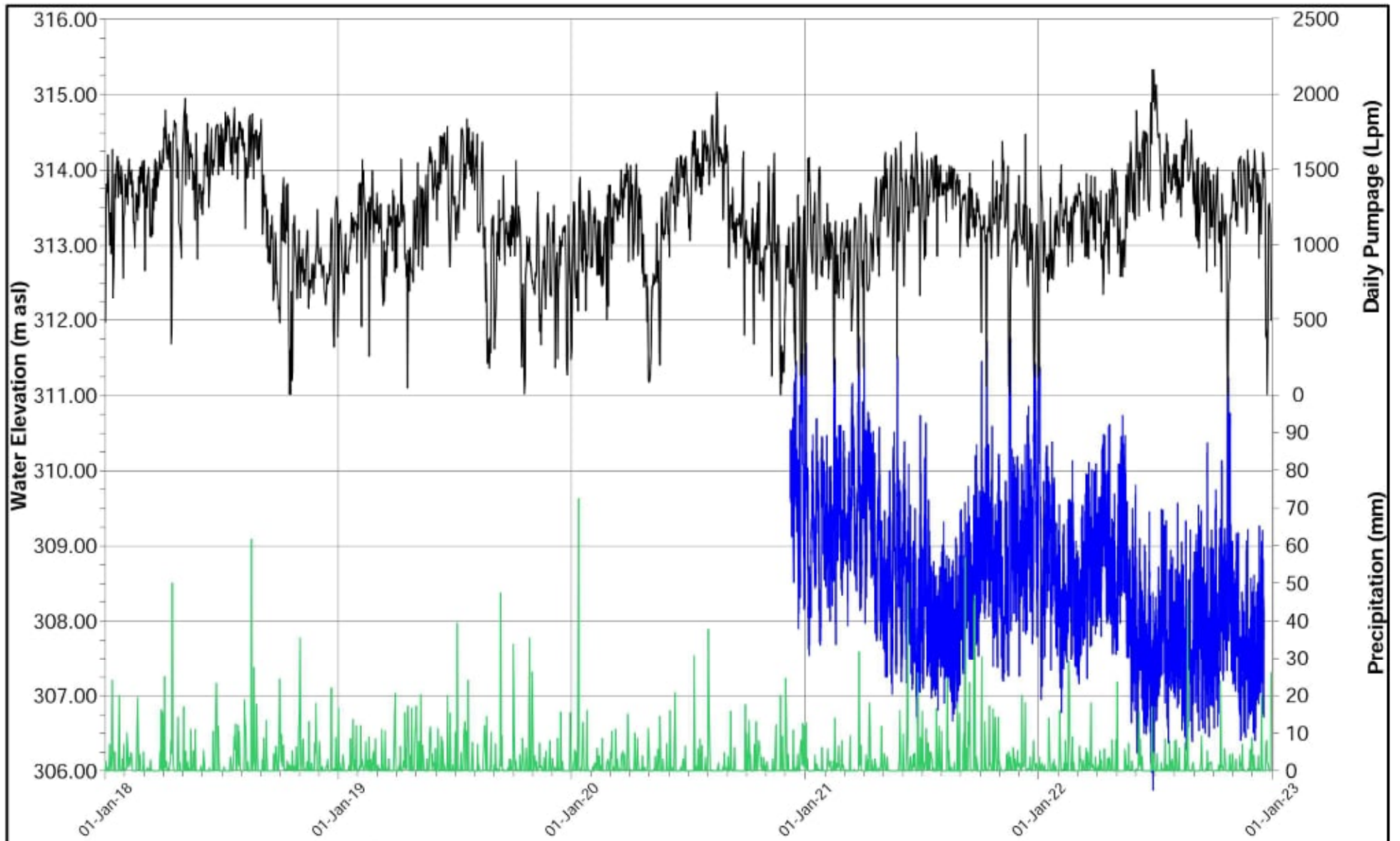
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FIGURE D13



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW20-19-5

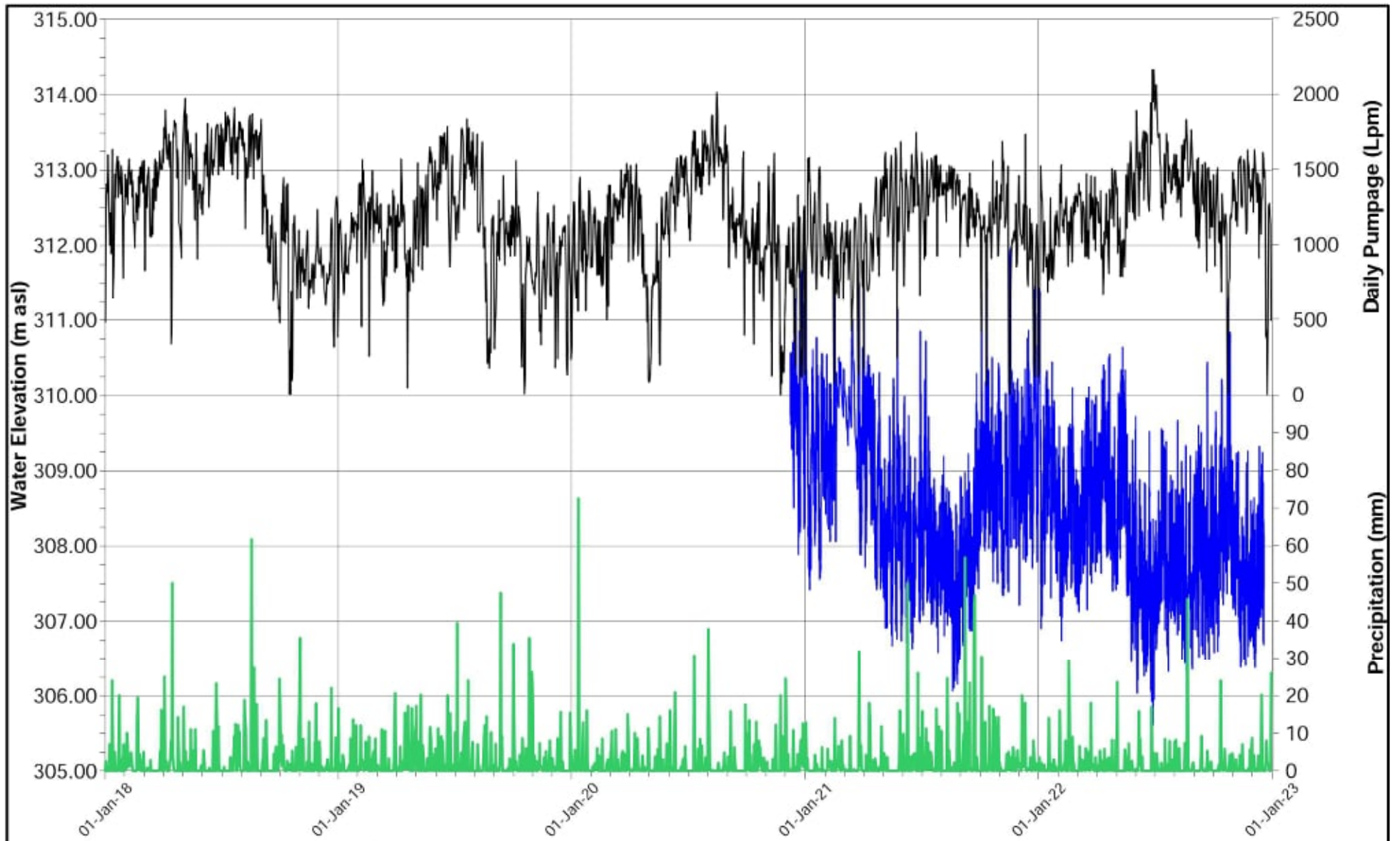
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW21-18-3

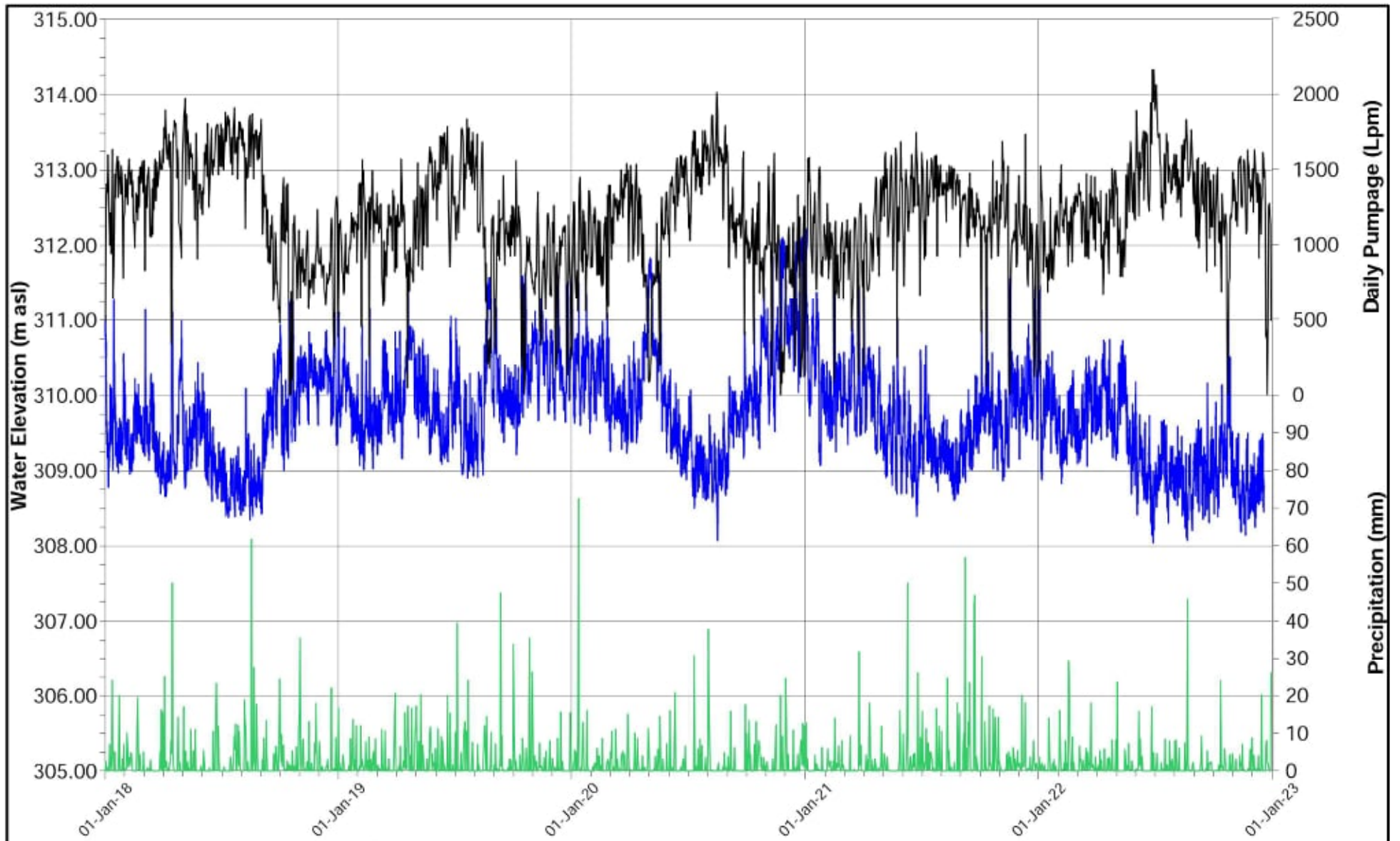
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— TW2-11

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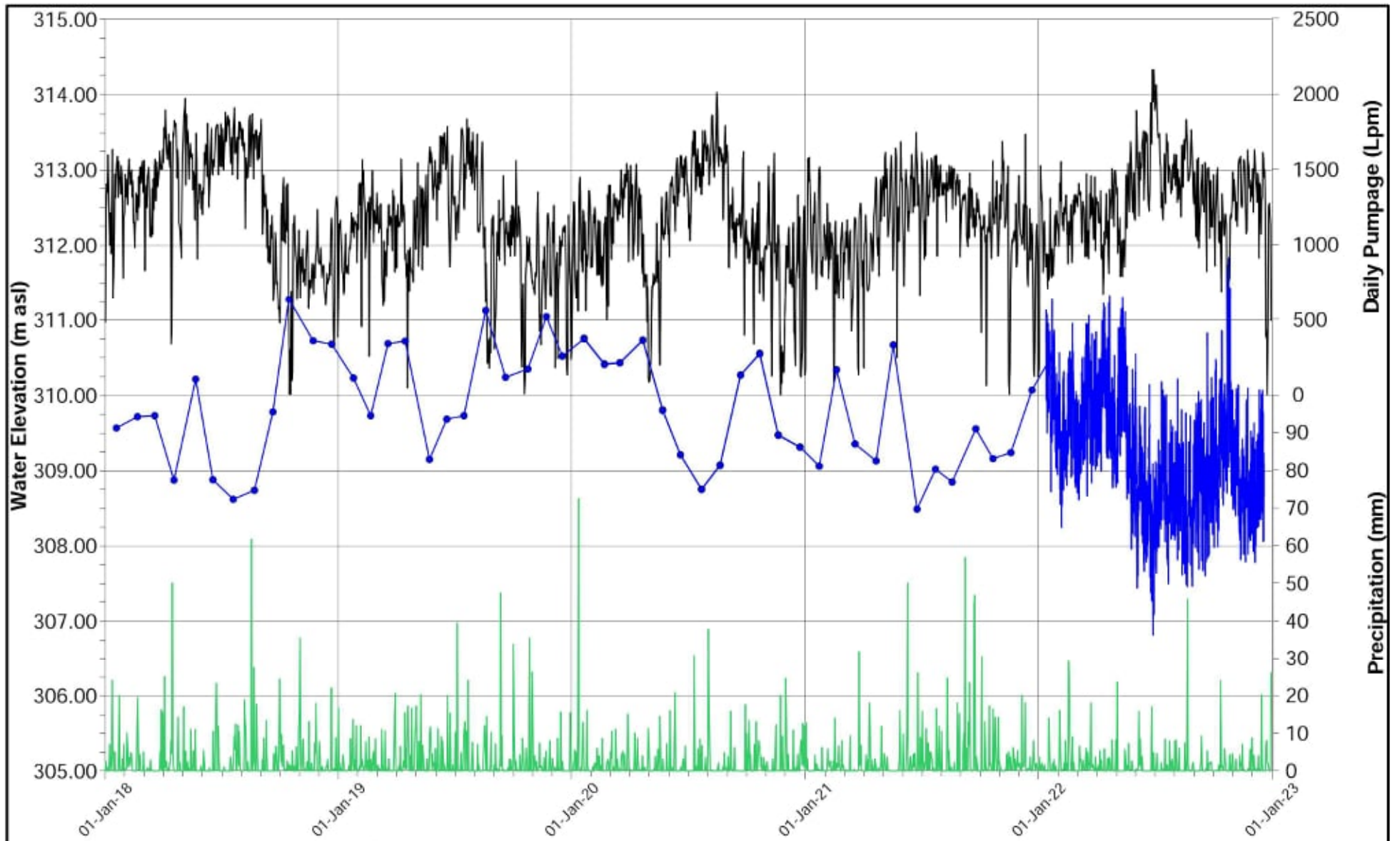
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 A

**FIGURE**  
 D16





- Precipitation (mm)
- Daily Pumpage (Lpm)
- PW5
- PW5 Manual



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APPROVED	GP

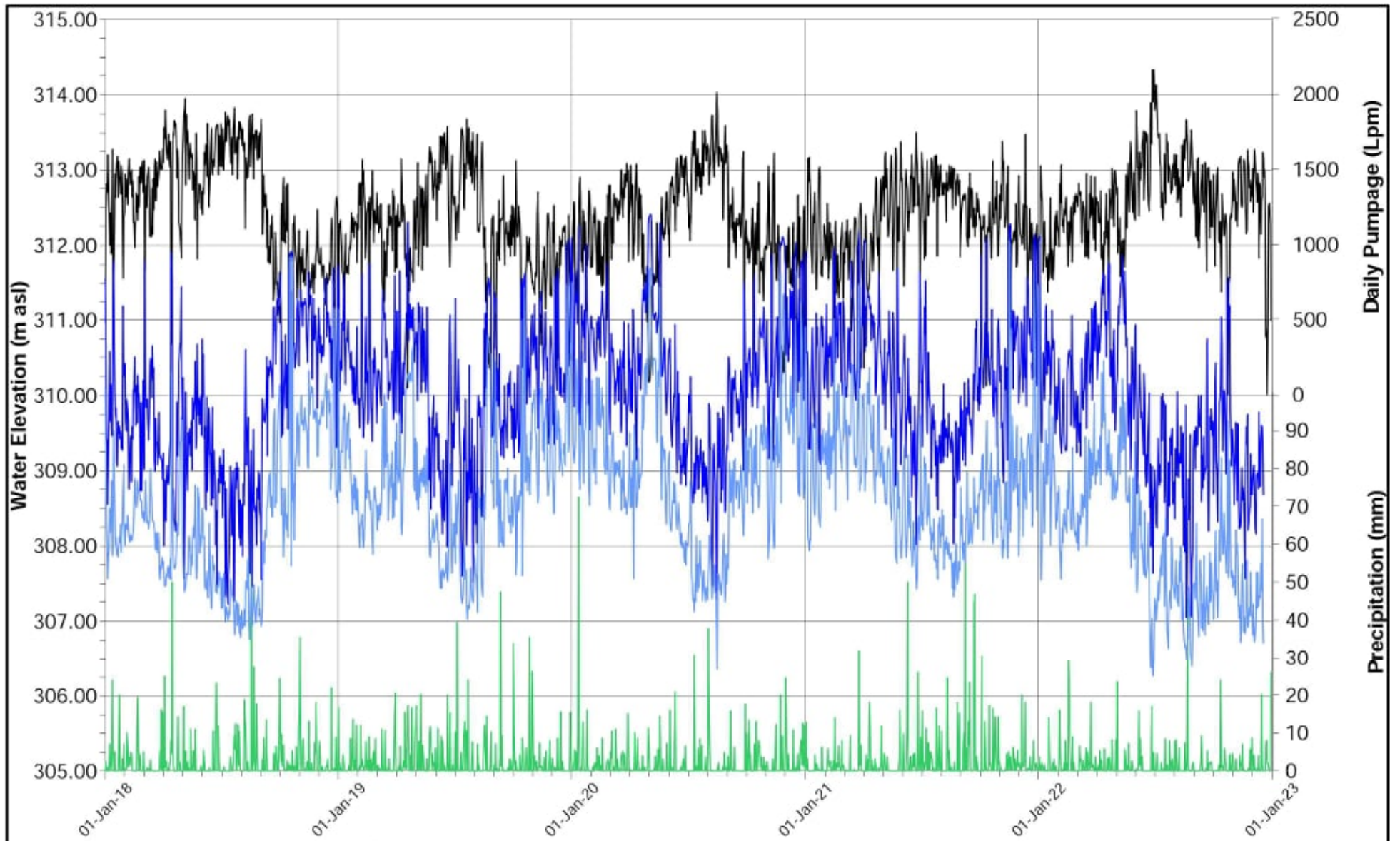
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**FIGURE**  
 D17



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW2B-07 Daily Max
- MW2B-07 Daily Min

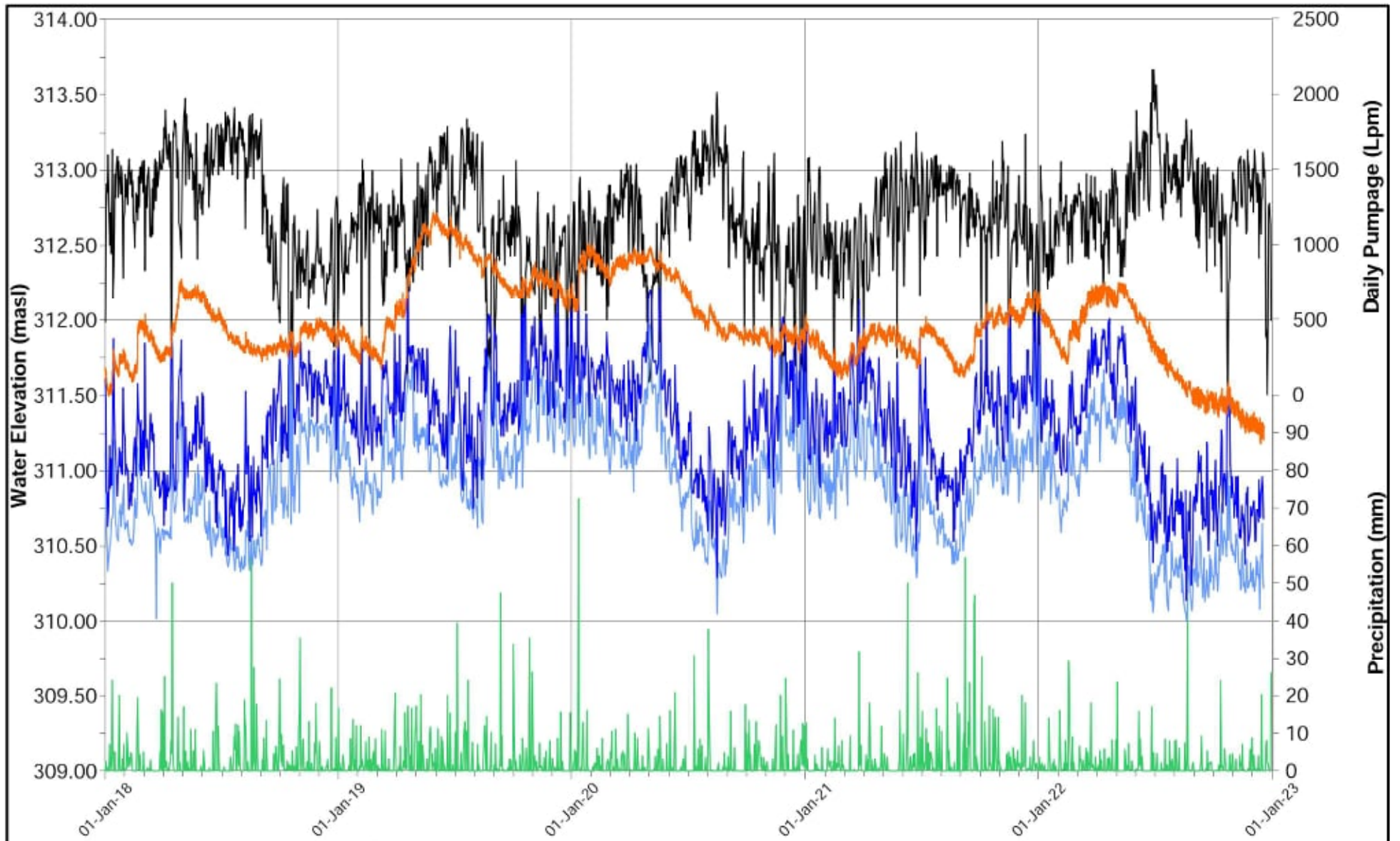


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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW2C-07 Daily Min
- MW2C-07 Daily Max
- MW4B-07

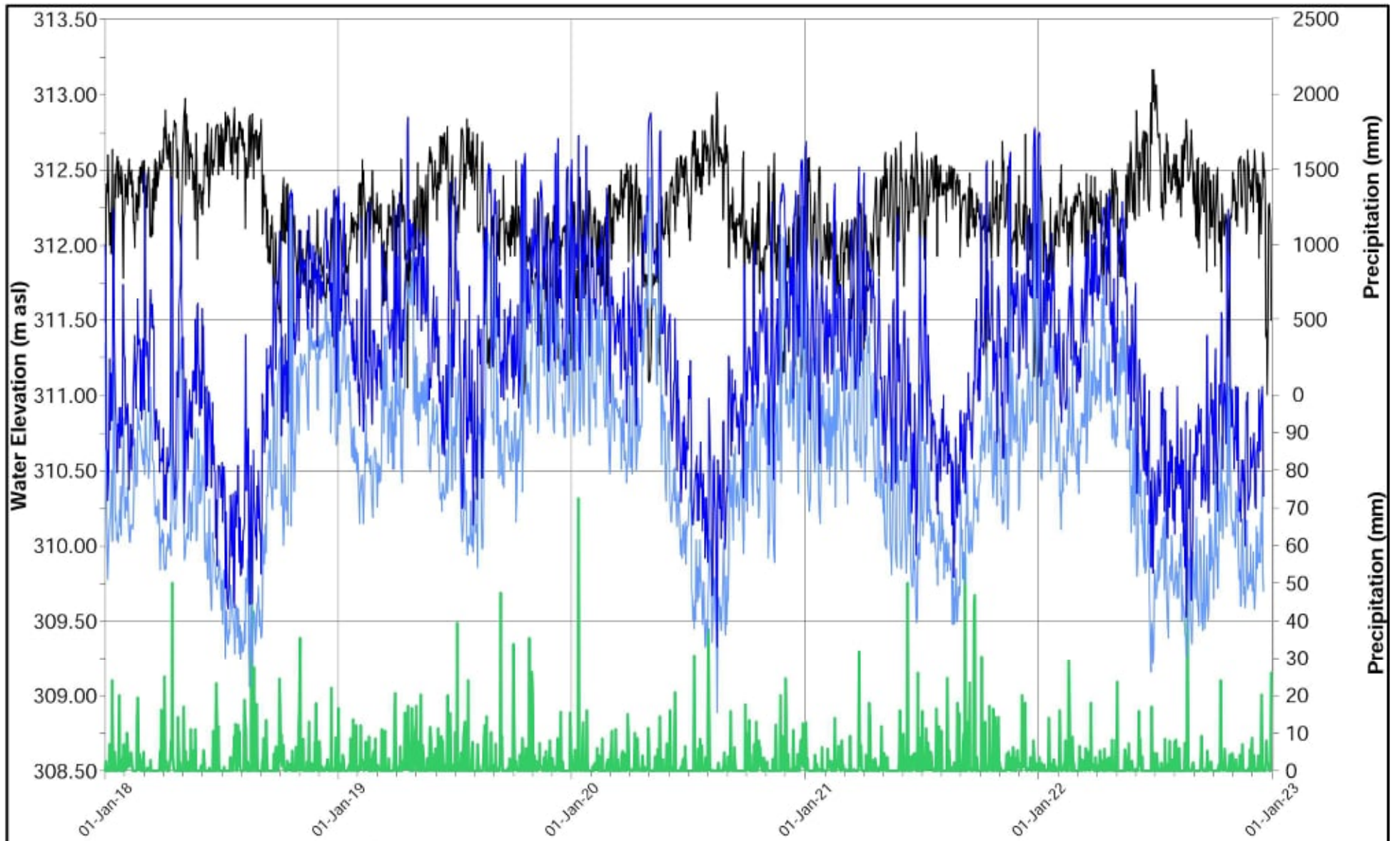


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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW7B-08 Daily Max
- MW7B-08 Daily Min

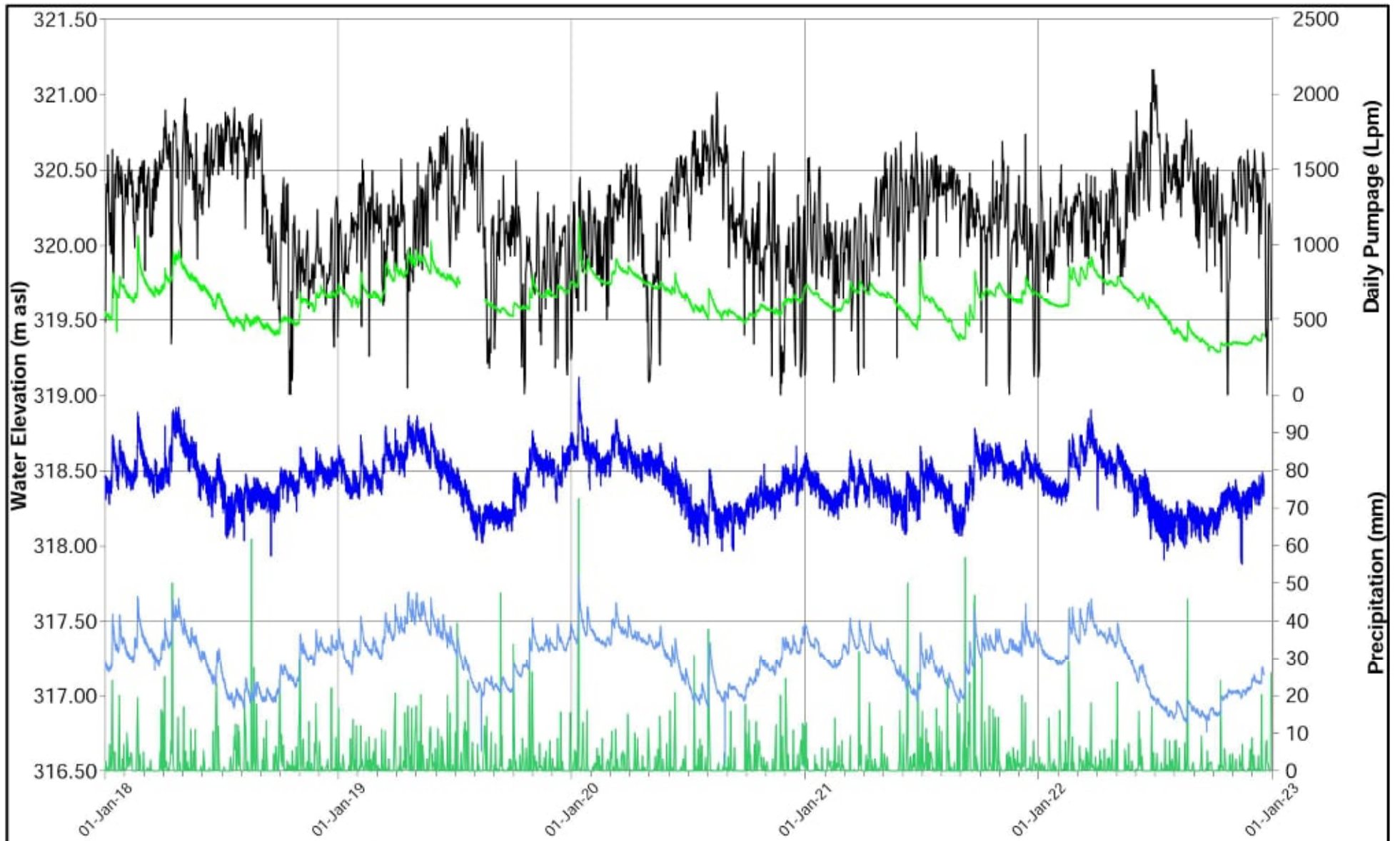


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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW6B-08
- MW8B-08
- MW10B-09



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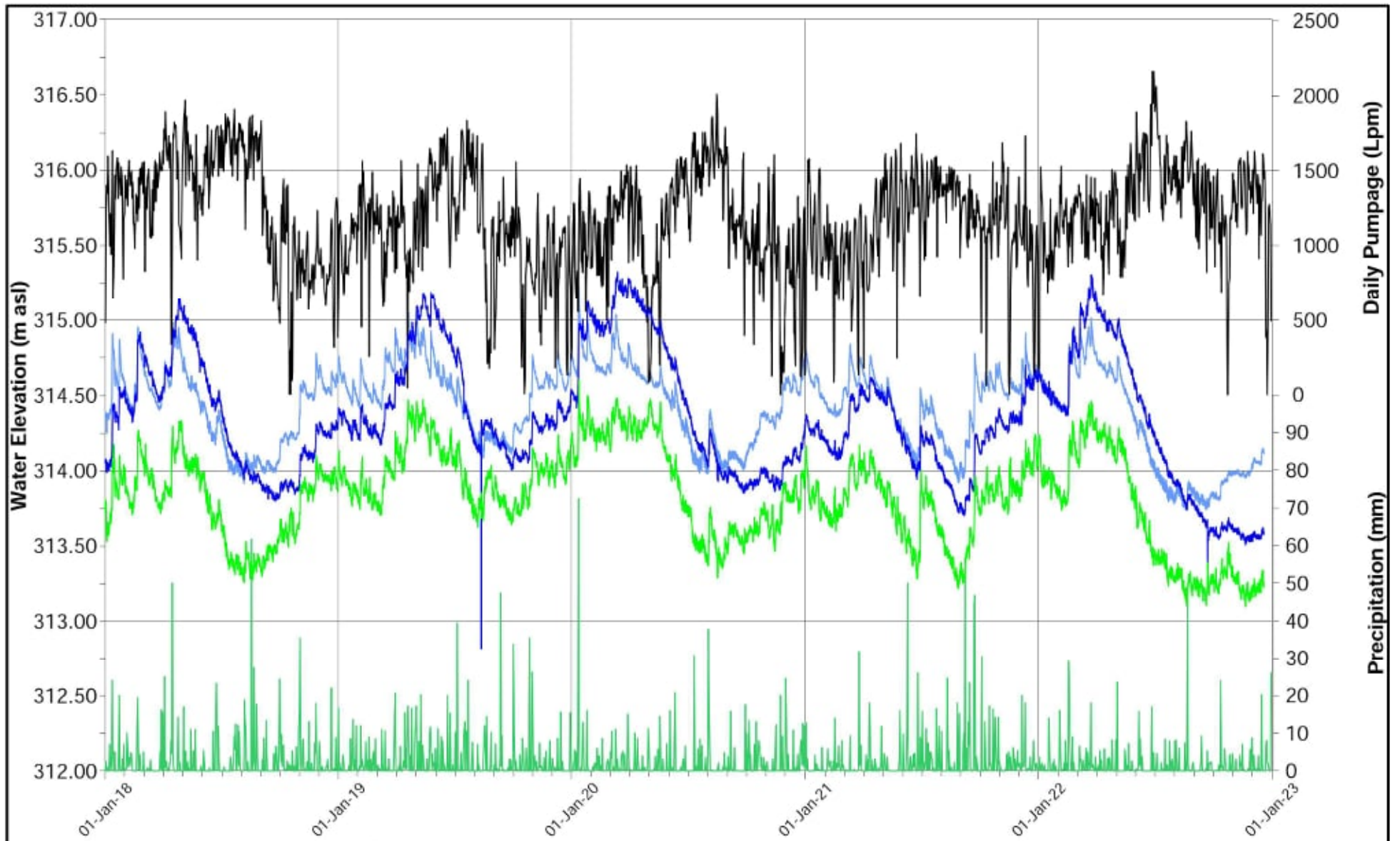
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- PCC-D
- MW14C-11
- MW14B-11

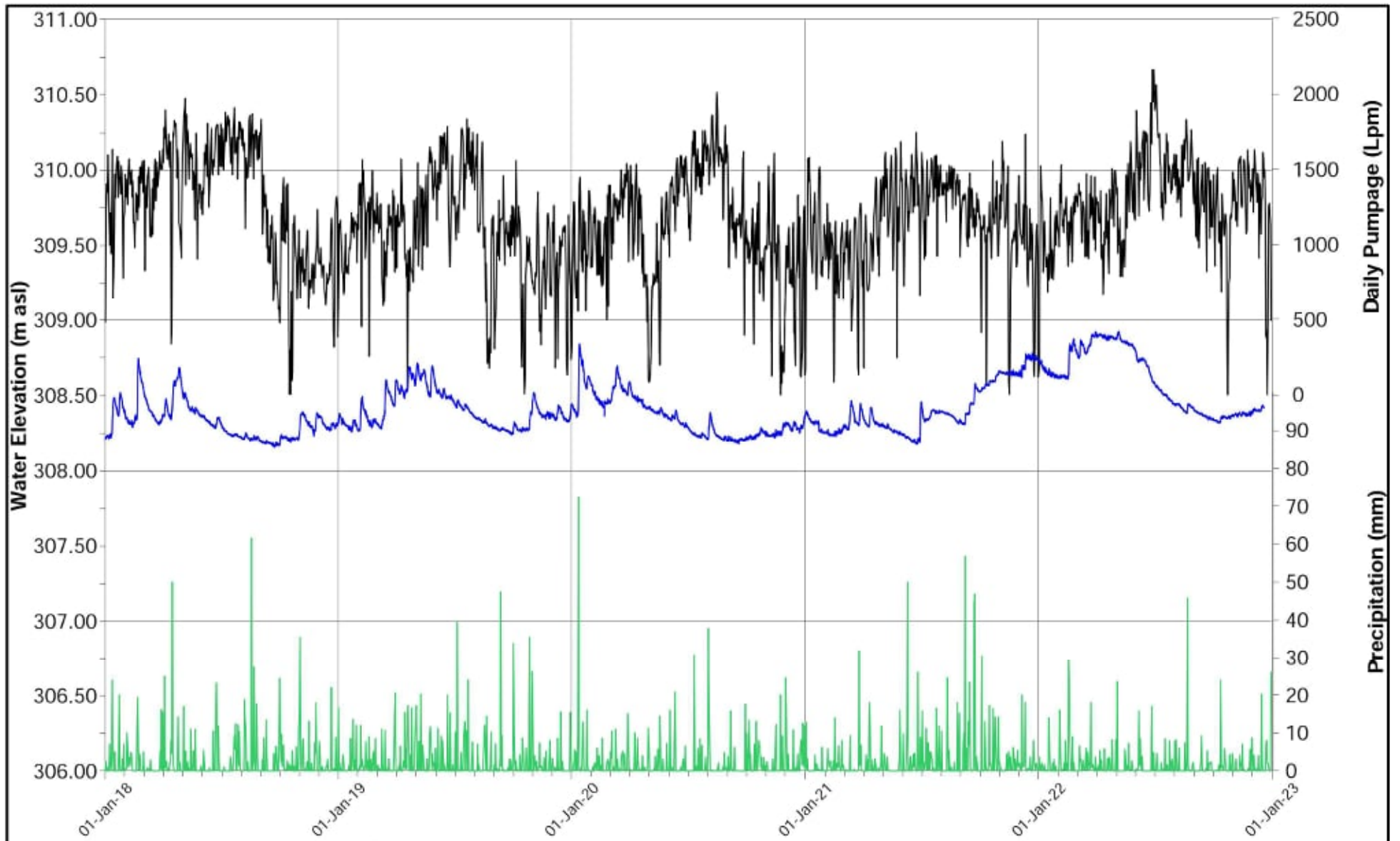


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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW15B-12

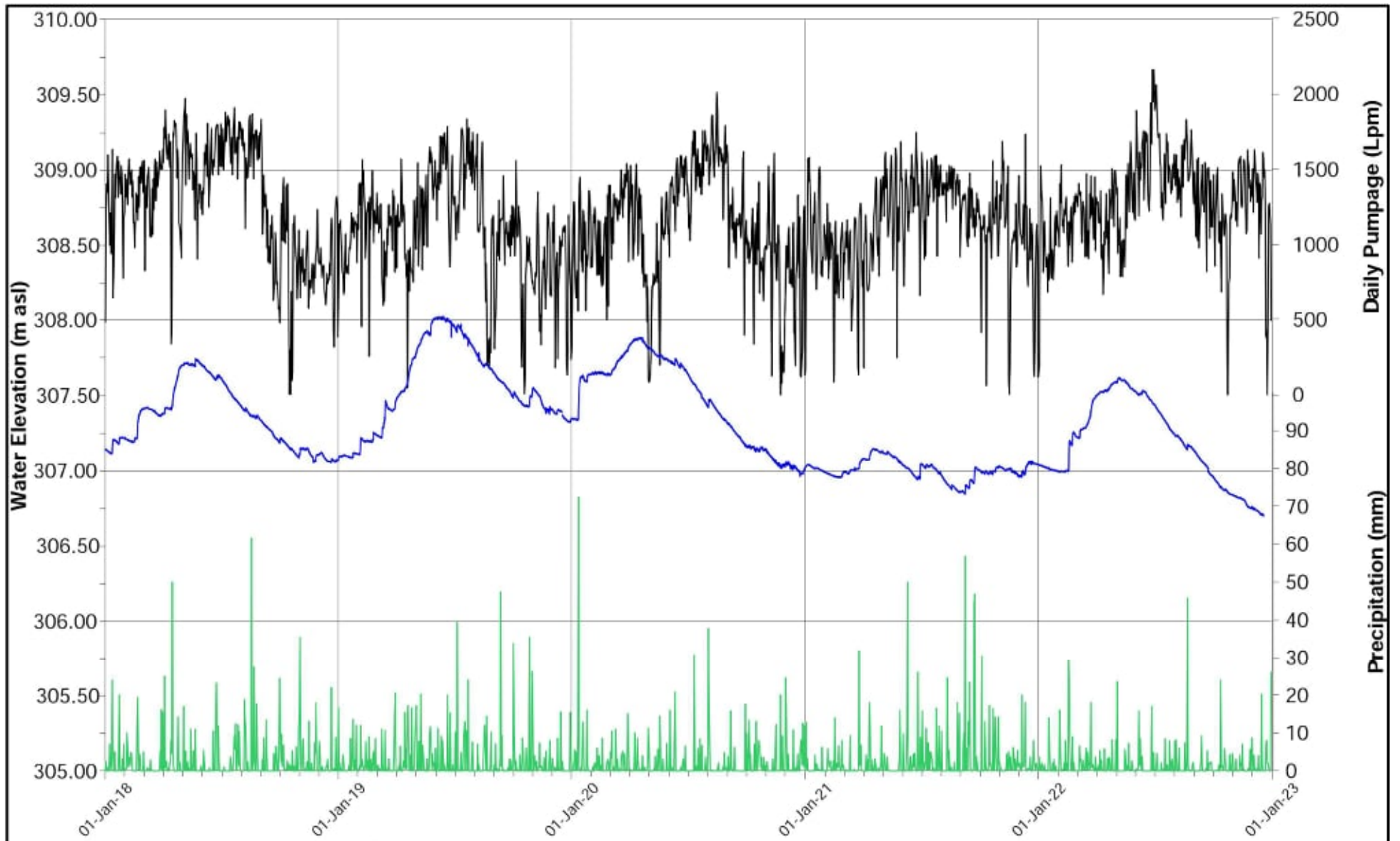
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW16B-12

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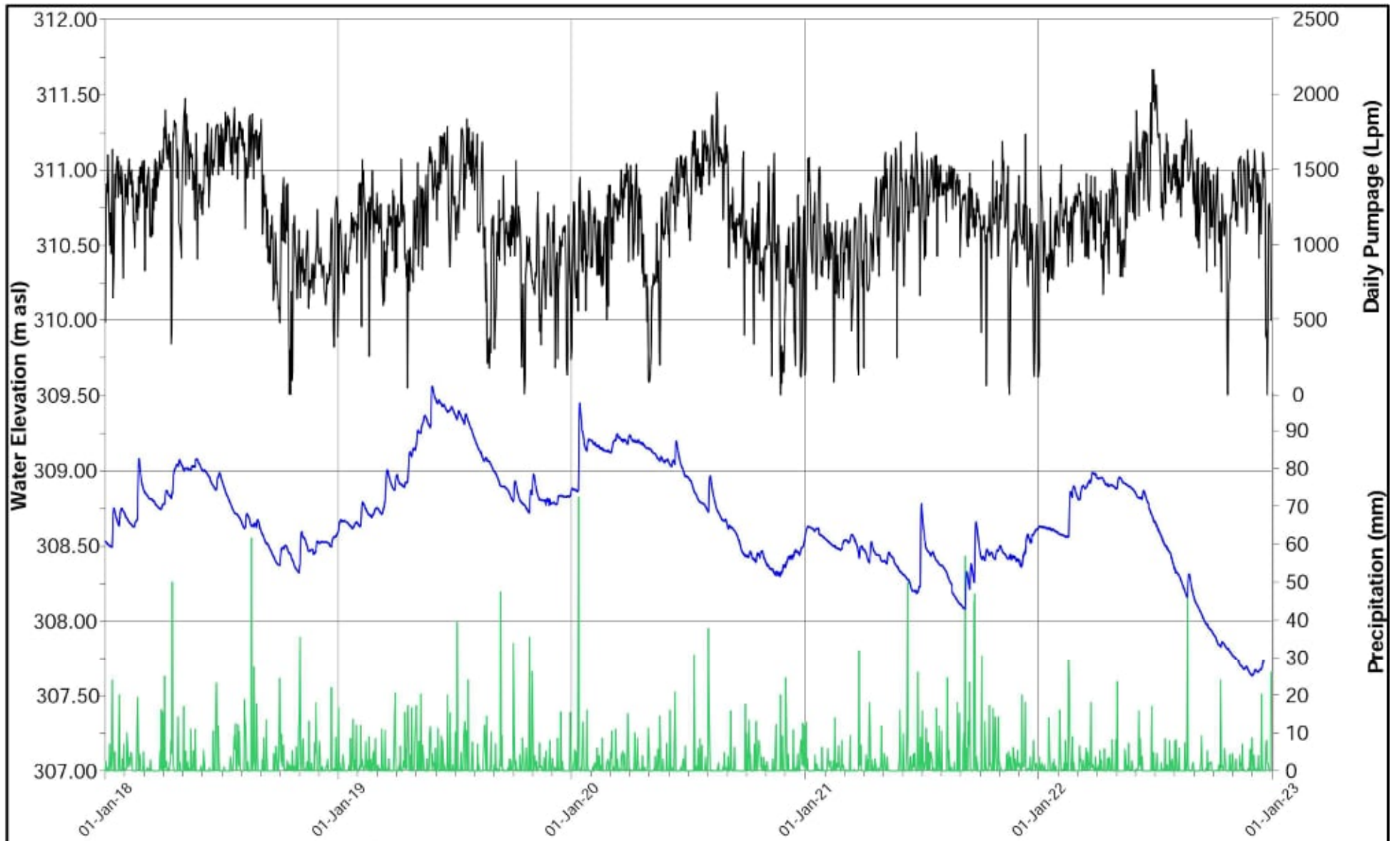
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 A

**FIGURE**  
 D24





— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW17B-12

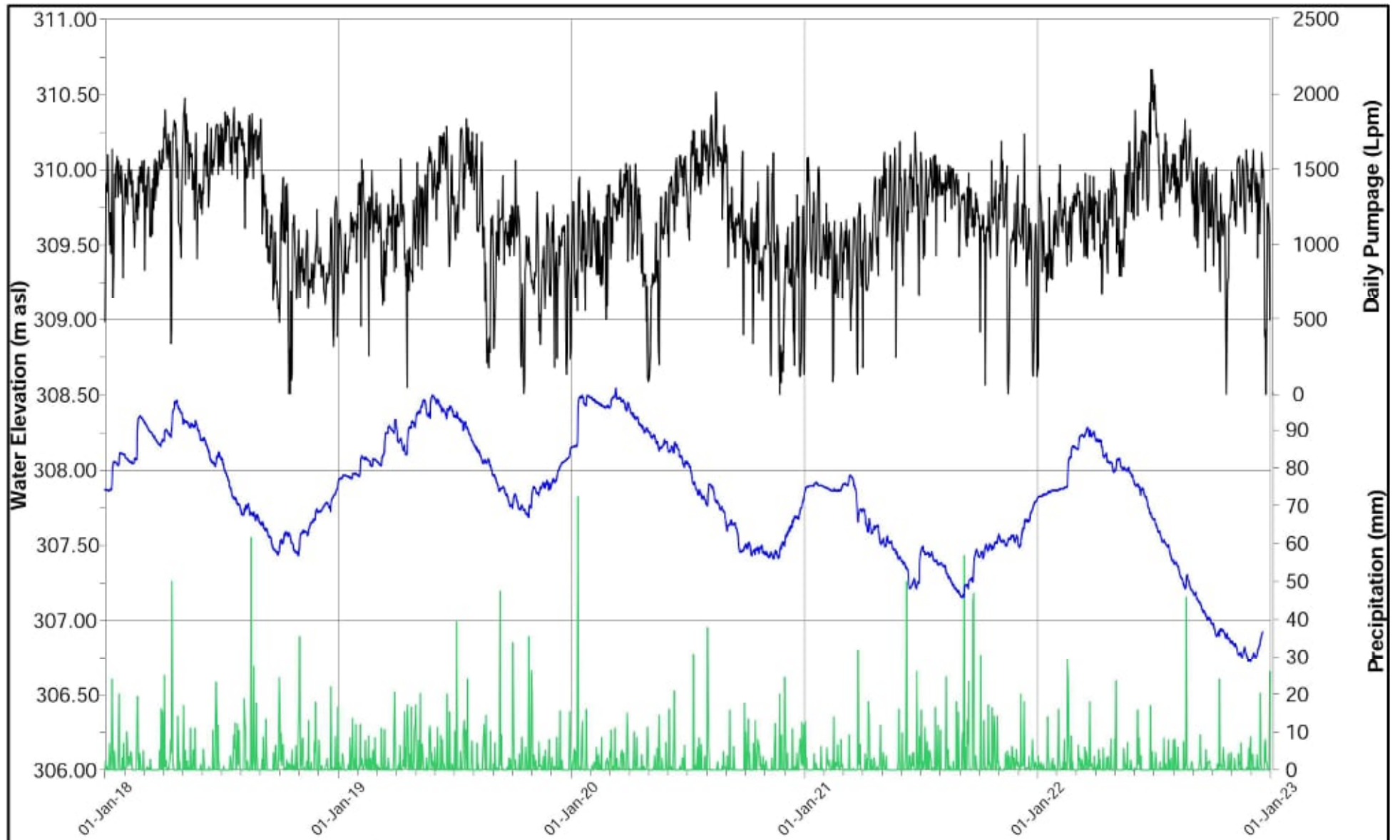
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW18B-12



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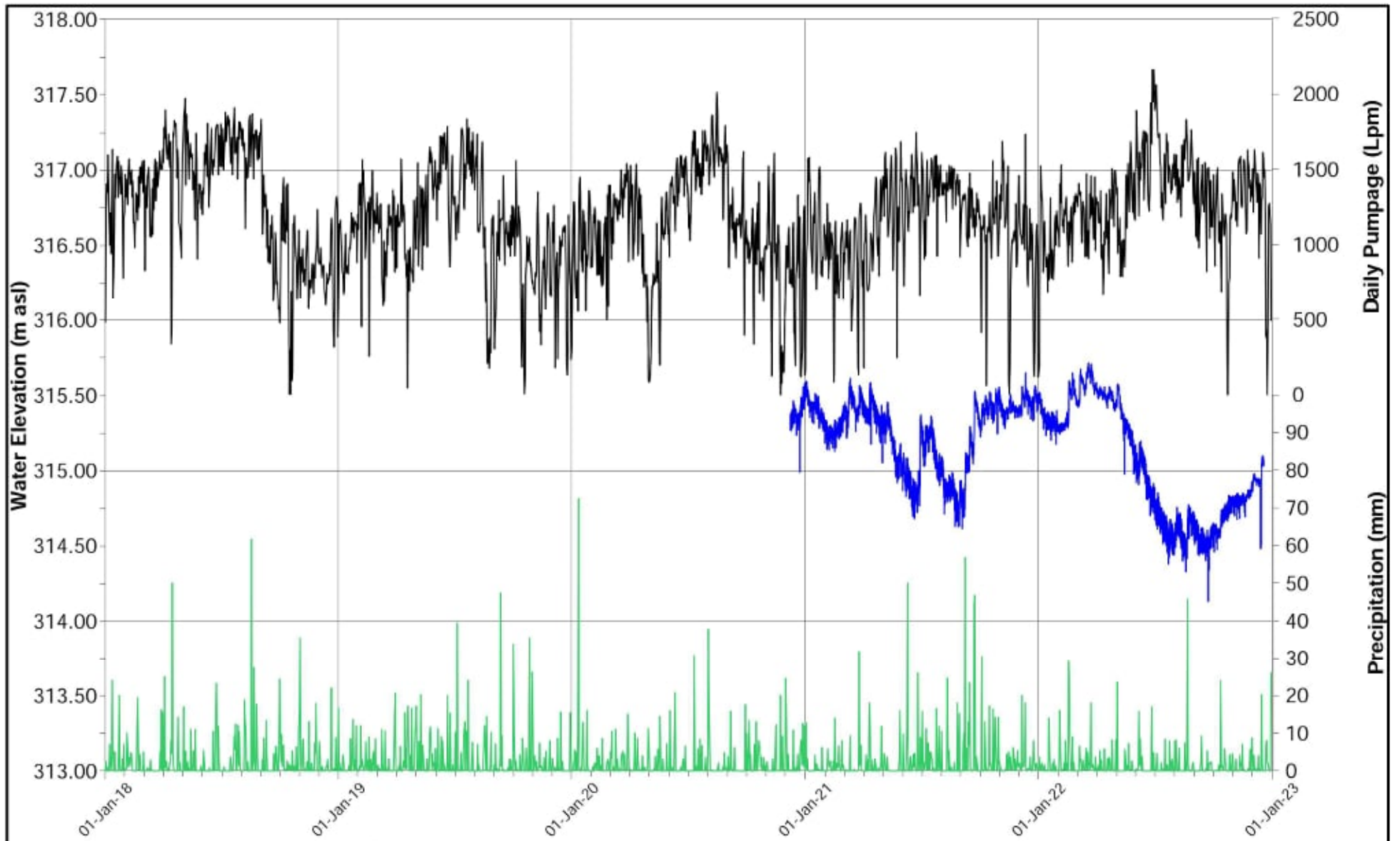
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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW19-18-7

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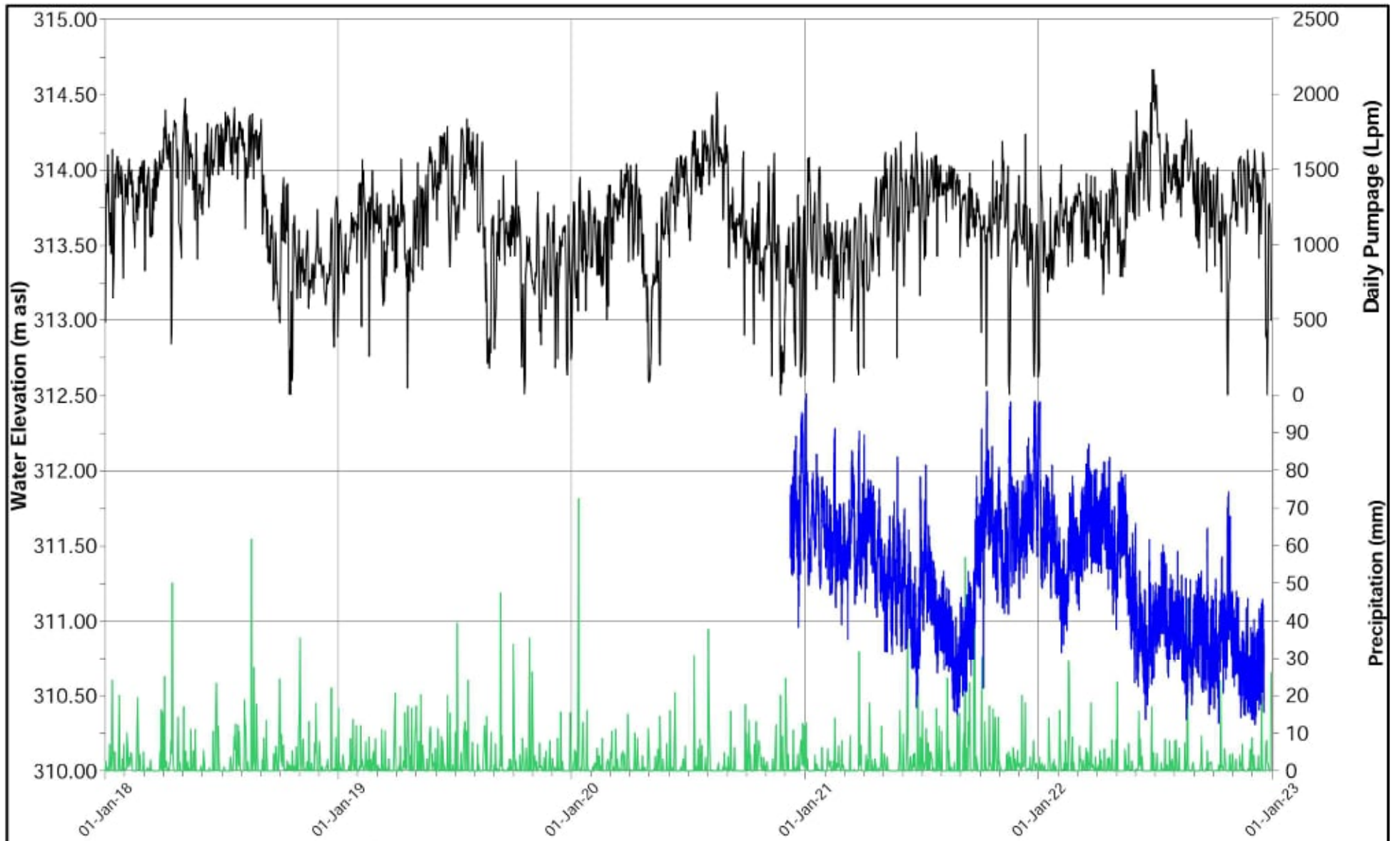


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 A

**FIGURE**  
 D27



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW20-19-7



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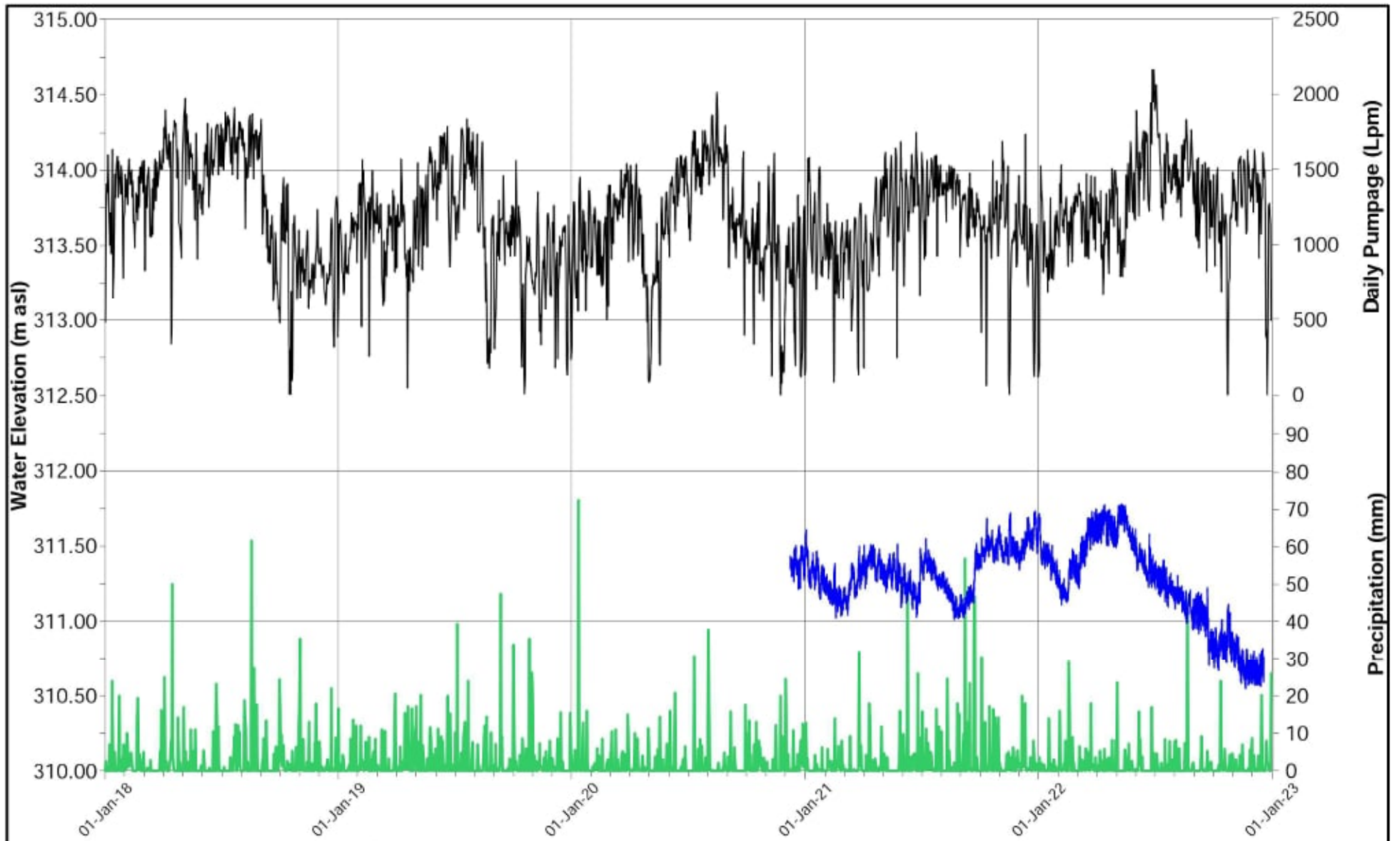
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FIGURE  
 D28



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW21-18-4

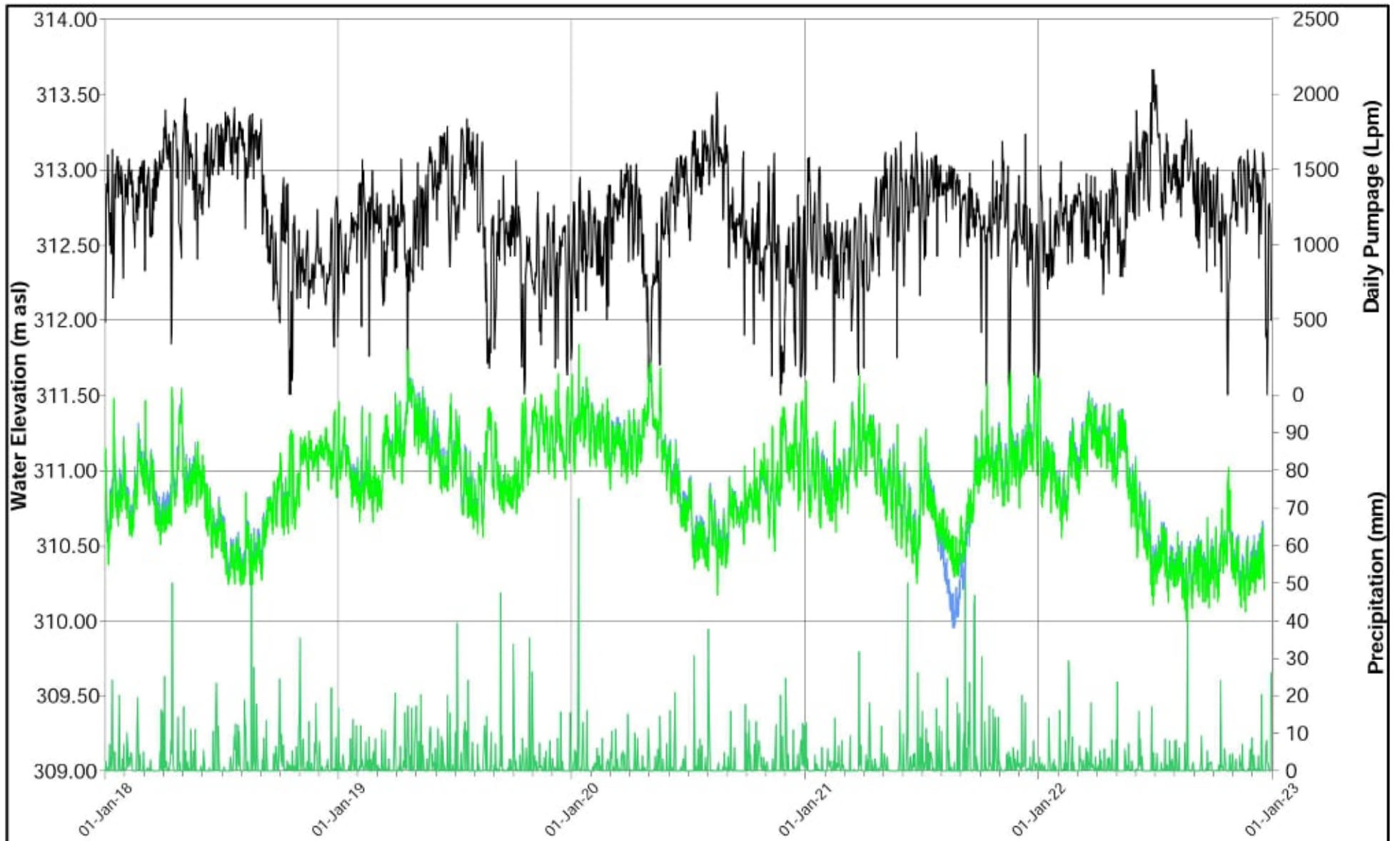


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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW-D
- MW-I



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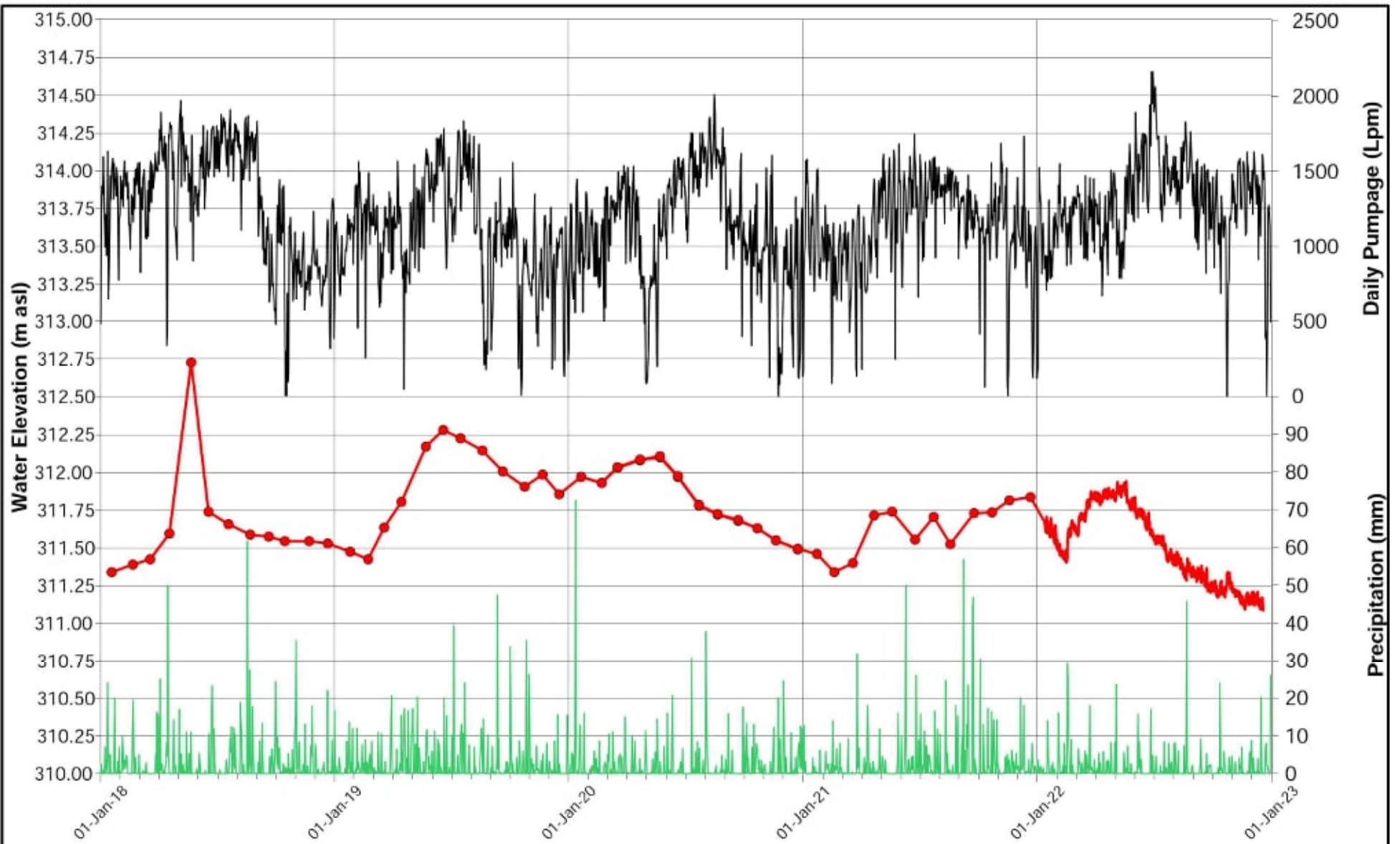
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**FIGURE**  
 D30



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— Dufferin Pit (Y Well)



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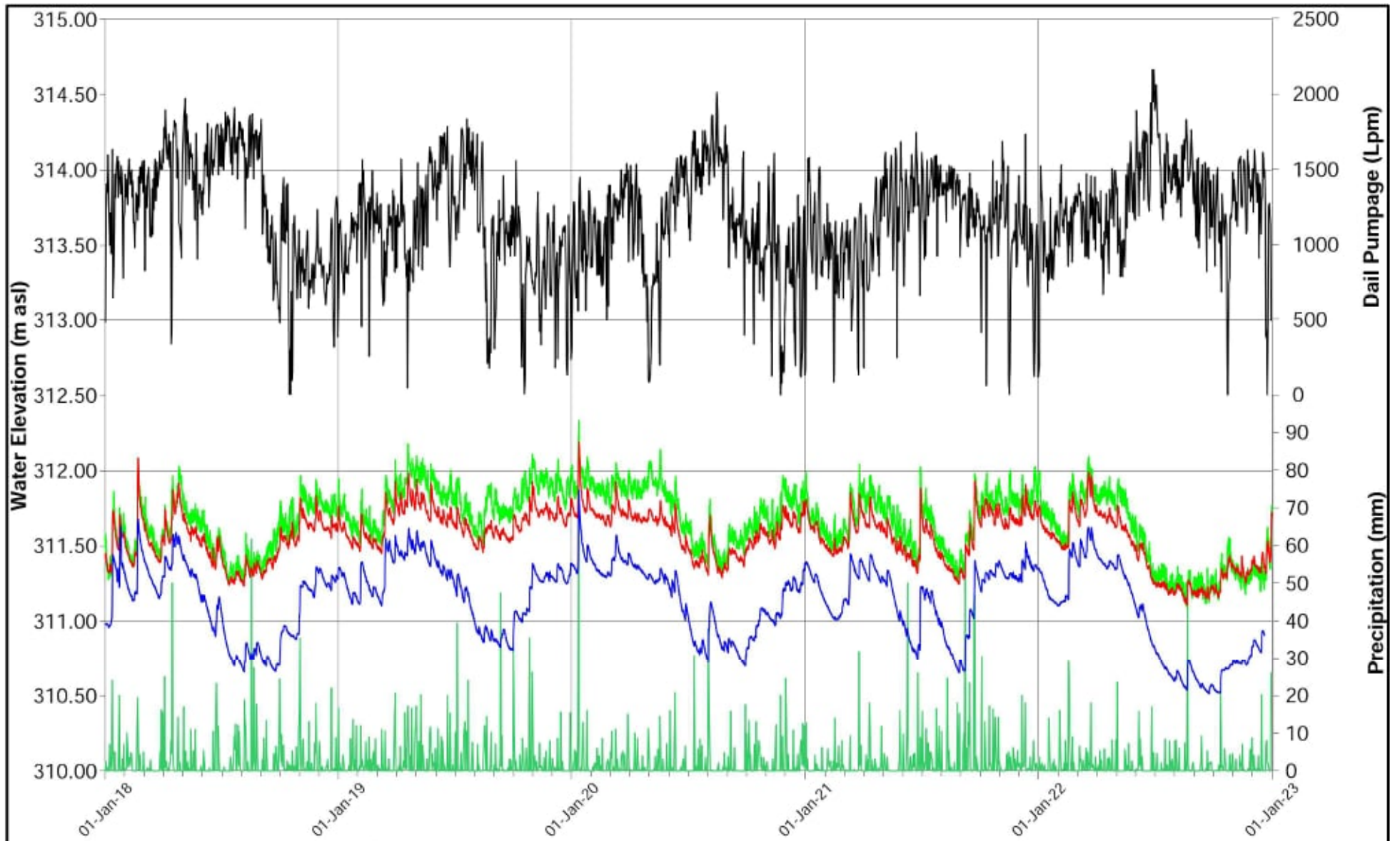
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PROJECT NO. 20449101 (1100)      REV A      FIGURE D31



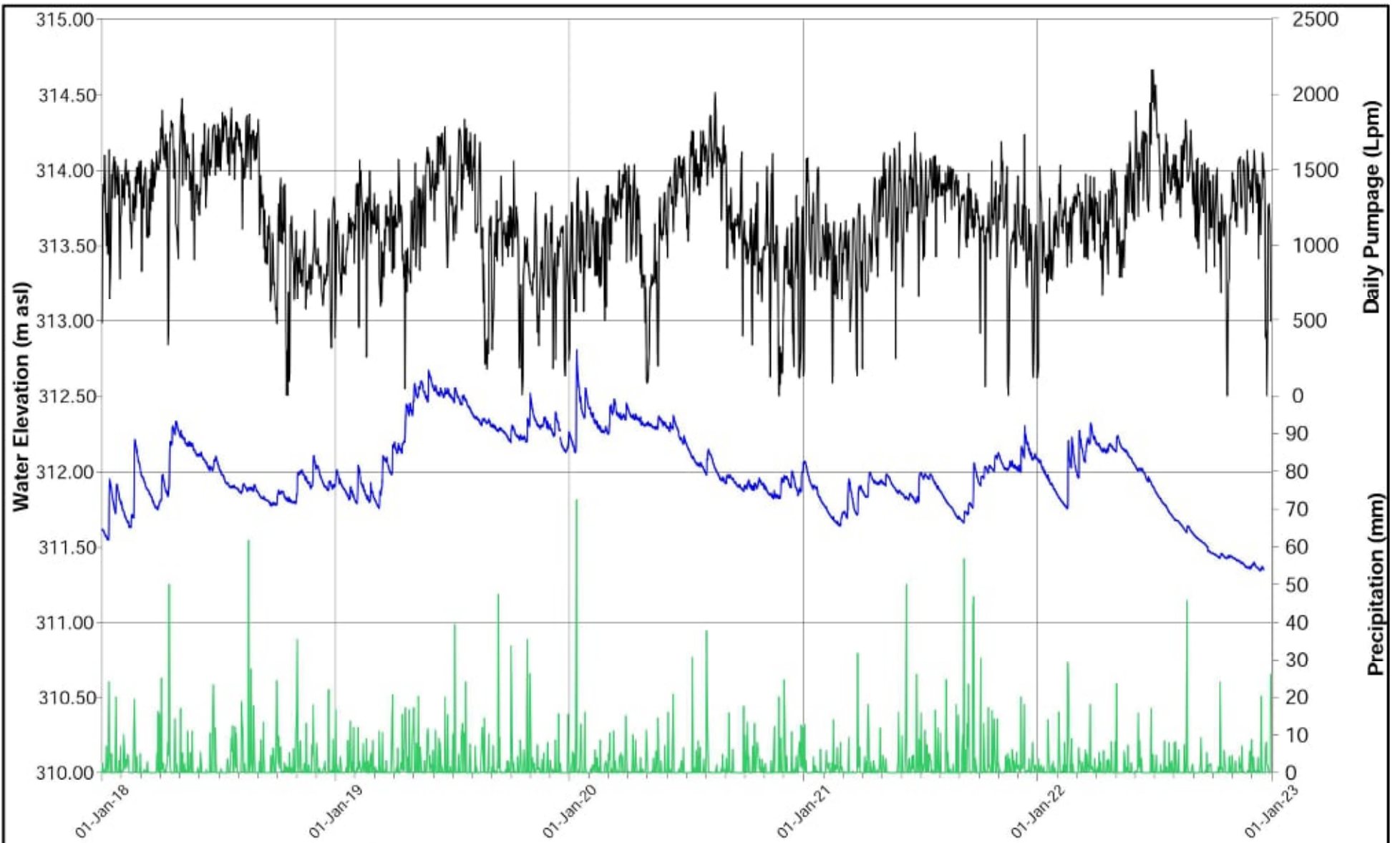
- Precipitation (mm)
- Daily Pumpage (Lpm)
- MW2D-07
- MW2E-07
- MW-S



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— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MW4C-07

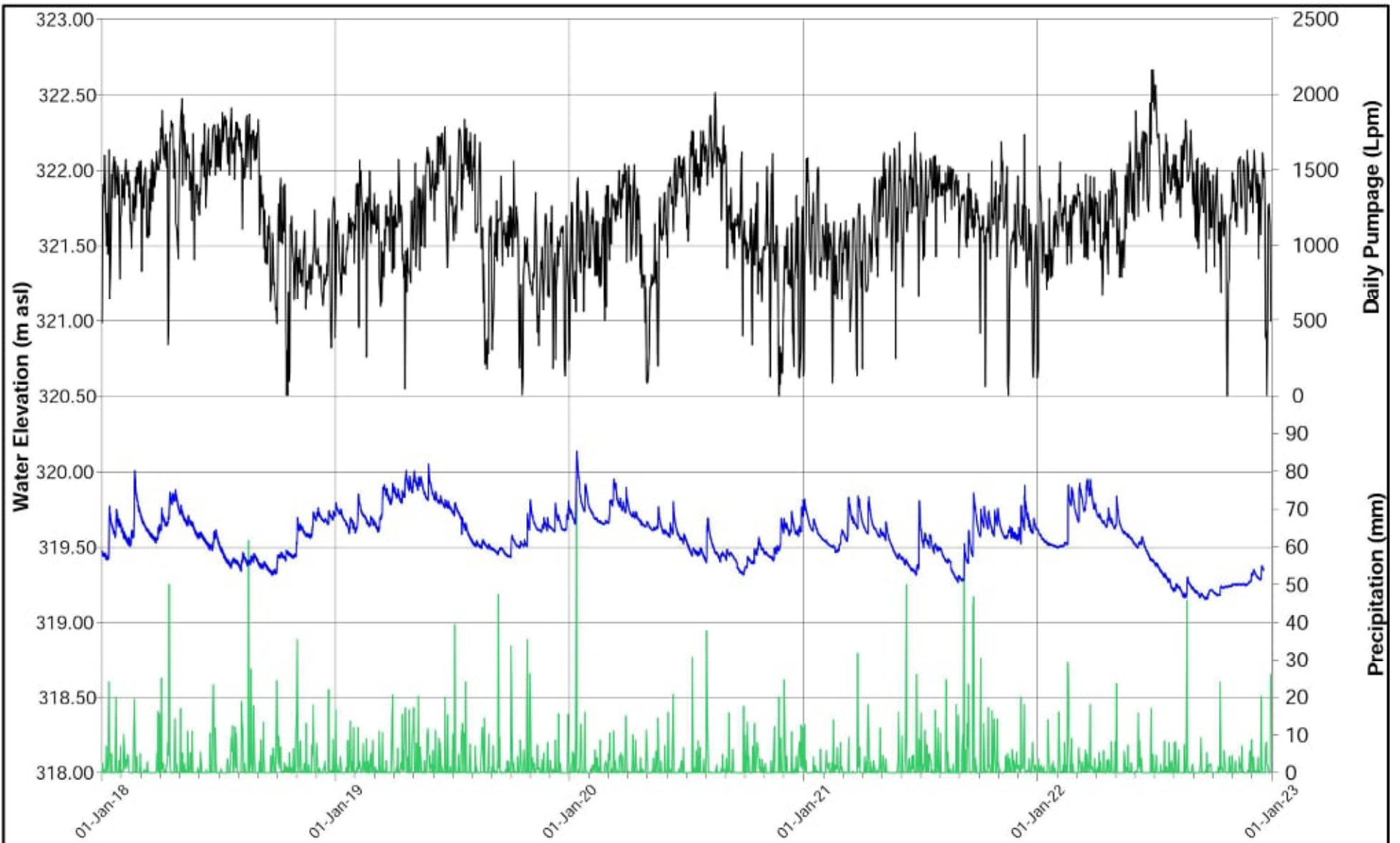
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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D33



— Precipitation (mm)  
 — Daily Pumpage (Lpm)  
 — MW10A-09

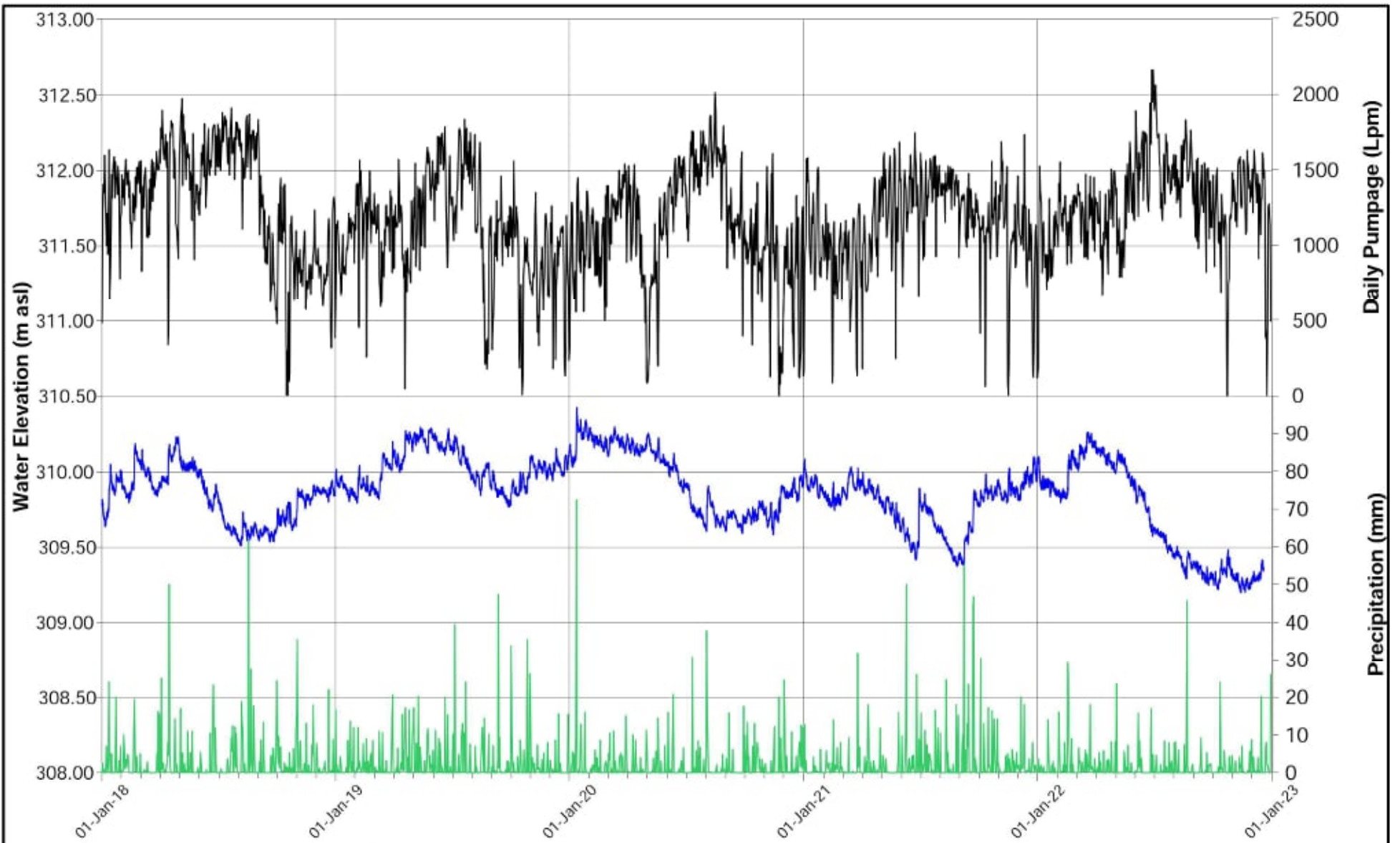
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PROJECT NO. 20449101 (1100)      REV A      FIGURE D31



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— TW1-93

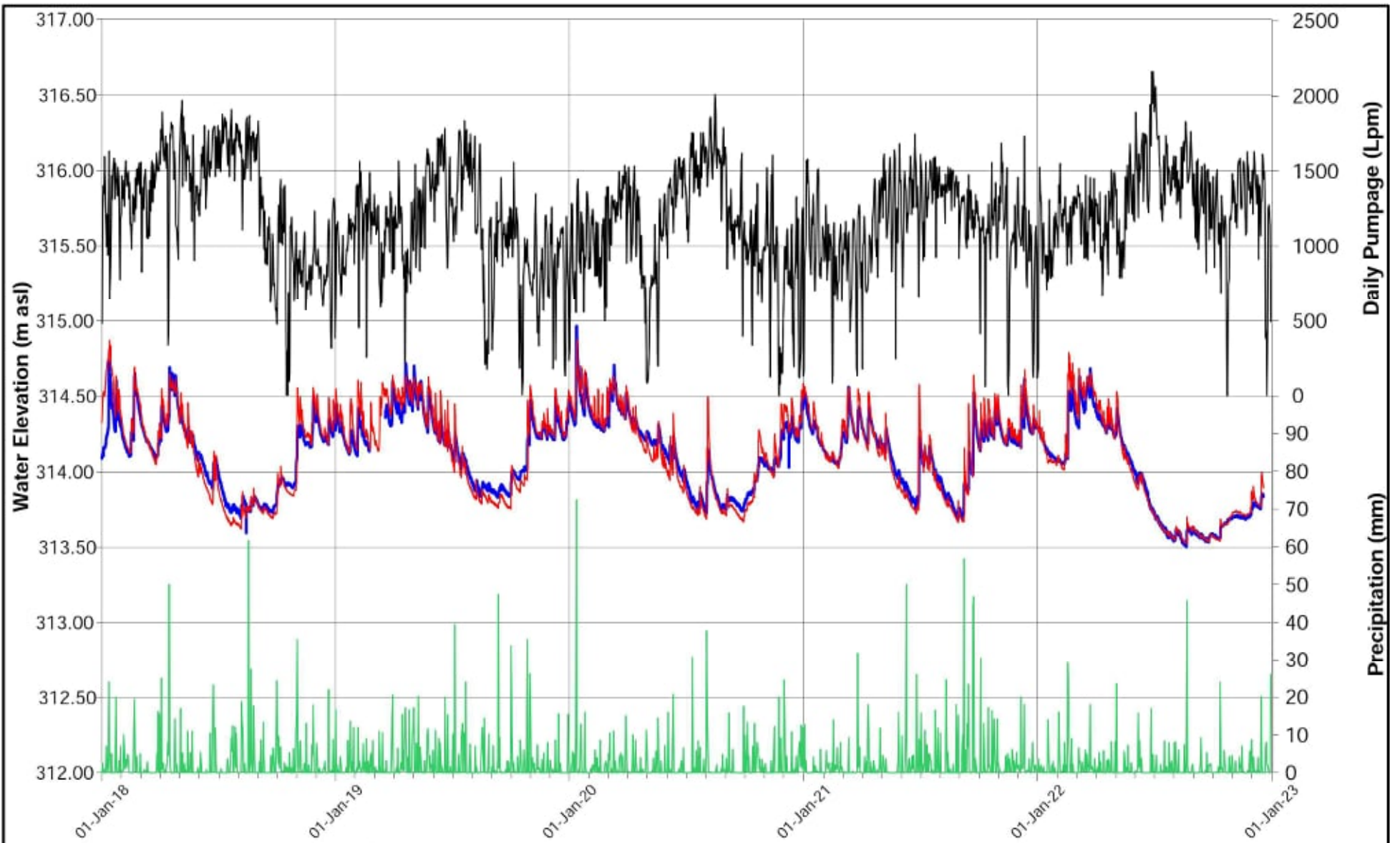
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**REVIEW** GP  
**APPROVED** GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D35



- Precipitation (mm)
- Daily Pumpage (Lpm)
- PCC-I
- PCC-S

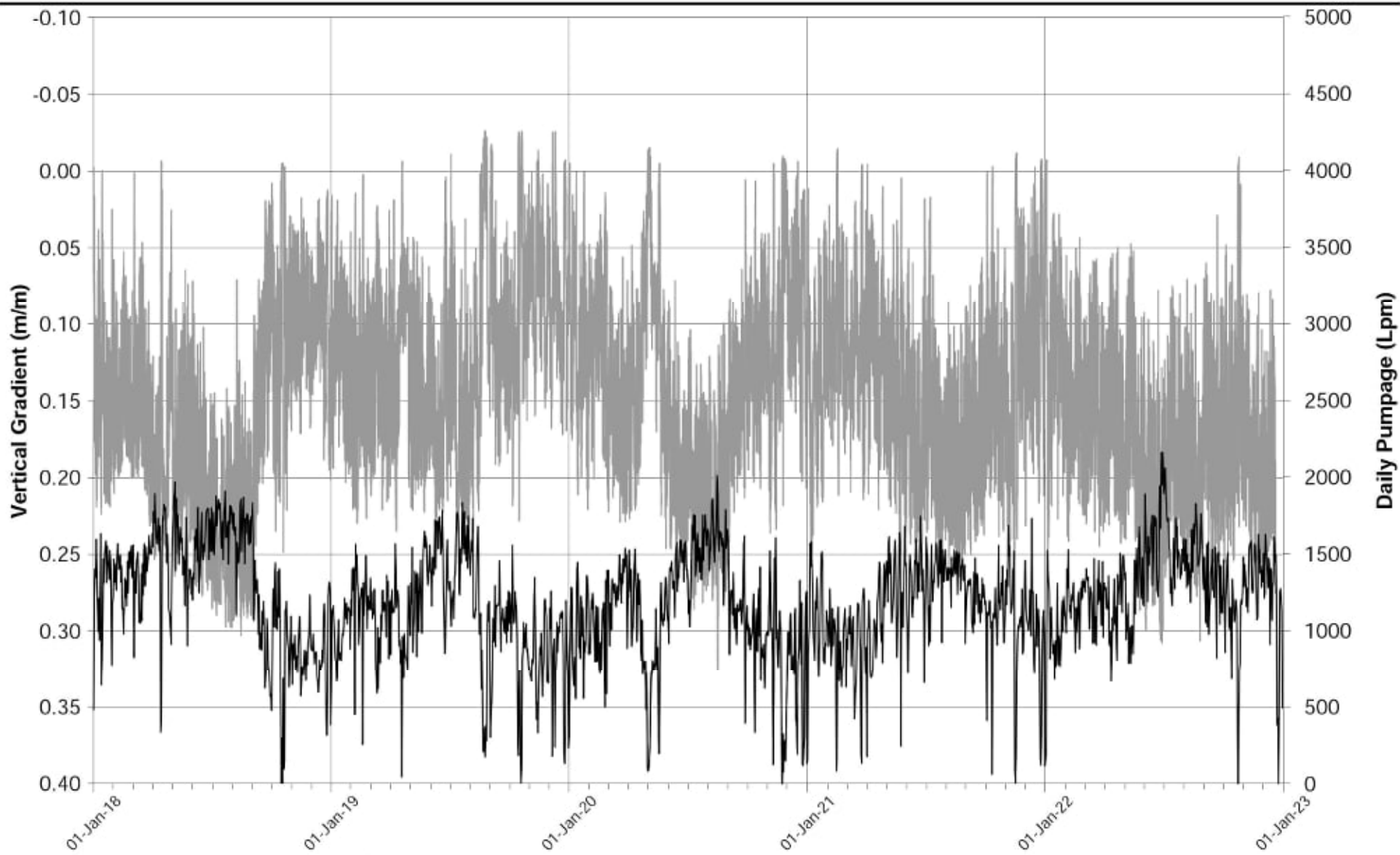


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PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **OVERBURDEN HYDROGRAPHS**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE D36



— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

Note: Vertical gradient between MW2C-07 and MW2A-07

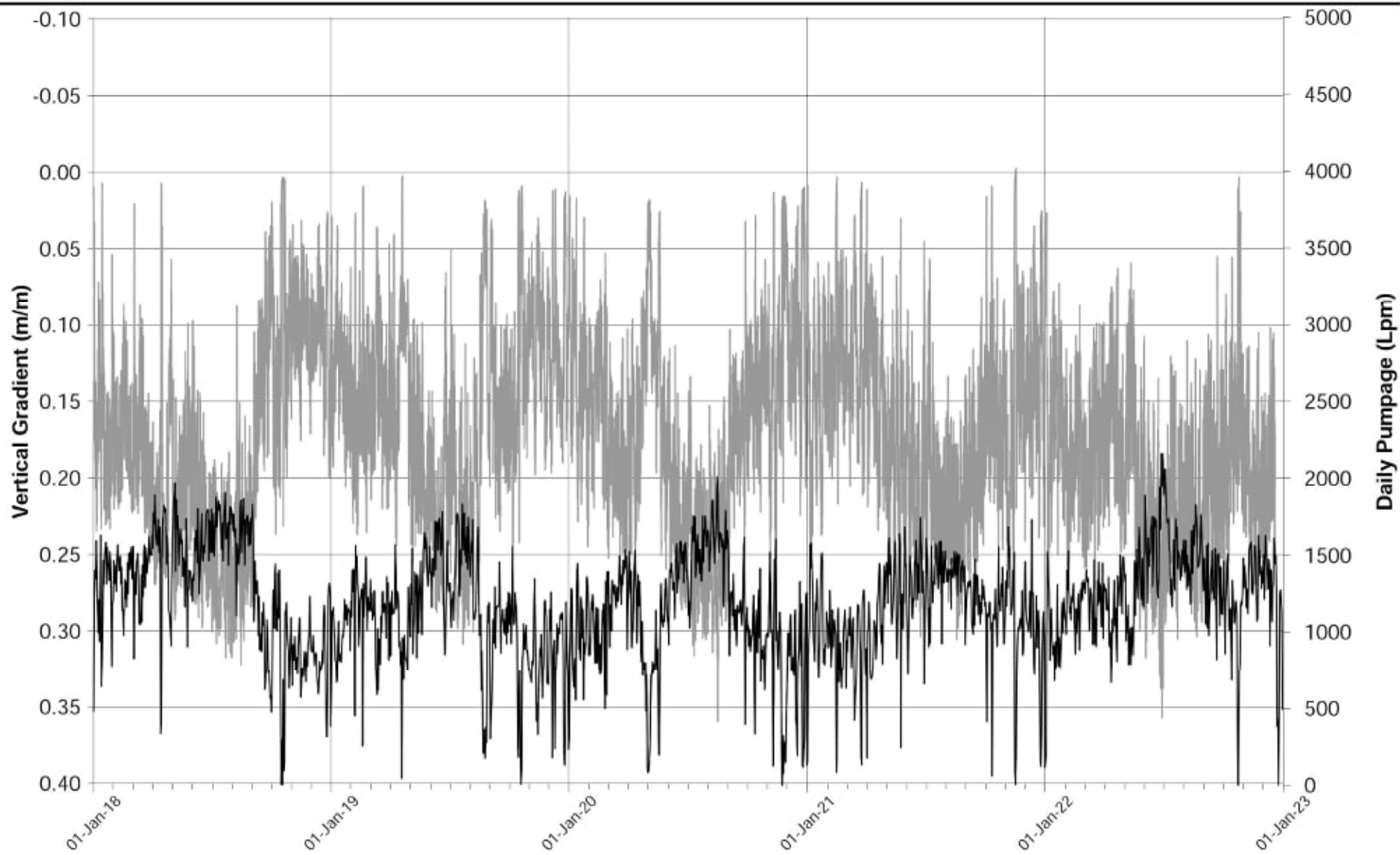
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW2-07 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
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PROJECT NO. 20449101 (1100)      REV A      FIGURE D37



— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

Note: Vertical gradient between MW4B-07 and MW4A-07

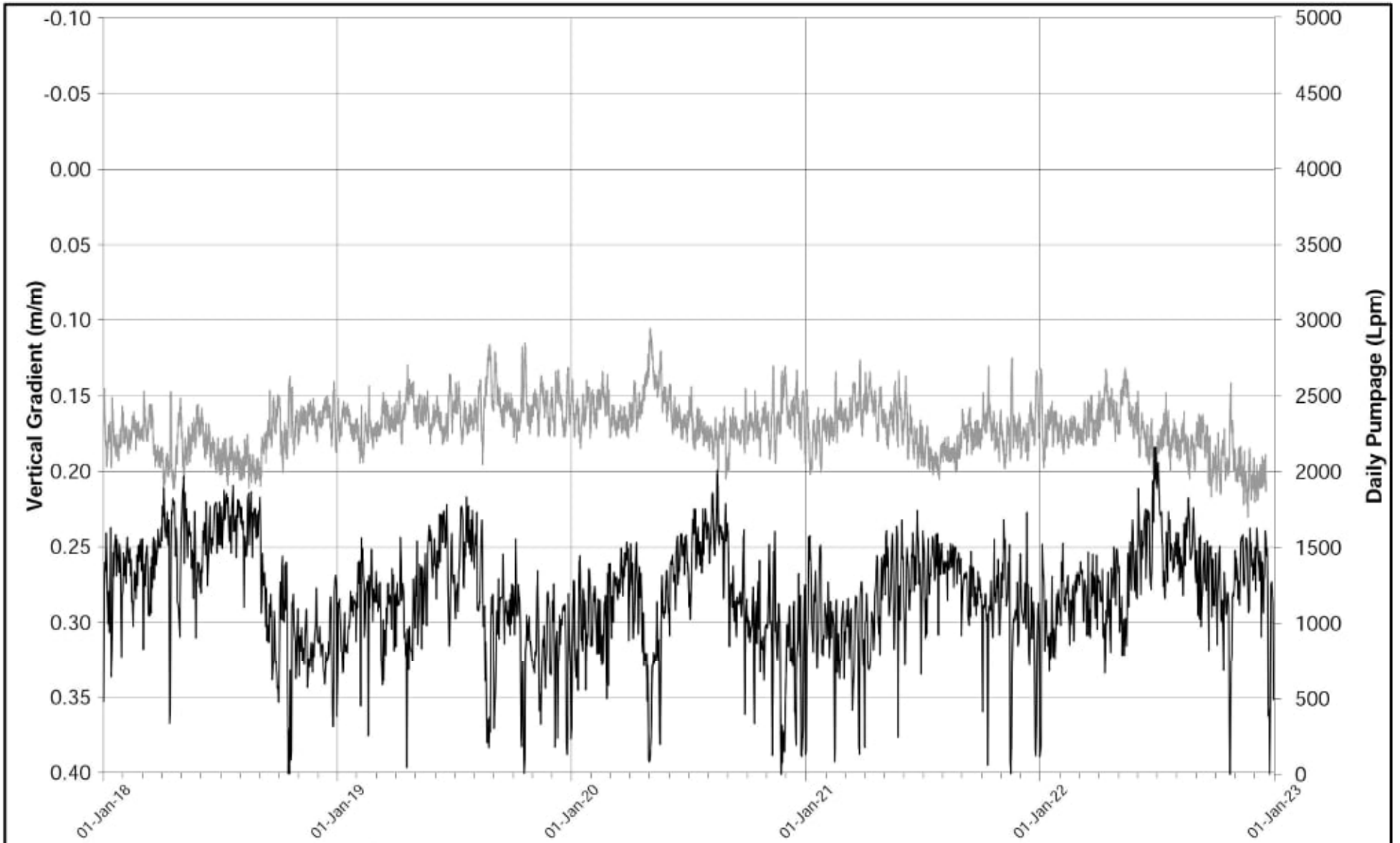
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW4-07 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



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**DESIGN** KS  
**REVIEW** GP  
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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D38



— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

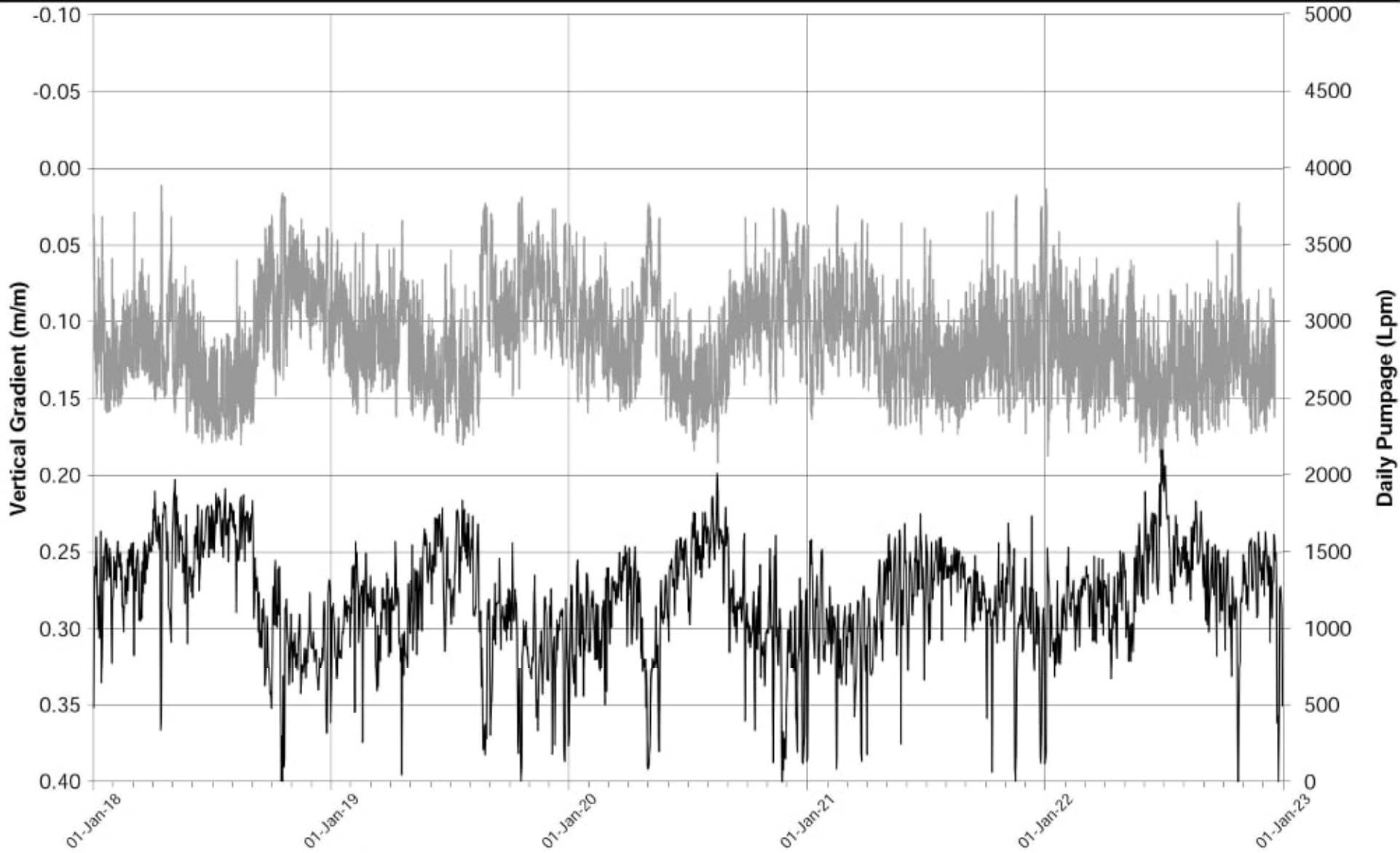
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW6-08 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



**DATE** JANUARY 2023  
**DESIGN** KS  
**REVIEW** GP  
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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D39



— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

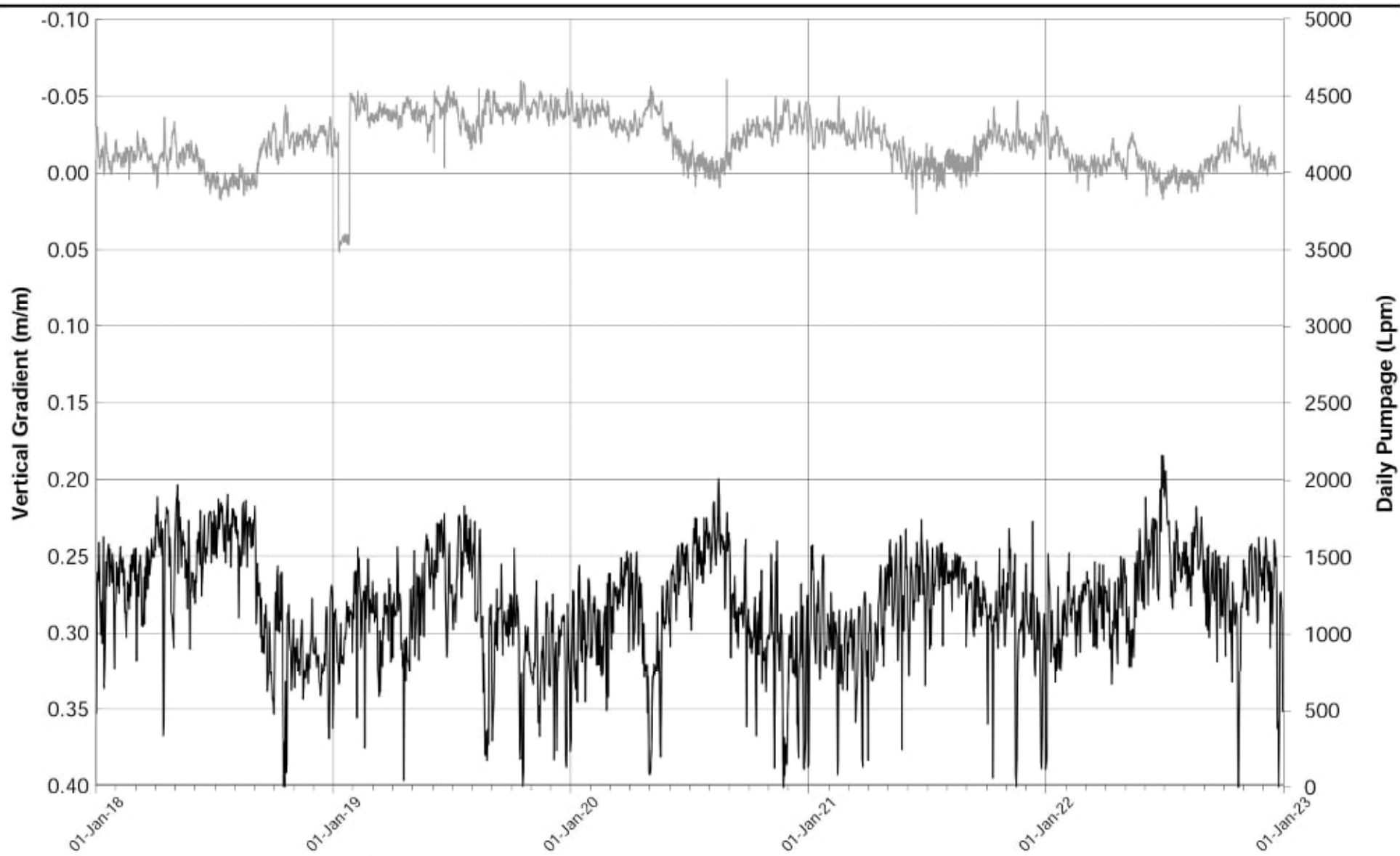
**TITLE**  
**MW7-08 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE D10





— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

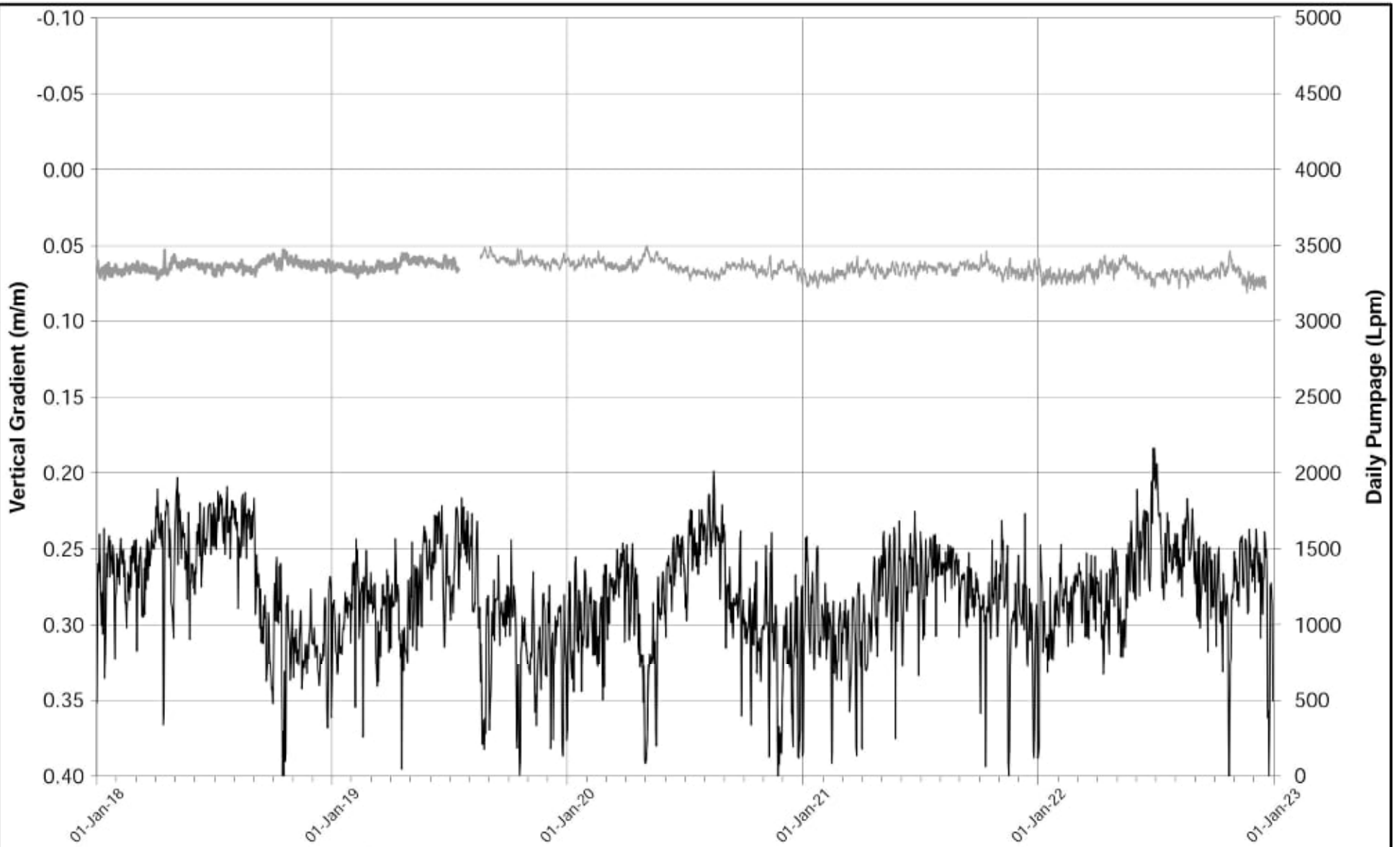
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW8-08 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



**DATE** JANUARY 2023  
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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D11



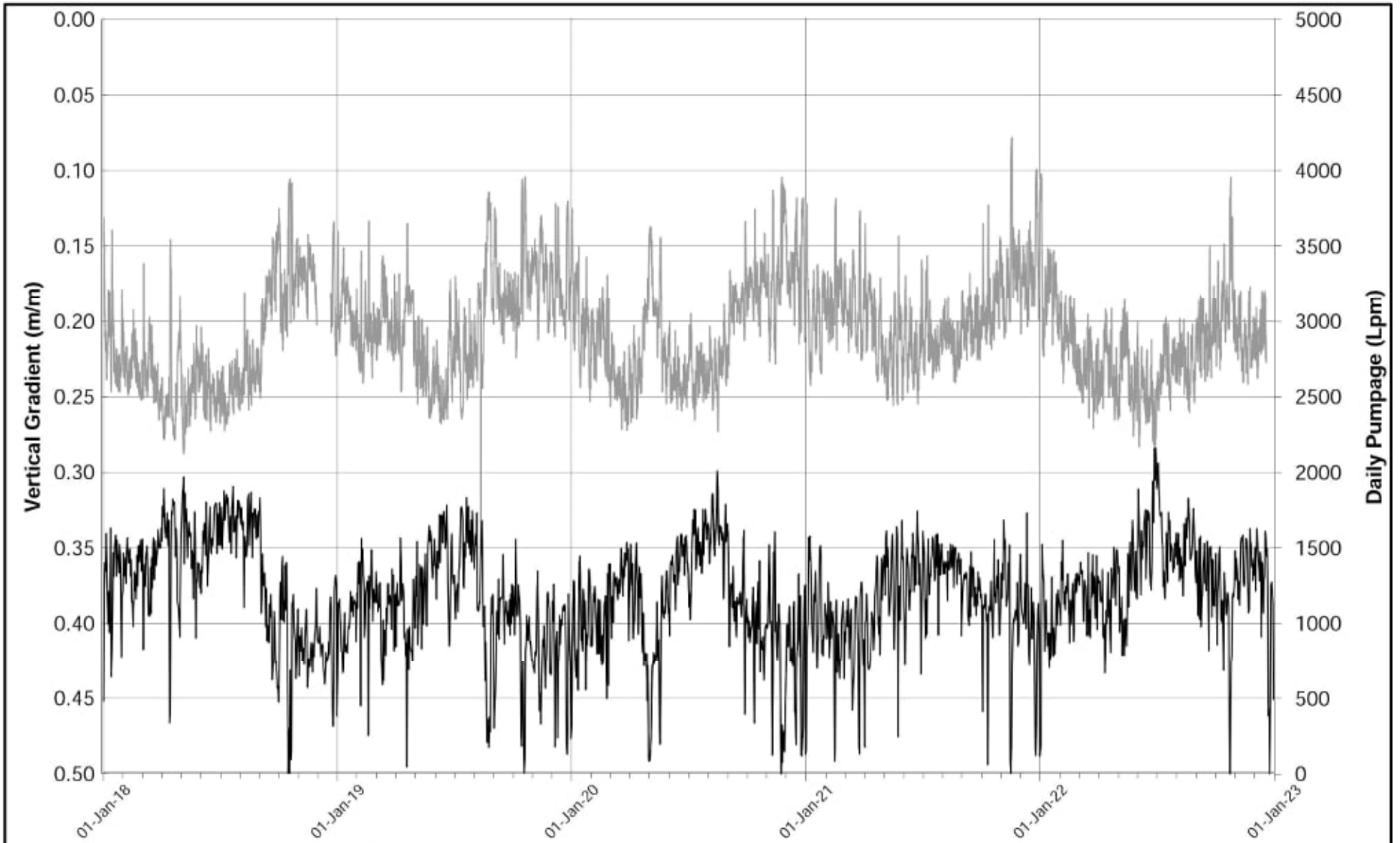
— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

Note: Vertical gradient between MW10B-09 and MW10C-09



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PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario	
TITLE	<b>MW10-09 VERTICAL GRADIENT</b> <b>2022 ANNUAL MONITORING REPORT</b>	
PROJECT NO.	20449101 (1100)	REV A
		FIGURE D12



— Vertical Gradient (m/m)  
 — Daily Pumpage (Lpm)

Note: Vertical gradient between MW14C-11 and MW14A-11.

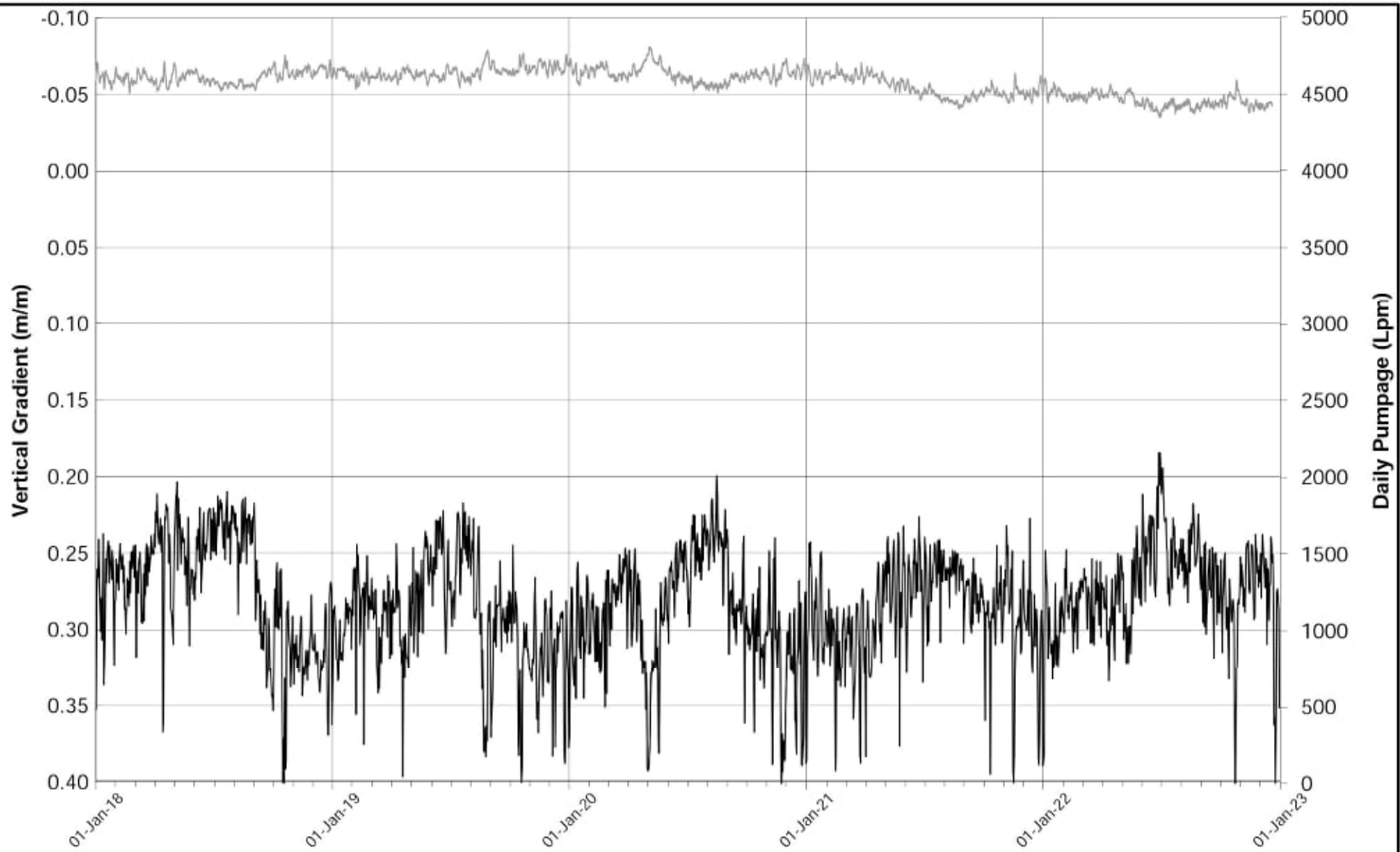
**PROJECT** BLUE TRITON BRANDS  
 Town of Aberfoyle, Ontario

**TITLE** MW14-11 VERTICAL GRADIENT  
 2022 ANNUAL MONITORING REPORT



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 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE D13



— Daily Pumpage (Lpm)  
 — Vertical gradient (m/m)

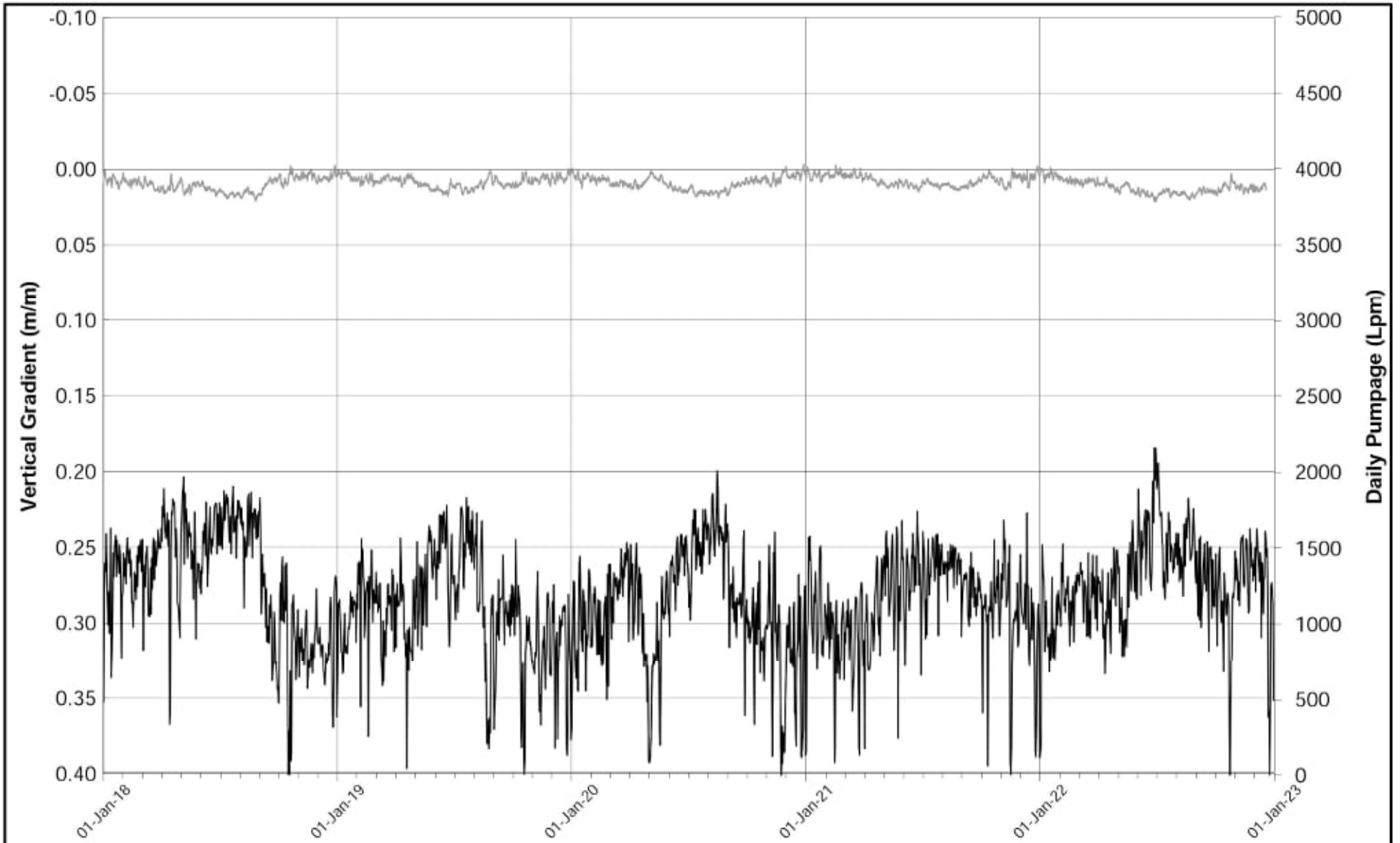
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW15-12 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



**DATE** JANUARY 2023  
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**REVIEW** GP  
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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D14



— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

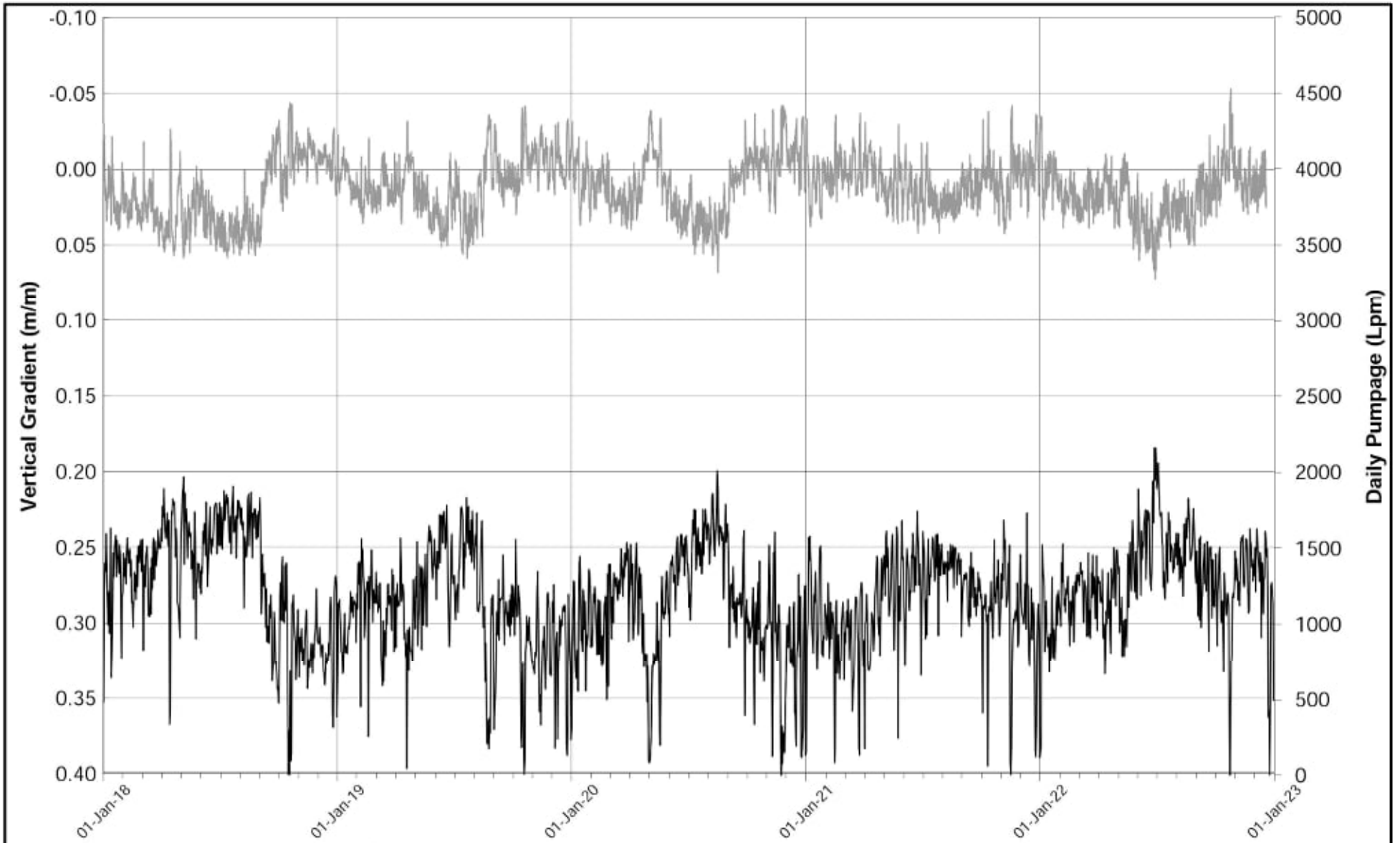
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW16-12 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



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PROJECT NO. 20449101 (1100)      REV A      FIGURE D15



— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

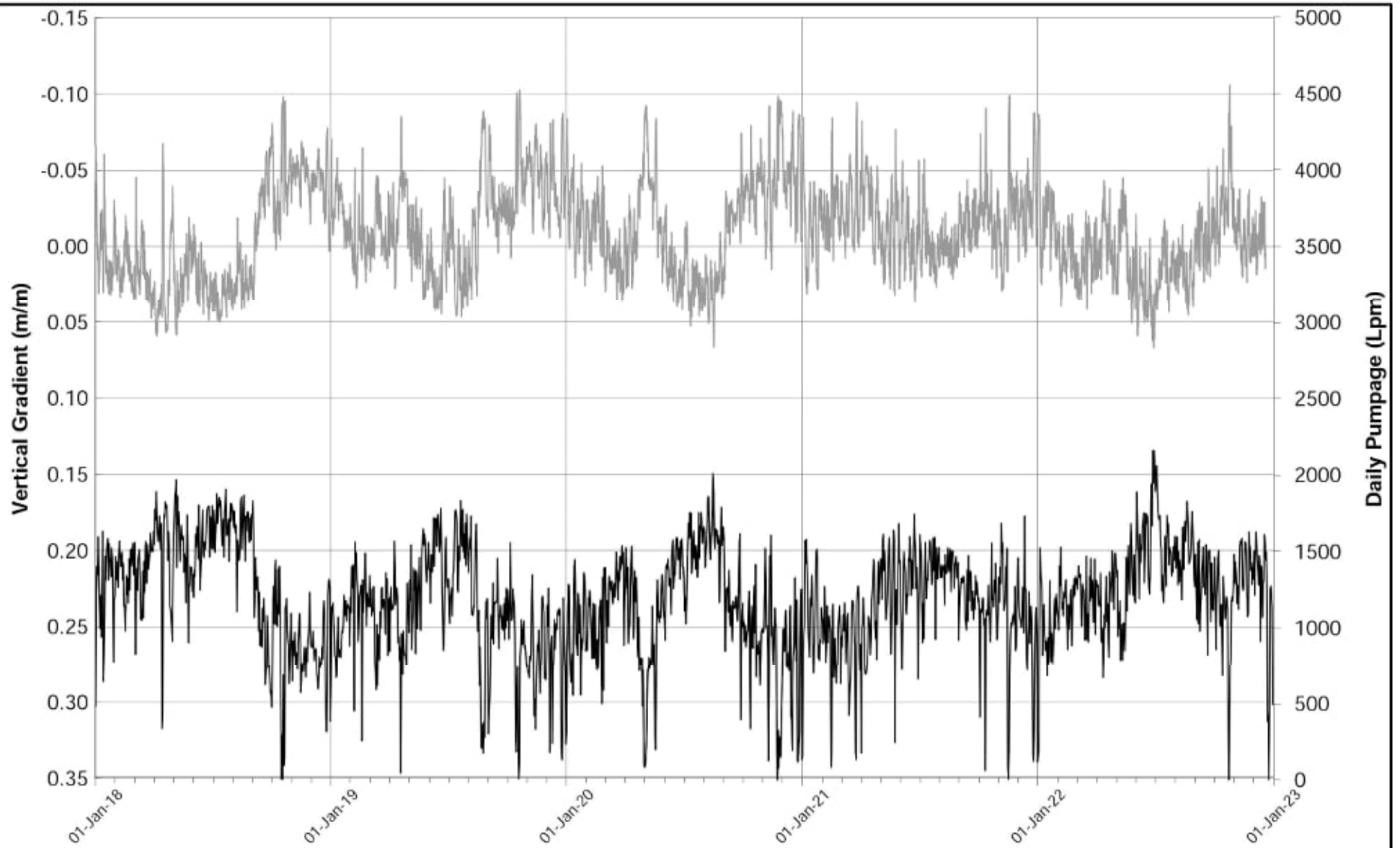
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW17-12 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



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 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE D16



— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

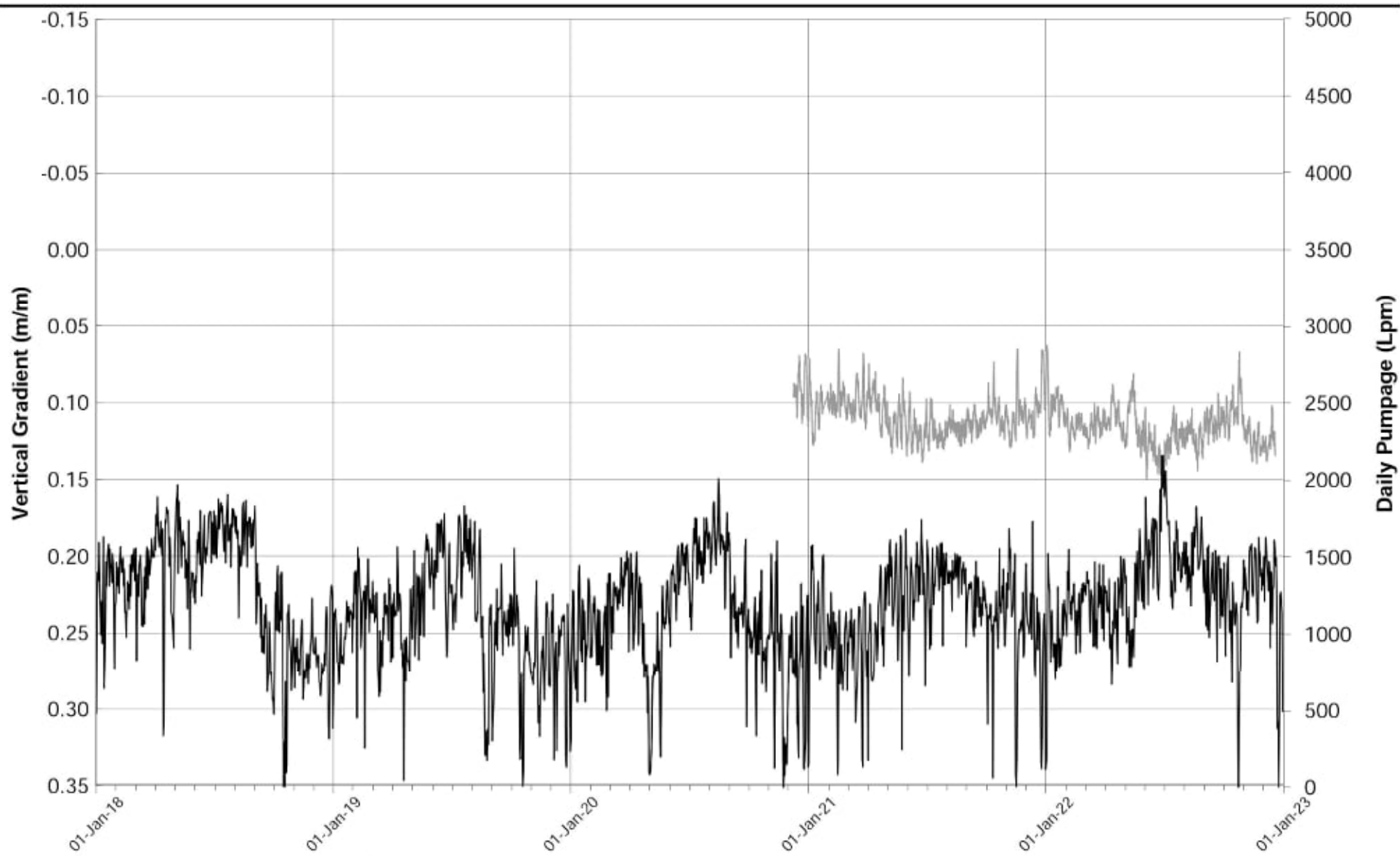
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW18-12 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



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 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE D17



— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

**PROJECT** BLUE TRITON BRANDS  
 Town of Aberfoyle, Ontario

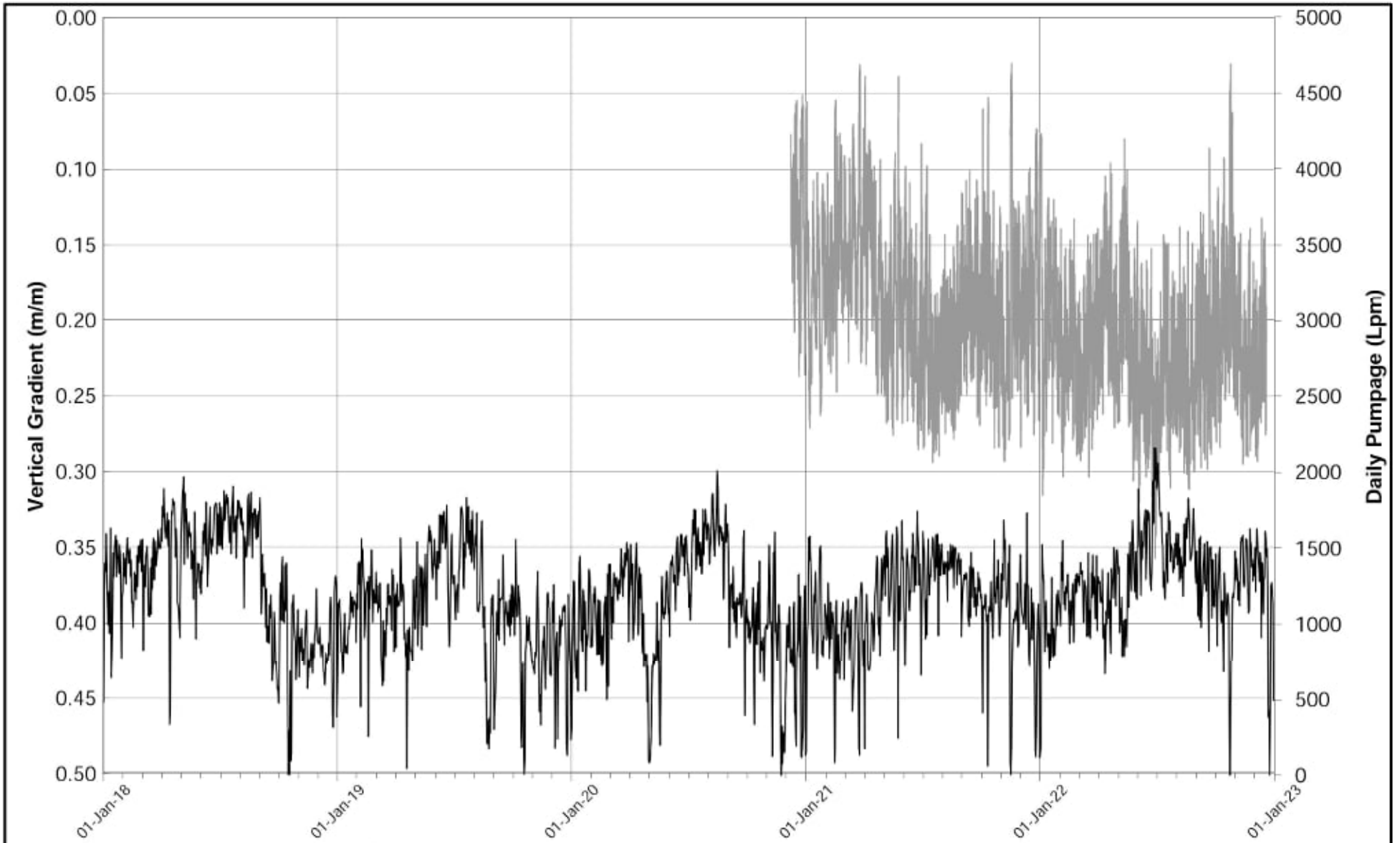
**TITLE** MW19-18 VERTICAL GRADIENT  
 2022 ANNUAL MONITORING REPORT



DATE JANUARY 2023  
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PROJECT NO. 20449101 (1100)      REV A      FIGURE D18





— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

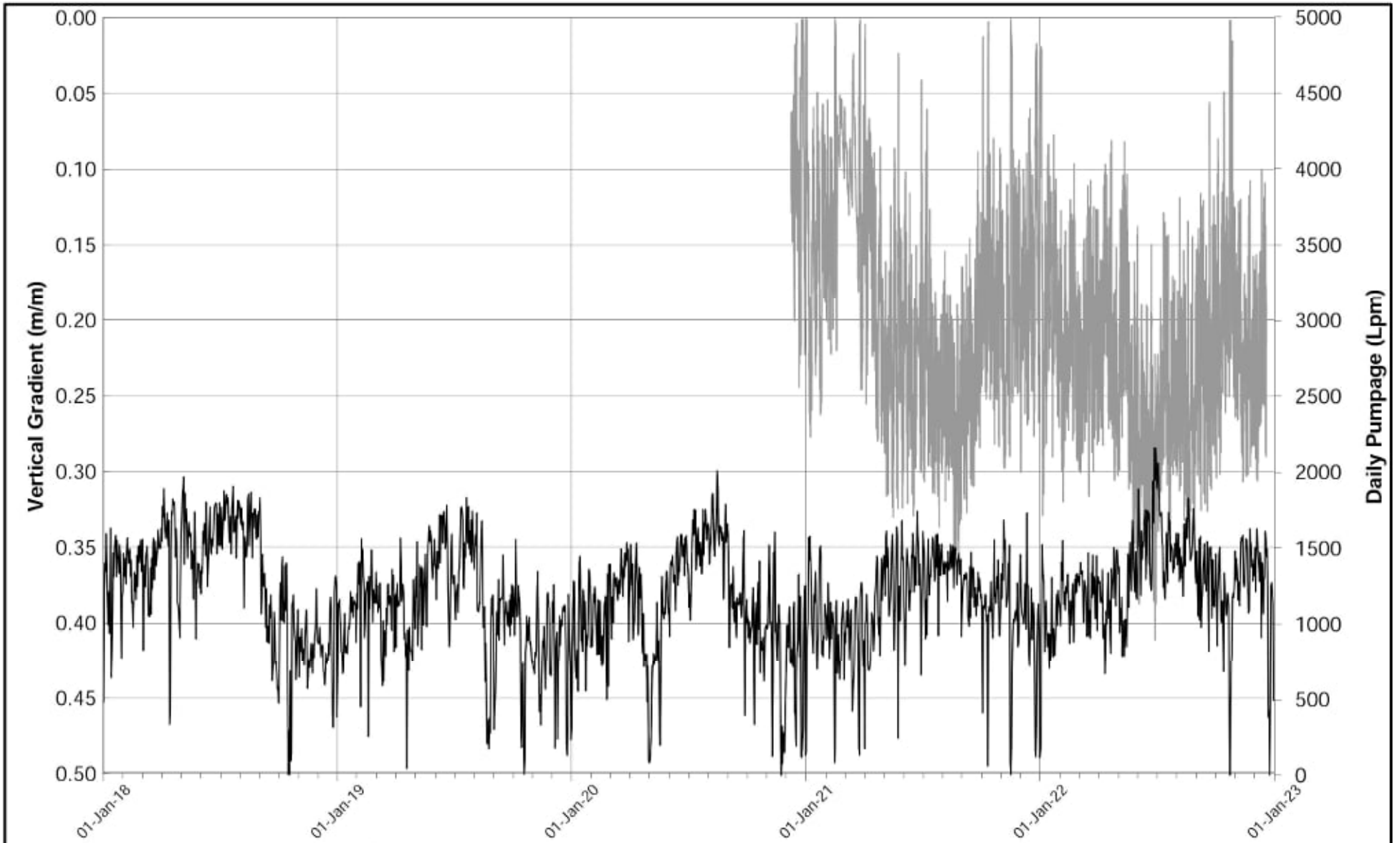
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW20-19 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



**DATE** JANUARY 2023  
**DESIGN** KS  
**REVIEW** GP  
**APPROVED** GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** D19



— Daily Pumpage (Lpm)  
 — Vertical Gradient (m/m)

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MW21-18 VERTICAL GRADIENT**  
**2022 ANNUAL MONITORING REPORT**



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 DESIGN KS  
 REVIEW GP  
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PROJECT NO. 20449101 (1100)      REV A      FIGURE D50

**TABLE D1**  
**Manual Groundwater Elevations**  
**2022 Annual Report**

Date	Water Level (masl)							
	TW3-80	MW2A-07	MW2B-07	MW2C-07	MW2D-07	MW2E-07	MW4A-07	MW4B-07
22/23-Mar-2022	303.03	307.59	308.63	311.18	311.93	311.87	309.20	312.12
22/23-Jun-2022	305.14	308.67	309.36	310.96	311.48	311.37	308.37	311.92
22/23-Sep-2022	301.60	305.99	310.26	310.26	311.16	311.18	308.29	311.44
19/20-Dec-2022	300.82	305.87	307.15	310.34	311.29	311.35	307.65	311.27

**TABLE D1**  
**Manual Groundwater Elevations**  
**2022 Annual Report**

Date	Water Level (masl)							
	MW4C-07	MW6A-08	MW6B-08	MW7A-08	MW7B-08	MW8A-08	MW8B-08	MW10A-09
22/23-Mar-2022	312.19	315.76	318.66	310.07	311.56	317.61	317.51	319.84
22/23-Jun-2022	311.93	315.18	318.19	308.82	310.50	317.01	317.04	319.45
22/23-Sep-2022	311.50	314.50	318.07	308.04	309.94	316.98	316.84	319.16
19/20-Dec-2022	311.35	314.66	318.35	308.62	310.33	317.17	317.13	319.34

**TABLE D1**  
**Manual Groundwater Elevations**  
**2022 Annual Report**

Date	Water Level (masl)							
	MW10B-09	MW10C-09	MW10D-09	MW14A-11	MW14B-11	MW14C-11	MW15A-12	MW15B-12
22/23-Mar-2022	319.86	317.16	316.52	310.27	314.33	315.18	310.70	308.83
22/23-Jun-2022	319.57	316.72	316.01	309.40	313.55	314.29	310.04	308.70
22/23-Sep-2022	319.33	316.40	315.62	308.82	313.26	313.54	309.84	308.34
19/20-Dec-2022	319.39	316.14	315.37	309.00	313.23	313.58	309.88	308.41

**TABLE D1  
Manual Groundwater Elevations  
2022 Annual Report**

Date	Water Level (masl)							
	MW16A-12	MW16B-12	MW17A-12	MW17B-12	MW18A-12	MW18B-12	MW-D	MW-I
22/23-Mar-2022	307.16	307.36	308.37	308.91	308.22	308.22	311.34	311.30
22/23-Jun-2022	306.96	307.48	307.89	308.77	307.48	307.78	310.80	310.77
22/23-Sep-2022	306.58	307.01	307.27	307.96	306.85	307.00	310.56	310.54
19/20-Dec-2022	306.29	306.70	307.03	307.73	306.80	306.92	310.35	310.28

**TABLE D1**  
**Manual Groundwater Elevations**  
**2022 Annual Report**

Date	Water Level (masl)							
	MW-S	PCC-D	PCC-I	PCC-S	TW1-93	TW2-11	PW5 Meadows of Aberfoyle	#125 Brock S. (Y Well)
22/23-Mar-2022	311.55	314.84	314.50	314.56	310.19	309.91	310.02	311.79
22/23-Jun-2022	310.91	314.12	313.84	313.81	309.76	309.32	309.30	311.66
22/23-Sep-2022	310.53	313.77	313.54	313.54	309.34	308.64	309.11	311.24
19/20-Dec-2022	310.90	314.11	313.83	313.89	309.36	308.74	308.64	311.09

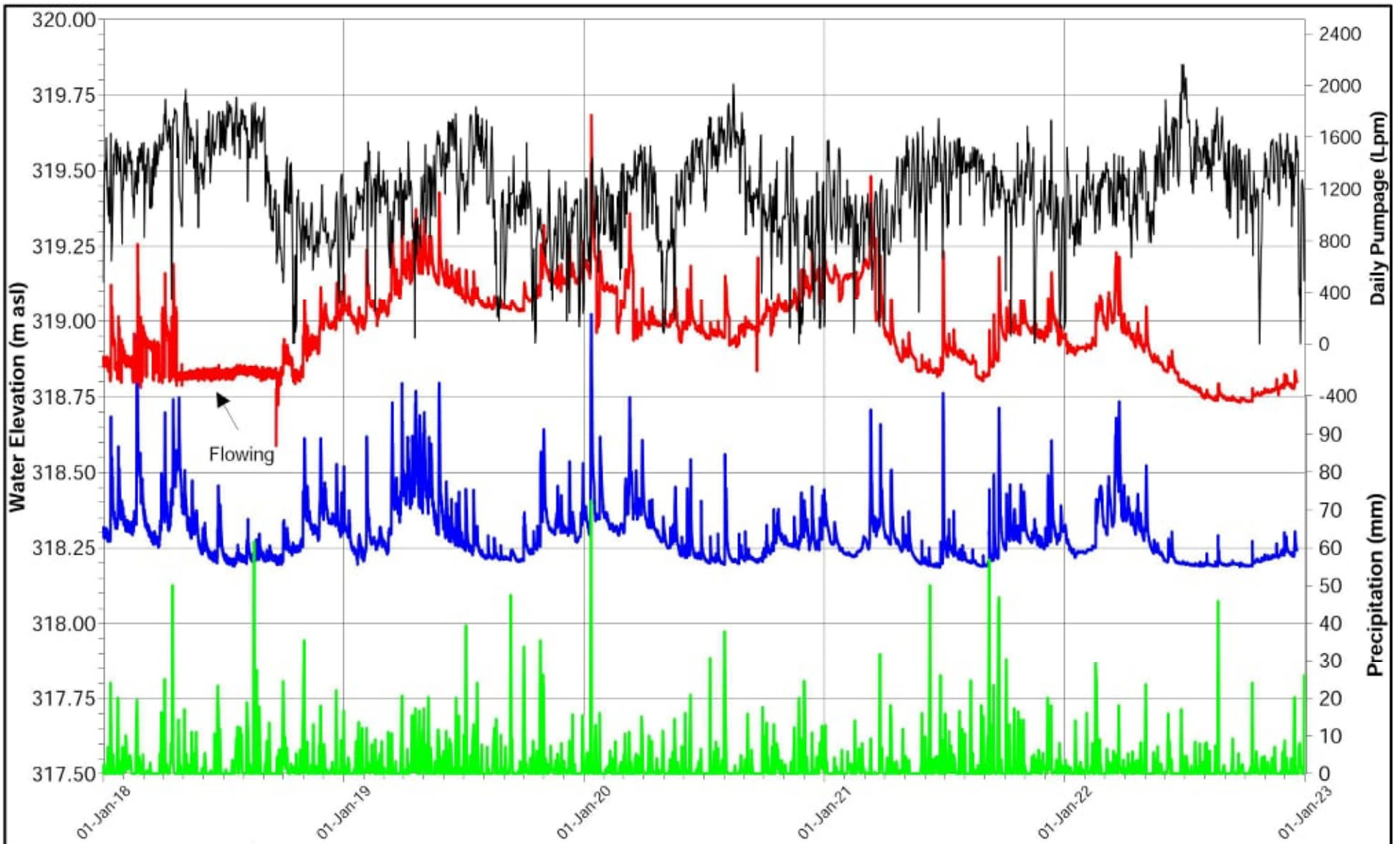
**TABLE D1**  
**Manual Groundwater Elevations**  
**2022 Annual Report**

Date	Water Level (masl)					
	MW19-18-4	MW19-18-7	MW20-19-5	MW20-19-7	MW21-18-3	MW21-18-4
22/23-Mar-2022	313.030	315.63	309.38	311.99	308.94	311.55
22/23-Jun-2022	311.770	314.82	307.94	310.75	308.53	311.26
22/23-Sep-2022	311.900	314.46	307.97	310.67	307.98	310.87
19/20-Dec-2022	311.980	315.04	307.76	310.71	307.42	310.75



**APPENDIX E**

**Surface Water Level Monitoring**



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP1-16 D
- MP1-16 S

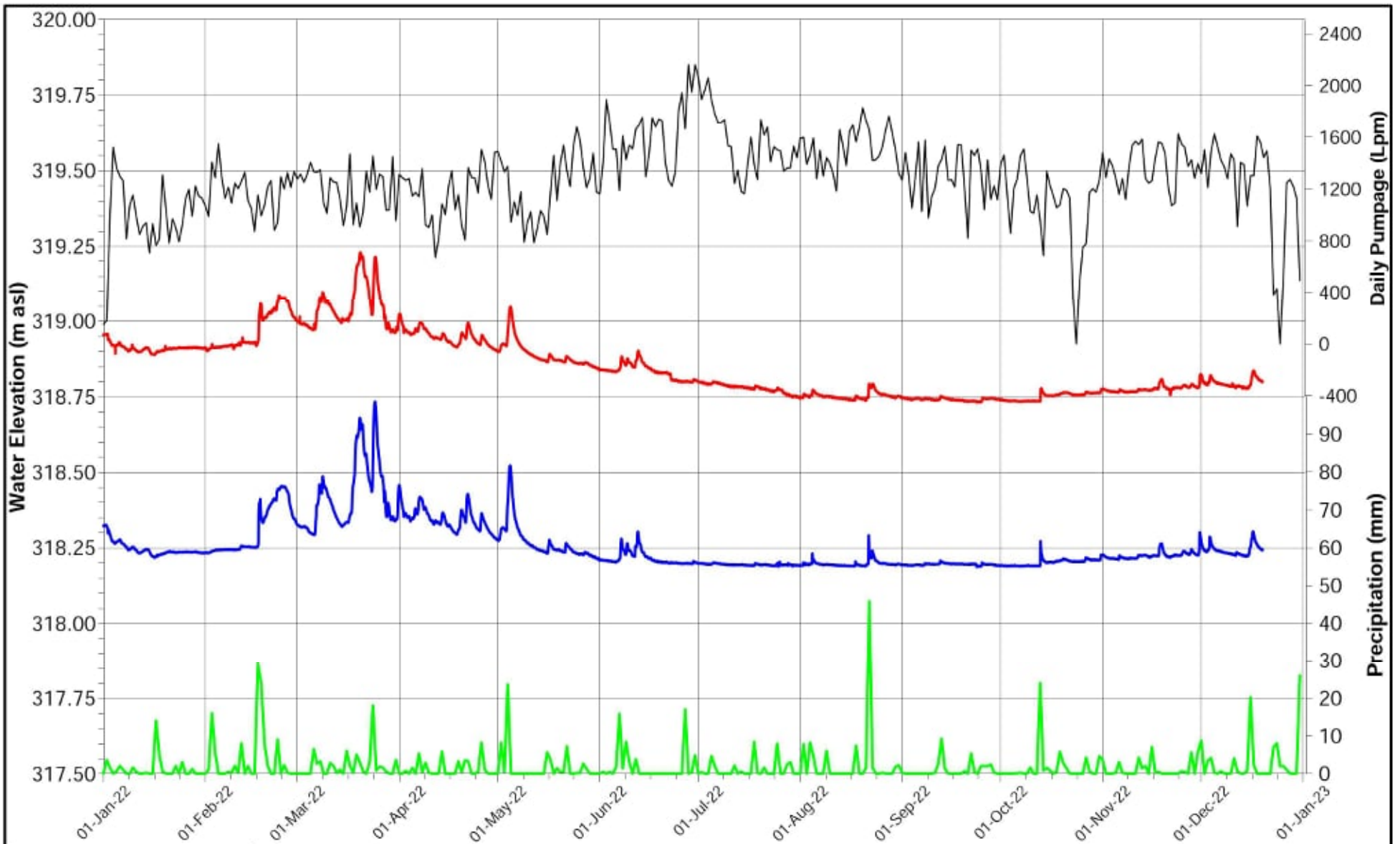
Note: MP1-16S and MP1-16D Reference elevations are taken from a topographic map.

Note: MP1-16D casing was extended September 20, 2018.



DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario	
TITLE	<b>MP1-16 NEST HYDROGRAPH</b> 2022 ANNUAL MONITORING REPORT	
PROJECT NO.	20449101 (1100)	REV A
		FIGURE E1a



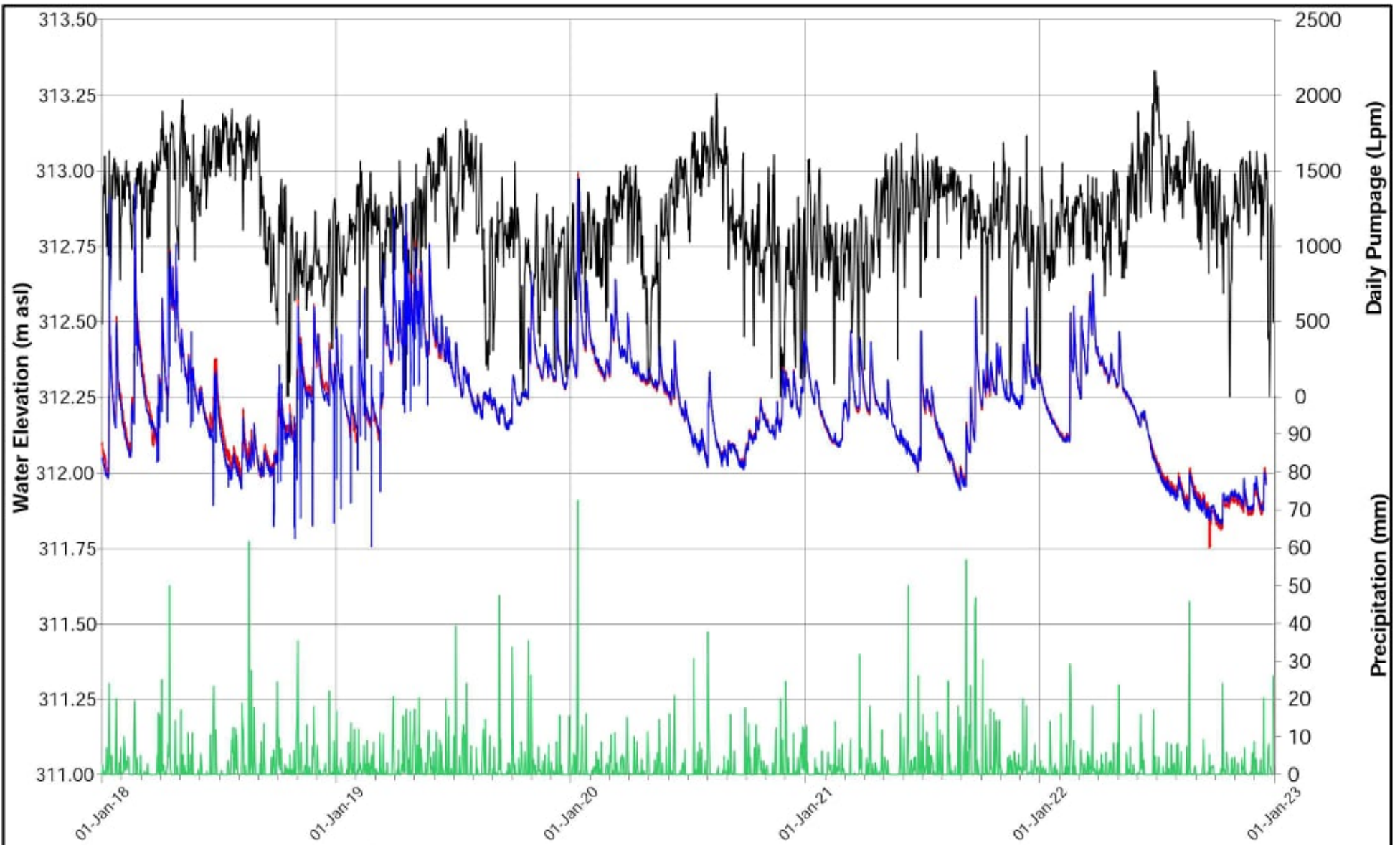
- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP1-16 D
- MP1-16 S

Note: MP1-16S and MP1-16D Reference elevations are taken from a topographic map.



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DESIGN	KS
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APPROVED	GP

<b>PROJECT</b>	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario	
<b>TITLE</b>	<b>MP1-16 NEST HYDROGRAPH (2022)</b> <b>2022 ANNUAL MONITORING REPORT</b>	
<b>PROJECT NO.</b>	20449101 (1100)	<b>REV</b> A
		<b>FIGURE</b> E1b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— MP16S-08  
— MP16D-08

Note: Roundabout constructed on Brock Road starting on May 21, 2019

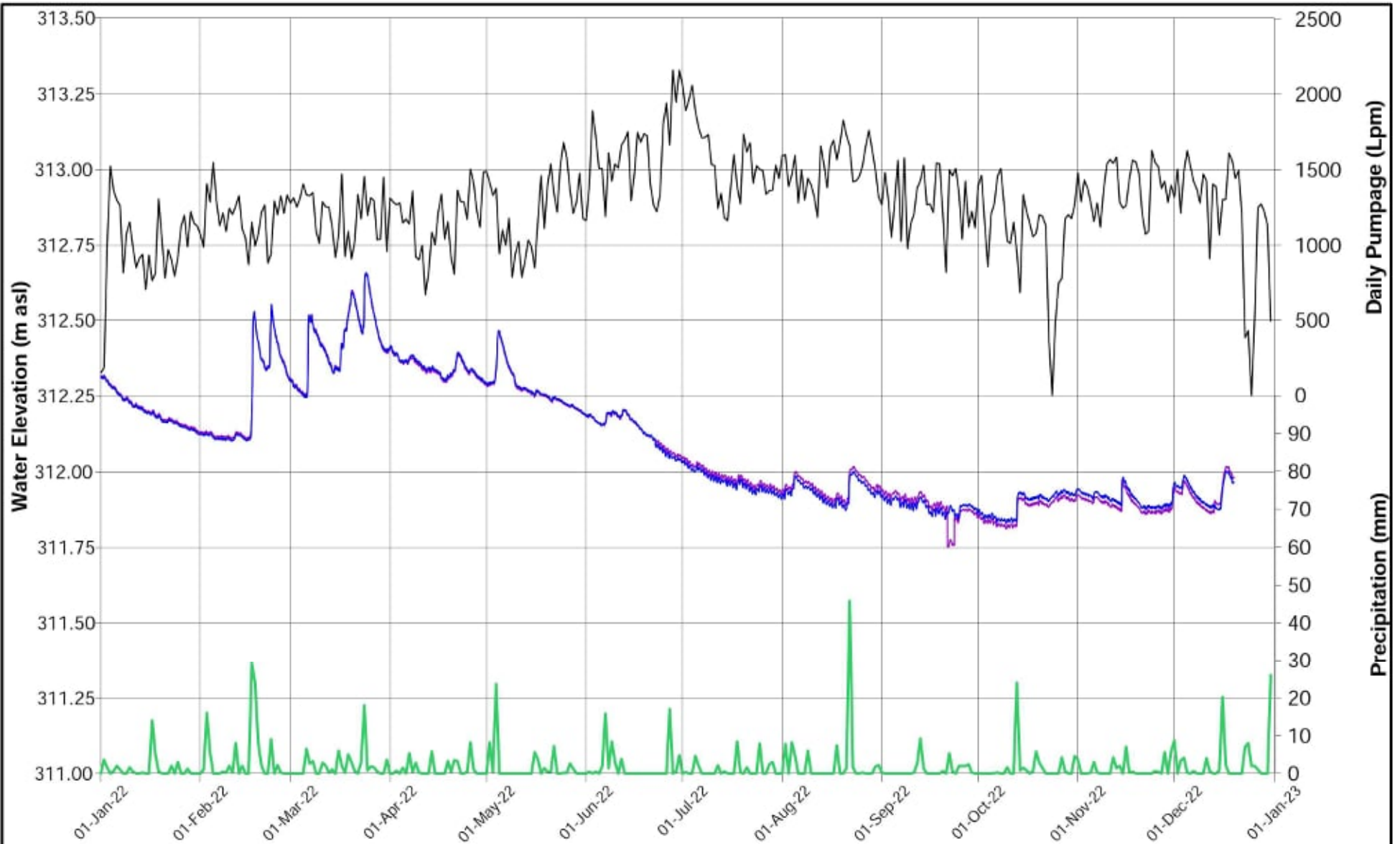
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP16 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E2a



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP16D-08
- MP16S-08

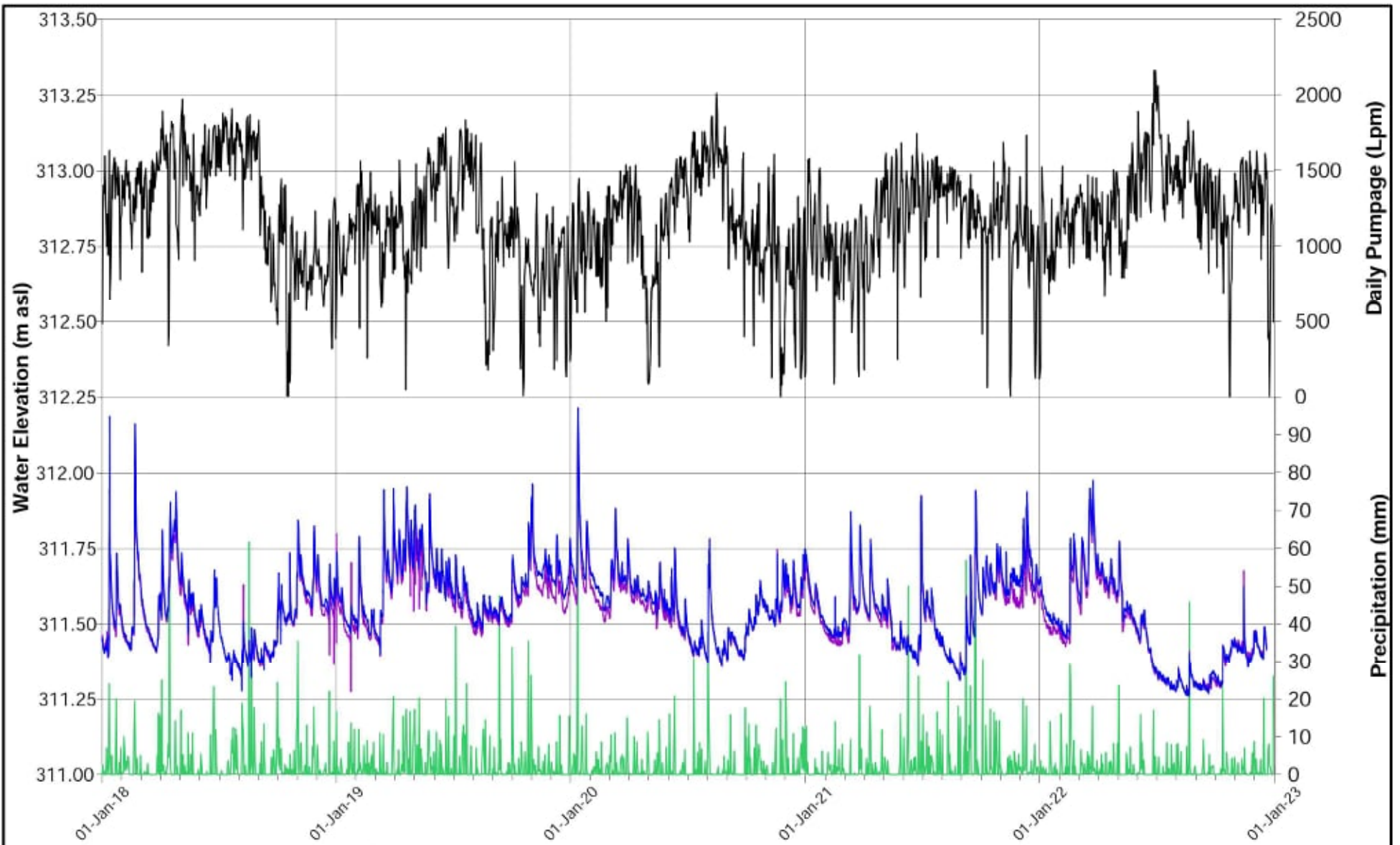
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP16 NEST HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



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PROJECT NO. 20449101 (1100)      REV A      FIGURE E2b



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP6D-04
- MP6S-08

Note: Roundabout constructed on Brock Road starting on May 21, 2019

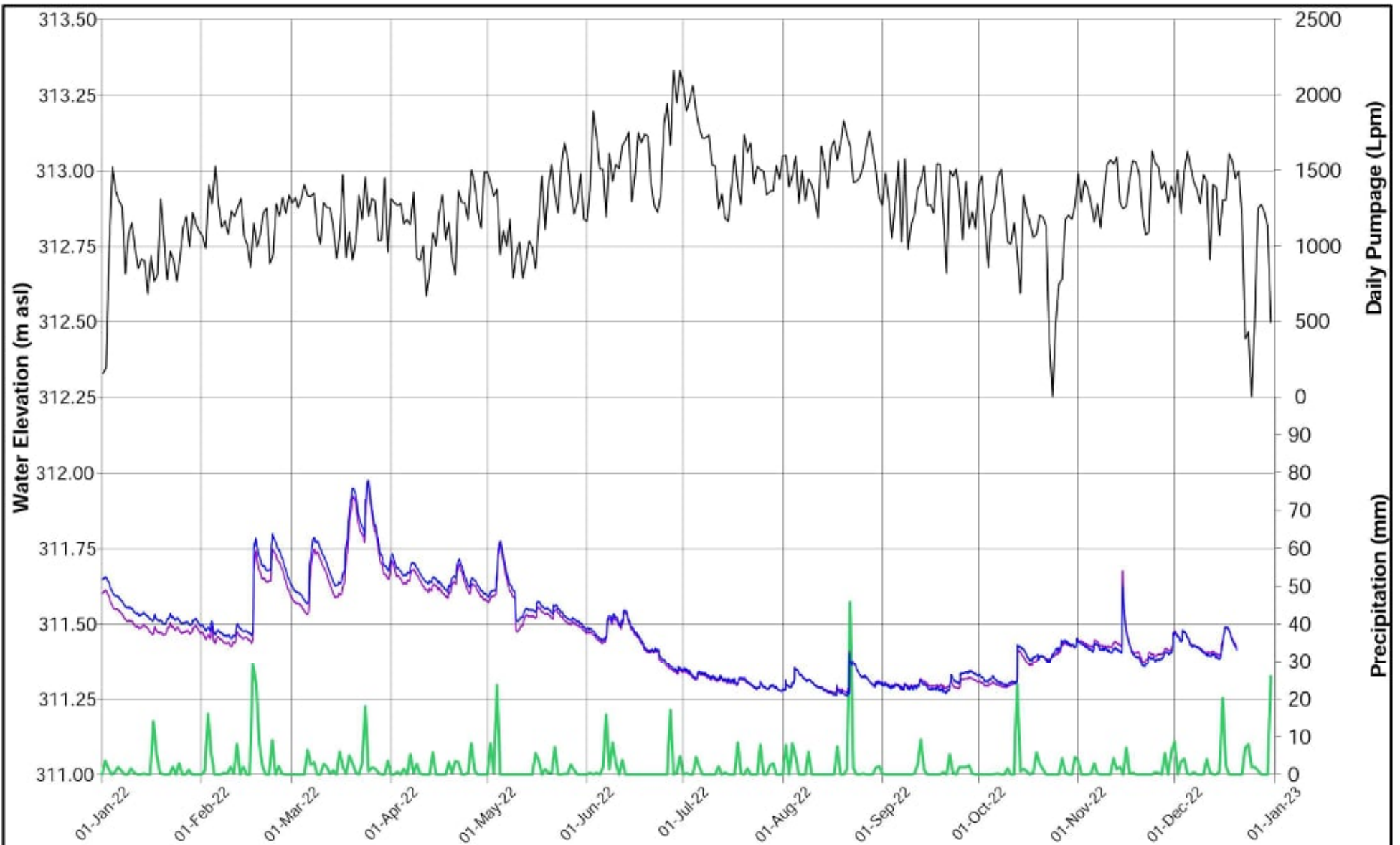
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP6 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



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PROJECT NO. 20449101 (1100)	REV A	FIGURE E3a
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- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP6D-04
- MP6S-08

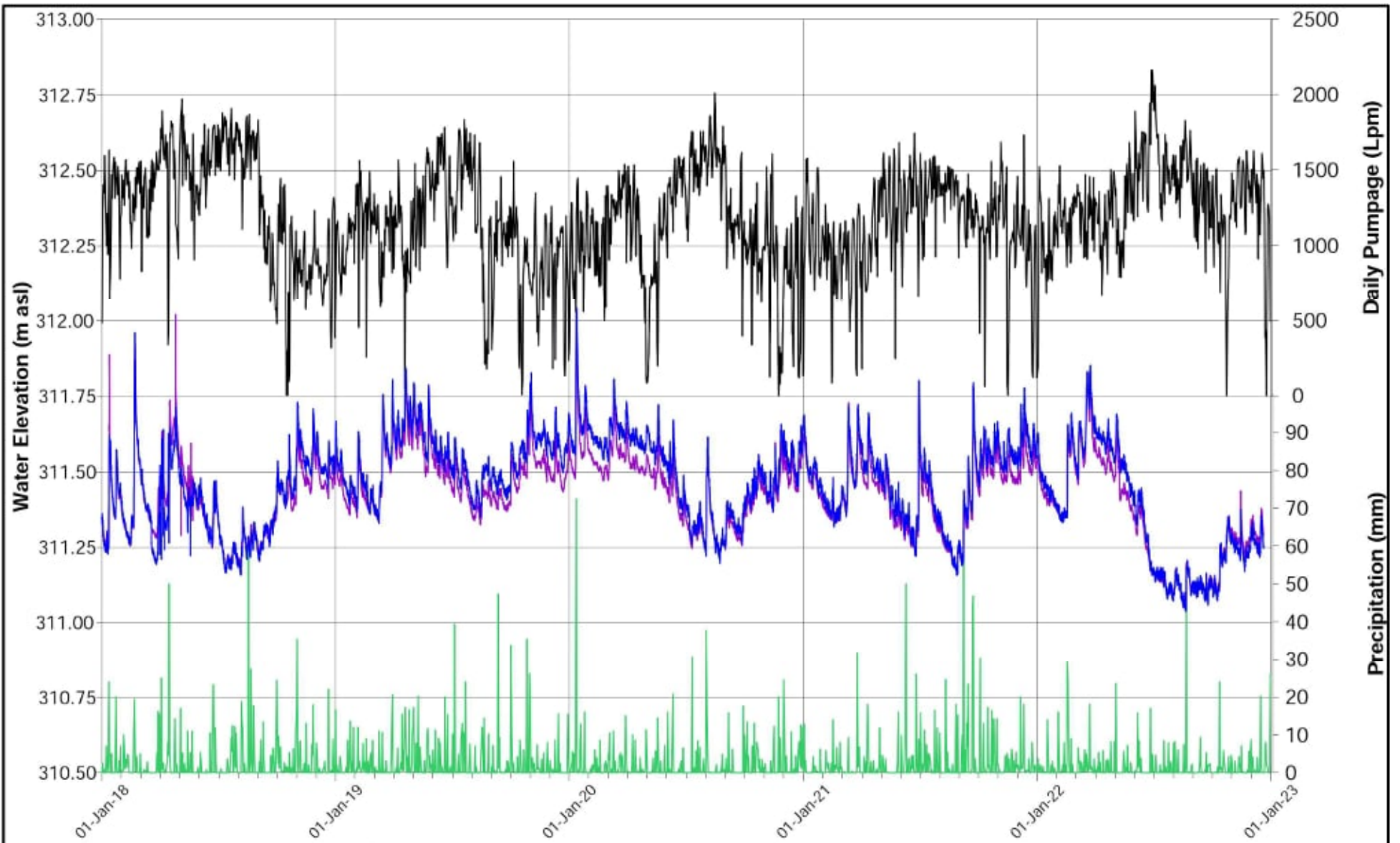
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP6 NEST HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



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 DESIGN KS  
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PROJECT NO. 20449101 (1100)      REV A      FIGURE E3b



— Precipitation (mm)  
 — Daily Pumpage (Lpm)  
 — MP12S-04  
 — MP12D-04



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
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**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

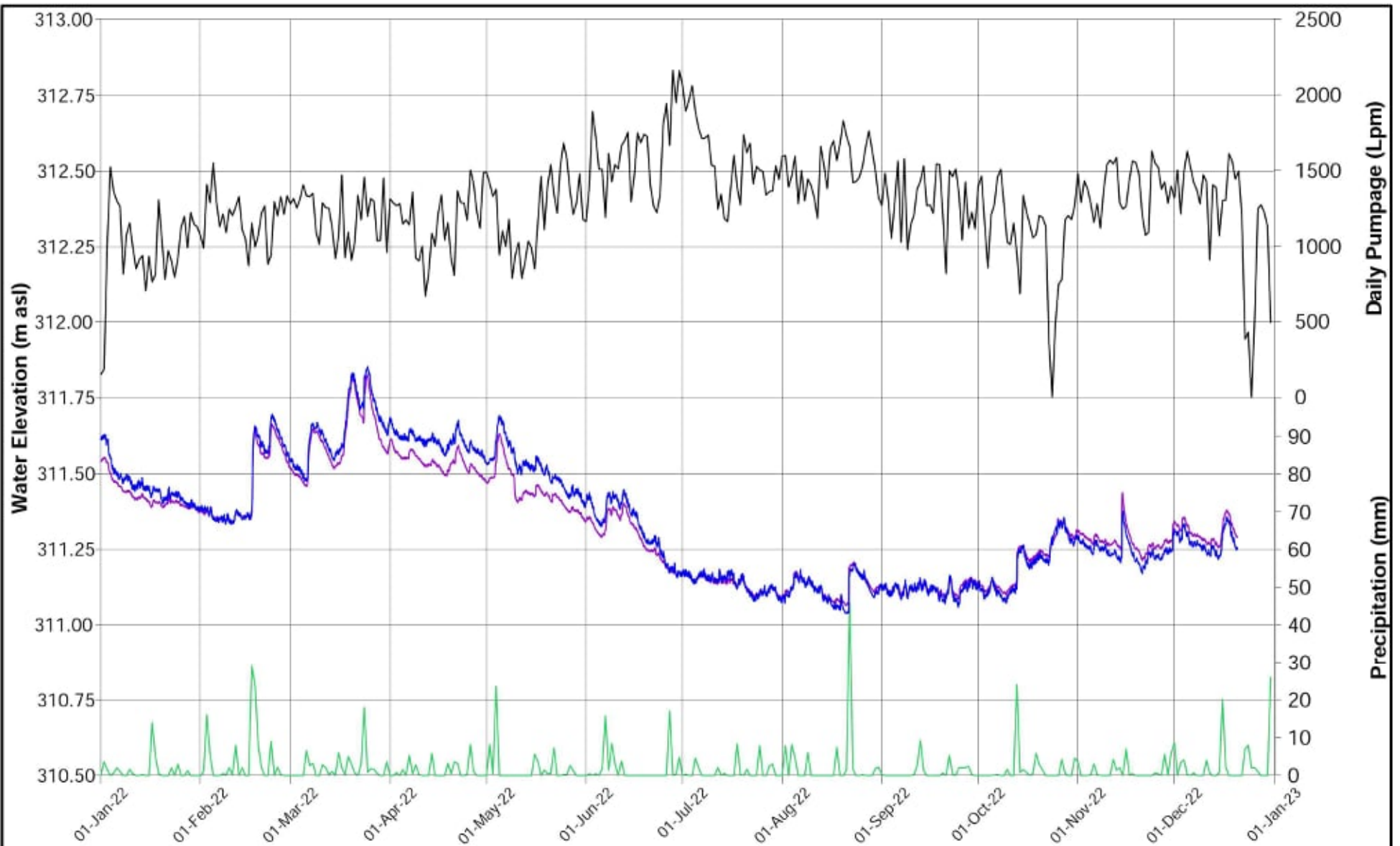
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**TITLE**  
**MP12 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**

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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E1a



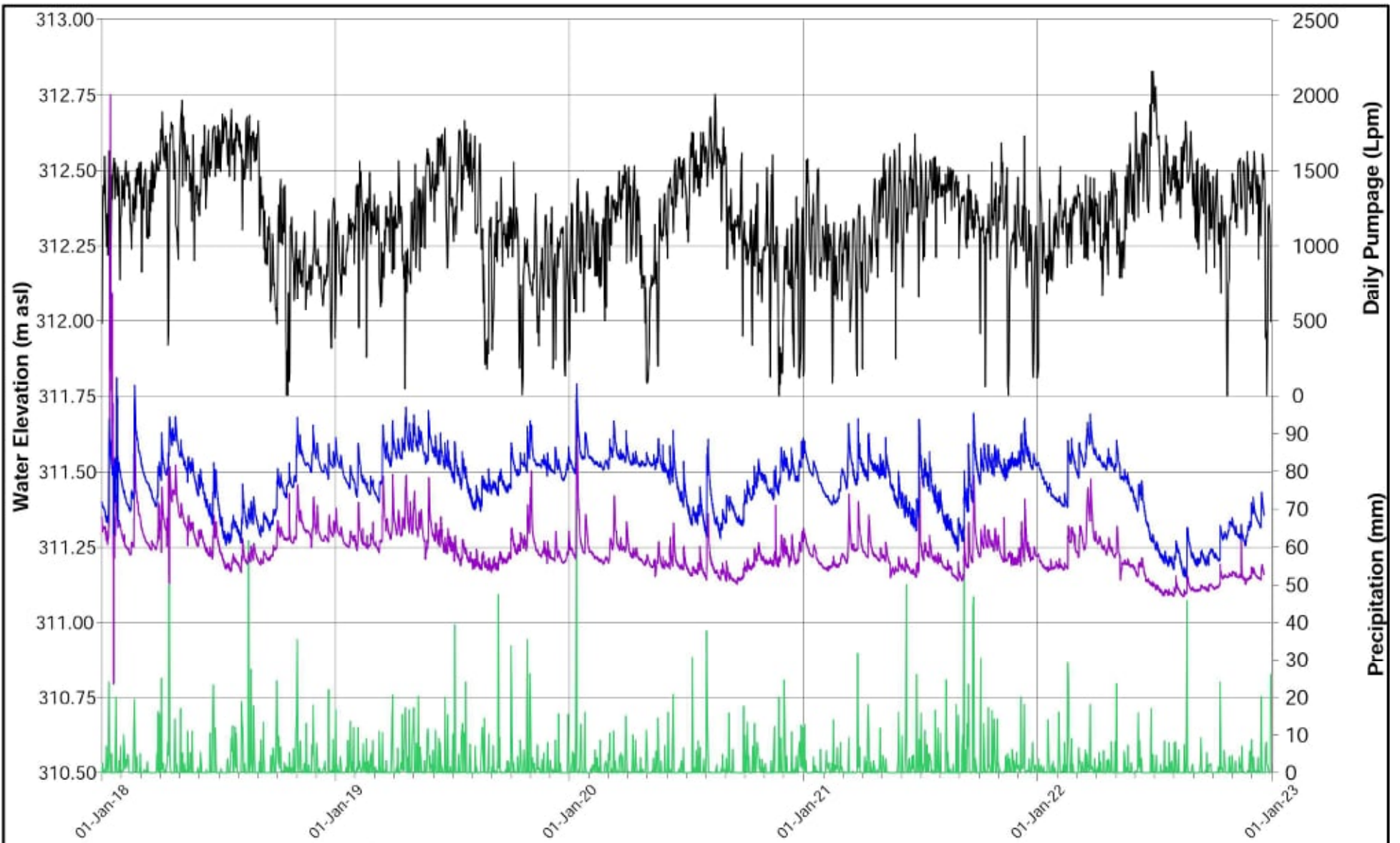


- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP12D-04
- MP12S-04



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DESIGN	KS
REVIEW	GP
APPROVED	GP

<b>PROJECT</b>		
<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario		
<hr/>		
<b>TITLE</b>		
<b>MP12 NEST HYDROGRAPH (2022)</b> <b>2022 ANNUAL MONITORING REPORT</b>		
<hr/>		
<b>PROJECT NO.</b>	<b>REV</b>	<b>FIGURE</b>
20449101 (1100)	A	E1b



— Precipitation (mm)  
 — Daily Pumpage (Lpm)  
 — MP14D-07  
 — MP14S-07

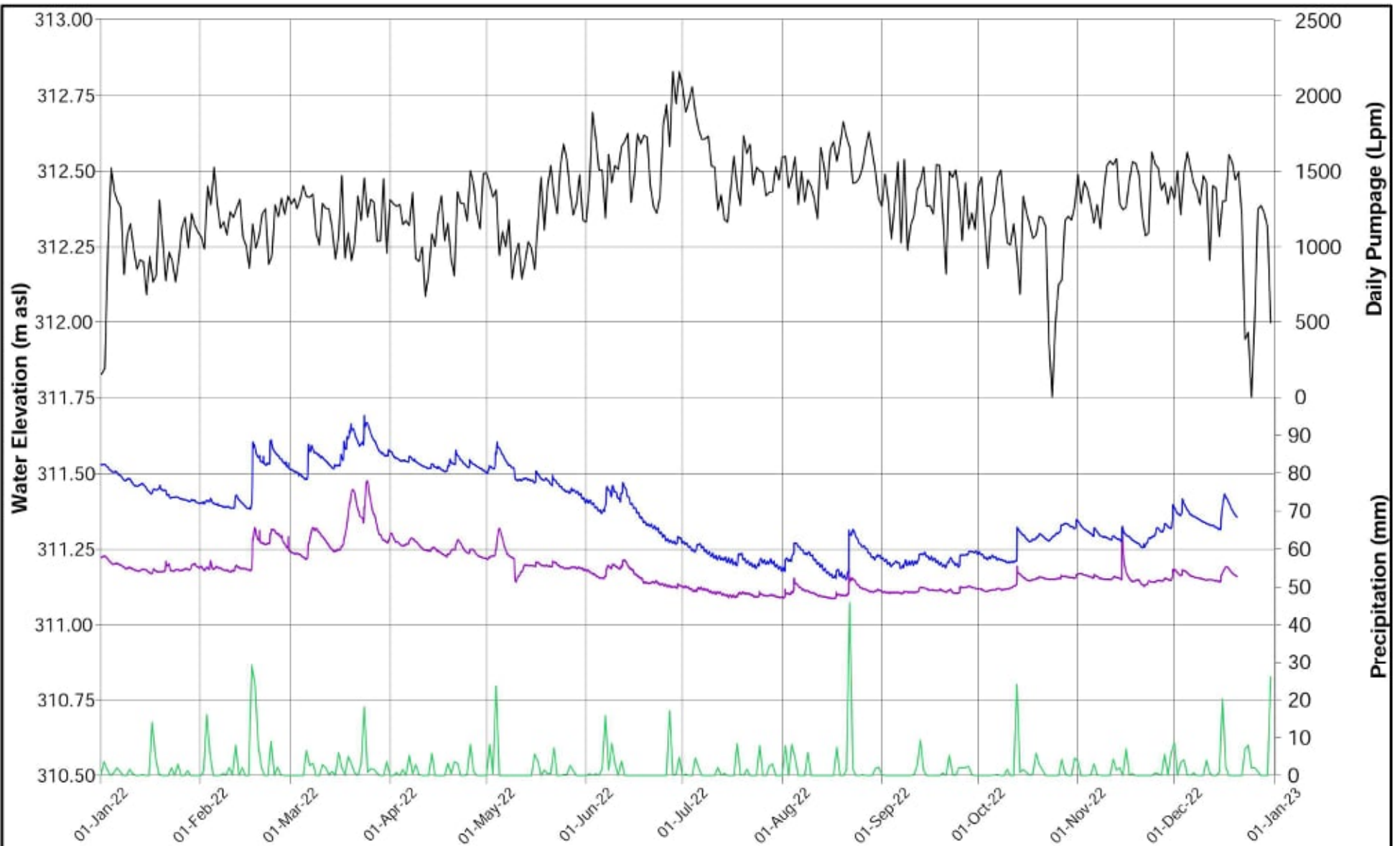


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PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **MP14 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE E5a

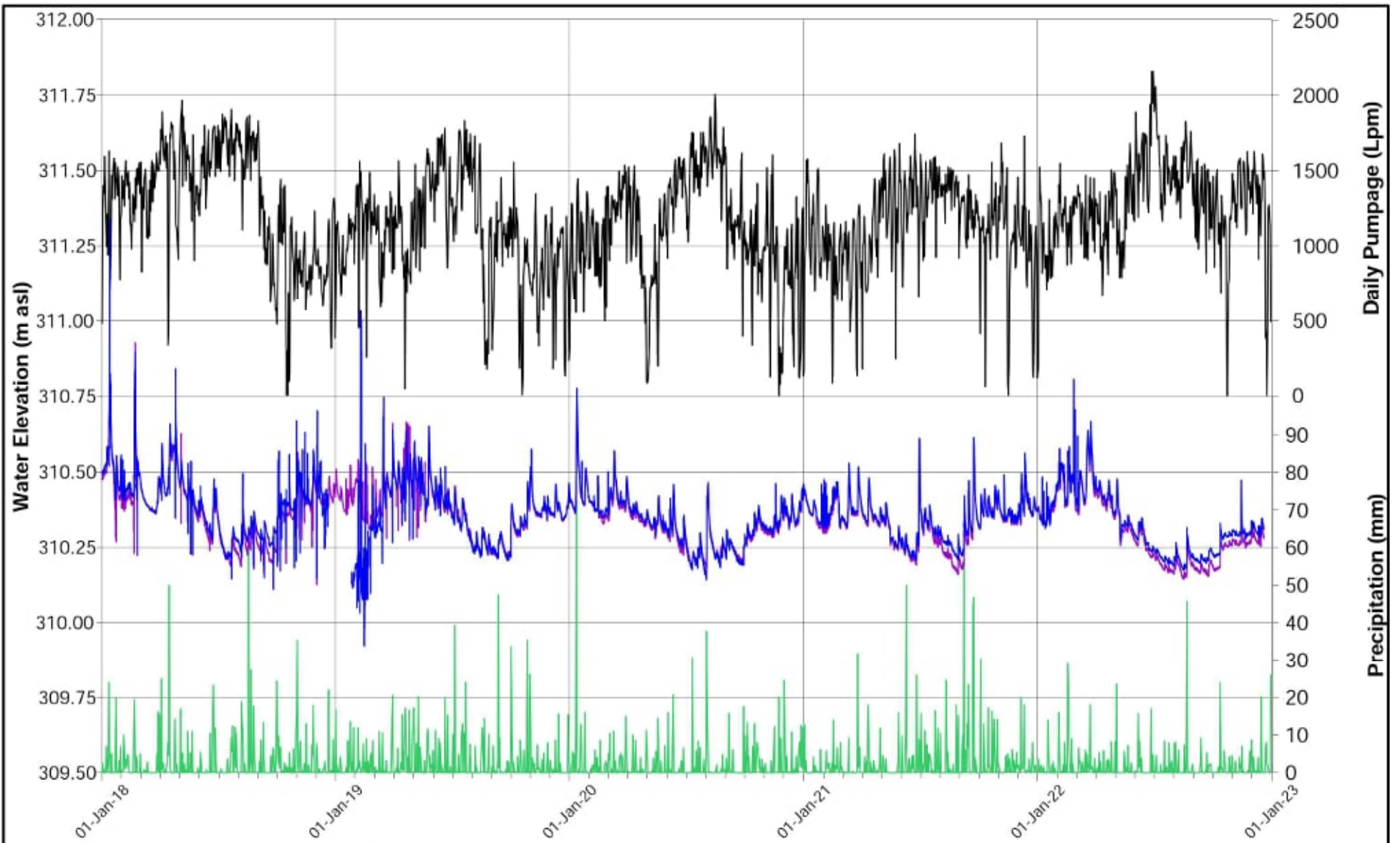


- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP14D-07
- MP14S-07



DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario		
TITLE	<b>MP14 NEST HYDROGRAPH (2022)</b> <b>2022 ANNUAL MONITORING REPORT</b>		
PROJECT NO.	20449101 (1100)	REV	A
		FIGURE	E5b



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP8D-04
- MP8S-04

Note: Stream rehabilitation from July 22, 2019 to August 21, 2019

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP8 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**

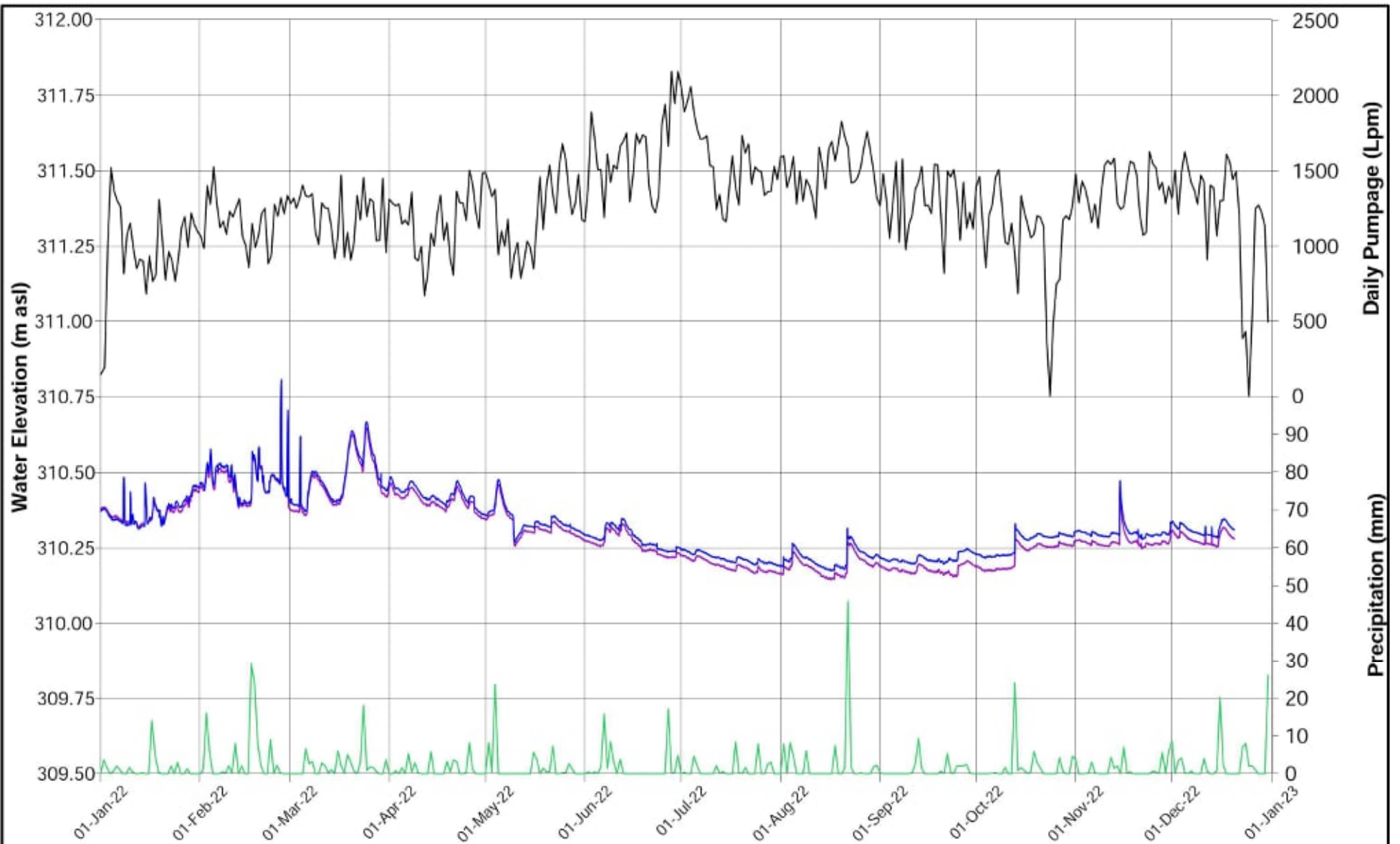


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PROJECT NO.  
 20449101 (1100)

REV  
 A

FIGURE  
 E6a

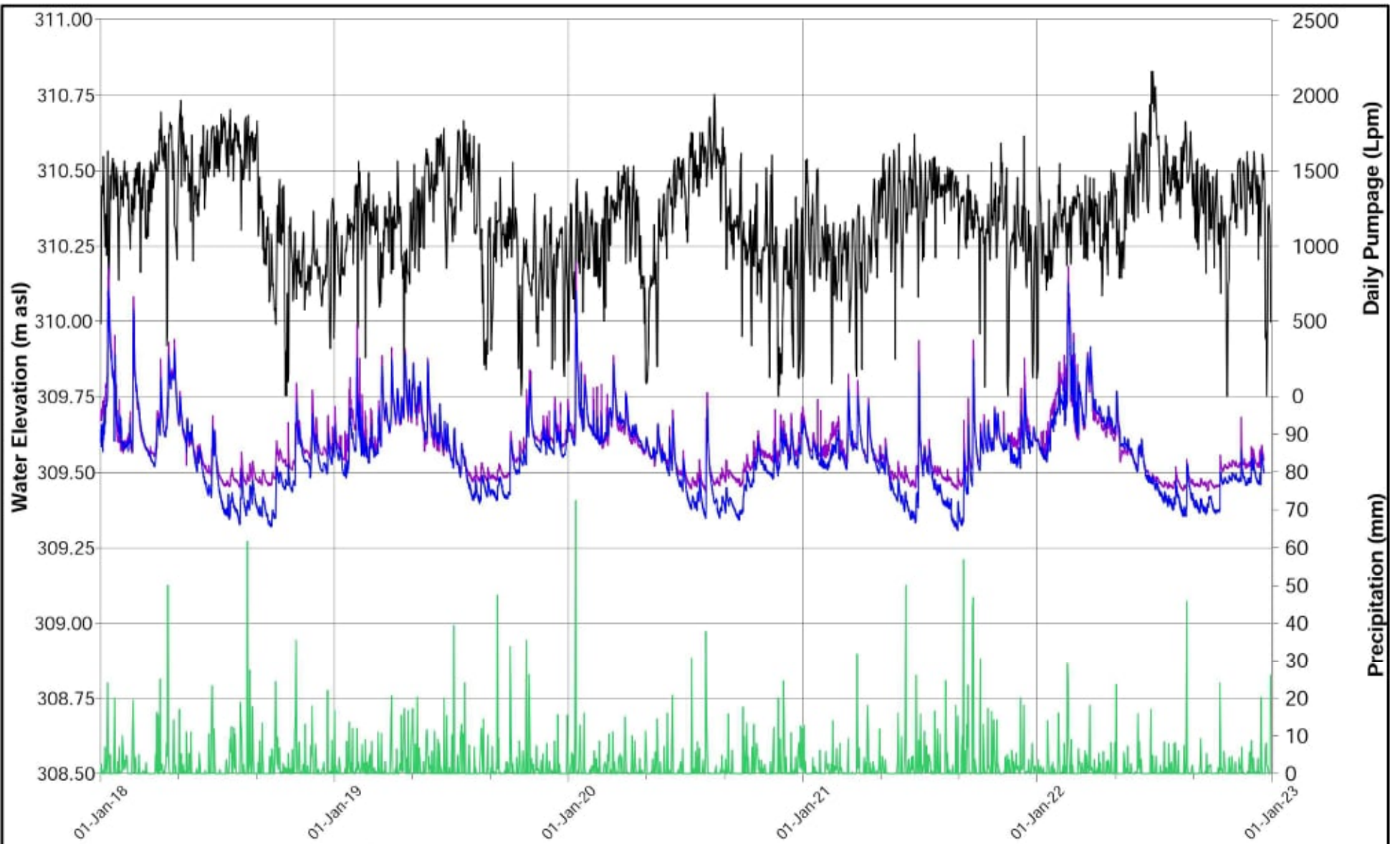


- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP8D-04
- MP8S-04



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APPROVED	GP

PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario		
TITLE	<b>MP8 NEST HYDROGRAPH (2022)</b> <b>2022 ANNUAL MONITORING REPORT</b>		
PROJECT NO.	20449101 (1100)	REV	A
		FIGURE	E6b



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP17D-11
- MP17S-11

Note: Stream rehabilitation from July 22, 2019 to August 21, 2019

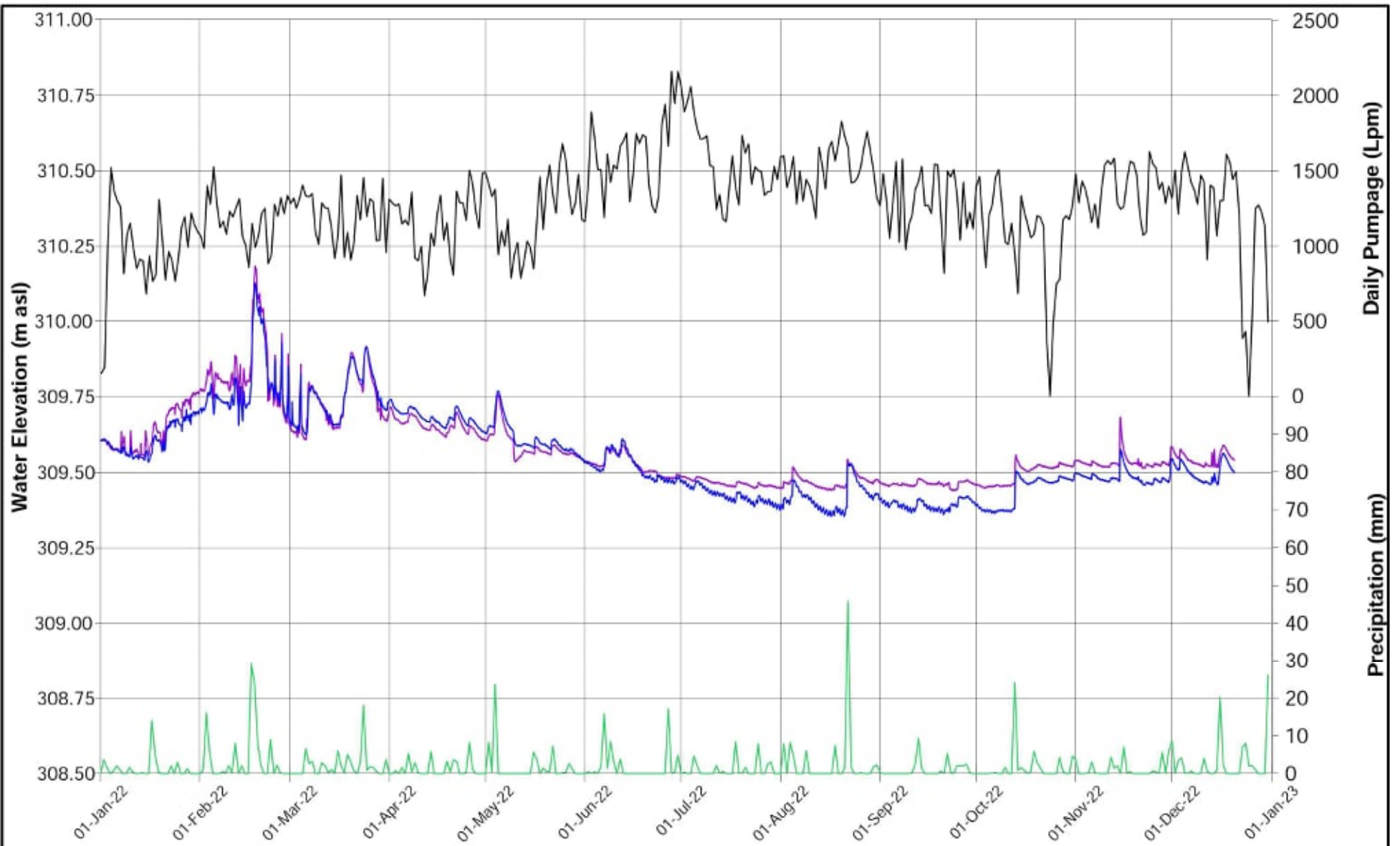
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP17 NEST HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



**DATE** JANUARY 2023  
**DESIGN** KS  
**REVIEW** GP  
**APPROVED** GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E7a



- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP17D-11
- MP17S-11

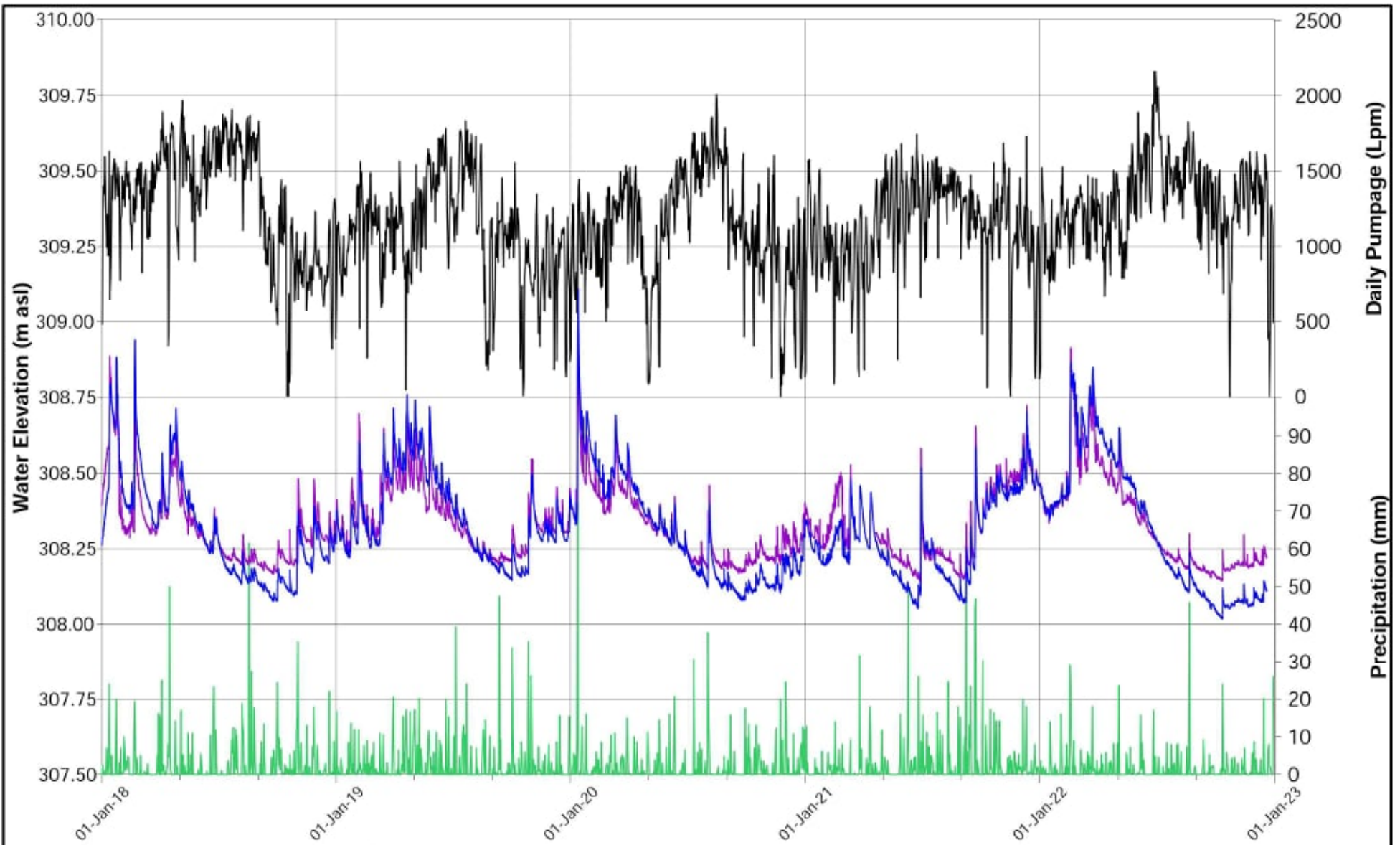


DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP



**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP17 NEST HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**

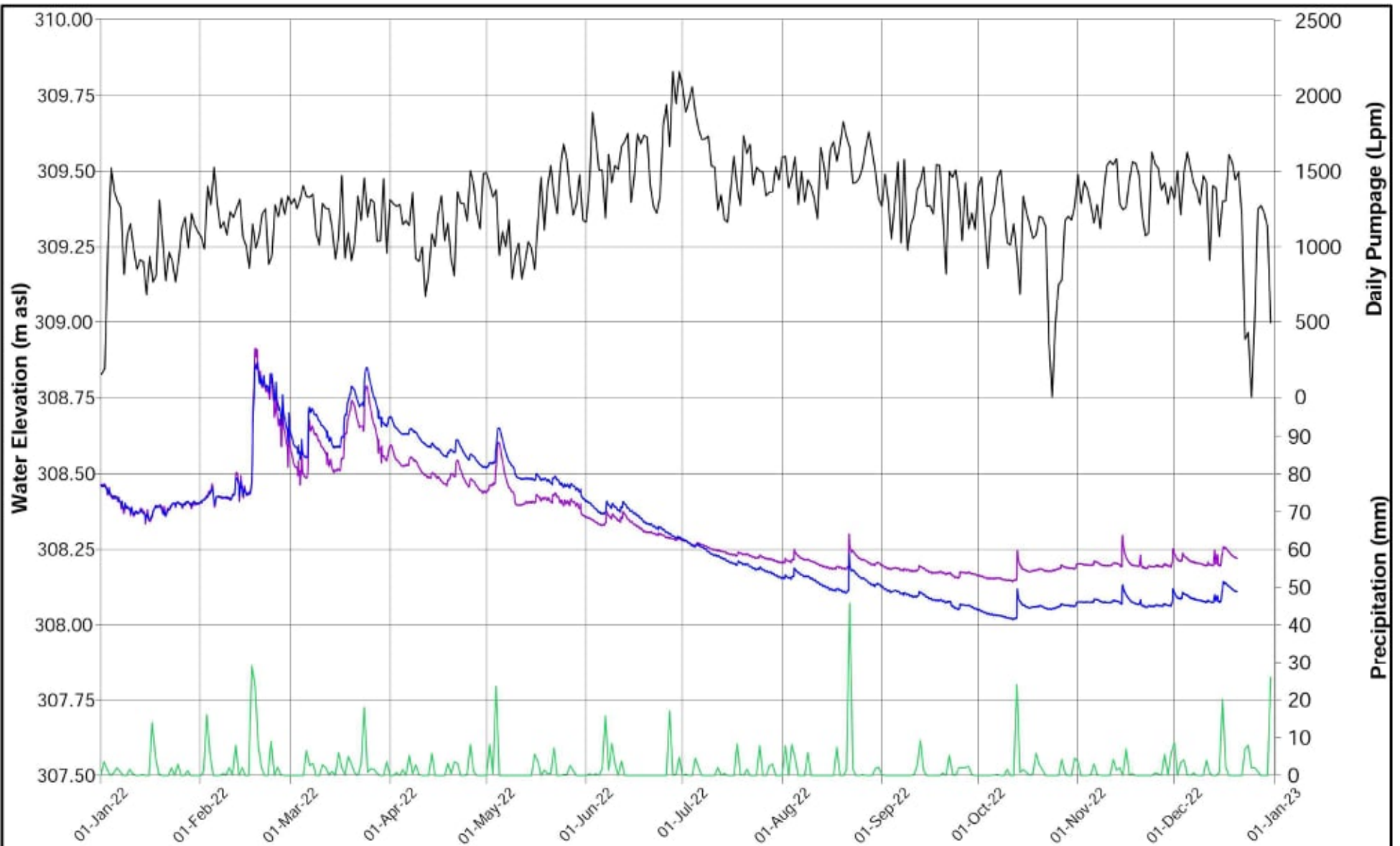
<b>PROJECT NO.</b> 20449101 (1100)	<b>REV</b> A	<b>FIGURE</b> E7b
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— Precipitation (mm)  
 — Daily Pumpage (Lpm)  
 — MP18D-11  
 — MP18S-11

	DATE JANUARY 2023 DESIGN KS REVIEW GP APPROVED GP	PROJECT <b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario
		TITLE <b>MP18 NEST HYDROGRAPH</b> <b>2022 ANNUAL MONITORING REPORT</b>
	PROJECT NO. 20449101 (1100)	REV A FIGURE E8a





- Precipitation (mm)
- Daily Pumpage (Lpm)
- MP18D-11
- MP18S-11

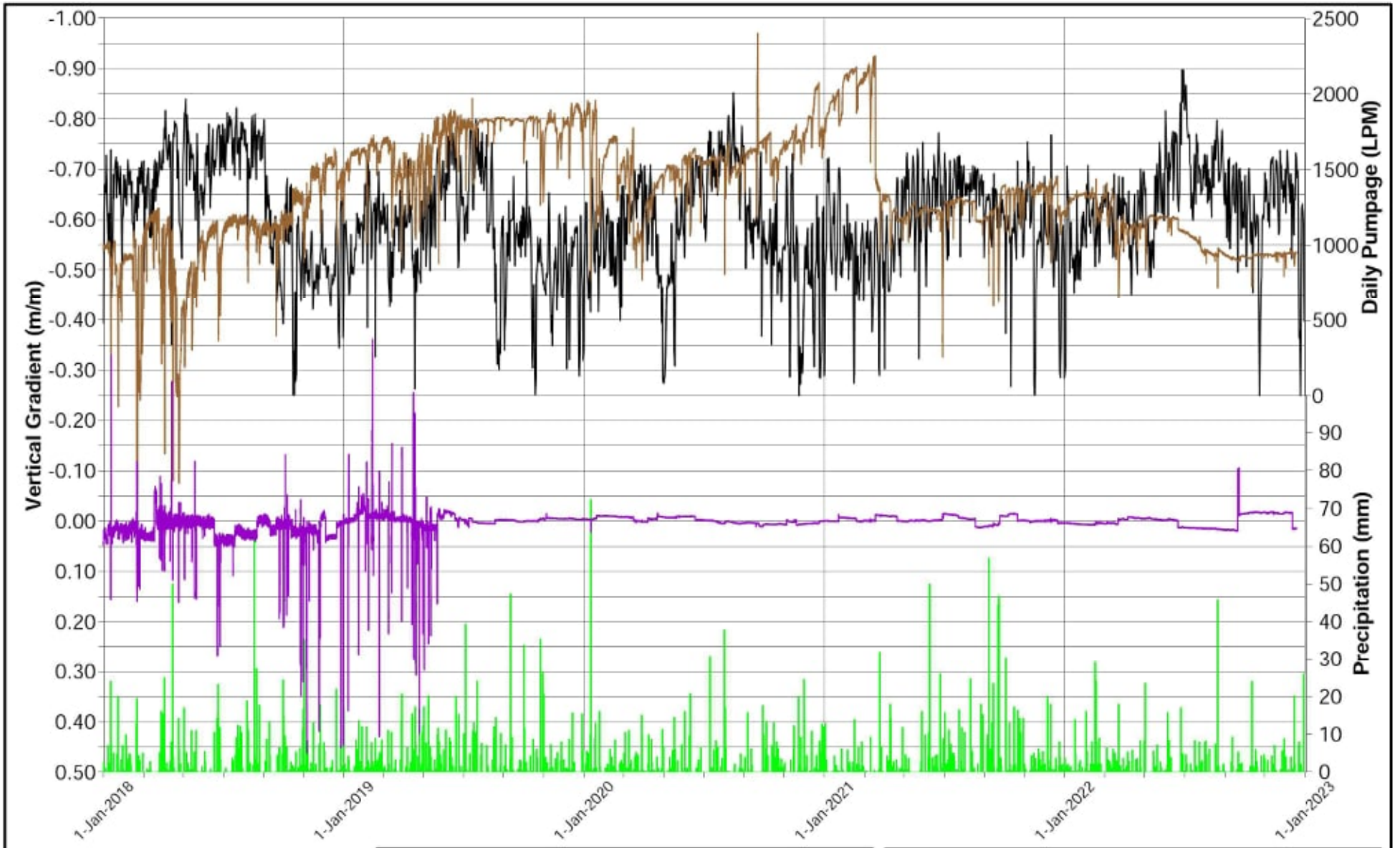


DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**MP18 NEST HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**

<b>PROJECT NO.</b> 20449101 (1100)	<b>REV</b> A	<b>FIGURE</b> E8b
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- Precipitation
- Daily Pumpage (LPM)
- MP16
- MP1-16



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

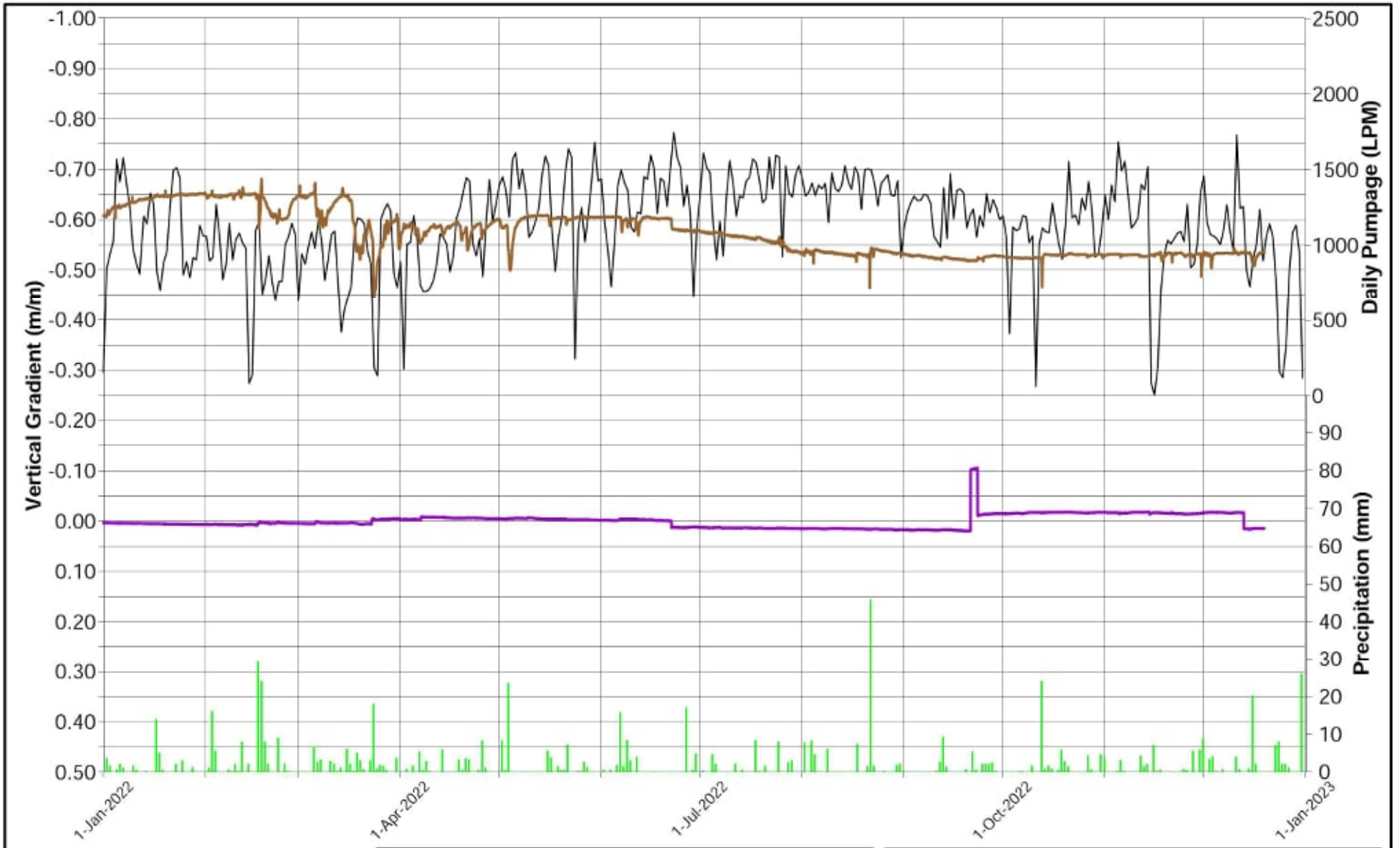
**PROJECT** BLUE TRITON BRANDS  
 Town of Aberfoyle, Ontario

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**TITLE** VERTICAL GRADIENT VERSUS TIME  
 MINI-PIEZOMETER NESTS (UPGRADIENT)  
 2022 ANNUAL MONITORING REPORT

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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E9a



- Precipitation
- Daily Pumpage (LPM)
- MP1-16
- MP16

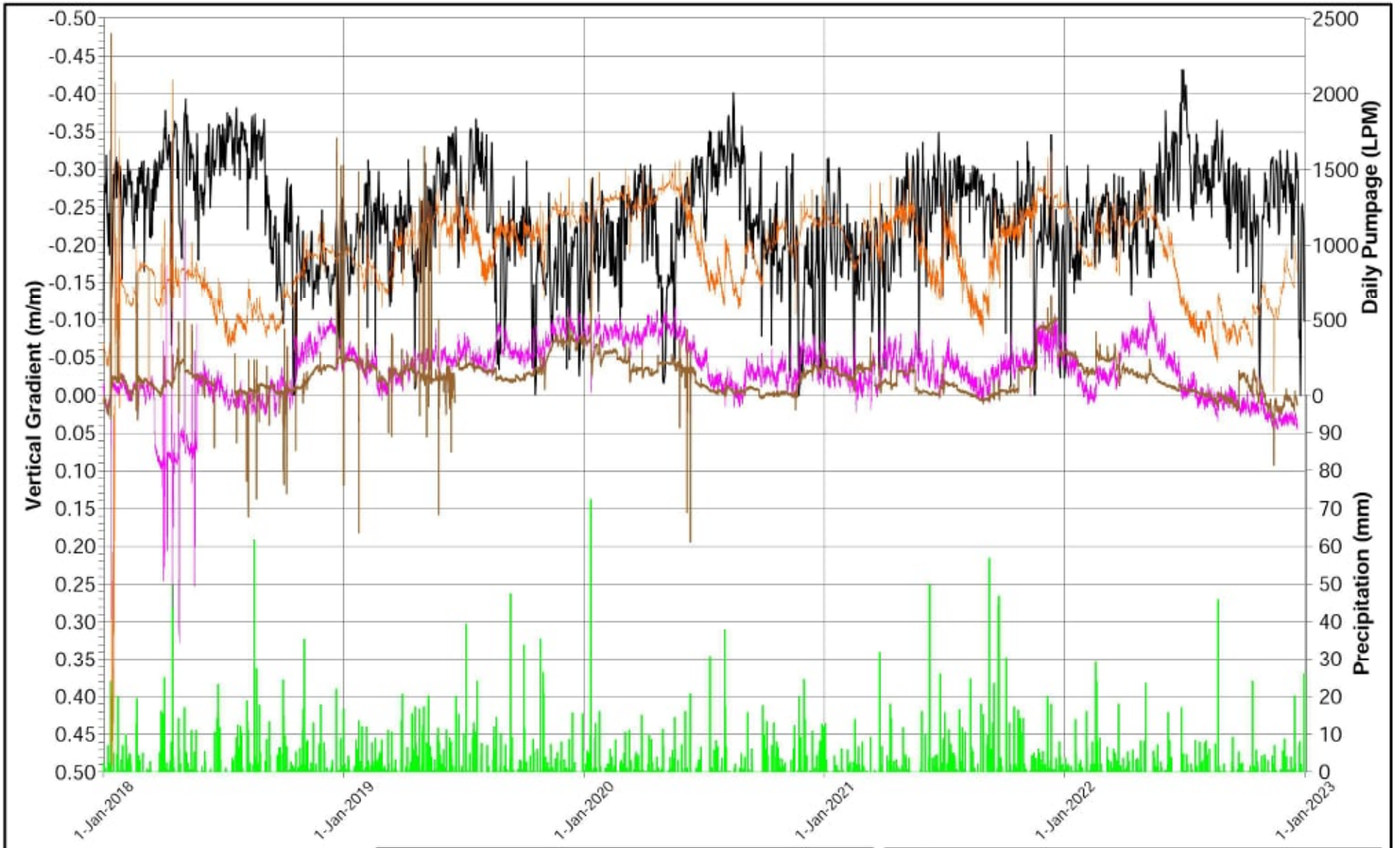


DATE JANUARY 2023  
 DESIGN JH  
 REVIEW GP  
 APPROVED GP

PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **VERTICAL GRADIENT VERSUS TIME**  
**MINI-PIEZOMETER NESTS FOR 2022 (UPGRADIENT)**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE E9b



- █ Precipitation
- Daily Pumpage (LPM)
- MP6
- MP12
- MP14

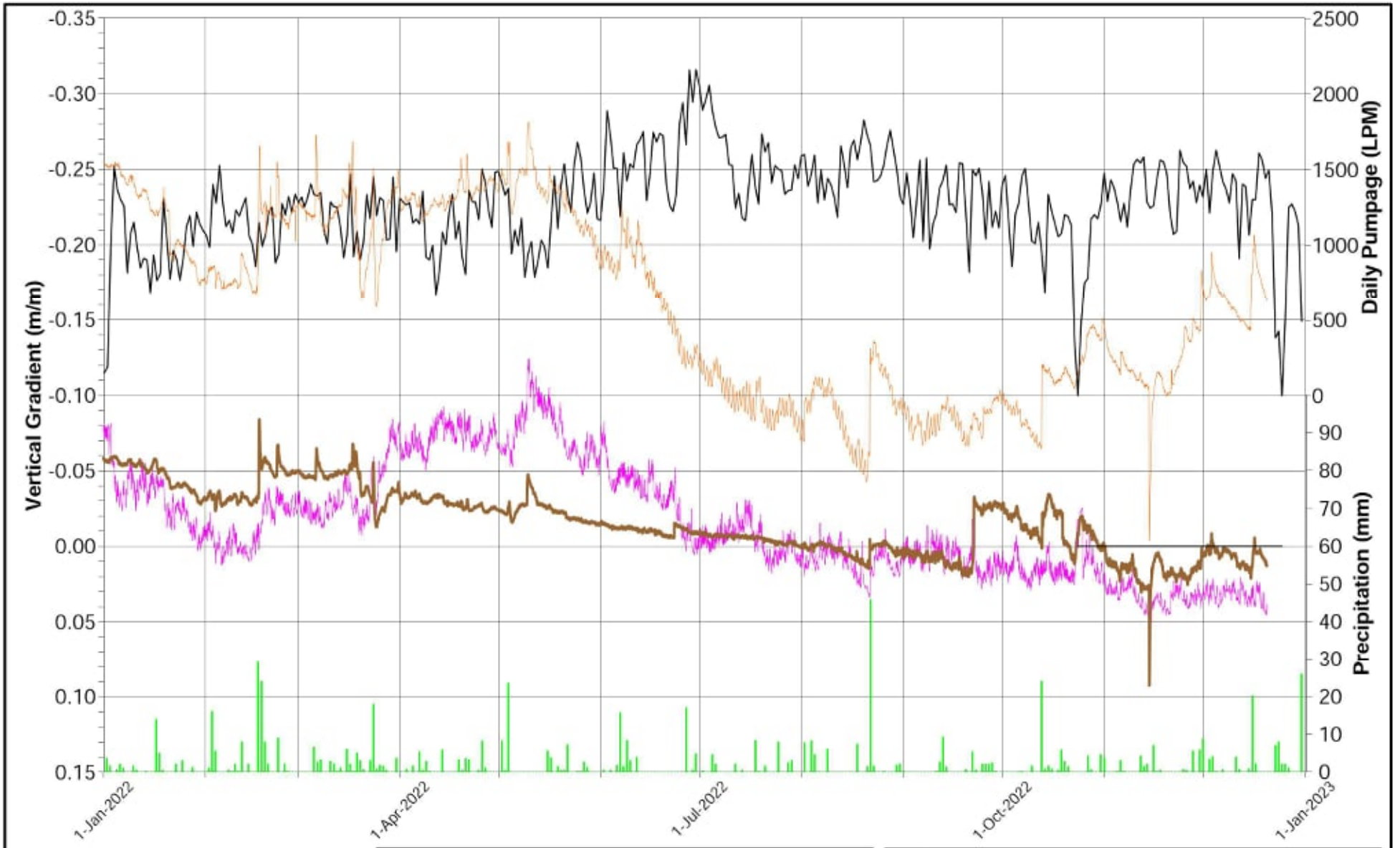


DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **VERTICAL GRADIENT VERSUS TIME**  
**MINI-PIEZOMETER NESTS (ONSITE)**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE E10a

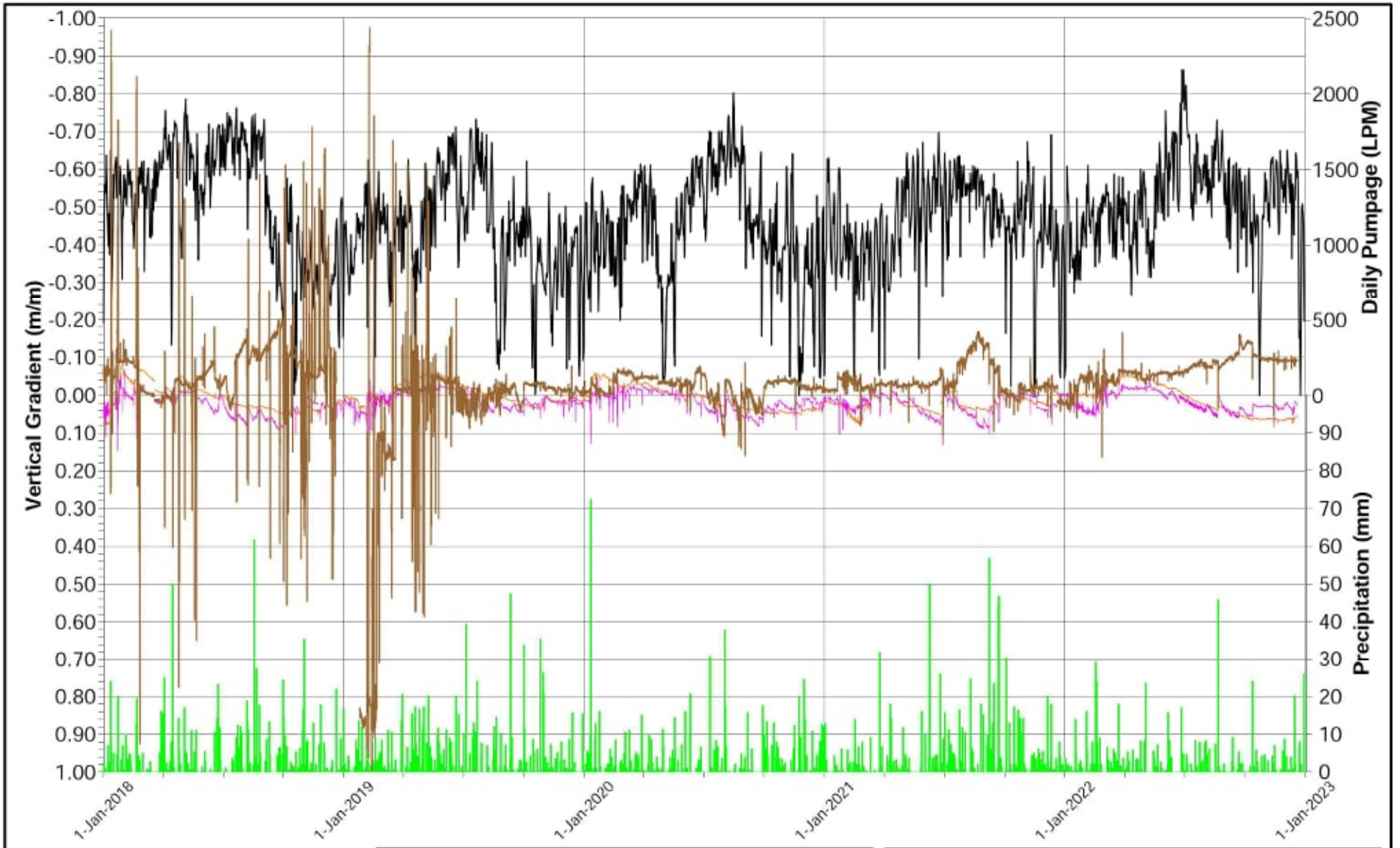


- █ Precipitation
- Daily Pumpage (LPM)
- MP6
- MP12
- MP14



DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

<b>PROJECT</b>		<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario	
<b>TITLE</b>		<b>VERTICAL GRADIENT VERSUS TIME MINI-PIEZOMETER NESTS FOR 2022 (ONSITE) 2022 ANNUAL MONITORING REPORT</b>	
<b>PROJECT NO.</b>	<b>REV</b>	<b>FIGURE</b>	
20449101 (1100)	A	E10b	



- █ Precipitation
- Daily Pumpage LPM)
- MP8
- MP17
- MP18



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

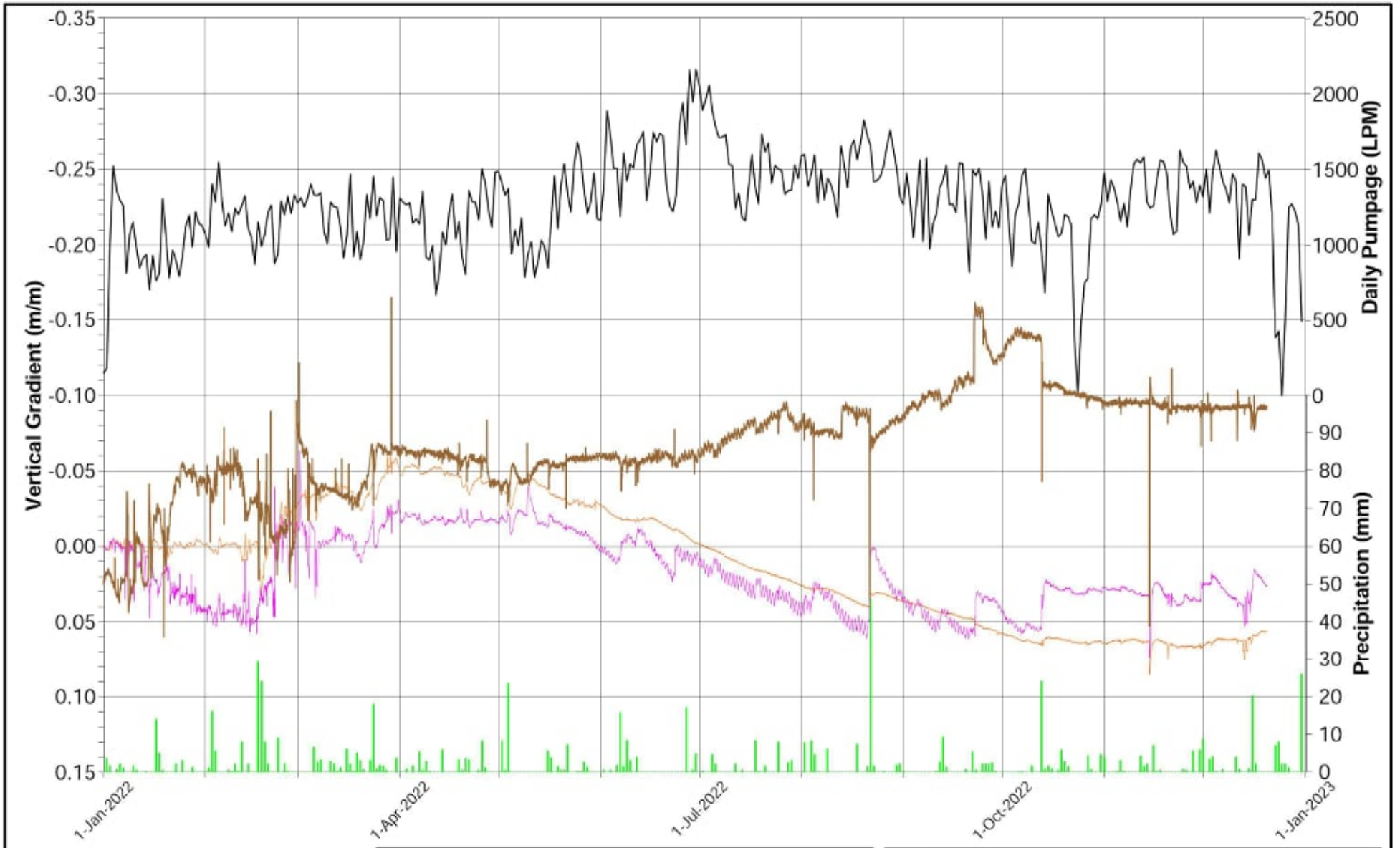
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

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**TITLE**  
**VERTICAL GRADIENT VERSUS TIME**  
**MINI-PIEZOMETER NESTS (DOWNGRADIENT)**  
**2022 ANNUAL MONITORING REPORT**

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**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E11a

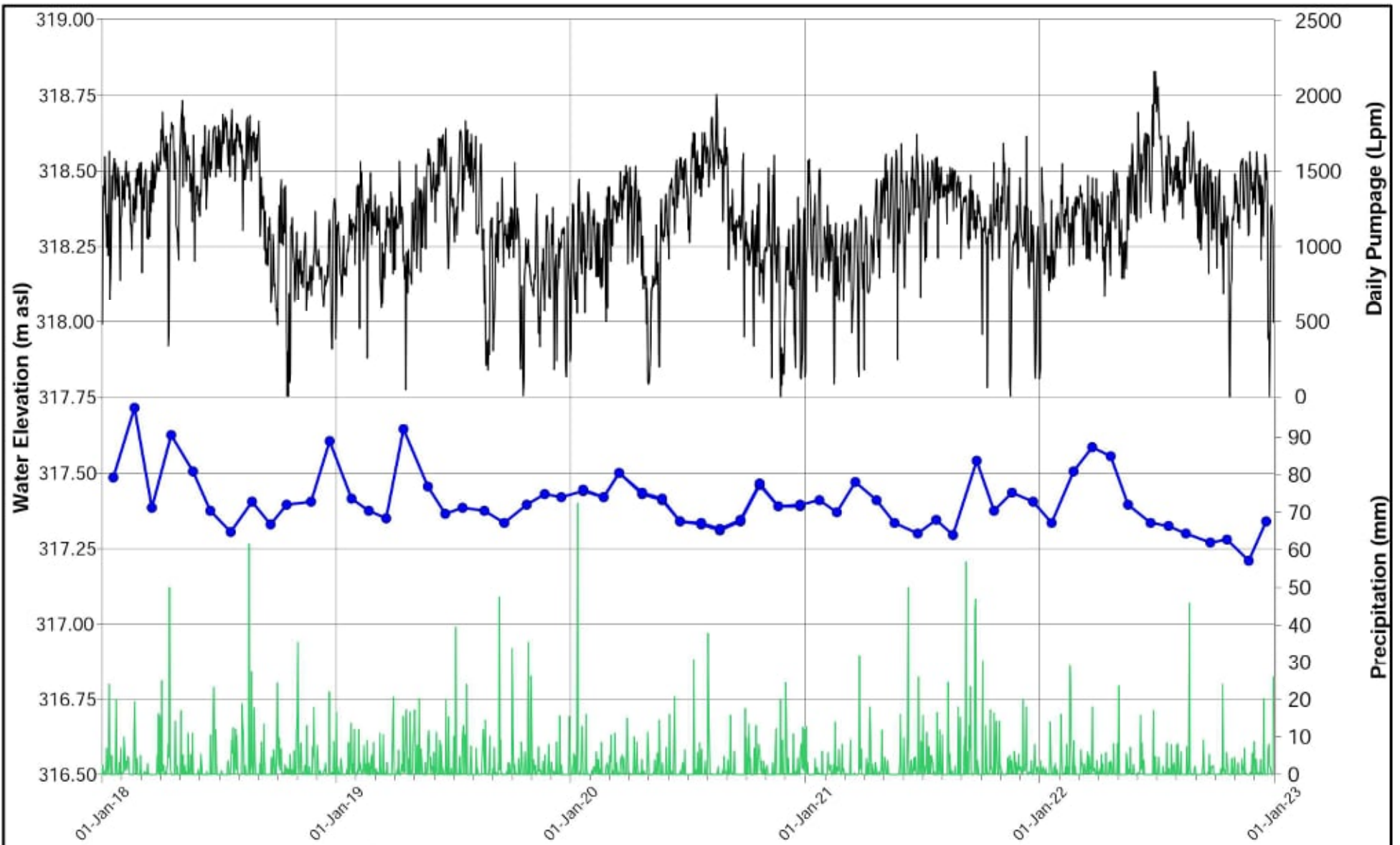


- █ Precipitation
- Daily Pumpage (LPM)
- MP8
- MP17
- MP18



DATE	JANUARY 2023
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario		
TITLE	<b>VERTICAL GRADIENT VERSUS TIME</b> <b>MINI-PIEZOMETER NESTS FOR 2022 (DOWNGRADIENT)</b> <b>2022 ANNUAL MONITORING REPORT</b>		
PROJECT NO.	20449101 (1100)	REV	A
		FIGURE	E11b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW3

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

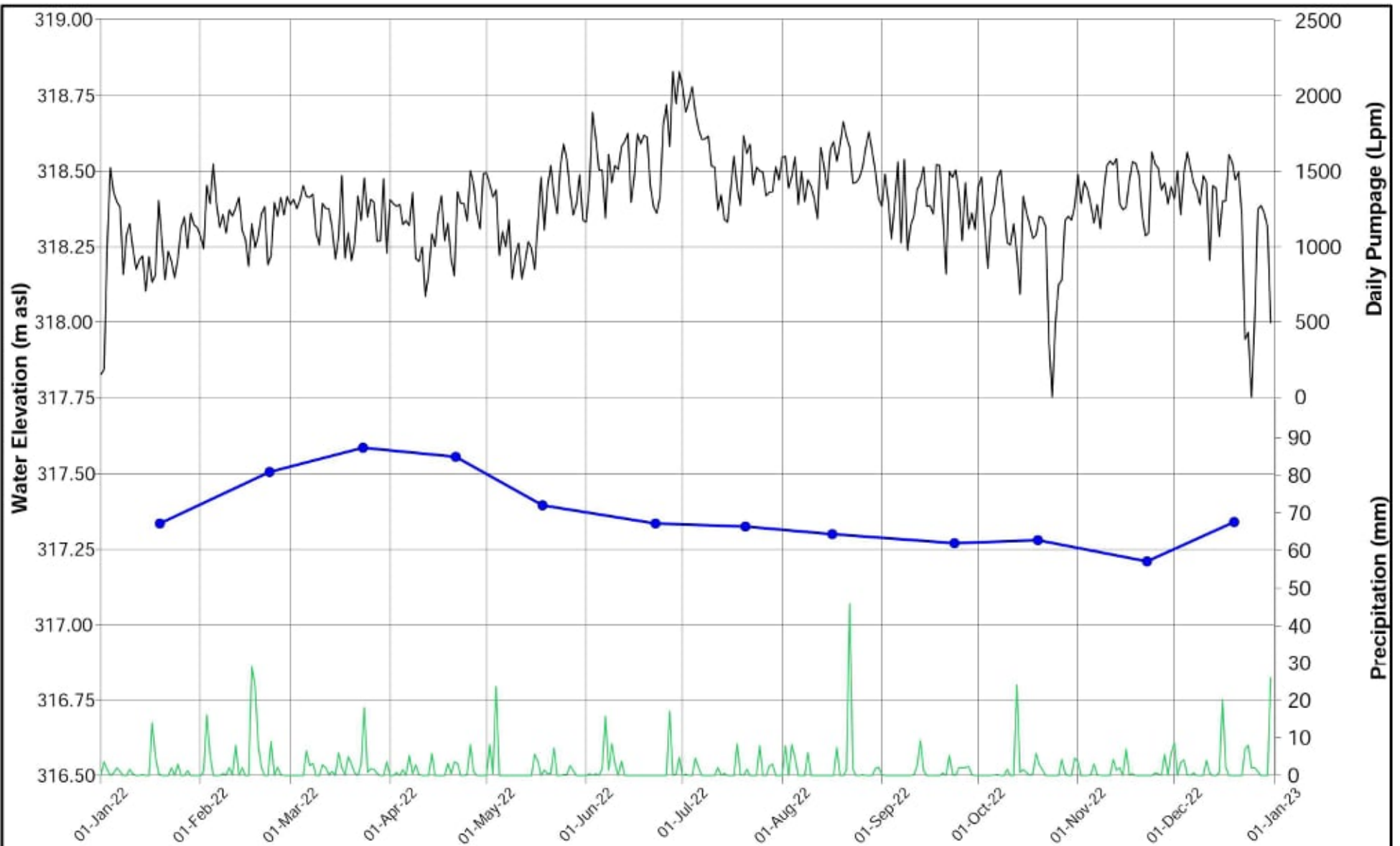
**TITLE**  
**SW3 HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E12a





— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW3

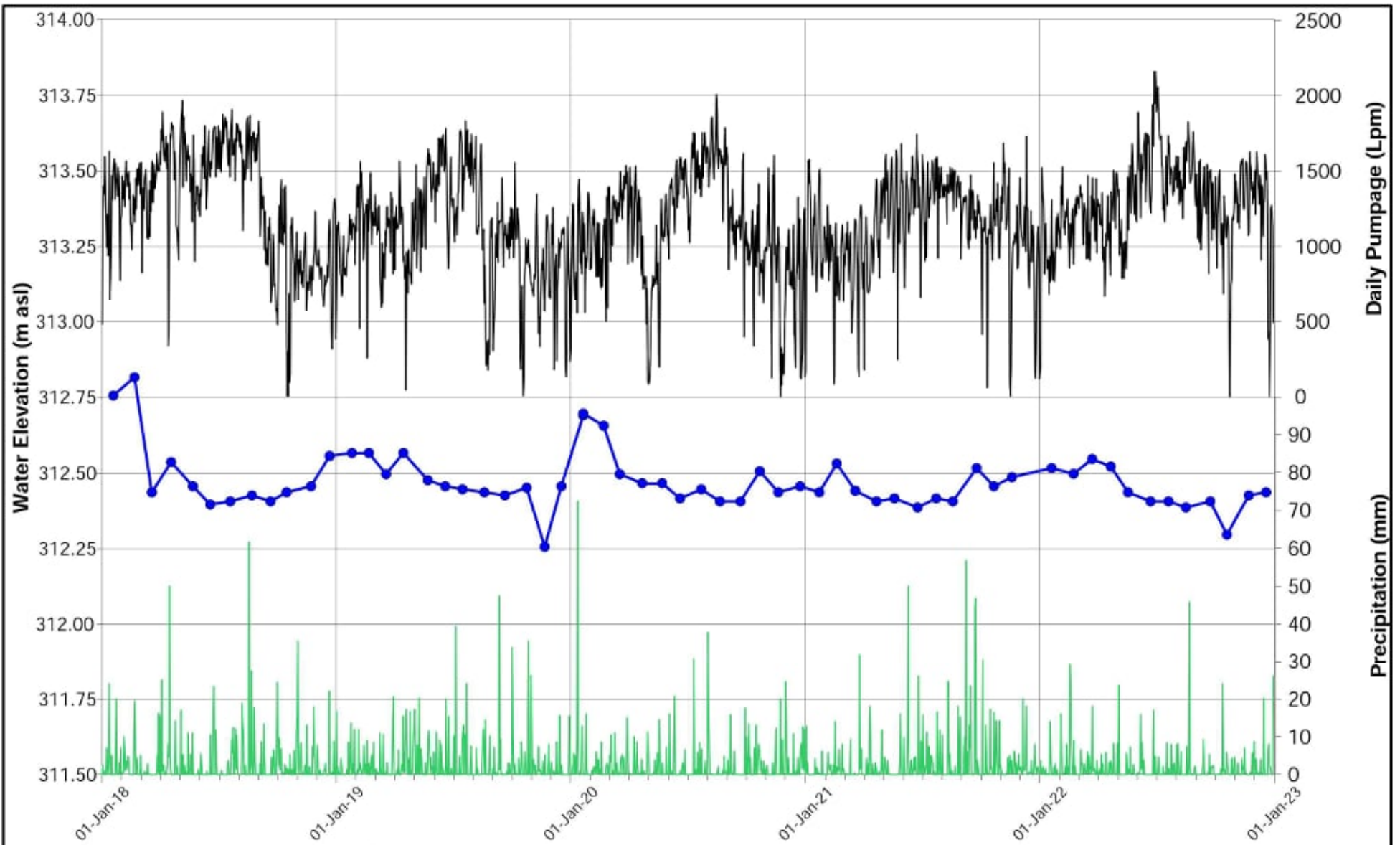
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW3 HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E12b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW4

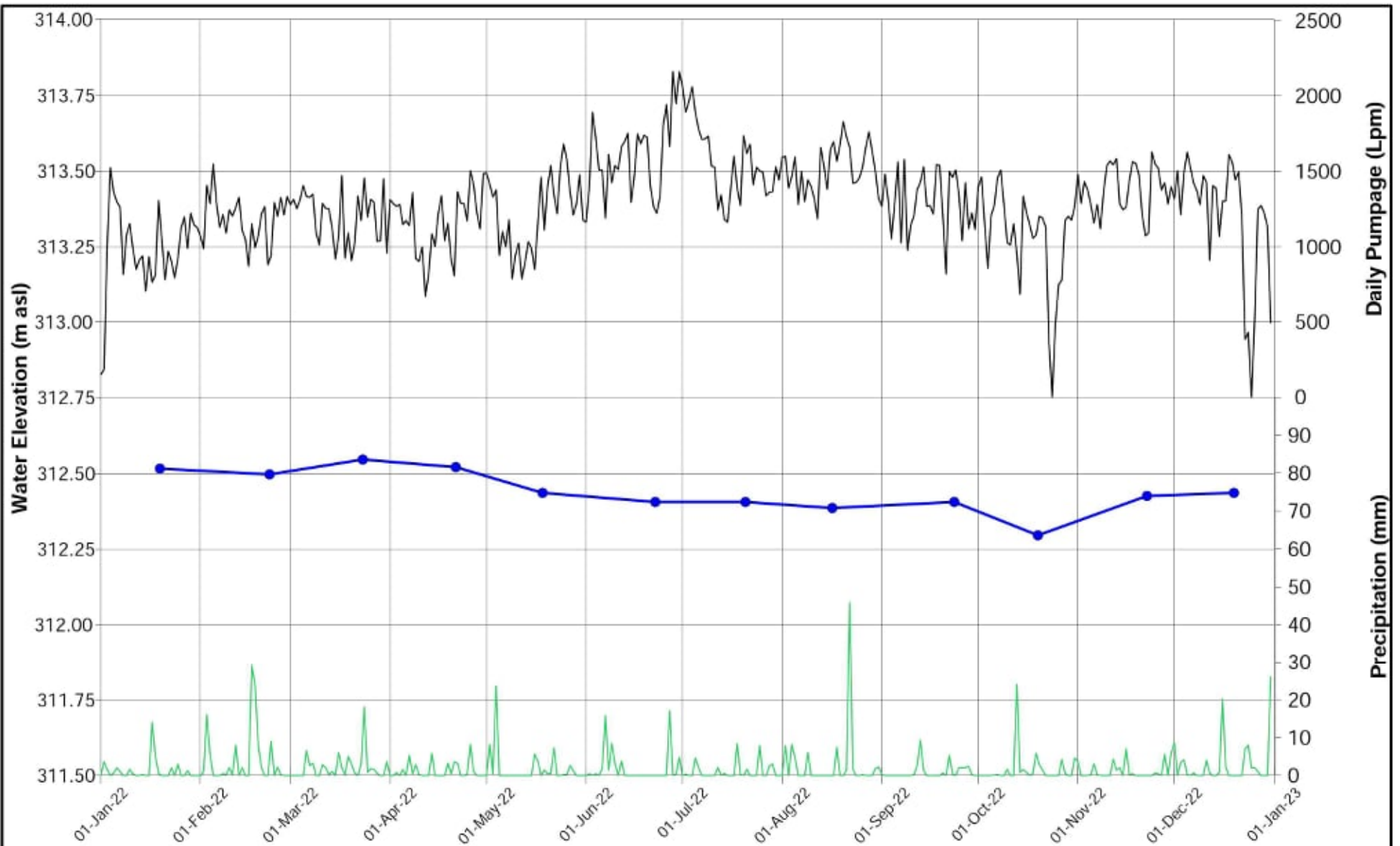
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW4 HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE E13a



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW4

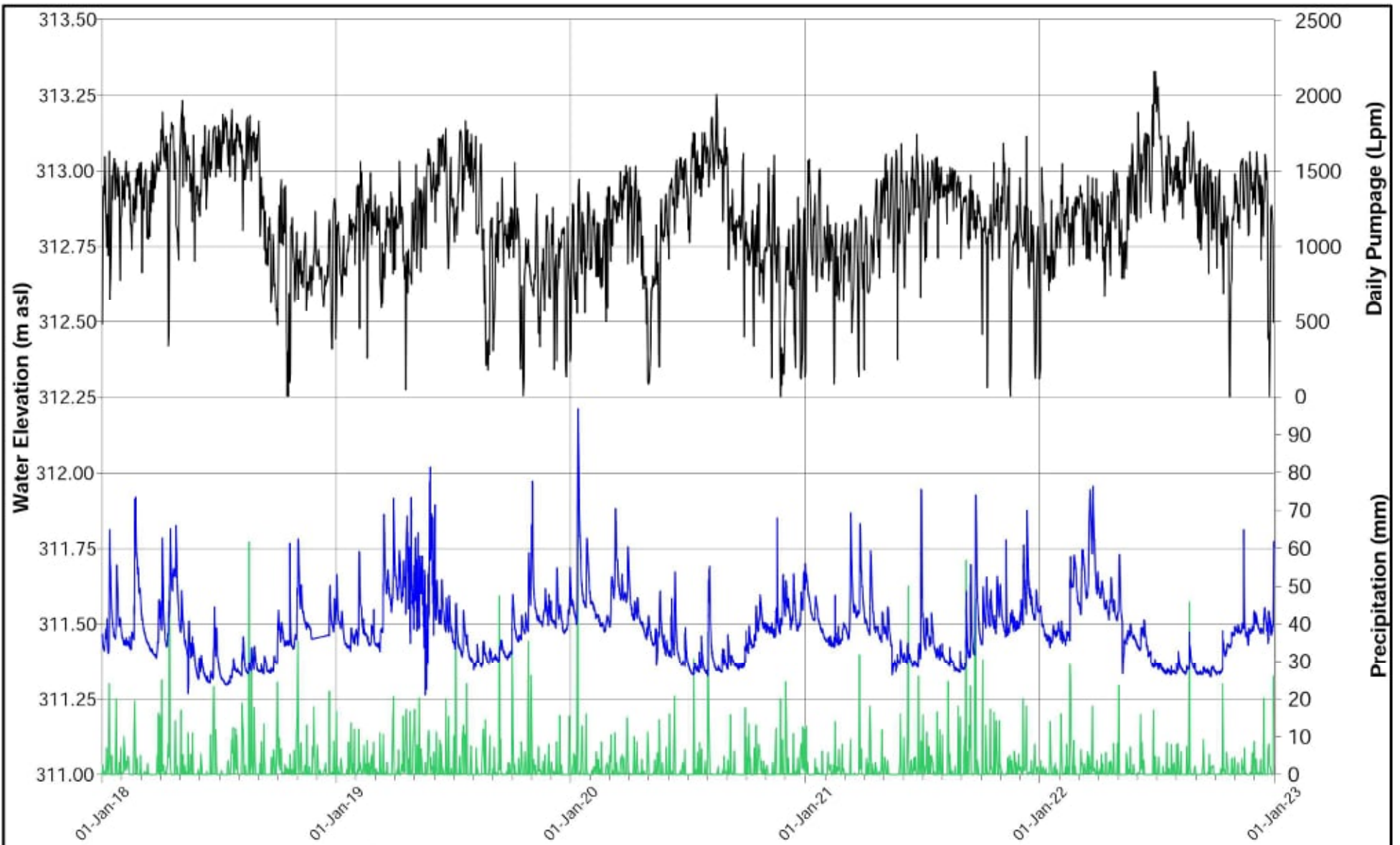
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW4 HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE E13b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— SW1

Note: Roundabout constructed on Brock Road starting on May 21, 2019

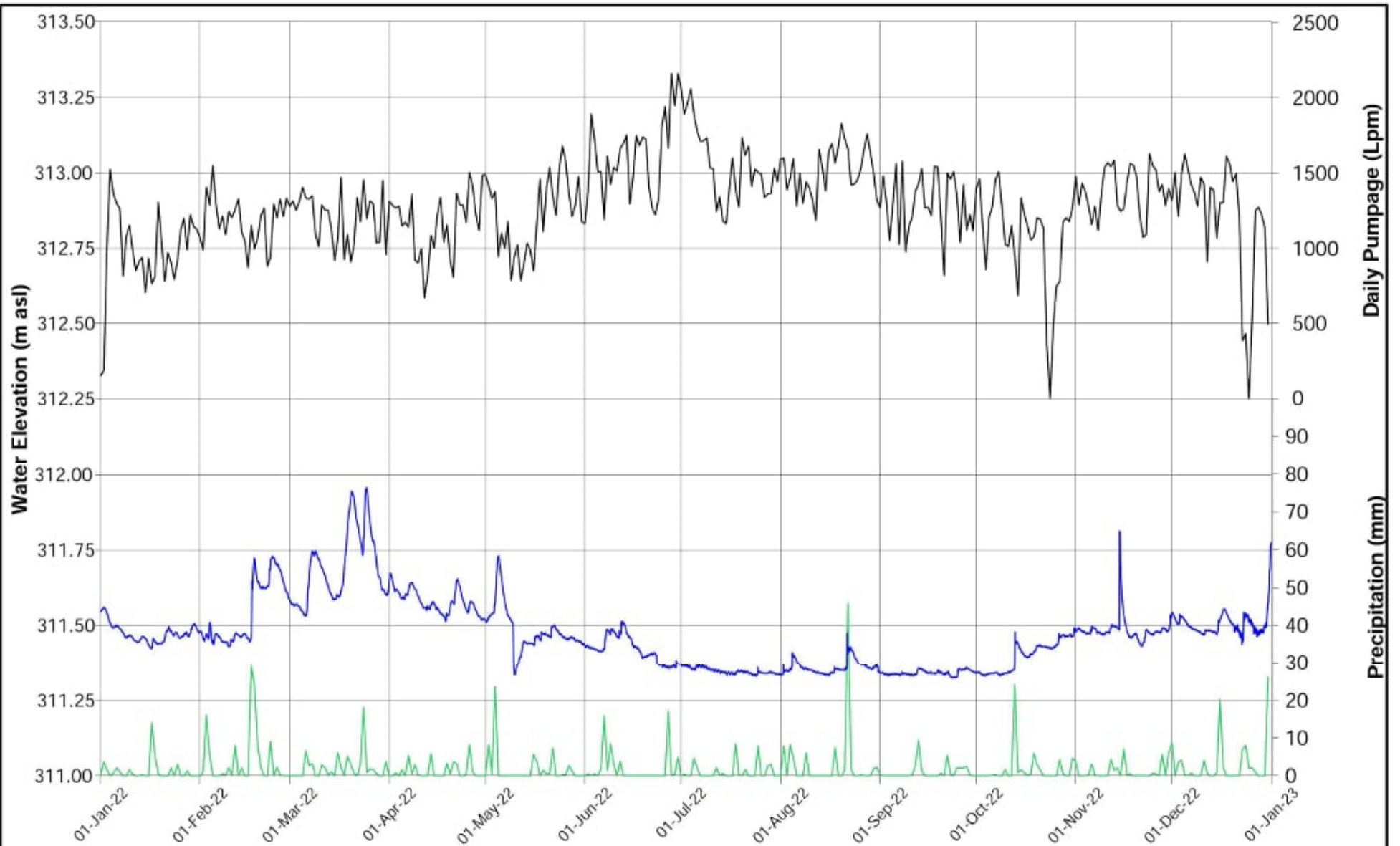
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW1 HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E11a



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— SW1

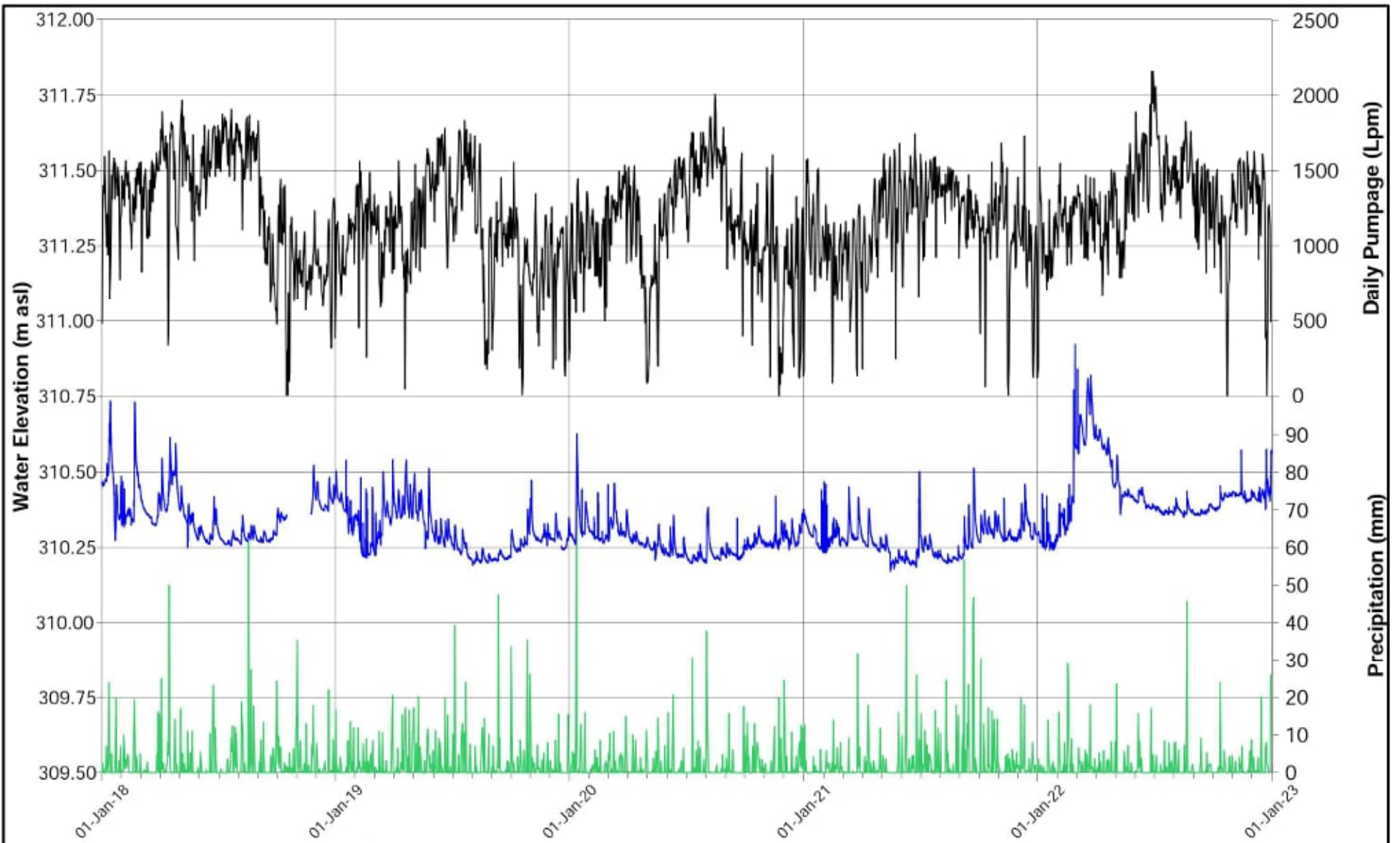
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW1 HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE E114b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
— SW2

Note: Stream rehabilitation from July 22, 2019 to August 21, 2019.  
 Measuring point re-surveyed in February 2022.

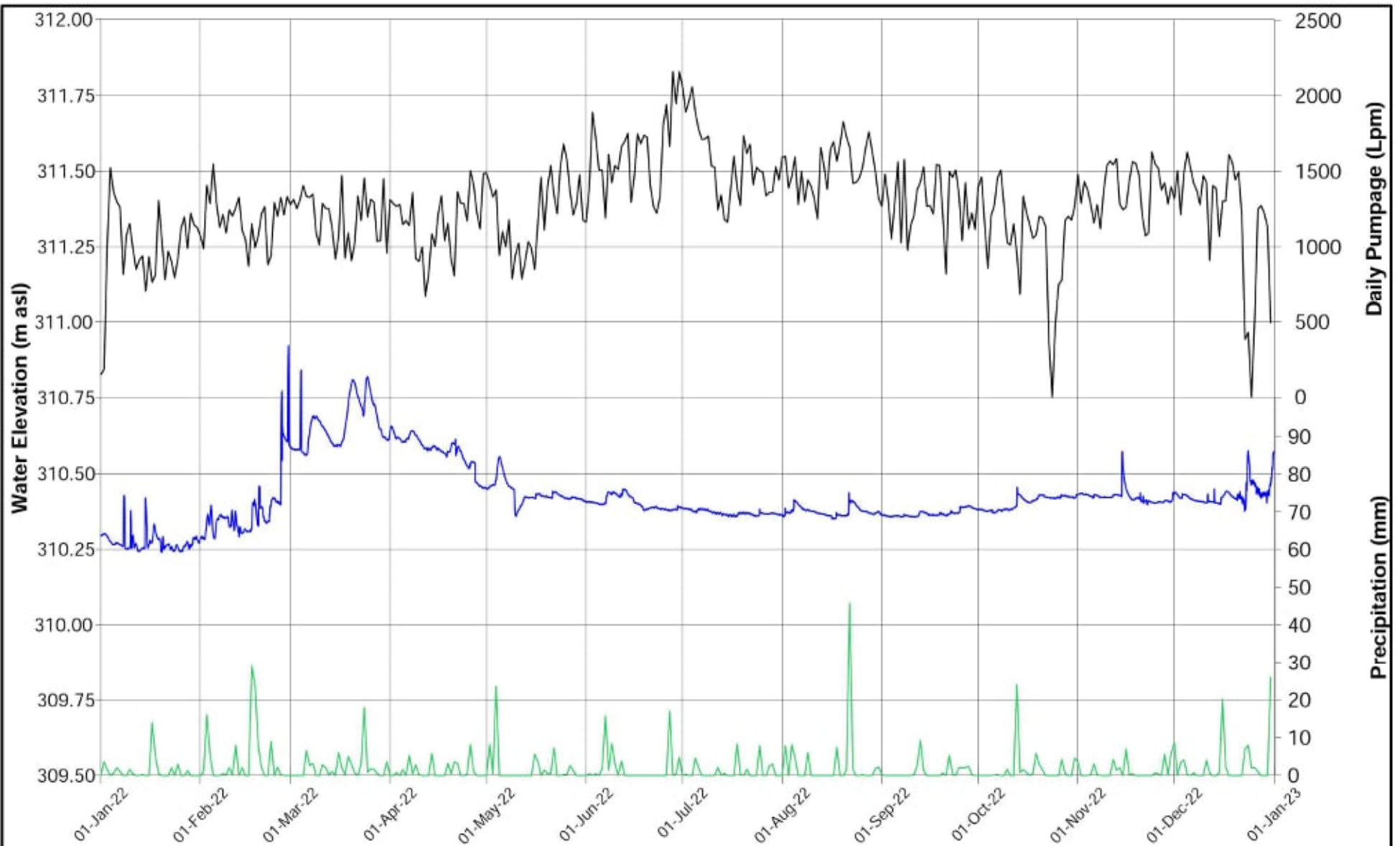
**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW2 HYDROGRAPH**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO. 20449101 (1100)      REV A      FIGURE E15a



Note: Measuring point re-surveyed in February 2022.

- Precipitation (mm)
- Daily Pumpage (Lpm)
- SW2

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW2 HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**

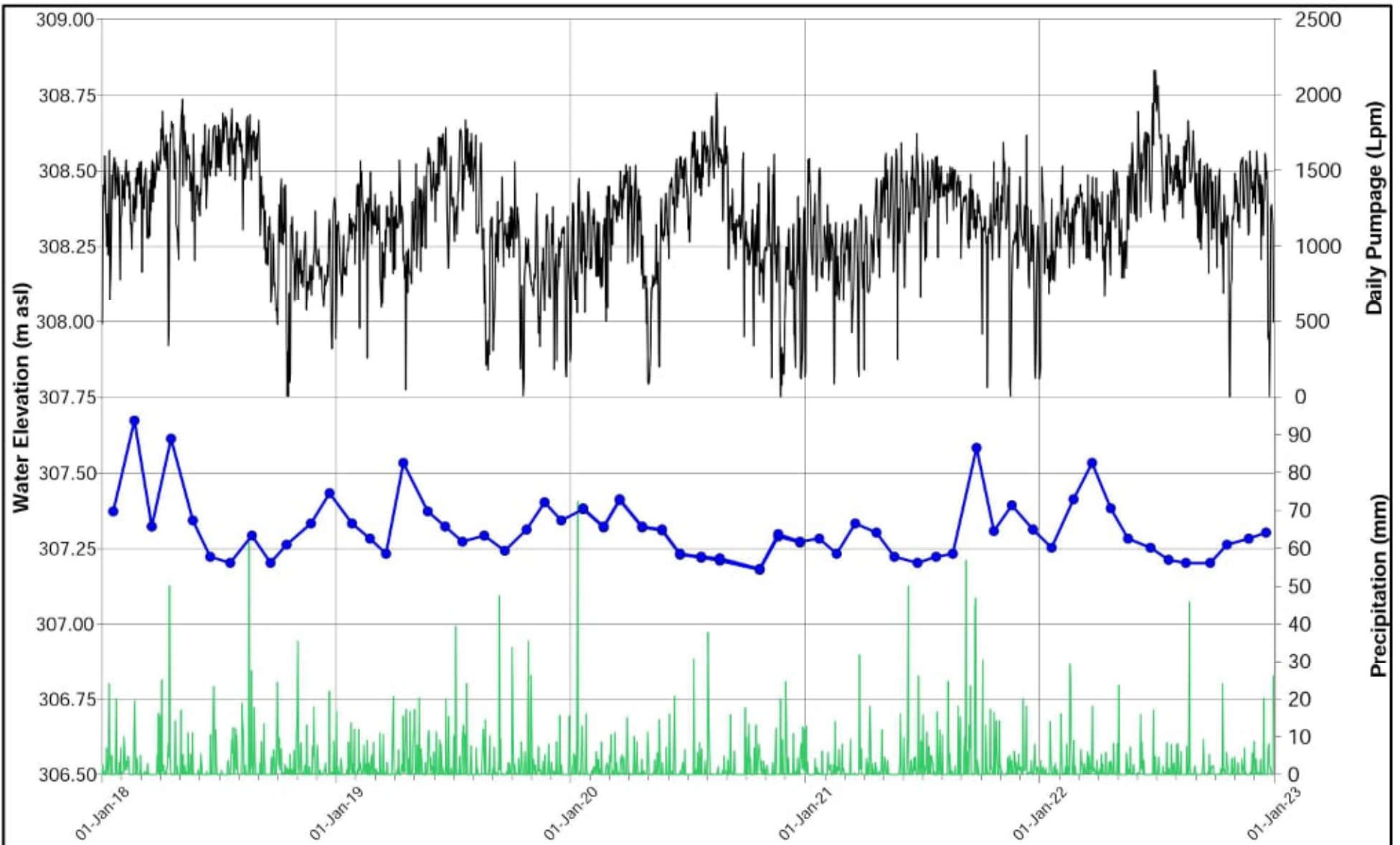


DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT NO.  
 20449101 (1100)

REV  
 A

FIGURE  
 E15b



— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW5

PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

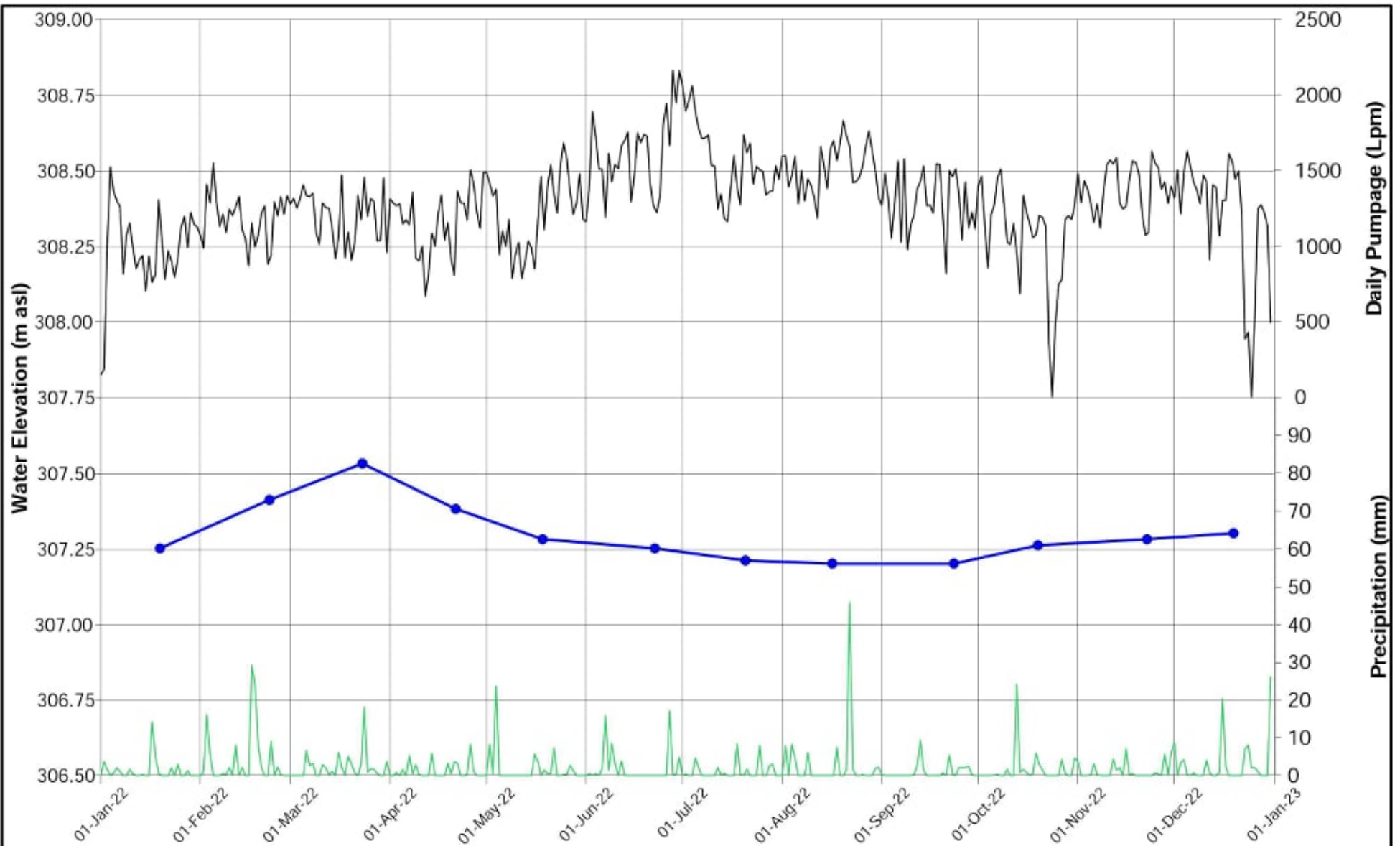
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**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE E16a



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP





— Precipitation (mm)  
— Daily Pumpage (Lpm)  
—●— SW5

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**SW5 HYDROGRAPH (2022)**  
**2022 ANNUAL MONITORING REPORT**



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

**PROJECT NO.** 20449101 (1100)      **REV** A      **FIGURE** E16b

**TABLE E1**  
**Manual Surface Water Elevations (Mini Piezometers)**  
**2022 Annual Report**

Date	Water Level (masl)							
	MP1D-16	MP1S-16	MP16D-08	MP16S-08	MP6D-04	MP6S-08	MP12D-04	MP12S-04
22/23-Mar-2022	319.05	318.48	312.45	312.46	311.84	311.81	311.71	311.69
22/23-Jun-2022	318.82	318.20	312.10	312.10	311.41	311.41	311.29	311.25
22/23-Sep-2022	318.73	318.19	311.87	311.89	311.31	311.31	311.09	311.10
19/20-Dec-2022	318.80*	318.24	311.96	311.98	311.41	311.42	311.25	311.29

\* Water frozen

**TABLE E1**  
**Manual Surface Water Elevations (Mini Piezometers)**  
**2022 Annual Report**

Date	Water Level (masl)							
	MP14D-07	MP14S-07	MP8D-04	MP8S-04	MP17D-11	MP17S-11	MP18D-11	MP18S-11
22/23-Mar-2022	311.59	311.36	310.56	310.54	309.81	309.80	308.72	308.65
22/23-Jun-2022	311.31	311.14	310.26	310.24	309.47	309.50	308.31	308.29
22/23-Sep-2022	311.22	311.11	310.21	310.17	309.38	309.46	308.07	308.17
19/20-Dec-2022	311.36*	311.16	310.31	310.28	309.50	309.54	308.11	308.22

\* Water frozen

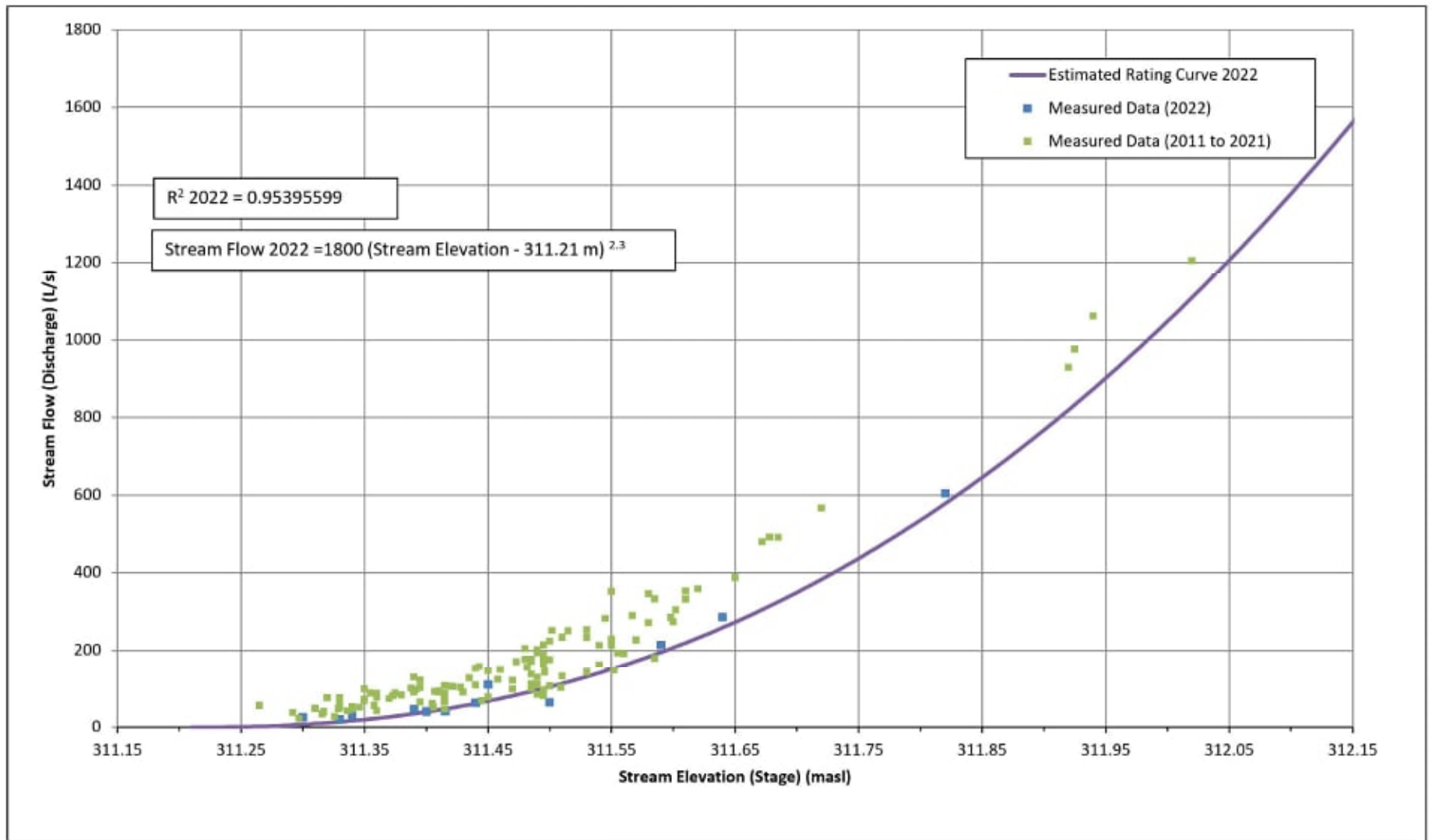
**TABLE E2**  
**Manual Surface Water Elevations (Surface Water Stations)**  
**2022 Annual Report**

Date	Water Level (masl)				
	SW1	SW2	SW3	SW4	SW5
19-Jan-22	311.44	310.28*	317.34	312.51*	307.25
22-Feb-2022	311.64	310.30	317.51	312.50	307.41
22/23-Mar-2022	311.82	310.74	317.59	312.55	307.53
21-Apr-2022	311.59	310.54	317.56	312.52	307.38
18-May-2022	311.45	310.43	317.40	312.44	307.28
22/23-Jun-2022	311.40	310.49	317.34	312.41	307.25
20-Jul-2022	311.30	310.38	317.33	312.41	307.21
16-Aug-2022	311.34	310.35	317.30	312.39	307.20
22/23-Sep-2022	311.35	310.37	317.27	312.41	307.20
19-Oct-2022	311.42	310.42	317.28	312.30	307.26
22-Nov-2022	311.39	310.39	317.21	312.43	307.28
19/20-Dec-2022	311.50	310.41	317.34	312.44	307.30

\* Water frozen

**APPENDIX F**

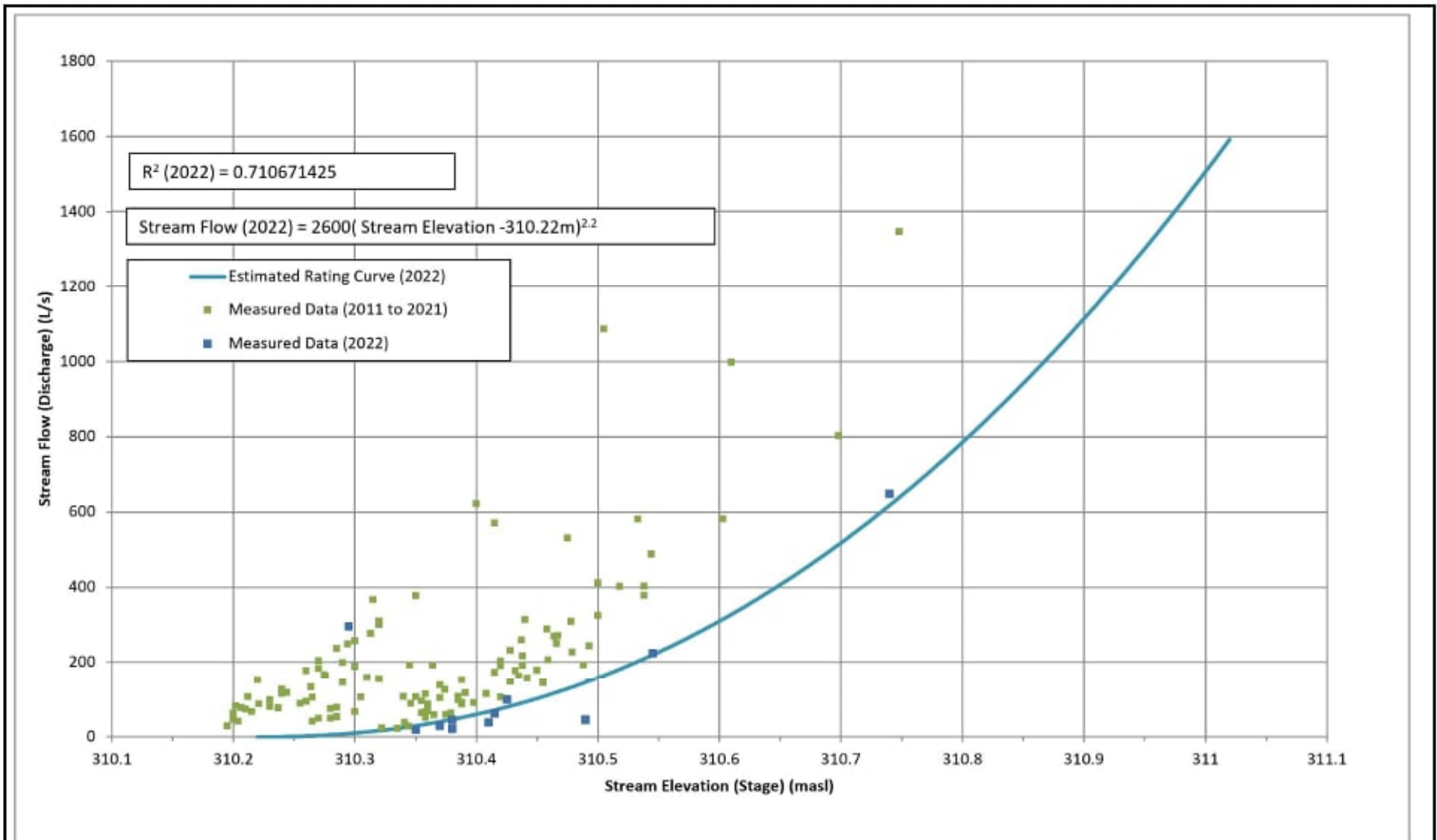
**Surface Water Flow Monitoring**



2022 Data Notes:  
 In 2022, the range of water levels recorded during manual flow measurements (and used to determine the stage-discharge relationship) = ~311.30 to 311.82 masl. The full range of water levels recorded in 2022 = ~311.325 to 311.96 masl.

Figure. F1  
 STAGE-DISCHARGE MEASUREMENTS FOR SW1 (2022)  
 2022 ANNUAL MONITORING REPORT  
 BLUE TRITON BRANDS  
 Aberfoyle, Ontario



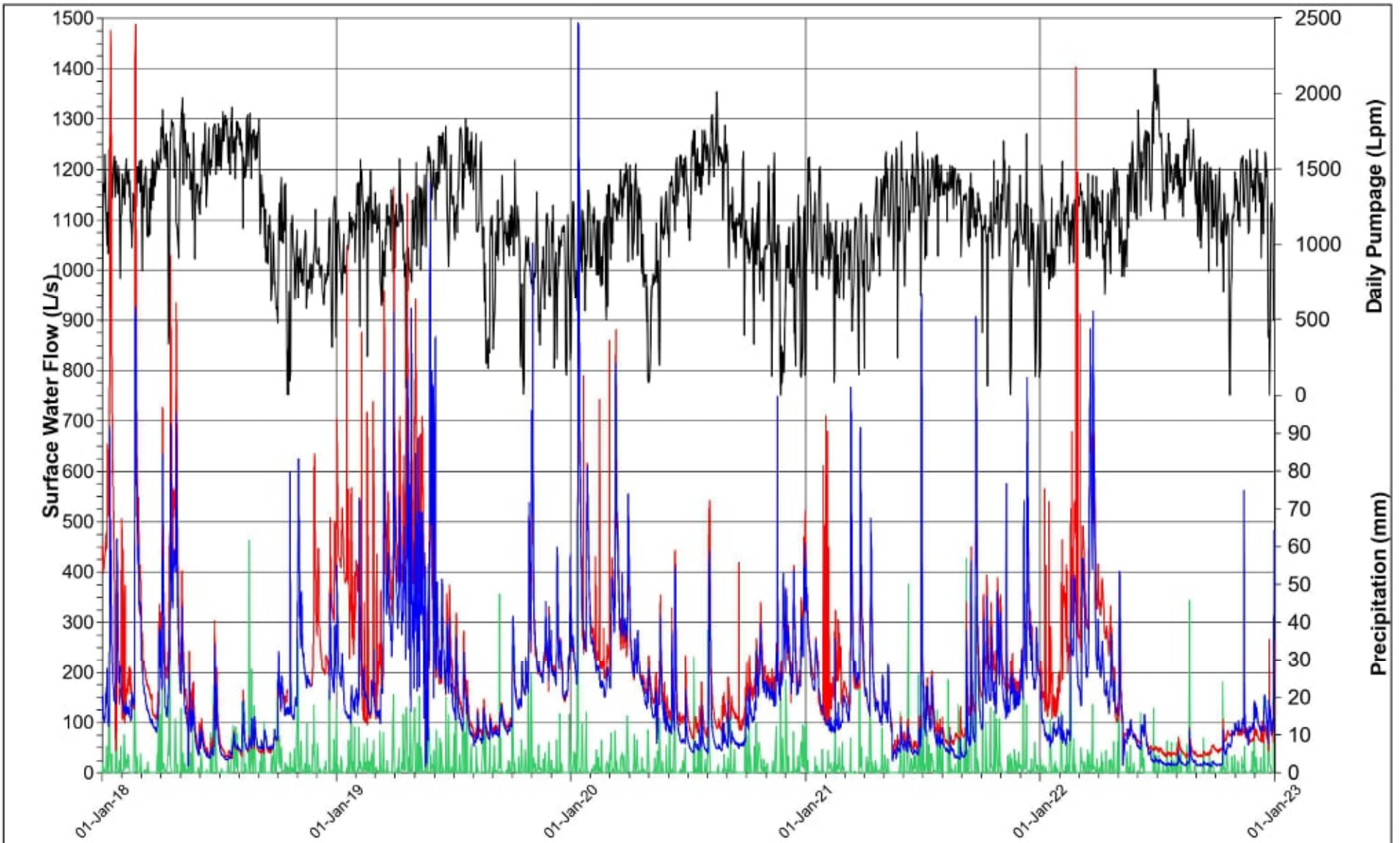


**2022 Data Notes:**


In 2022, the range of water levels recorded during manual flow measurements = 310.30 to 310.74 masl. The full range of water levels recorded in 2022 = ~310.24 to 310.92 masl.

Figure. F2  
 STAGE-DISCHARGE MEASUREMENTS FOR SW2 (2022)  
 2022 ANNUAL MONITORING REPORT  
 BLUE TRITON BRANDS  
 Aberfoyle, Ontario

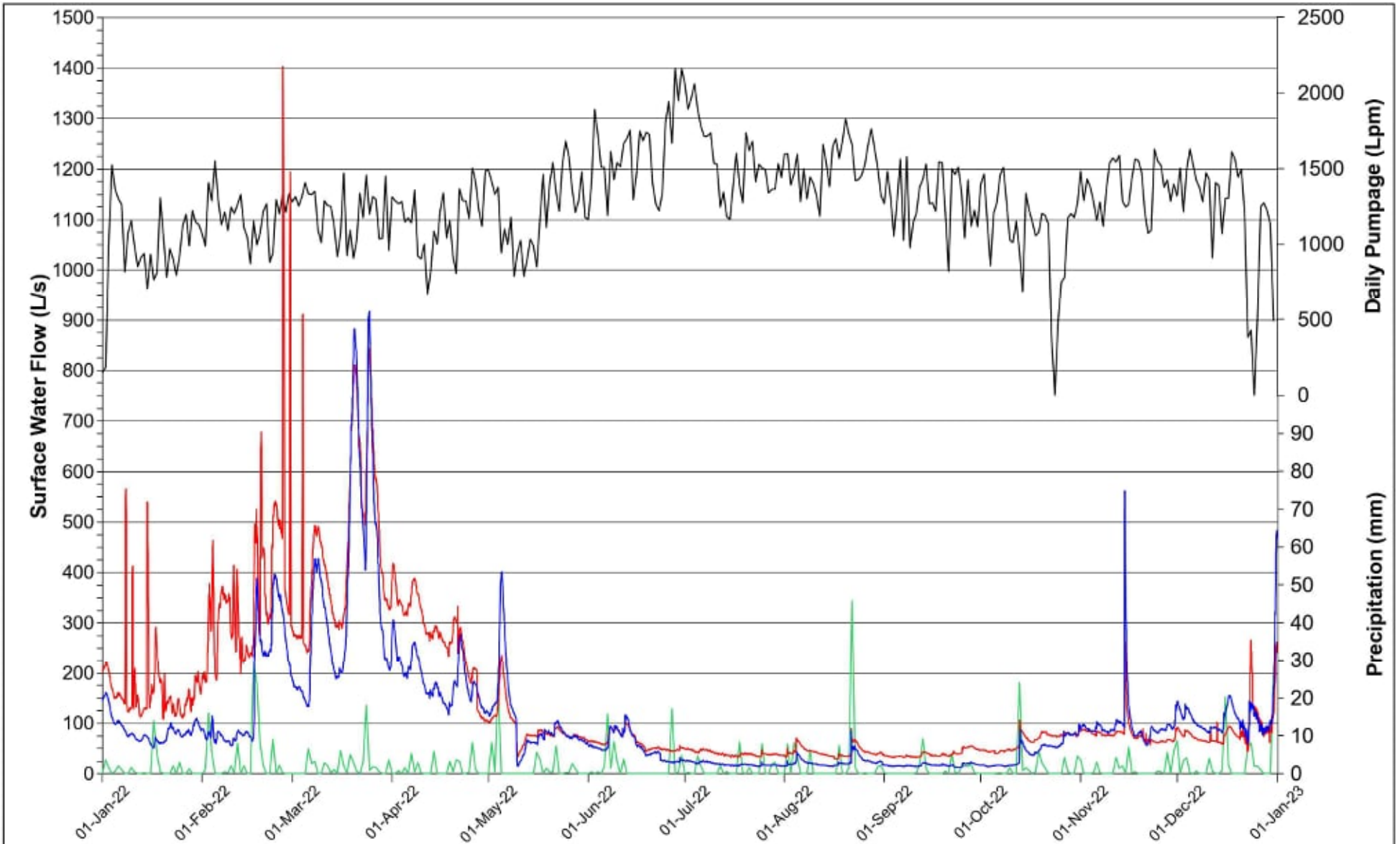




- Precipitation (mm)
- Daily Pumpage (Lpm)
- SW1
- SW2

	DATE	JANUARY 2023	PROJECT	<b>BLUE TRITON BRANDS</b> Town of Aberfoyle, Ontario	
	DESIGN	KS	TITLE	<b>SURFACE WATER FLOW VS. TIME</b> <b>2022 ANNUAL MONITORING REPORT</b>	
	REVIEW	GP	PROJECT NO.	20449101 (1100)	REV A
	APPROVED	GP			FIGURE F3a





- Precipitation (mm)
- Daily Pumpage (Lpm)
- SW1
- SW2



DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **SURFACE WATER FLOW VS. TIME (2022)**  
**2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)

REV A

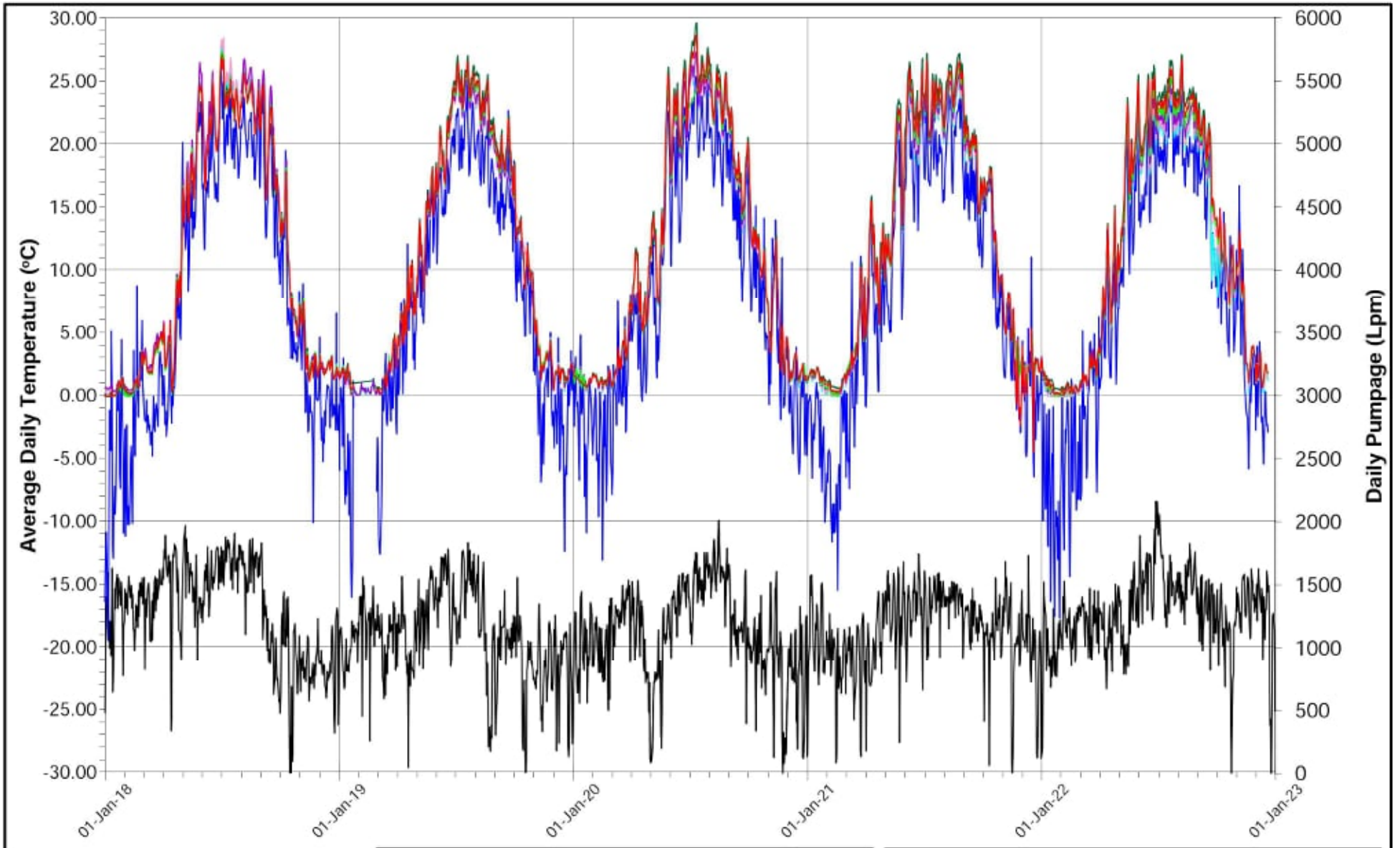
FIGURE F3b

**TABLE F1**  
**Surface Water Flow**  
**2022 Annual Report**

<b>DATE</b>	<b>SW-1 Flow (L/sec)</b>	<b>SW-2 Flow (L/sec)</b>
19-Jan-22	62.3	Frozen
22-Feb-22	285.3	295.0
22-Mar-22	604.5	648.5
21-Apr-22	213.2	223.5
18-May-22	110.6	99.8
23-Jun-22	40.4	45.8
20-Jul-22	25.6	21.3
16-Aug-22	20.5	19.5
22-Sep-22	31.1	30.1
19-Oct-22	41.3	38.5
22-Nov-22	46.6	45.0
20-Dec-22	64.1	62.1

**APPENDIX G**

# Stream Temperature Monitoring



- Daily Pumpage (Lpm)
- AT1-05 (Air)
- ST1-05
- ST2-05
- ST3-05
- ST4-05
- ST5-05
- ST6-08

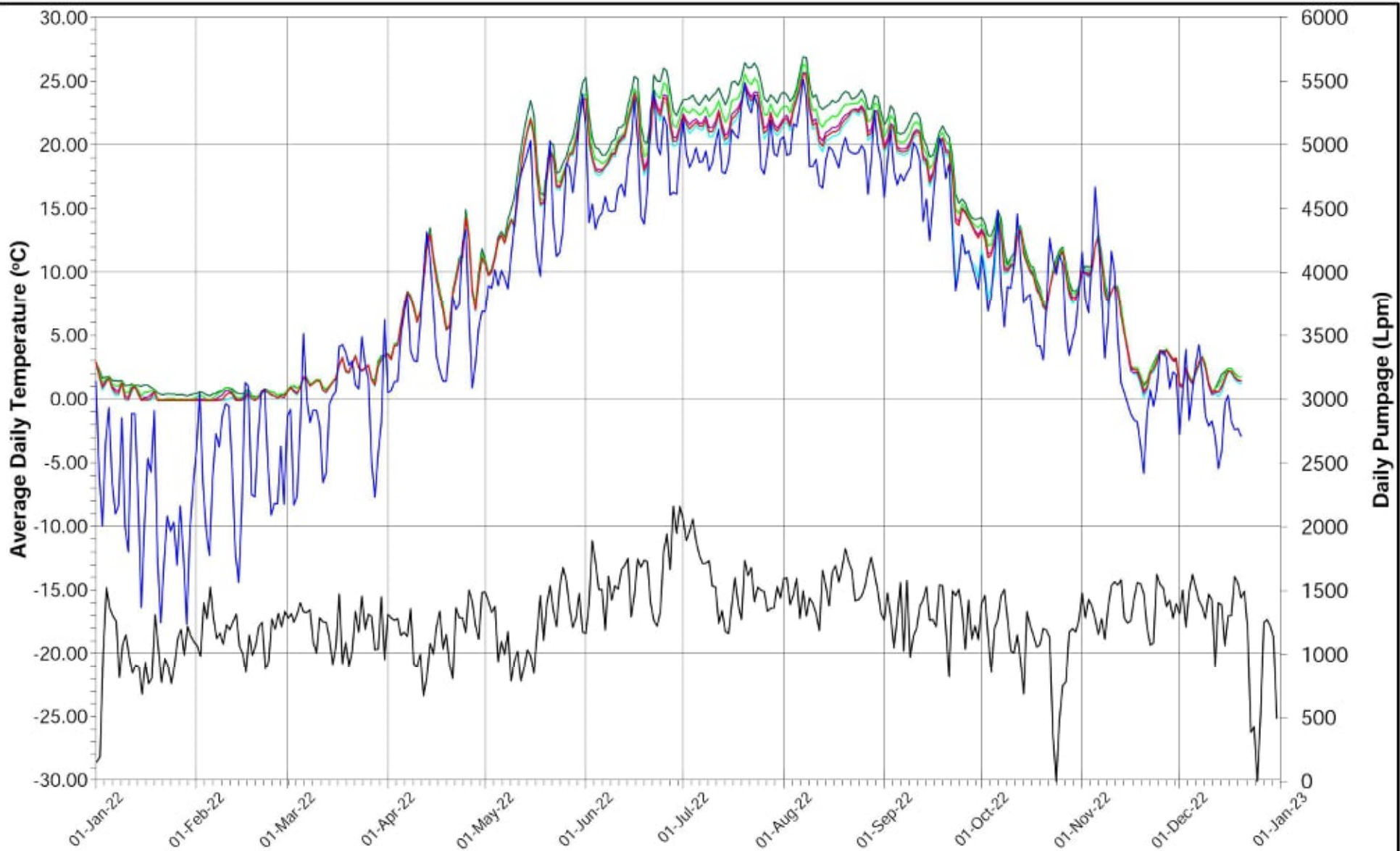


DATE JANUARY 2023  
 DESIGN KS  
 REVIEW GP  
 APPROVED GP

PROJECT **BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

TITLE **AVERAGE DAILY SURFACE WATER TEMPERATURE VS. TIME  
 2022 ANNUAL MONITORING REPORT**

PROJECT NO. 20449101 (1100)      REV A      FIGURE G1a



— Daily Pumpage (Lpm)	— ST3-05
— AT1-05 (Air)	— ST4-05
— ST1-05	— ST5-05
— ST2-05	— ST6-08

**PROJECT**  
**BLUE TRITON BRANDS**  
 Town of Aberfoyle, Ontario

**TITLE**  
**AVERAGE DAILY SURFACE WATER TEMPERATURE VS. TIME**  
**2022 ANNUAL MONITORING REPORT**



<b>DATE</b>	JANUARY 2023
<b>DESIGN</b>	KS
<b>REVIEW</b>	GP
<b>APPROVED</b>	GP

<b>PROJECT NO.</b>	20449101 (1100)	<b>REV</b>	A	<b>FIGURE</b>	G1b
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# Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2022

Prepared for Blue Triton Brands



Prepared by Cam Portt and Jim Reid

C. Portt and Associates

January 2023

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## Introduction

Condition 4.4 of the Permit to Take Water (PTTW Number 1763-8FXR29) issued to Nestlé Waters Canada (Nestlé), now Blue Triton Brands (Blue Triton), by the Ontario Ministry of Environment (MOE, now Ministry of Environment, Conservation and Parks) on April 29, 2011, required that Nestlé review the appropriateness of the methodology of their water temperature monitoring program in Aberfoyle Creek (the Nestlé program). C. Portt and Associates conducted that review for Nestlé and made a number of recommendations (Portt, 2011). The recommendations of the review were accepted by the MOE and were to be incorporated commencing in the 2012 field season (letter from Carl Slater, MOE, to Don DeMarco, Nestlé, October 26, 2011). One of those recommendations was that historical and future temperature data be analyzed using ThermoStat software, which has been developed to evaluate the thermal suitability of Ontario streams for thermal guilds for individual species of fishes in order to provide insight into the ecological implications of the current temperature regime. The monitoring is now required under Condition 4.4 of PTTW 3133-C5BUH9. Subsequently, the results of these analyses have been reported annually (Portt and Reid, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021). This report presents the results of the analyses of the 2022 data, together with the data from previous years.

## Methods

Water temperature is monitored at the sediment-water interface at six locations in Aberfoyle Creek (Figure 1) using Tidbit® V2 and MX2203 temperature loggers manufactured by Onset Computer Corporation. ([http://www.onsetcomp.com/products/data-loggers/utbi-001\\_or\\_mx2203](http://www.onsetcomp.com/products/data-loggers/utbi-001_or_mx2203)). The loggers have an accuracy of  $\pm 0.2^{\circ}\text{C}$  between  $0^{\circ}\text{C}$  and  $50^{\circ}\text{C}$  and drift is  $0.1^{\circ}\text{C}$  per year. Monitoring at Stations 1 – 5 began in 2005; monitoring at Station 6, which is the station furthest upstream, began in 2008. The data are logged at half-hour intervals.

The data were analyzed using ThermoStat Version 3.1 temperature analysis software (Jones and Schmidt, <http://people.trentu.ca/nicholasjones/thermostat.htm>). ThermoStat calculates the thermal suitability for individual fish species based on laboratory determined optimal and lethal temperatures, compiled by Hasnain et al. (2010), and the water temperature record.

Hasnain et al. (2010) provide the following definitions for the temperature criteria:

**Optimum growth temperature (OGT):** *The optimum growth temperature is that which supports the highest growth rate in an experiment where separate groups of fish are exposed to one of a set of constant temperatures under ad libitum feeding conditions. The range of these constant temperatures is chosen so that reduced growth is observed at both extremes (McCauley and Casselman 1980 cited in Wismer and Christie 1987, Jobling 1981).*

**Final temperature preferendum (FTP):** *Final temperature preferendum is that towards which fish gravitate when exposed to an 'infinite' temperature range (Giattina and Garton 1982 cited in Wismer and Christie 1987). Two methods are used to determine FTP: the gravitation method and the acclimation method (Jobling 1981). The gravitation method involves exposing fish to a temperature gradient until they*



gravitate towards a specific temperature. The acclimation method extends the gravitation method by carrying out repeated 'gravitation trials' with fish acclimated to progressively higher temperatures. The preferred temperature exhibited in each trial is then plotted against the acclimation temperature and the FTP is the temperature at which the best fit line for these data crosses the line of equality (Jobling 1981). An informal survey of a subset of the original sources indicated that most estimates were determined via the gravitation method. FTP estimates obtained using both methods were compiled in the database.

**Upper incipient lethal temperature (UILT):** The upper incipient lethal temperature is that at which 50% of the fish in an experimental trial survive for an extended period (Spotila et al. 1979, Jobling 1981, Wismer and Christie 1987). Testing for UILT involves placing groups of fish in separate baths, each held at a different constant temperature, using a sufficiently wide range of constant temperatures that rapid mortality is observed in some baths whereas slow incomplete mortality occurs in others (Spotila et al. 1979).

**Critical thermal maximum (CTMax):** The critical thermal maximum is an indicator of 'thermal resistance' and is defined as the temperature at which a fish loses its ability to maintain a 'normal' upright posture in the water (loss of equilibrium; Jobling 1981). It is determined by exposing fish in a tank to steadily increasing water temperatures (typically at a rate of 1 °C min<sup>-1</sup>) and noting the temperature at which the fish exhibit spasms and loss of equilibrium (Jobling 1981, Wismer and Christie 1987). Remaining at, or above, CTMax results in mortality (Jobling 1981, Wismer and Christie 1987).

Thermal indices that reflect suitability are calculated based on the temperature record for a location and the laboratory derived criteria (Table 1). The proportion of the June through August temperature measurements that are within  $\pm 2$  °C of the optimal or preferred temperature and the proportion of the June through August temperature measurements that equal or exceed the lethal threshold temperatures are expressed as a percentage of the total number of temperature measurements during this period. Because the temperature measurements occurred at fixed intervals, this percentage of measurements is equivalent to the percentage of the time from June 1st through August 31st that the temperature conditions are met.

**Table 1. Indices used to evaluate the thermal suitability for individual fish species.**

<b>Optimal Range Indices</b>	
%OGT	Percent of temperature measurements within $\pm 2$ °C of the optimal growth temperature. Higher values indicate better conditions, to a theoretical maximum of 100%.
%FTP	Percent of temperature measurements within $\pm 2$ °C of the final temperature preferendum. Higher values indicate better conditions, to a theoretical maximum of 100%.
<b>Lethal Threshold Indices</b>	
%>UILT	Percent of temperature measurements that equal or exceed the upper incipient lethal temperature. Lower values indicate better conditions. 0% is optimum.
%>CTmax	Percent of temperature measurements that equal or exceed the critical thermal maximum. Lower values indicate better conditions. 0% is optimum.

Not all the temperature criteria are available from the scientific literature (Hasnain et al, 2010) and, therefore, some of the thermal suitability indices cannot be calculated for some species. The temperature criteria that were available and used by ThermoStat for the fish species that were captured in Aberfoyle Creek during electrofishing conducted in 2008 are presented in (Table 2), together with the number of individuals of each species that was captured on each of the two sampling dates.

**Table 2. Number of individuals of each species that were captured by electrofishing Aberfoyle Creek on January 31 and September 24, 2008 and the temperature criteria that are available from the scientific literature, from Hasnain et al (2010), and are used by ThermoStat to calculate thermal indices.**

Common name	Scientific name	Number of individuals captured		Temperature criteria available from the scientific literature			
		01/31/2008	09/24/2008	OGT	FTP	UILT	CTmax
blacknose dace	<i>Rhinichthys atratulus</i>	25	29	na <sup>1</sup>	19.6	28.6	30.2
bluntnose minnow	<i>Pimephales notatus</i>	3	2	26.2	24.1	31.5	29.9
brook trout	<i>Salvelinus fontinalis</i>	1	0	14.2	14.8	24.9	29.3
brown trout	<i>Salmo trutta</i>	4	3	12.6	15.7	25.0	28.3
common shiner	<i>Luxilus cornutus</i>	96	36	22.0	21.9	30.4	31.2
common white sucker	<i>Catostomus commersonii</i>	49	76	25.5	23.4	27.8	31.6
creek chub	<i>Semotilus atromaculatus</i>	154	353	na	24.9	29.1	33.0
johnny darter	<i>Etheostoma nigrum</i>	59	52	na	na	na	na
largemouth bass	<i>Micropterus salmoides</i>	0	3	26.6	28.6	31.9	38.4
pumpkinseed	<i>Lepomis gibbosus</i>	2	10	25.0	27.7	31.7	37.6
rainbow darter	<i>Etheostoma caeruleum</i>	3	28	na	19.9	na	32.1
rock bass	<i>Ambloplites rupestris</i>	9	37	28.4	24.9	33.9	36.0

1. na indicates that the temperature metric was not available.

The water temperature data were analyzed for each year at each monitoring location, excluding cases for which a significant portion of the potential temperature measurements was missing for the June through August period. Temperature logging at Sites 1 through 5 began on July 1, 2005; consequently, 2006 is the first year for which thermal suitability indices were calculated. Temperature logging at Site 6 began on May 15, 2008, so there are no thermal suitability indices for that site prior to 2008. There are significant gaps in the summer temperature data for Site 4 in 2010, so the thermal suitability indices were not calculated. Approximately 3.5 days of data were missing for Sites 2 and 3, at the end of August in 2010, and 9.5 hours of data for June 1 were missing for Site 1 in 2010; it was assumed that these amounts of missing data would not materially alter the calculated thermal suitabilities. There are no gaps in the summer temperature data series after 2010.

The mean air temperature at the Guelph Turfgrass weather station, which is the closest Environment Canada weather station to the site, was calculated for the period June 1 through August 31 for the years 2007- 2009 and 2011-2021. The weather station began operating during the summer of 2006, and there are missing data during June of 2010, so the June – August mean could not be calculated for those years. The relationship between mean June – August air temperature and mean June – August water temperature was explored graphically and using regression analyses.

## Results

Graphs of the thermal suitability indices are presented in Figure 2 (%>UILT), Figure 3 (%>CTmax), Figure 4 (%FTP) and Figure 5 (%OTG). The indices values are presented in Appendix A. Summer water temperatures are highest at the most upstream location, which is closest to the Aberfoyle Mill pond, and decrease with distance downstream. This is reflected in the thermal indices, which improve from upstream to downstream for species that require cold temperatures and improve from downstream to upstream for species that require warm temperatures. Mean June – August air temperature was 19.02 °C in 2022, which is intermediate for the period 2007 – 2022 (Figure 6). This is reflected in the thermal suitability indices.

Lethal temperatures are arguably the most critical thermal factor in determining fish distributions. If lethality occurs, other factors such as growth are immaterial. It is clear from Figure 2 that brook trout and brown trout are the species whose upper incipient lethal temperature is equaled or exceeded most frequently from June 1st to August 31st; in the warmest years, at the warmest site (Site 6), the %>UILT exceeds 40% for those species. The upper incipient lethal temperature is also exceeded, but infrequently, for blacknose dace, common shiner, creek chub and white sucker. In 2022, the upper incipient lethal temperature for brook trout and brown trout was exceeded 26% and 24% of the time, respectively, at the farthest upstream station and 3% of the time for brook trout and for brown trout at the station farthest downstream. In 2022, the *CTMax* was exceeded only for brown trout and only at the most upstream stations (Figure 3).

The percentage of the time, from June 1st to August 31st, that water temperature is within 2°C of the final temperature preferendum (%FTP) is lowest for brown trout and brook trout, which have the lowest preferred temperatures, at all sites in all years (Figure 4; Table 2). The next lowest %FTP values, in most years, are for pumpkinseed and largemouth bass (Figure 4), which have the highest preferred temperatures (Table 2). In 2022, as in past years, the %FTP was highest for species with intermediate temperature requirements.

The percentage of the time, from June 1st to August 31st, that water temperature was within 2°C of the optimal temperature for growth (%OGT) is presented in Figure 5. The lowest %OGT values are for brown trout and brook trout, which have the lowest optimum temperature for growth among the species that occur in this portion of Aberfoyle Creek (Table 2). In 2022, %OGT was zero for brown trout at all sites and also zero for brook trout except at Sites 4 and 5, where it was 0.4 and 0.1, respectively. The next lowest value was for rock bass, which is the species with the highest optimum temperature for growth (Table 2). As in previous years, the highest mean %OGT in 2022 was for species with intermediate optimum temperatures for growth.

The mean June – August water temperature at each monitoring location is plotted versus mean June – August air temperature at the Guelph Turfgrass Institute in Figure 6. Mean June – August water temperature decreases in a downstream direction through the Blue Triton property (Figure 6). This is also evident in the plots of the temperature indices (Figures 2 – 5). For example, the percent of temperature measurements that exceed the ultimate upper incipient lethal temperature (%>UILT) for brook trout decreases with distance downstream (Figure 2).

As Figure 6 illustrates, the mean June – August water temperature is highly correlated with the mean June – August air temperature. The regressions shown are two-stage polynomials. At the three furthest upstream sites, mean June – August air temperature accounts for nearly 95% of the variation in mean June – August water temperature. The rate of increase in water temperature with air temperature tends to decrease in a downstream direction, as does the proportion of the variation accounted for (the  $r^2$ ). The relationship between mean air temperature and mean water temperature was consistent with previous years at the three upstream sites, but mean water temperature was less than predicted from the equations at the three downstream sites.

## Discussion

The 2022 fish suitability results were consistent with those of previous years. In the reach of Aberfoyle Creek that flows through the Blue Triton property, some species (i.e. largemouth bass, rock bass) are limited by low temperatures and the individuals that occur there probably originate from the mill pond that is just upstream. Brook trout and brown trout, conversely, are limited by high temperatures that exceed their upper incipient lethal temperature frequently during the summer (Figure 2) and often exceed their preferred temperature and their optimum temperature for growth (Figure 5), even in cool summers. The 2022 results continue to support the previously expressed opinion that water temperature is the principal factor limiting trout abundance in the Blue Triton reach of Aberfoyle Creek, which was based on an analysis by C. Portt using the thermal suitability model of Wehrly et al. (2007) and presented in the Response to Technical Stakeholders' Comments on the TW3-80 Permit Renewal Application (Distributed: March 4, 2011).

The data continue to demonstrate a strong correlation between mean June – August air temperature and mean water temperature in Aberfoyle Creek, however, at the three furthest downstream sites, 2022 mean summer water temperatures were lower than predicted based on the relationship with mean air temperature. The summer of 2022 was dry and average stream flow during the June-August period was the lowest during the period for which there are temperature data. The second largest negative deviation from the expected stream temperature was in 2007, which was also a low flow year. During the summer, the water flowing into the Aberfoyle Branch from the upstream mill pond is warm and cools as it flows downstream. It is plausible that the rate of cooling is higher when flow volumes are low; less water contains less thermal mass and the ratio of water volume to area for potential heat loss would be lower. To investigate this further, the residuals (observed minus expected) from the water temperature versus air temperature regression were plotted against mean summer stream flow (Figure 7). No relationship between mean daily flow and the residuals is evident. Therefore, if low flow is a factor, it is not the only factor involved. Regardless, it remains clear that any study that attempts to link changes in water temperature over time to causative factors must take year-to-year differences in air temperature into account.

## Conclusions

In 2022, mean summer (June – August) air temperature was intermediate among those observed during the period 2007 – 2022. The overall pattern of water temperature suitability for the fish species found in the Aberfoyle Branch of Mill Creek from Brock Road downstream through the Blue Triton property in 2022 are consistent with previous years. Water temperatures during the June 1 – August 31 period are usually too warm for coldwater species such as brook trout and brown trout and too cold for warmwater species such as largemouth bass. The water temperatures during this period are most favourable for species such as common shiner which have intermediate thermal requirements. During the summer, the water in the mill pond upstream from Brock Road becomes warm and, although the creek temperature decreases with distance downstream, it frequently exceeds the ultimate upper incipient lethal temperature for brook trout and brown trout at the furthest downstream temperature monitoring site.

The relationships between air temperature and water temperature were consistent with those observed in previous years at the three upstream sites but the 2022 stream temperatures were lower than predicted from the mean water temperature versus mean air temperature relationship at the three downstream sites. Stream flow in 2022 was the lowest during the period for which temperature data are available but the data do not demonstrate a relationship between flow and residuals of the water temperature versus air temperature relationship.

## References

- Hasnain S., Minns C. and B. Shuter. 2010. Key Ecological Temperature Metrics for Canadian Freshwater Fishes. Climate change research report: CCRR-17. Applied Research and Development Branch, Ontario Ministry of Natural Resources, Canada. 54 p.
- Jobling, M. 1981. Temperature tolerance and the final preferendum -- rapid methods for the assessment of optimum growth temperatures. *J. Fish Biol.* 19: 439-455.
- McCauley, R.W. and J.M. Casselman 1980. The final preferendum as an index of the temperature for optimum growth in fish. Pp 83-93 In United Nations Food and Agriculture Organization, European Inland Fisheries Advisory Commission, Symposium 80/E76, Rome, Italy.
- Post, J.R., and Evans, D.O. 1989. Size-dependent overwinter mortality in young-of-the-year yellow perch (*Perca flavescens*): laboratory, in situ enclosure, and field experiments. *Can. J. Fish. Aquat. Sci.* 46: 1958–1968.
- Portt, C. 2011. Review of the Aberfoyle Creek Water Temperature Monitoring Program. Report prepared for Nestle Waters Canada by C. Portt and Associates. 15p.
- Portt, C. and J. Reid. 2013. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes. Report prepared for Nestle Waters Canada by C. Portt and Associates. 25p.
- Portt, C. and J. Reid. 2014. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2013. Report prepared for Nestle Waters Canada by C. Portt and Associates. 22p.

- Portt, C. and J. Reid. 2015. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2014. Report prepared for Nestle Waters Canada by C. Portt and Associates. 22p.
- Portt, C. and J. Reid. 2016. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2015. Report prepared for Nestle Waters Canada by C. Portt and Associates. 21p.
- Portt, C. and J. Reid. 2017. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2016. Report prepared for Nestle Waters Canada by C. Portt and Associates. 21p.
- Portt, C. and J. Reid. 2018. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2017. Report prepared for Nestle Waters Canada by C. Portt and Associates. 22p.
- Portt, C. and J. Reid. 2019. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2018. Report prepared for Nestle Waters Canada by C. Portt and Associates. 25p.
- Portt, C. and J. Reid. 2020. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2019. Report prepared for Nestle Waters Canada by C. Portt and Associates. 25p.
- Portt, C. and J. Reid. 2021. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2020. Report prepared for Nestle Waters Canada by C. Portt and Associates. 25p.
- Portt, C. and J. Reid. 2022. Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2021. Report prepared for Nestle Waters Canada by C. Portt and Associates. 25p.
- Spotila, J.R., K.N. Terpin, R.R. Koons and R.L. Bonati. 1979. Temperature requirements of fishes from eastern Lake Erie and the upper Niagara River: A review of the literature. *Env. Biol. Fish.* 4: 281-307.
- Wehrly, K.E., L. Wang, and M. Mitro. 2007. Field-based estimates of thermal tolerance limits for trout: incorporating exposure time and temperature fluctuation. *Transactions of the American Fisheries Society.* 136: 365-374.
- Wismer, D.A. and A.E. Christie. 1987. Temperature relationships of Great Lakes fishes: A data compilation. Great Lakes Fishery Commission, Ann Arbor, MI. Spec. Publ. 87-3. 196 p.



Figure 1. Temperature logging locations used in the Blue Triton monitoring program in Aberfoyle Creek.

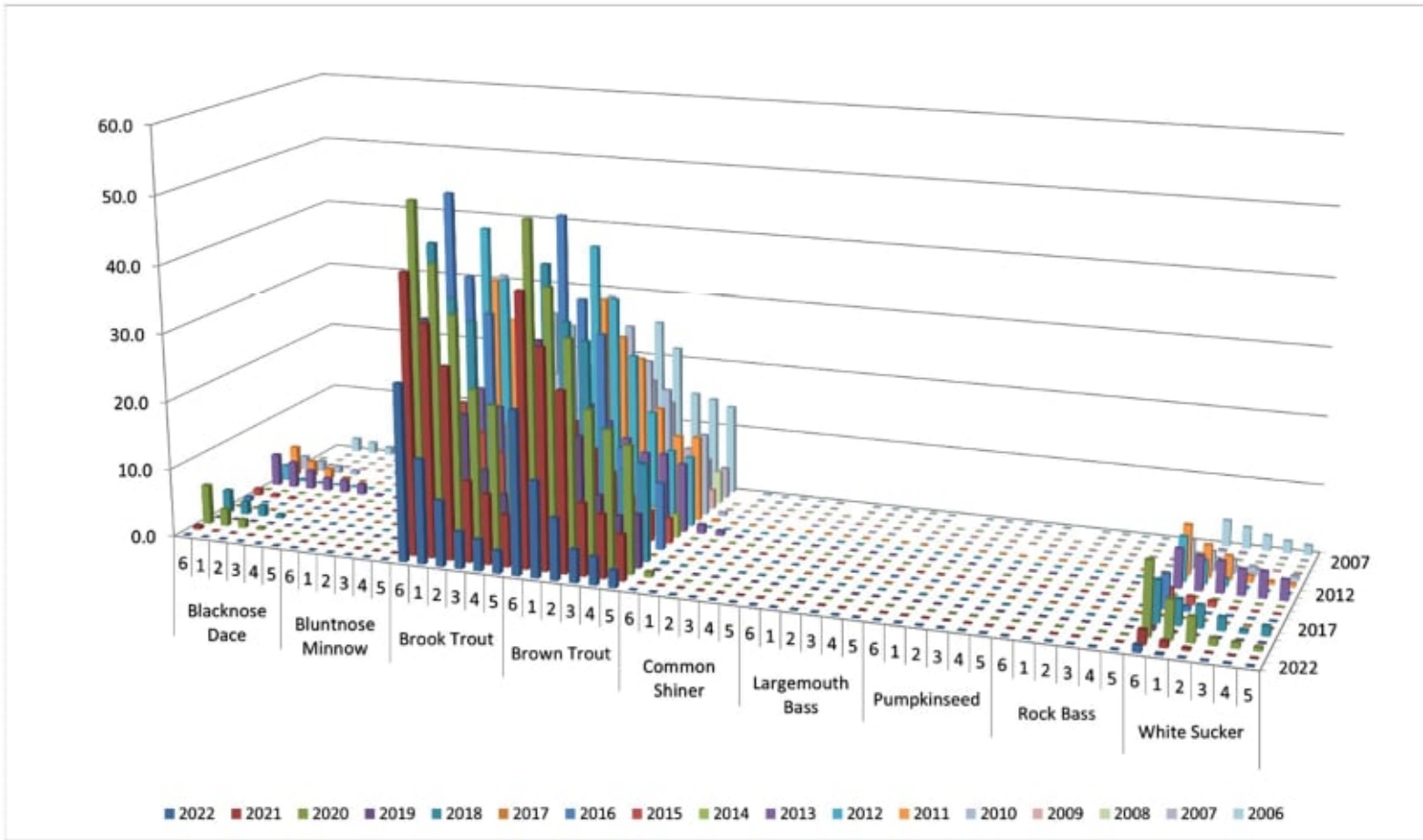


Figure 2. Percent of temperature measurements that exceed the ultimate upper incipient lethal temperature (>UILT) during the period June 1 to August 31, by species, station, and year.



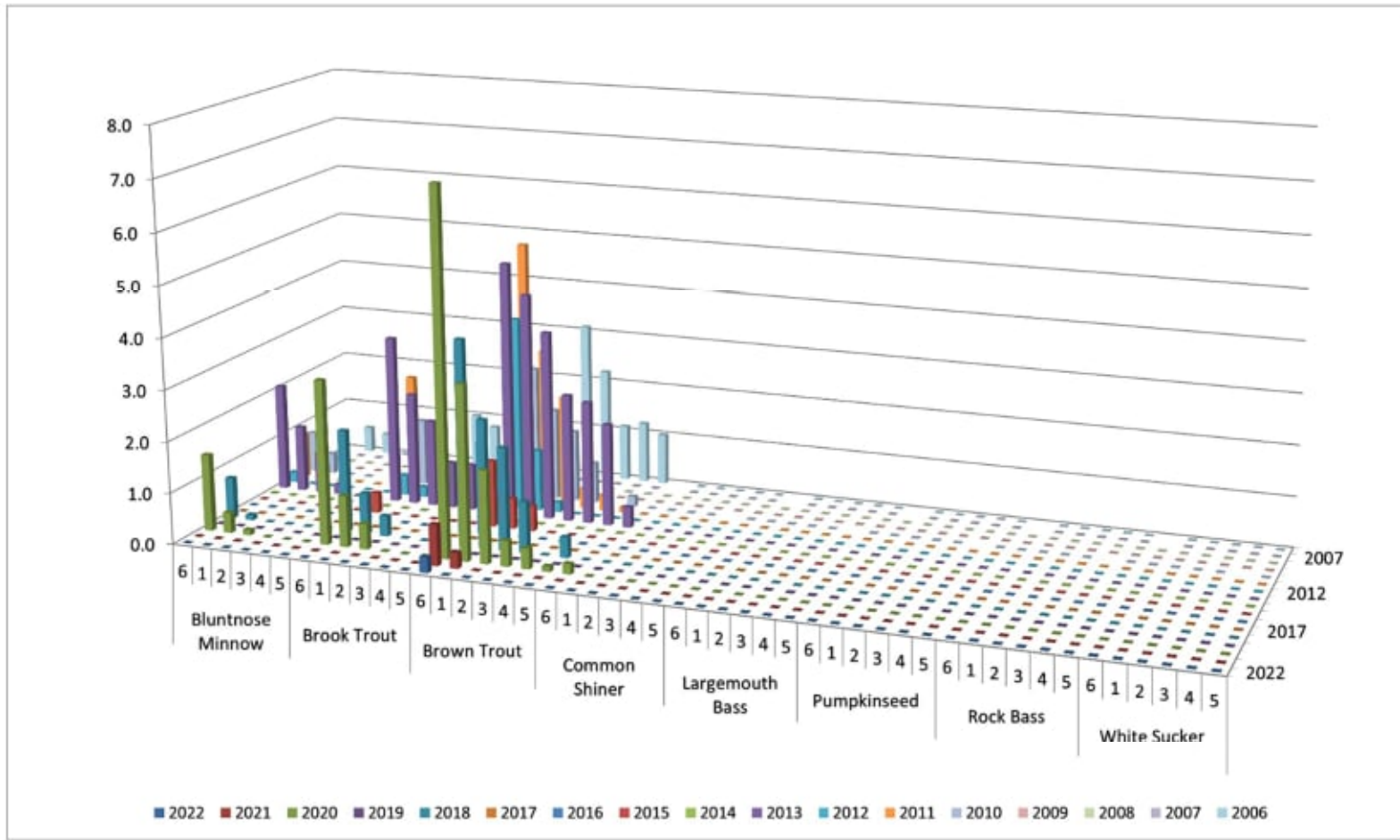


Figure 3. Percent of temperature measurements that exceed the critical thermal maximum temperature (>CTmax) during the period June 1 to August 31, by species, station, and year.

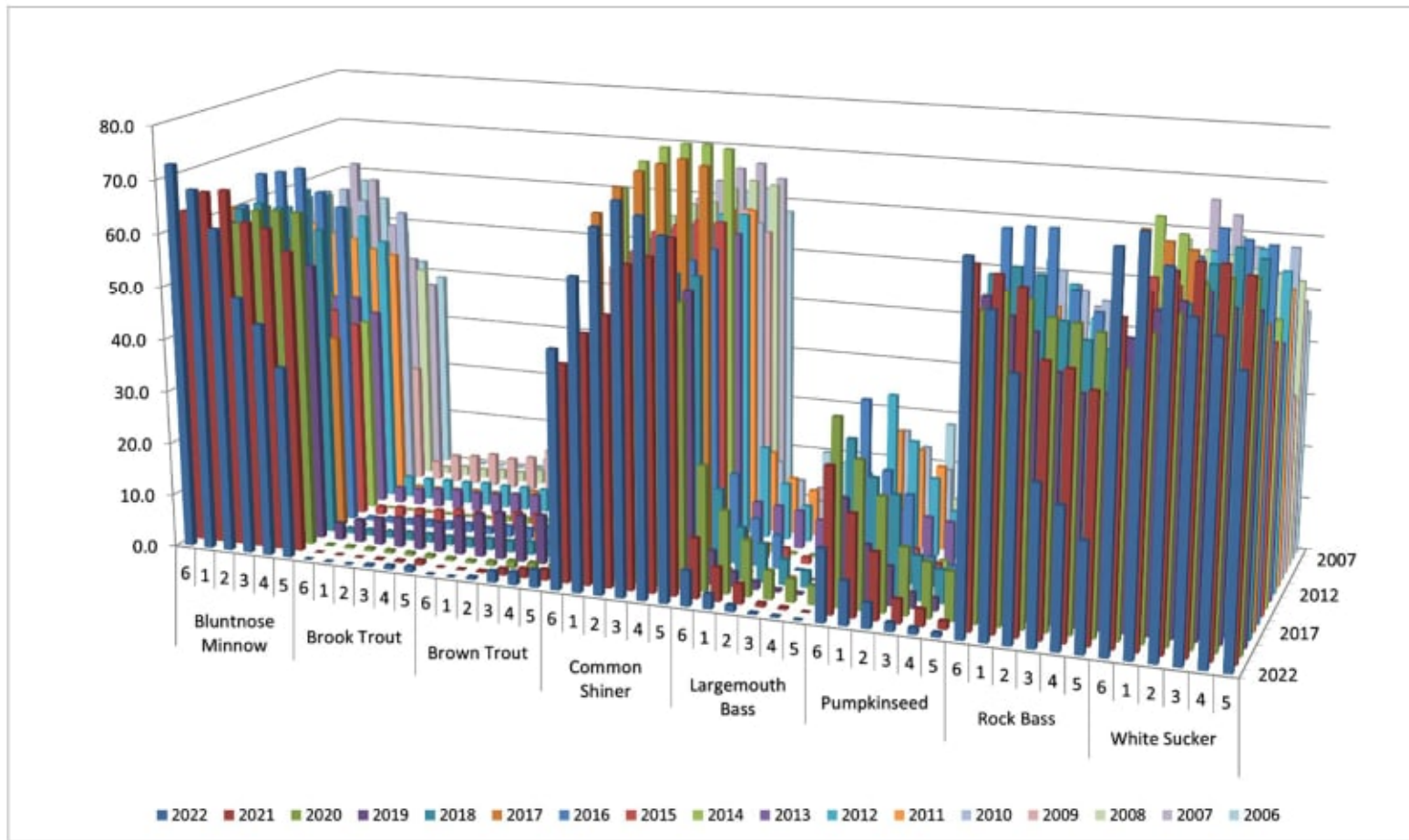


Figure 4. Percent of temperature measurements within  $\pm 2^{\circ}\text{C}$  of the final temperature preferendum (%FTP) during the period June 1 to August 31, by species, station, and year.

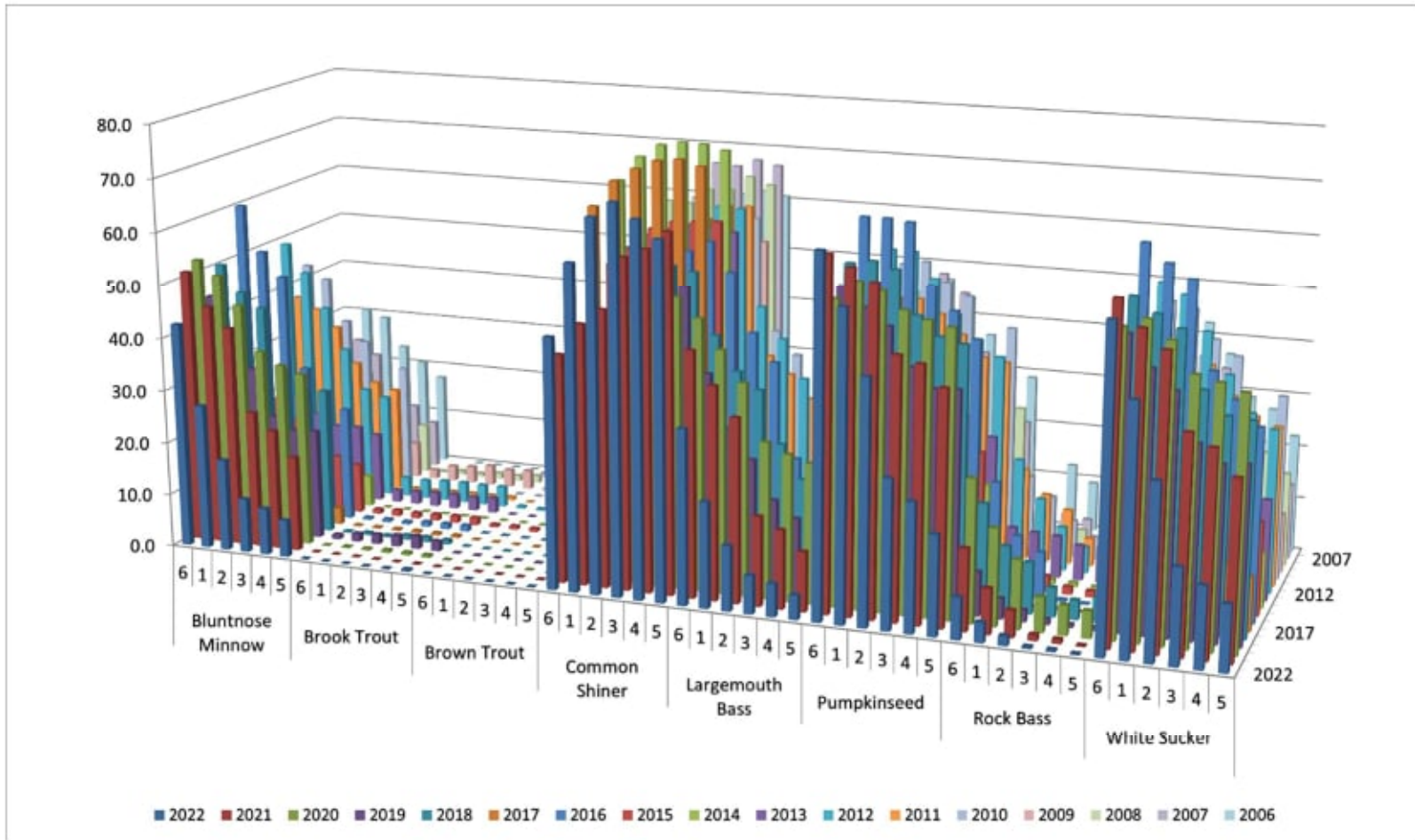


Figure 5. Percent of temperature measurements within  $\pm 2^\circ\text{C}$  of the optimal temperature for growth (%OTG) during the period June 1 to August 31, by species, station, and year.

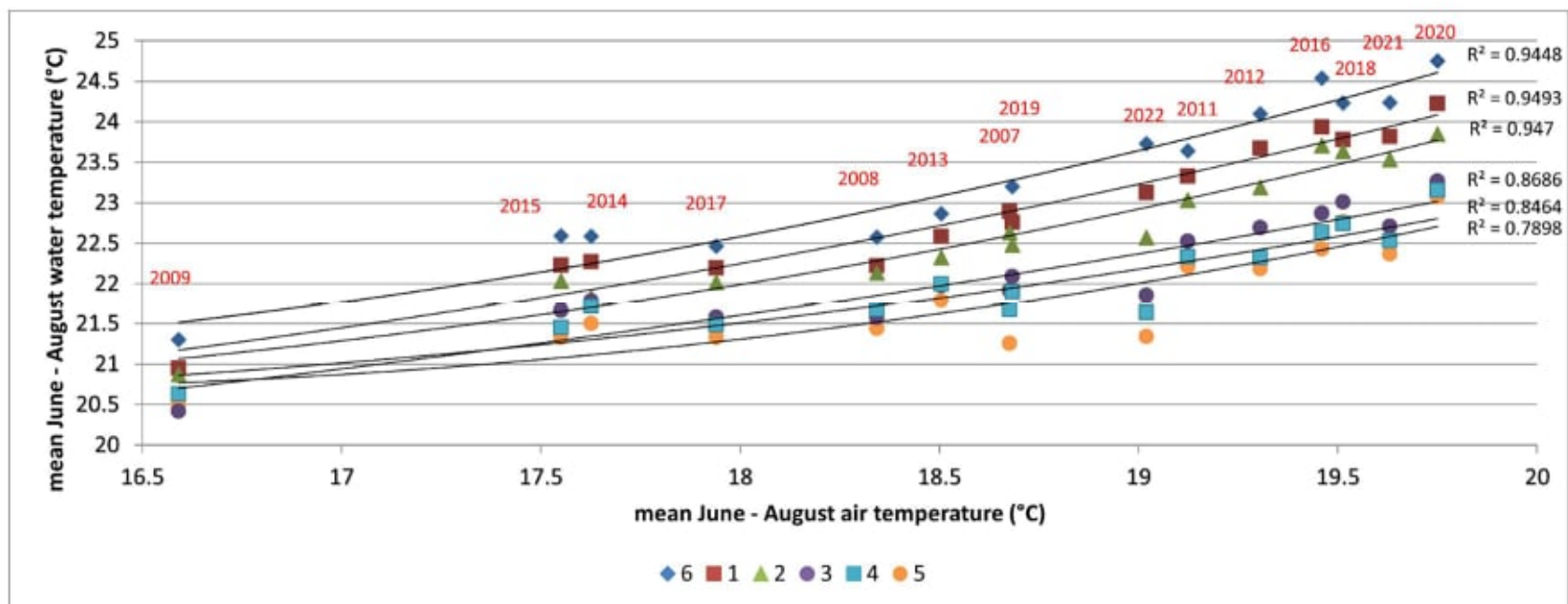


Figure 6. Plot of the mean June 1 - August 31 water temperature at each site versus mean June 1 - August 31 air temperature at the Guelph Turfgrass Institute weather station, by year. The lines and R<sup>2</sup> values are for second order polynomial regressions.

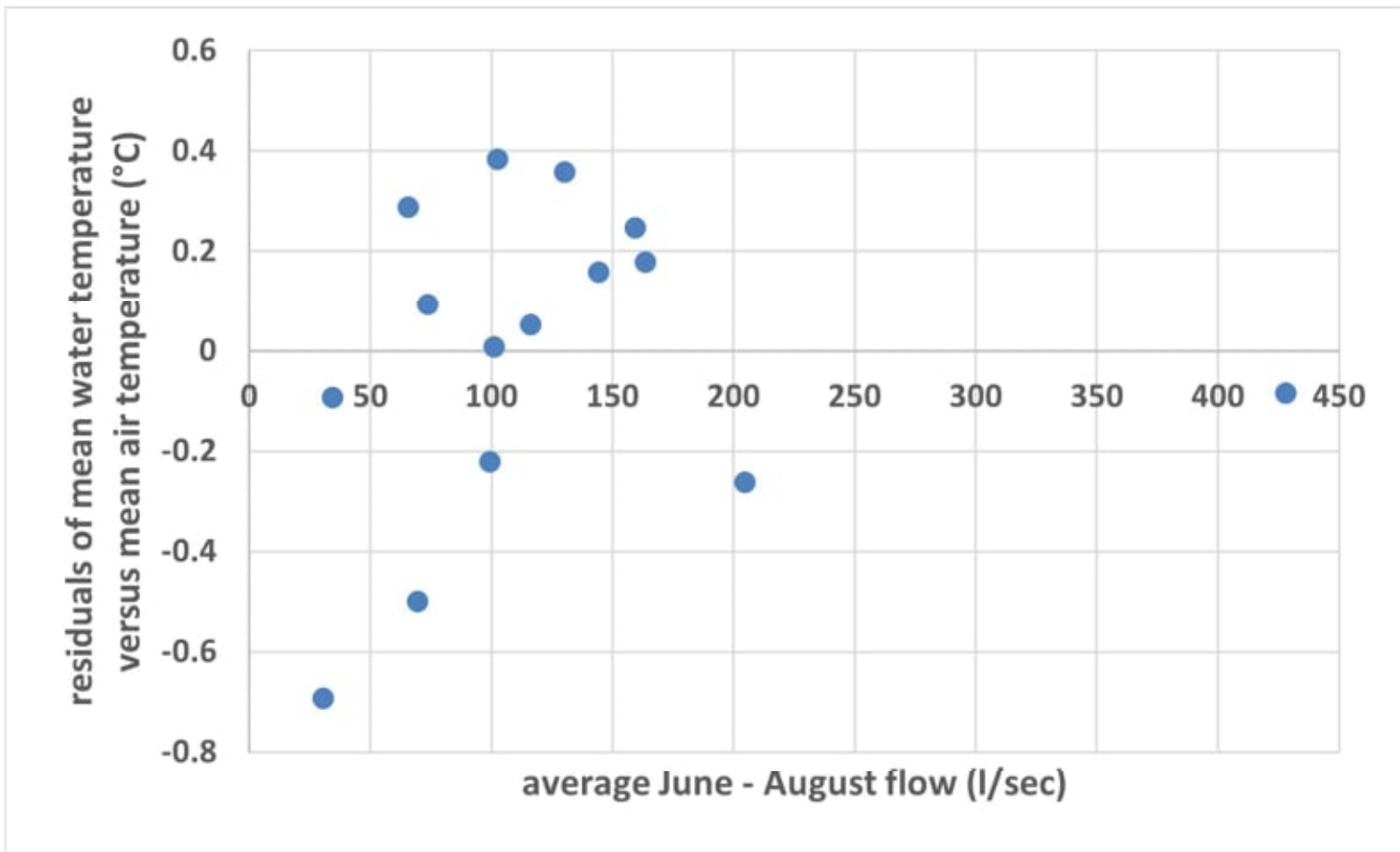


Figure 7. Residuals (observed minus expected) for regression of mean June-August water temperature at the furthest downstream monitoring site versus mean stream flow for the same period.

## **APPENDIX A**

### Thermal suitability indices

		Percent of temperature measurements within $\pm 2^{\circ}\text{C}$ of the optimum growth temperature (%OGT)																	
Species	Station	Year																	
		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Mean
Blunt-nose Minnow	6	42.5	51.6	53.0	45.0	50.3	20.9	60.1	27.0	18.2	23.2	49.2	37.4	43.1	12.3	26.2			37.0
	1	27.3	45.2	50.3	36.5	45.2	14.0	51.4	21.3	13.0	19.3	43.7	35.3	40.6	8.5	19.3	25.0	30.5	31.2
	2	17.3	41.5	44.9	31.7	42.5	10.6	46.8	17.3	8.5	16.2	36.8	31.9	32.2	7.2	19.3	22.2	29.1	27.4
	3	10.2	25.7	36.4	22.8	30.9	5.5	29.0	13.2	7.9	14.2	28.7	24.9	28.3	5.9	11.7	15.1	23.3	20.2
	4	8.8	22.6	34.1	20.5	27.4	4.5	24.9	10.7	7.0	14.3	20.9	21.3		7.0	11.9	12.1	20.3	17.3
	5	7.0	17.9	32.8	20.7	27.4	3.1	21.6	9.4	5.9	13.2	19.7	20.1	23.5	6.9	9.5	9.0	17.5	16.1
	Mean	18.9	34.1	41.9	29.5	37.3	9.8	39.0	16.5	10.1	16.7	33.2	28.5	33.5	8.0	16.3	16.7	24.1	24.7
Brook Trout	6	0.0	0.0	0.0	0.8	0.2	0.1	0.4	0.8	0.0	2.3	3.6	0.2	0.0	1.7	0.2			0.7
	1	0.0	0.0	0.2	1.5	0.4	0.2	0.5	1.1	0.0	2.4	3.5	0.2	0.0	2.9	0.7	0.0	0.0	0.9
	2	0.0	0.0	0.3	1.8	0.3	0.3	0.5	1.0	0.0	2.6	3.8	0.4	0.0	3.2	0.6	0.0	0.0	0.9
	3	0.0	0.0	0.5	2.1	0.8	0.4	0.9	1.2	0.0	2.7	3.9	0.5	0.0	3.8	1.1	0.1	0.0	1.1
	4	0.1	0.0	0.5	2.4	0.9	0.4	1.0	1.3	0.0	2.6	3.8	0.5		3.4	1.0	0.2	0.0	1.2
	5	0.4	0.1	0.5	1.9	0.8	0.4	1.1	1.4	0.0	2.8	3.9	0.6	0.0	3.6	1.4	0.7	0.1	1.2
	Mean	0.1	0.0	0.3	1.8	0.6	0.3	0.7	1.1	0.0	2.6	3.8	0.4	0.0	3.1	0.8	0.2	0.0	1.0
Brown Trout	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.3	0.0			0.1
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.1
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.1
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6	0.0	0.0	0.6	0.0	0.0	0.0	0.1
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0		0.6	0.0	0.0	0.0	0.1
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.5	0.0	0.0	0.6	0.1	0.0	0.0	0.1
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0	0.0	0.1
Common Shiner	6	46.6	42.4	33.7	37.6	35.4	66.0	29.5	53.7	68.5	55.0	36.4	47.3	44.8	63.9	60.0			48.2
	1	60.3	48.3	38.3	43.0	41.6	70.9	38.8	56.7	73.1	57.7	43.1	51.0	47.0	60.8	59.8	60.1	56.3	52.9
	2	68.7	51.3	43.7	46.5	43.3	73.4	42.4	60.9	75.6	59.1	51.8	53.4	54.8	62.8	62.7	67.1	61.5	56.9
	3	71.6	61.1	51.6	53.4	52.9	75.1	55.8	62.4	76.3	60.1	56.8	59.7	56.7	51.4	62.9	66.8	60.5	60.2
	4	68.9	62.8	52.9	54.6	57.2	75.6	58.1	62.7	76.2	60.1	63.1	62.5		57.9	65.7	68.2	61.4	62.6
	5	65.7	66.2	53.6	54.5	56.4	74.6	60.2	63.0	75.3	59.4	63.0	62.6	59.6	54.2	64.4	67.4	60.7	62.2

	Mean	63.6	55.4	45.6	48.3	47.8	72.6	47.5	59.9	74.2	58.6	52.4	56.1	52.6	58.5	62.6	65.9	60.1	57.3
Large-mouth Bass	6	32.4	45.4	50.1	39.1	45.1	14.8	54.8	20.6	13.4	17.5	44.6	34.2	38.0	9.0	19.6			31.9
	1	19.6	39.4	44.8	29.4	38.8	8.6	43.9	16.5	9.1	15.1	38.8	31.0	33.7	6.8	15.1	19.9	26.6	26.1
	2	12.1	34.1	39.2	24.1	35.8	6.1	38.8	13.6	6.2	13.4	31.5	26.6	26.5	4.4	14.8	18.7	25.5	22.5
	3	7.1	16.6	28.9	17.1	26.2	2.7	21.2	9.5	5.6	11.3	22.3	20.4	22.7	4.3	8.9	12.1	20.2	15.6
	4	6.1	14.6	27.1	14.1	20.1	1.9	18.1	7.7	5.3	11.3	15.8	16.9		5.2	8.9	9.3	17.6	12.9
	5	4.5	11.1	25.9	14.3	21.2	1.1	15.7	6.4	4.7	10.2	15.0	16.3	18.0	4.6	7.0	6.4	15.3	12.1
	Mean	13.6	26.9	36.0	23.0	31.2	5.9	32.1	12.4	7.4	13.1	28.0	24.2	27.8	5.7	12.4	13.3	21.0	20.0
Pumpkinseed	6	66.0	64.5	55.7	57.0	60.2	42.9	66.8	42.5	39.8	39.5	57.5	47.5	53.0	23.4	45.8			49.7
	1	56.5	62.4	59.1	53.5	60.9	36.0	66.8	38.3	33.2	36.5	57.4	47.6	53.8	18.3	38.3	48.8	46.8	47.4
	2	44.8	60.1	57.8	50.6	59.7	32.6	66.4	35.8	23.5	33.0	52.6	45.1	50.1	15.4	38.2	45.3	43.6	44.4
	3	27.4	47.9	54.7	43.7	51.8	23.5	55.3	29.3	23.3	28.2	46.3	41.5	47.8	13.7	29.0	34.1	36.5	37.9
	4	23.7	46.7	53.3	40.2	48.4	21.5	51.1	26.6	21.4	28.6	41.8	37.6		14.4	29.5	27.2	32.6	34.7
	5	18.4	42.9	52.4	40.5	47.4	18.7	46.3	24.6	17.4	25.1	39.0	37.0	42.4	14.2	25.0	21.2	28.9	32.7
	Mean	39.5	54.1	55.5	47.6	54.7	29.2	58.8	32.9	26.4	31.8	49.1	42.7	49.4	16.6	34.3	35.3	37.7	41.0
Rock Bass	6	7.7	15.1	26.3	8.2	19.3	0.2	20.7	5.5	3.1	8.5	20.1	17.1	14.6	1.6	5.4			11.8
	1	3.7	8.4	17.9	3.8	12.0	0.0	11.3	3.3	1.9	8.0	13.1	12.7	11.1	1.0	2.5	3.8	12.4	7.7
	2	1.8	5.0	12.7	2.2	9.5	0.0	8.7	3.0	1.0	7.8	8.2	10.2	6.9	0.8	2.5	3.3	9.3	5.7
	3	0.4	1.1	6.5	1.0	5.4	0.0	0.4	1.4	0.8	6.5	4.9	5.2	4.2	0.2	0.5	1.4	6.5	2.9
	4	0.4	0.8	5.5	0.6	3.6	0.0	0.1	1.1	0.5	6.5	1.7	4.2		0.3	0.5	0.6	6.0	2.1
	5	0.2	0.2	5.0	0.6	4.6	0.0	0.1	0.8	0.2	5.7	2.3	3.3	2.5	0.3	0.2	0.1	4.7	1.9
	Mean	2.4	5.1	12.3	2.7	9.1	0.0	6.9	2.5	1.3	7.2	8.4	8.8	7.9	0.7	1.9	1.8	7.8	5.3
White Sucker	6	58.2	60.8	55.0	52.9	58.3	34.0	65.9	36.6	30.4	33.6	55.3	44.6	50.0	18.0	37.3			45.2
	1	45.1	56.1	56.7	47.3	55.6	26.9	62.6	32.0	23.7	30.0	53.3	43.0	48.9	15.0	27.5	37.0	42.4	41.1
	2	31.8	52.8	53.4	43.8	53.4	22.4	60.1	28.0	15.7	25.8	47.0	39.9	43.6	12.8	28.5	35.1	36.8	37.4
	3	17.5	39.3	48.0	35.1	43.2	14.1	44.4	22.4	14.9	20.8	39.5	34.6	40.8	9.5	19.4	21.9	29.0	29.8
	4	14.8	37.1	47.0	31.9	39.1	11.7	39.7	18.9	12.8	21.1	32.9	31.2		10.8	21.1	18.9	27.0	26.7
	5	12.1	32.4	45.7	32.3	38.7	10.0	35.3	17.2	10.3	18.7	30.3	29.7	34.2	11.1	17.5	14.2	22.3	25.0
	Mean	29.9	46.4	51.0	40.6	48.1	19.9	51.3	27.6	18.0	25.0	43.1	37.2	43.5	12.9	25.2	25.4	31.5	34.1



Percent of temperature measurements within $\pm 2^{\circ}\text{C}$ of the final temperature preferendum (%FTP)																			
Species	Station	Year																	
		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Mean
Black-nose Dace	6	13.8	11.5	10.9	17.8	13.7	27.4	9.2	28.0	26.7	26.9	10.2	21.6	21.1	51.1	30.5			21.9
	1	19.3	15.1	14.1	20.4	16.1	33.2	12.0	33.3	31.4	30.7	12.9	24.7	22.5	57.2	35.1	24.9	24.8	25.5
	2	28.3	17.9	16.3	23.5	17.0	35.5	13.6	36.1	42.3	34.0	17.1	28.4	24.8	53.2	34.1	26.7	26.5	27.9
	3	39.1	27.4	20.8	28.1	22.0	42.2	20.6	41.7	42.0	38.9	22.9	34.1	29.2	59.9	40.2	37.8	37.7	34.1
	4	43.4	28.4	21.5	31.0	23.9	43.9	24.1	45.0	43.9	38.6	27.4	36.4		58.4	39.6	41.2	42.2	36.4
	5	48.7	31.0	22.1	31.4	24.7	46.6	26.9	46.9	48.7	42.1	30.9	38.9	34.1	59.7	43.3	49.8	48.4	39.1
	Mean	32.1	21.9	17.6	25.4	19.6	38.1	17.7	38.5	39.2	35.2	20.2	30.7	26.3	56.6	37.1	36.1	35.9	31.0
Blunt-nose Minnow	6	72.8	63.4	53.7	57.8	57.3	60.8	60.5	54.3	58.7	51.1	57.0	52.0	57.4	33.9	56.3			55.3
	1	68.4	67.2	58.9	59.9	61.6	55.3	66.8	50.5	52.9	48.1	60.7	53.2	58.8	28.9	53.8	62.2	58.0	56.1
	2	61.4	67.8	60.8	58.7	63.0	51.8	67.5	48.0	43.0	44.9	59.9	51.5	59.5	26.6	52.5	59.1	54.6	54.3
	3	48.7	62.1	63.5	55.2	62.4	41.9	68.4	43.3	42.3	40.5	57.6	50.7	57.5	23.6	47.4	50.0	47.6	50.9
	4	44.1	61.2	63.7	52.5	60.7	40.5	64.1	40.1	40.9	40.7	56.2	48.9		23.4	46.1	43.4	42.0	48.3
	5	36.3	57.2	63.7	52.8	58.8	36.9	61.5	37.6	37.1	38.0	51.5	48.0	55.6	22.6	42.3	38.3	39.0	46.3
	Mean	55.3	63.2	60.7	56.2	60.6	47.9	64.8	45.6	45.8	43.9	57.2	50.7	57.8	26.5	49.7	50.6	48.2	51.8
Brook Trout	6	0.0	0.0	0.2	3.2	0.9	0.3	0.6	1.5	0.0	2.9	3.9	0.8	0.0	3.5	1.2			1.4
	1	0.0	0.0	0.4	4.3	1.1	0.4	0.9	1.8	0.0	3.0	3.9	0.8	0.0	5.2	1.7	0.2	0.0	1.5
	2	0.0	0.0	0.5	5.1	1.2	0.5	1.0	1.8	0.0	3.4	4.0	1.0	0.0	5.5	1.6	0.3	0.0	1.6
	3	0.4	0.2	0.6	5.6	1.5	0.8	1.3	2.1	0.1	3.7	4.1	1.2	0.0	6.3	1.9	0.5	0.1	1.9
	4	0.7	0.4	0.6	6.3	1.6	0.8	1.4	2.6	0.1	3.6	4.3	1.2		5.8	1.8	1.7	0.2	2.2
	5	1.0	0.9	0.6	5.7	1.6	1.4	1.6	2.5	0.3	3.8	4.2	1.2	0.0	6.5	2.6	3.8	0.4	2.3
	Mean	0.4	0.3	0.5	5.0	1.3	0.7	1.1	2.1	0.1	3.4	4.1	1.0	0.0	5.5	1.8	1.3	0.1	1.8
Brown Trout	6	0.0	0.0	0.5	7.2	1.6	0.8	1.2	2.9	0.8	4.2	4.3	2.3	0.7	8.3	3.8			2.8
	1	0.0	0.1	0.5	8.1	2.1	1.1	2.0	3.4	0.9	4.4	4.3	2.3	0.6	9.7	4.5	2.6	0.2	2.9
	2	0.5	0.3	0.8	8.8	2.1	1.4	2.0	3.5	1.2	4.8	4.8	2.6	1.1	10.1	4.7	2.8	0.4	3.2
	3	2.1	1.2	1.4	8.8	2.4	3.2	2.7	3.9	1.4	5.4	5.0	3.1	1.4	11.6	5.6	4.0	1.0	3.9
	4	2.4	1.7	1.5	9.3	2.6	3.4	2.9	4.1	1.4	5.4	5.4	3.1		10.5	5.1	5.0	1.6	4.2
	5	3.3	2.0	1.6	8.9	2.6	4.1	3.4	4.4	1.8	5.9	5.3	3.3	2.1	11.8	5.9	6.6	2.8	4.5

	Mean	1.4	0.9	1.1	8.5	2.2	2.3	2.4	3.7	1.3	5.0	4.9	2.8	1.2	10.3	4.9	4.2	1.2	3.6
Com-mon Shiner	6	44.6	40.9	32.7	36.8	34.3	65.0	28.1	53.2	67.2	54.2	34.8	46.0	43.9	62.5	57.2			3.6
	1	58.1	46.8	37.3	42.0	40.0	70.0	37.1	56.6	72.5	56.9	41.5	50.3	46.2	60.8	59.8	60.1	56.3	46.9
	2	67.2	50.5	42.2	45.3	42.1	73.2	40.7	60.5	75.4	59.1	50.7	52.6	53.0	62.8	60.5	63.9	58.9	52.1
	3	72.1	60.0	50.0	52.3	52.1	74.8	54.0	62.0	76.3	60.4	55.9	59.1	55.7	56.5	63.4	66.6	61.4	55.7
	4	69.7	61.7	51.7	53.9	56.0	75.9	56.6	63.1	76.4	60.3	61.9	62.0		60.5	65.2	67.8	62.2	60.0
	5	66.5	65.3	52.8	54.1	55.8	74.9	59.0	63.1	75.8	59.3	62.1	62.1	58.9	56.3	64.6	65.1	57.9	62.3
	Mean	63.0	54.2	44.5	47.4	46.7	72.3	45.9	59.8	73.9	58.4	51.2	55.4	51.5	59.9	61.8	64.7	59.3	61.7
Creek Chub	6	67.1	64.9	55.9	57.4	60.4	44.9	66.8	43.9	42.1	40.5	57.4	47.9	53.6	23.3	45.2			56.6
	1	58.2	63.4	59.6	54.3	62.0	38.1	67.3	39.4	34.8	37.7	58.0	48.4	54.3	18.1	38.3	48.8	45.0	50.3
	2	47.7	61.5	58.5	51.9	60.8	34.3	67.4	37.1	25.3	33.9	53.8	45.8	50.8	19.2	38.0	44.9	43.0	48.0
	3	29.4	49.3	55.6	45.2	53.1	25.7	56.8	30.9	24.9	29.4	47.8	42.9	49.1	13.7	29.0	34.1	36.5	45.4
	4	25.9	48.3	55.0	41.9	50.1	23.1	53.1	27.8	23.3	30.0	43.5	38.6		16.2	32.1	30.1	34.1	39.0
	5	20.2	44.9	53.8	42.2	48.8	20.5	48.4	25.9	18.9	26.9	40.4	38.4	43.9	14.9	26.7	21.2	28.9	36.5
	Mean	41.4	55.4	56.4	48.8	55.9	31.1	60.0	34.2	28.2	33.1	50.2	43.7	50.3	17.6	34.9	35.8	37.5	34.0
Large- mouth Bass	6	6.6	11.3	23.5	6.3	16.7	0.1	17.1	4.8	2.4	8.0	17.5	15.4	12.4	1.1	4.4			42.1
	1	2.8	6.4	15.6	2.8	9.9	0.0	9.0	2.9	1.4	7.7	10.8	10.7	9.1	0.5	2.5	3.8	10.0	10.1
	2	1.2	3.8	10.6	1.5	7.3	0.0	6.3	2.5	0.3	7.2	6.9	8.7	5.4	0.5	1.8	2.7	8.3	6.4
	3	0.3	0.7	5.4	0.5	4.8	0.0	0.1	1.2	0.3	5.8	3.7	4.2	3.6	0.2	0.5	1.4	6.5	4.6
	4	0.2	0.4	4.3	0.3	3.1	0.0	0.0	0.7	0.2	5.7	1.1	3.3		0.2	0.2	0.4	5.4	2.4
	5	0.0	0.0	3.6	0.4	3.7	0.0	0.0	0.5	0.0	5.1	1.5	2.6	2.1	0.1	0.2	0.1	4.7	1.7
	Mean	1.9	3.8	10.5	2.0	7.6	0.0	5.4	2.1	0.8	6.6	6.9	7.5	6.5	0.4	1.6	1.7	7.0	1.5
Pump- kinseed	6	13.6	27.3	34.9	18.9	28.6	3.4	33.6	9.8	5.4	10.0	30.1	22.1	21.0	3.6	9.4			4.4
	1	8.2	19.1	27.6	10.8	21.9	0.7	20.8	6.3	3.9	9.7	21.6	18.9	18.2	2.7	5.6	8.1	18.1	18.4
	2	4.7	12.6	21.4	7.3	19.2	0.1	16.7	5.2	2.2	8.7	14.9	16.0	14.2	2.3	5.9	8.0	14.0	13.4
	3	1.6	4.5	12.6	2.9	8.4	0.0	5.5	2.9	2.1	8.2	9.0	10.2	9.7	0.7	2.2	3.1	9.8	10.5
	4	1.2	3.2	10.4	2.4	6.3	0.0	4.3	2.1	2.0	8.2	5.3	7.7		0.9	2.5	2.4	9.1	5.7
	5	0.8	1.5	9.2	2.5	6.9	0.0	2.4	1.6	1.6	7.8	5.7	6.3	5.5	0.6	1.0	0.8	6.8	4.5
	Mean	5.0	11.4	19.4	7.5	15.2	0.7	13.9	4.7	2.9	8.8	14.4	13.5	13.7	1.8	4.4	4.5	11.6	3.8
Rainbow Darter	6	15.8	14.3	13.5	19.2	15.7	33.4	10.6	32.7	32.2	31.0	12.9	25.4	23.7	52.3	31.5			9.2
	1	23.5	18.8	16.8	23.1	18.5	39.1	14.4	37.8	38.4	34.7	15.9	28.1	25.6	60.5	37.5	29.1	29.4	24.9
	2	32.0	21.6	19.2	26.0	19.4	41.4	16.3	41.7	49.7	38.2	21.0	32.5	28.8	57.5	36.8	31.4	31.9	29.2
	3	44.2	31.7	23.8	31.7	25.6	49.7	23.9	47.1	49.9	43.6	27.9	38.4	33.7	62.3	45.2	42.5	42.7	32.1
	4	48.3	32.5	24.8	33.5	28.4	51.6	28.0	50.1	51.5	43.3	31.9	41.1		62.2	43.7	46.5	46.8	38.7
	5	54.8	35.8	25.2	33.8	29.6	53.9	31.3	52.1	55.6	45.7	35.6	42.9	37.4	63.2	49.0	54.7	52.3	41.1

	Mean	36.4	25.8	20.6	27.9	22.9	44.9	20.8	43.6	46.2	39.4	24.2	34.7	29.8	59.7	40.6	40.8	40.6	43.6
Rock Bass	6	67.1	64.9	55.9	57.4	60.4	44.9	66.8	43.9	42.1	40.5	57.4	47.9	53.6	23.3	45.2			35.1
	1	58.2	63.4	59.6	54.3	62.0	38.1	67.3	39.4	34.8	37.7	58.0	48.4	54.3	18.1	38.3	48.8	45.0	50.3
	2	47.7	61.5	58.5	51.9	60.8	34.3	67.4	37.1	25.3	33.9	53.8	45.8	50.8	19.2	38.0	44.9	43.0	48.0
	3	29.4	49.3	55.6	45.2	53.1	25.7	56.8	30.9	24.9	29.4	47.8	42.9	49.1	13.7	29.0	34.1	36.5	45.4
	4	25.9	48.3	55.0	41.9	50.1	23.1	53.1	27.8	23.3	30.0	43.5	38.6		16.2	32.1	30.1	34.1	39.0
	5	20.2	44.9	53.8	42.2	48.8	20.5	48.4	25.9	18.9	26.9	40.4	38.4	43.9	14.9	26.7	21.2	28.9	36.5
	Mean	41.4	55.4	56.4	48.8	55.9	31.1	60.0	34.2	28.2	33.1	50.2	43.7	50.3	17.6	34.9	35.8	37.5	34.0
White Sucker	6	70.5	57.7	47.9	52.2	50.5	69.2	51.1	59.1	69.0	57.1	52.3	54.7	56.2	43.5	59.9			42.1
	1	73.3	62.4	54.4	57.2	56.5	67.4	60.2	57.9	66.1	55.5	57.5	56.1	58.4	38.1	58.2	66.7	60.3	55.7
	2	67.9	66.2	58.1	59.2	57.8	66.2	64.3	56.9	58.3	52.8	61.7	55.4	61.1	35.8	57.6	64.1	59.3	58.3
	3	59.7	68.0	63.5	61.3	65.0	59.3	69.4	53.9	58.3	49.7	62.7	56.1	61.6	32.2	55.3	58.5	54.7	58.4
	4	56.9	68.0	64.8	58.7	68.1	57.4	67.7	51.3	57.2	50.0	62.7	57.0		33.6	54.8	54.0	49.7	58.1
	5	51.6	66.4	65.1	58.7	66.5	54.4	67.1	49.3	52.3	47.1	59.1	55.0	61.6	33.4	53.8	49.0	46.1	57.0
	Mean	63.3	64.8	59.0	57.9	60.7	62.3	63.3	54.7	60.2	52.0	59.3	55.7	59.8	36.1	56.6	58.5	54.0	55.3

Percent of temperature measurements that exceed the ultimate upper incipient lethal temperature (%>UILT)																			
Species	Station	Year																	
		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Mean
Black-nose Dace	6	0.0	0.5	5.8	0.0	3.3	0.0	0.6	1.0	0.0	4.7	2.2	4.3	2.0	0.0	0.0			1.7
	1	0.0	0.0	2.5	0.0	1.9	0.0	0.0	0.4	0.0	3.8	0.3	2.3	1.5	0.0	0.0	0.0	2.0	0.9
	2	0.0	0.0	1.2	0.0	1.6	0.0	0.0	0.2	0.0	2.8	0.0	1.4	1.0	0.0	0.0	0.0	1.6	0.6
	3	0.0	0.0	0.3	0.0	0.5	0.0	0.0	0.0	0.0	1.9	0.0	0.3	0.6	0.0	0.0	0.0	1.1	0.3
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0		0.0	0.0	0.0	0.8	0.2
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1
	Mean	0.0	0.1	1.6	0.0	1.2	0.0	0.1	0.3	0.0	2.8	0.4	1.4	1.0	0.0	0.0	0.0	1.2	0.6
Blunt-nose Minnow	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0			0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brook Trout	6	25.9	41.1	50.6	33.0	43.4	10.6	49.4	17.8	9.9	18.4	42.0	33.6	33.7	7.9	17.7			29.2
	1	15.3	33.9	41.8	23.5	35.5	5.9	37.5	13.6	7.1	15.9	34.5	27.7	29.1	4.9	11.6	17.1	25.4	22.8
	2	9.6	28.1	34.7	19.7	32.4	3.4	32.2	10.8	5.0	13.9	26.3	24.4	23.7	3.5	11.2	15.5	23.7	19.3
	3	5.4	11.9	24.3	11.8	20.6	1.2	16.1	7.3	4.8	11.5	17.8	17.1	19.3	3.1	7.2	9.8	17.8	12.6
	4	4.6	10.3	22.3	8.5	14.6	0.4	13.8	5.1	4.5	11.5	12.4	13.1		3.4	7.0	6.8	15.4	9.9
	5	3.3	7.6	20.3	9.3	15.7	0.1	11.0	4.1	3.9	10.5	11.2	13.3	13.0	2.9	5.3	4.5	13.3	9.1
	Mean	10.7	22.2	32.3	17.6	27.0	3.6	26.7	9.8	5.9	13.6	24.0	21.5	23.8	4.3	10.0	10.7	19.1	17.0
Brown Trout	6	23.8	39.8	49.2	31.4	41.7	9.2	47.4	16.7	9.1	17.7	40.6	32.0	31.7	7.0	15.6			27.8
	1	14.0	32.1	39.9	22.1	33.6	5.3	35.5	12.9	6.5	15.4	32.9	26.6	27.5	4.9	11.6	17.1	25.4	21.8
	2	9.0	26.3	32.9	18.2	31.1	2.8	30.7	9.7	4.6	13.1	24.7	23.6	22.5	3.5	10.0	13.9	21.6	18.1
	3	4.8	10.6	23.1	10.0	18.8	0.8	14.4	6.4	4.4	11.2	16.5	16.3	18.4	2.2	5.3	7.0	14.8	11.3
	4	4.1	9.3	20.5	7.3	13.2	0.2	12.5	4.5	4.3	11.3	11.0	12.4		2.9	6.0	5.6	14.2	9.0
	5	2.5	6.7	18.6	7.8	14.2	0.0	9.8	3.7	3.4	10.1	10.3	12.5	12.1	2.8	4.8	4.5	13.3	8.4

	Mean	9.7	20.8	30.7	16.1	25.4	3.1	25.1	9.0	5.4	13.1	22.7	20.6	22.4	3.9	8.9	9.6	17.9	15.9	
Common Shiner	6	0.0	0.0	0.7	0.0	0.2	0.0	0.0	0.0	0.0	1.3	0.0	0.2	0.5	0.0	0.0			0.2	
	1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Creek Chub	6	0.0	0.1	3.9	0.0	2.3	0.0	0.0	0.6	0.0	3.6	0.6	2.9	1.5	0.0	0.0			1.1	
	1	0.0	0.0	1.3	0.0	1.2	0.0	0.0	0.0	0.0	2.5	0.2	1.2	0.9	0.0	0.0	0.0	0.0	1.0	0.5
	2	0.0	0.0	0.7	0.0	0.6	0.0	0.0	0.0	0.0	2.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.9	0.3
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.7	0.1
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0		0.0	0.0	0.0	0.0	0.4	0.1
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	1.0	0.0	0.7	0.0	0.0	0.1	0.0	1.9	0.1	0.8	0.6	0.0	0.0	0.0	0.0	0.6	0.4
Large-mouth Bass	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pumpkin-seed	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rock Bass	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
White Sucker	6	1.0	2.1	10.6	0.6	6.0	0.0	4.9	2.0	0.0	5.7	6.5	7.3	4.3	0.0	0.4			3.6
	1	0.2	0.9	5.6	0.1	3.7	0.0	0.7	1.1	0.0	5.0	3.4	4.7	2.9	0.0	0.0	0.3	3.8	2.0
	2	0.0	0.3	3.6	0.0	3.2	0.0	0.0	0.8	0.0	4.6	1.2	3.5	2.0	0.0	0.0	0.2	3.1	1.4
	3	0.0	0.0	1.0	0.0	1.9	0.0	0.0	0.1	0.0	3.8	0.2	1.0	1.3	0.0	0.0	0.0	2.2	0.7
	4	0.0	0.0	0.8	0.0	0.5	0.0	0.0	0.0	0.0	3.8	0.0	0.5		0.0	0.0	0.0	1.7	0.5
	5	0.0	0.0	0.5	0.0	1.4	0.0	0.0	0.0	0.0	3.0	0.0	0.5	0.6	0.0	0.0	0.0	1.4	0.5
	Mean	0.2	0.6	3.7	0.1	2.8	0.0	0.9	0.7	0.0	4.3	1.9	2.9	2.2	0.0	0.1	0.1	2.4	1.4

Percent of temperature measurements that exceed the critical thermal maximum temperature (%>Ctmax)																			
Species	Station	Year																	
		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Mean
Black-nose Dace	6	0.0	0.0	1.0	0.0	0.4	0.0	0.0	0.0	0.0	1.7	0.1	0.3	0.7	0.0	0.0			0.3
	1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.1
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.1
Blunt-nose Minnow	6	0.0	0.0	1.5	0.0	0.8	0.0	0.0	0.0	0.0	2.1	0.2	0.9	0.8	0.0	0.0			0.5
	1	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	1.3	0.0	0.2	0.4	0.0	0.0	0.0	0.5	0.2
	2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.2	0.0	0.0	0.0	0.2	0.1
Brook Trout	6	0.0	0.0	3.2	0.0	2.0	0.0	0.0	0.4	0.0	3.3	0.4	2.3	1.3	0.0	0.0			0.9
	1	0.0	0.0	1.0	0.0	0.8	0.0	0.0	0.0	0.0	2.2	0.2	0.6	0.9	0.0	0.0	0.0	1.0	0.4
	2	0.0	0.0	0.5	0.0	0.4	0.0	0.0	0.0	0.0	1.7	0.0	0.4	0.4	0.0	0.0	0.0	0.8	0.3
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0		0.0	0.0	0.0	0.1	0.1
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.8	0.0	0.5	0.0	0.0	0.1	0.0	1.6	0.1	0.6	0.5	0.0	0.0	0.0	0.4	0.3
Brown Trout	6	0.3	0.8	7.1	0.0	4.0	0.0	1.8	1.3	0.0	5.0	3.8	5.2	2.6	0.0	0.0			2.3
	1	0.0	0.3	3.4	0.0	2.5	0.0	0.0	0.6	0.0	4.4	1.2	3.1	1.8	0.0	0.0	0.0	3.1	1.3
	2	0.0	0.0	1.8	0.0	2.0	0.0	0.0	0.5	0.0	3.7	0.2	2.2	1.4	0.0	0.0	0.0	2.2	0.9
	3	0.0	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	2.5	0.0	0.4	0.8	0.0	0.0	0.0	1.1	0.4
	4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.3		0.0	0.0	0.0	1.2	0.3
	5	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	2.0	0.0	0.1	0.2	0.0	0.0	0.0	1.0	0.2





	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rock Bass	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
White Sucker	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**APPENDIX H**

**Biological Monitoring**



GUIDING SOLUTIONS IN THE  
NATURAL ENVIRONMENT

# 2022 Biological Monitoring Program Blue Triton Brands Aberfoyle Property

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*Prepared For:*

**Blue Triton Brands**

*Prepared By:*

**Beacon Environmental Limited**

*Date:*     *Project:*

**February 2023    216114.1**

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# 1. Introduction

Beacon Environmental Limited (Beacon) and C. Portt and Associates were retained by Blue Triton Brands to undertake terrestrial and aquatic monitoring at the company's Aberfoyle property located at 101 Brock Road South in the Township of Puslinch (**Figure 1**). A Site Context Map is included as **Figure 2**. The biological monitoring program for the property was initiated in 2007 as a condition of a Ministry of Environment, Conservation and Parks (MECP) Permit to Take Water (PTTW) (#7043-74BL3K) for the onsite wells that service their bottling operations. Biological monitoring remains a condition of the current PTTW (#3133-C5BUH9).

Condition 4.4 of the PTTW states:

*The Permit Holder shall undertake wetland monitoring and redd surveys as recommended in "2010 Biological Monitoring Program Final Report" by C. Portt and Associates\* dated January 28, 2011. Results from the wetland and redd surveys shall be submitted to the Director as a part of the annual monitoring report...*

\*Note: Authorship of the 2010 report should be attributed to Dougan & Associates and C. Portt and Associates.

The objectives of the biological monitoring program are to:

- Characterize existing aquatic, wetland and terrestrial resources; and
- Document potential long-term changes to the site's biological resources.

Existing or baseline biological conditions on the Aberfoyle property were established through surveys and inventories completed between 2007 and 2009 which fulfilled the first objective. To achieve the second objective, there has been ongoing biological monitoring with annual reports submitted to the MECP as per the PTTW conditions. The type and frequency of biological monitoring is variable and based on the recommendations provided in each year's annual monitoring report.

Between 2007 and 2022, biological monitoring has included the following:

- Electrofishing surveys of Aberfoyle Creek; [C. Portt & Associates];
- Salmonid spawning (redd) surveys of Aberfoyle Creek; [C. Portt & Associates];
- Ecological Land Classification (ELC);
- Vascular plant surveys;
- Permanent vegetation monitoring plot surveys;
- Amphibian call surveys;
- Breeding bird surveys;
- Odonate (dragonfly/damselfly) surveys;
- Owl surveys;
- Turtle surveys;
- Marsh surveys (assessment of surface hydrology); and
- Invasive species mapping - Common Reed.

Biological monitoring completed on the property between 2007 and 2022 is summarized in **Table 1**.

**Table 1. Summary of Biological Monitoring Program (2007-2022)**

Year	Aquatic			Vegetation				Wildlife				
	Electrofishing	Habitat characterization	Spawning (i.e. Redd) surveys	Ecological Land Classification (ELC) mapping	Vegetation plot sampling	Marsh surveys	Invasive species mapping	Nocturnal amphibian call monitoring	Breeding bird surveys	Owl surveys	Basking Turtle surveys	Odonate surveys
2007			X	X								
2008	X		X	X	X			X	X			
2009		X	X	X		X	X	X	X			
2010			X		X	X	X	X	X	X	X	X
2011			X			X	X	X	X	X	X	X
2012			X								X	X
2013			X		X	X	X					
2014			X		X							
2015			X					X	X		X	
2016			X		X		X	X	X		X	
2017			X				X	X	X		X	
2018			X					X	X		X	
2019			X	X	X			X	X		X	
2020			X					X	X		X	
2021			X					X	X		X	
2022			X					X	X		X	

The 2021 Aberfoyle Biological Monitoring Program Report (Beacon 2022) recommended that core wildlife monitoring (amphibian, reptiles and birds) be completed in 2022. Additionally, it recommended salmonid spawning surveys in Aberfoyle Creek will be conducted as required in 2022 by C. Portt and Associates. The recommended biological monitoring was completed in 2022. Beacon completed core wildlife monitoring and C. Portt and Associates completed salmonid spawning (redd) surveys of Aberfoyle Creek.



This annual report includes a comprehensive summary of the biological monitoring program and data collected between 2007 and 2022. The report describes the methods and findings of the various monitoring activities and compares data from prior years to identify potential changes or trends in selected monitoring parameter or indicators over the long term.



**Legend**

Subject Property



<b>Site Location</b>		<b>Figure 1</b>
Aberfoyle 2022 Biological Monitoring Program		
		Project: 216114.1 Last Revised: January 2023
Client: Blue Triton Brands		Prepared by: SZ Checked by: KU
	1:40,000	Inset Map: 1:250,000
<small>Contains information licensed under the Open Government License— Ontario Orthoimagery Baselayer: FBS Wellington 2010</small>		



Aberfoyle 2022 Biological Monitoring Program

Legend

- Subject Property
- Wetlands
- Watercourse



Project: 216114.1

Last Revised: January 2023

Client: Blue Triton Brands

Prepared by: SZ  
Checked by: KU



1:8,000

0 150 300 m

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## 2. Methods

### 2.1 Aquatic Survey

C. Portt and Associates has surveyed Aberfoyle Creek for evidence of Brown Trout (*Salmo trutta*) or Brook Trout (*Salvelinus fontinalis*) spawning, from its confluence with Mill Creek upstream to the limit of the Blue Triton Brands property (**Figure 2**) annually, beginning in 2007. In 2022, the surveys were conducted on November 2 and November 15. On these dates, this entire reach of the creek was walked and searched for spawning fish or areas of disturbed substrate that could be indicative of salmonid spawning.

### 2.2 Vegetation Surveys

#### 2.2.1 Ecological Land Classification

Ecological communities associated with the subject property were classified in accordance with the Ecological Land Classification System for Southern Ontario (ELC) (Lee *et al.* 1998). ELC is the provincial standard for classifying ecological communities. Ecological communities are classified based on their biophysical parameters such as vegetation composition and structure as well as physical site conditions such as topography, slope, soil, moisture and drainage. Information on these parameters is collected from each polygon to confirm the appropriate classification using the ELC community catalogue.

Ecological communities were initially described and mapped by Dougan & Associates in the fall 2007. As the mapping was more than ten years old, Beacon reviewed the boundaries of the various ecological communities on July 23, 2019, to confirm their classifications, adjust boundaries and update the mapping where necessary.

ELC classification and mapping is generally conducted only once a decade as the rate of vegetation change is relatively slow and was therefore not repeated in 2022.

#### 2.2.2 Floristic Surveys

A floristic survey of the property was initially completed by Dougan & Associates in the fall of 2007 to establish baseline conditions and develop a checklist of vascular plants for the subject property. The checklist has been variably amended over the years based on data collected from the vegetation plots and incidental observations. To update this checklist, Beacon completed a floristic survey of the subject property on July 23, 2019.

Floristic surveys are generally completed every five to ten years as the rate of vegetation change is relatively slow and were therefore not repeated in 2022.

### 2.2.3 Vegetation Plot Sampling

To monitor changes to vegetation resources on the property over time, six permanent vegetation sampling plots were established in 2007 in representative wetland communities. The UTM coordinates for each plot in NAD83 are provided in **Table 2** and mapped on **Figure 3**.

**Table 2. Locations of Permanent Vegetation Monitoring Plots**

Plot No.	UTM Zone	UTM Easting	UTM Northing
1	17T	569227	4812889
2	17T	569075	4812948
3	17T	568804	4812731
4	17T	568500	4812482
5	17T	568500	4812482
6	17T	568892	4812956

The vegetation plots are circular and 100 m<sup>2</sup> in area. The centre of each plot is marked with a steel T-bar. The plots were sampled in the summers of 2008, 2010, 2013, 2014, 2017 and 2019. No plot sampling occurred in 2022. A handheld GPS is used to locate the plots. The outer boundaries of each sample plot were delineated by attaching a 5.64 m length of rope to the T-bar centre post and temporarily marking the plot perimeter with flagging tape. Within each sampling plot, information is collected on the composition and structure of the vegetation, by estimating the cover abundance at various height classes.

Vegetation data collection methods follow the standardized vegetation sampling protocols of the Ecological Land Classification System (ELC) for Southern Ontario (Lee *et al.* 1998). Within each plot, all observed species are documented, and the percent cover estimated by assigning a cover value of 1-4 (1) <10%; 2) 10-25%; 3) 25-60%; and 4) >60%) to each species for each vegetation layer it occurs in. Vegetation layers corresponded with the following height classes 1) <0.5 m; 2) 0.5-2 m; 3) 2-10 m, and 4) >10 m).

As in previous sampling years, vegetation plot data was subjected to a Floristic Quality Assessment (FQA) and provides a metric for monitoring change over time (Oldham *et al.*, 1995). The FQA is determined from total number of species (species richness) in a given area (e.g. sampling plot) and summing their conservatism values. Species conservatism is considered a measure of "*the degree of faithfulness a plant displays to a specific habitat or set of environmental conditions*" (Oldham *et al.*, 1995). More conservative species display a higher degree of fidelity to particular habitats or ecological conditions and are relatively intolerant of disturbance. Less conservative species tend to be habitat generalists and more tolerant of disturbance. In Ontario, plant species have been assigned a coefficient of conservatism value (CC) value ranging from 0-10. A description of how these values were assigned is provided below:

- 0-3: Species found in a wide variety of habitats including disturbed sites;
- 4-6: Species found in specific habitats, but tolerate moderate disturbance;
- 7-8: Species found in advanced successional communities with minor disturbance; or
- 9-10: Species found in high quality natural areas and/or limited to a narrow range of environmental conditions.

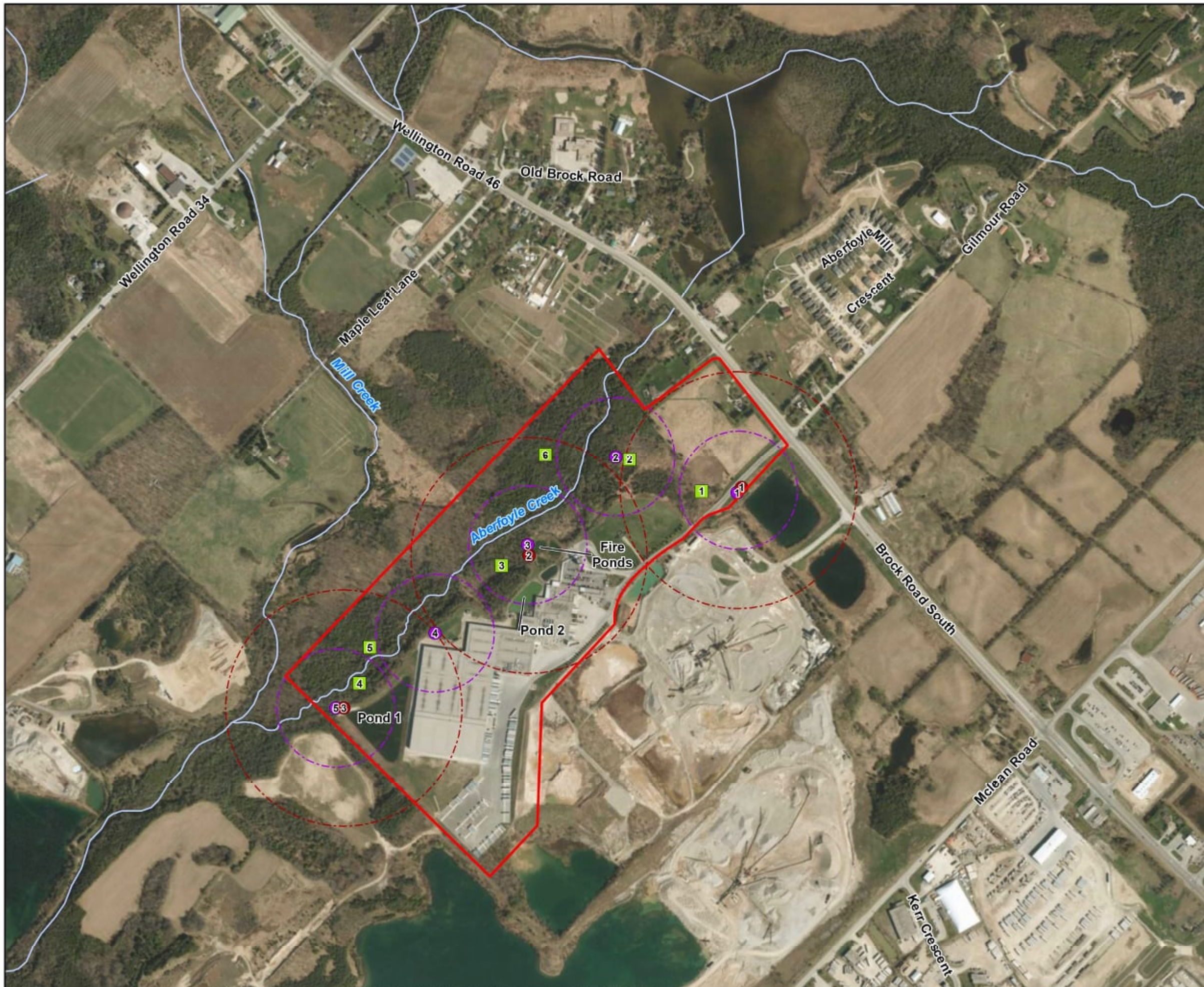
**Monitoring Stations and Survey Locations**

**Figure 3**

Aberfoyle 2022 Biological Monitoring Program

**Legend**

- Subject Property
- Watercourse
- Vegetation Monitoring Station
- Amphibian Call Monitoring Station (with 250 m radius)
- Breeding Bird Monitoring Station (with 125 m radius)



Note: Basking Turtle Surveys were conducted at Pond 1, Pond 2 and the Fire Ponds

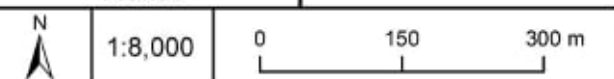


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The FQA is used to establish a Floristic Quality Index (FQI) value. Generally speaking, higher FQI values are indicative of higher floristic quality and lower levels of disturbance, whereas lower FQI values indicate poorer quality and higher disturbance. FQI values were determined for each of the six monitoring plots by calculating the mean CC for each plot and multiplying it by the square root of the total number of species. FQI values were calculated using both the total number of species per plot and for native species only. The FQI values were then used to compare changes over time both within and among vegetation plots.

In addition to the FQI, a Wetness Index was also calculated for each plot and the site as a whole. Each plant species in Ontario has been assigned a Coefficient of Wetness (CW) based on their probability of occurring in wetlands. CW values range from -5 to 5. Species with negative CW values favour wetter conditions and typically occur in wetlands; species with positive CW values prefer drier conditions and tend to occur in uplands. The Wetness Index is calculated by averaging the CW values of each species observed in the plot. A Wetness Index for the site was obtained by averaging the CW of each plot. The wetness index could potentially be used as an indicator of hydrological changes.

The 2020 monitoring report recommended vegetation plot sampling resume in 2022, however as the rate of observed vegetation change is relatively slow, it is recommended that this sampling occur in 2024 instead.

#### 2.2.4 Marsh Vegetation Surveys

Marsh surveys were undertaken by Dougan & Associates in 2009, 2010, 2011 and 2013. The purpose of these surveys was to check moisture levels and to confirm these classifications of ELC communities. This was done by determining the approximate depth of standing water (if present) versus the presence of saturated soil, moist soil or dry soil. This level of detail is sufficient to differentiate a Shallow Marsh and a Meadow Marsh within the ELC system (Lee *et al.* 1998). A key difference between the two communities is the presence of standing water for much or all of the growing season within a Shallow Marsh compared to the seasonally flooded meadow marsh. However, this level of detail is not sufficient for correlating long term trends with any degree of certainty, as moisture levels in wetlands vary seasonally and annually depending on factors such as precipitation, average temperature, etc. For these reasons, the marsh surveys have not been repeated.

#### 2.2.5 Invasive Species Mapping

There are several colonies of Common Reed (*Phragmites australis*) present on the subject property. Common Reed is a highly invasive non-native plant species that is known to displace native wetland vegetation. Since 2007, the colonies on the property have been observed to be expanding. Colonies of Common Reed were originally mapped in several locations on the property in 2009, 2010, 2011, and 2013 by Dougan & Associates to track changes in the size of the colonies. The edges of the colonies were mapped using a high-resolution GPS. The Common Reed colonies were re-surveyed and mapped again by Beacon in 2016 and 2017 using an RTK (Real-Time-Kinematic) GPS to facilitate comparison with prior years. The Common Reed colonies were not surveyed in 2022.

Common Reed is ubiquitous in the adjacent landscape. It is prevalent in roadside ditches next to the property and is also present on neighbouring properties. The species is very difficult to control. The most effective control method is chemical treatment using herbicide. While such treatments are considered safe and pose minimal risk to the environment when appropriately applied, Blue Triton

Brands has elected not to implement a treatment program due to the proximity of the colonies to the production well (TW3-80). Common Reed will continue to be monitored and alternative management approaches researched to inform potential future management actions.

## 2.3 Wildlife Surveys

### 2.3.1 Amphibian Surveys

Amphibian call surveys were undertaken to estimate the species richness, abundance, and location of frog and toad populations associated with the subject property. Because there is variation in the breeding periods during which different frog or toad species (anurans) are calling and detectable, surveys were completed at three different periods between April and June to ensure coverage of the full range of early to late breeding species. These surveys were conducted by Dougan and Associates in 2008, 2009, 2010 and 2011, and then by Beacon annually between 2015 and 2022.

In 2022, Beacon conducted surveys on April 25, May 11, and June 24 using the survey protocols developed for the Marsh Monitoring Program (MMP) (Bird Studies Canada, 2009). On each occasion the subject property was visited at least 0.5 hours after sunset during suitable weather conditions to listen for calling frogs and toads at three (3) permanent monitoring stations that were established in 2008. The locations of these monitoring stations are illustrated in **Figure 3**. Amphibians observed or heard calling in other locations on the property during these and other surveys were also recorded as incidental observations.

Surveys were conducted using the point count method whereby the surveyor stands at a set point or station for a specific period of time and records all species that can be heard calling within the sample area. A minimum of three minutes was spent listening at each station. The approximate locations of calling amphibians were noted on a standard MMP data sheet and chorus activity for each species was assigned a call code as follows:

- 0 - No calls;
- 1 - Individuals of one species can be counted, calls not simultaneous;
- 2 - Calls of one species simultaneous, numbers can be reliably estimated; or
- 3 - Full chorus, calls continuous and overlapping, individuals indistinguishable.

In addition to recording species and call levels, weather conditions (i.e., air temperature, precipitation, wind speed, and cloud cover) at the time of survey were also recorded. Weather conditions for the 2022 surveys are summarized in **Table 3**.

**Table 3. Amphibian Survey Details**

	Survey 1	Survey 2	Survey 3
<b>Date:</b>	April 25, 2022	May 11, 2022	June 24, 2022
<b>Start time:</b>	8:45 pm	9:05 pm	9:35 pm
<b>Temperature:</b>	11°C	20°C	25°C
<b>Wind speed:</b>	3 – 5 km/h	3 – 5 km/h	6 - 11 km/h
<b>Cloud cover:</b>	100%	10%	0%
<b>Precipitation:</b>	Drizzle	None	None

### 2.3.2 Breeding Bird Surveys

Breeding bird surveys were undertaken in 2022 by Beacon to document the diversity and abundance of avian populations associated with the subject property. Previous surveys were completed in 2008, 2009, 2010 and 2011 by Dougan & Associates. Beacon completed surveys annually between 2015 and 2022.

There are five permanent point count stations that were established in 2008 that provide coverage for the majority of the property. Each point count station is positioned so the observer can detect calling birds up to a distance of 125 m. The locations of the point count stations are illustrated in **Figure 3**. A handheld GPS was used to locate the plots.

A modified point count methodology, based on protocols established for the Ontario Breeding Bird Atlas for point counts (Cadman *et al.* 2007), Forest Bird Monitoring Program (CWS, 2006) and a standard method recommended for monitoring songbird populations in the Great Lakes Region (Howe *et al.* 1997), was utilized to complete breeding bird surveys. The following is a detailed description of the modified approach utilized to complete these surveys:

- Surveys should be conducted a minimum of one week apart (CWS 2006);
- Point count stations will be at least 250 m apart (Howe *et al.* 1997 & CWS 2006);
- Since the Blue Triton Brands property in Aberfoyle is relatively small, a randomized site selection approach will not be required. The majority of natural features on the site are covered by the five- point count station survey areas;
- Survey duration for each point count is 10 minutes, consistent with the Forest Bird Monitoring Program (CWS 2006) and Howe *et al.* (1997) and is not restricted to forested habitats;
- The location of each individual adult bird is recorded on a field sheet as per the layout and symbols used by the Forest Bird Mapping Protocol (CWS 2006) or Howe *et al.* (1997). Bird flying overhead (i.e., not directly associating with the survey area) or otherwise not showing any breeding evidence will be distinguished from the other breeding birds;
- Observations recorded on the field maps are transferred into a summary table. All birds observed or heard within suitable habitat are assumed to be breeding; and
- Breeding evidence is documented according to the Ontario Breeding Bird Atlas protocols (Cadman *et al.* 2007).

Birds observed between the point count surveys are noted separately on a field map to help ensure that no bird species present on the property are missed as the point count circles do not cover the entire property.

Weather conditions (i.e., air temperature, precipitation, wind speed, and cloud cover) at the time of survey were recorded (see **Table 4**).

**Table 4. Breeding Bird Survey Details**

	Survey 1	Survey 2
<b>Date:</b>	June 9, 2022	June 20, 2022
<b>Start time:</b>	6:46 am	6:35 am
<b>End Time:</b>	8:12 am	8:00 am
<b>Temp:</b>	12°C	14°C
<b>Wind:</b>	1 - 6 km/h	1 – 6 km/h
<b>Cloud cover:</b>	100%	100%
<b>Precipitation:</b>	None	None

### 2.3.3 Owl Surveys

Owl surveys were not part of the original biological monitoring program, however in August 2009, Barred Owl (*Strix varia*) was reported from the northeast portion of the subject property by Dougan & Associates. To confirm this record, two surveys were completed in 2010 and an additional survey was completed in 2011. The survey consisted of broadcasting Barred Owl calls using a portable compact disc (CD) player. In 2011, Northern Saw-whet Owl (*Aegolius acadicus*) calls were also broadcast prior to the Barred Owl calls. A period of silence was included following each series of calls to allow the surveyor to listen for a response. The surveys were completed from two stations in forested habitats in the vicinity of the original observation. No additional owl surveys have been undertaken since 2011.

### 2.3.4 Basking Turtle Survey

The ponds on the subject property are known to support populations of Midland Painted Turtle (*Chrysemys picta marginata*) and Snapping Turtle (*Chelydra serpentina*).

Midland Painted Turtle is listed federally as a Special Concern species. Snapping Turtle is listed both federally and provincially as a Special Concern species. Snapping Turtle was originally observed in the large pond near the western property boundary in 2008, which is labelled as Pond 1 on **Figure 3**.

To monitor populations of turtles, basking surveys were completed by Dougan & Associates annually between 2010 and 2012, and by Beacon annually between 2015 and 2022.

In 2022, basking turtle surveys on the property were primarily focused on Pond 1; brief surveys of the other ponds were also completed. The surveys consist of slowly walking along the outer edge of the ponds using binoculars to scan the perimeter and other potential basking sites within the pond. Surveys were completed in mid-May and mid-September between 8:00 am and 5:00 pm during sunny periods when the air temperature was greater than water temperature and after inclement weather. Surveys, including weather conditions, are included in **Table 5**.



**Table 5. Basking Turtle Survey Details**

	<b>Survey 1</b>	<b>Survey 2</b>	<b>Survey 3</b>
<b>Date:</b>	May 5, 2022	May 24, 2022	September 20, 2022
<b>Start time:</b>	10:40 am	11:00 am	10:45 am
<b>End time:</b>	12:10 pm	12:30 pm	12:00 pm
<b>Temp:</b>	13°C	16°C	18 °C
<b>Wind Speed:</b>	6-11 km/h	1 – 6 km/h	1-6 km/h
<b>Cloud cover:</b>	15%	10%	60%
<b>Precipitation:</b>	None	None	None

### 2.3.5 Odonate Surveys

While not included in the original monitoring program, it was felt that baseline surveys for dragonflies and damselfly surveys could be used to supplement the baseline biological data available for the site. In 2010, 2011 and 2012, Dougan & Associates conducted odonate surveys for select habitats on the subject property, while in 2009 they were recorded incidentally. Surveys were informally conducted during ideal weather conditions simultaneously to turtle basking surveys using a net. Any individuals caught were immediately examined with a 10x (power) hands lens and then released following identification. No individuals were collected, and no microscopic analysis was conducted. When needed, identifications were confirmed using Jones (2008) and Lam (2004). The surveys were brief, and the findings were not considered a comprehensive list of species potentially present. No additional odonate surveys have been undertaken since 2012.

### 2.3.6 Other Wildlife Observations

Other wildlife species observations and habitat encountered over the course of the 2022 field season were recorded as incidental observations. When encountered, the species and locations of the wildlife were noted.

## 3. Results

### 3.1 Aquatic Survey

No evidence of salmonid spawning was observed along Aberfoyle Creek on the subject property in 2022. This is consistent with the findings of previous surveys completed annually from 2007 through 2021.

### 3.2 Vegetation Surveys

No vegetation surveys were conducted in 2022. The discussion presented below provides a summary of previous surveys. It is expected that vegetation plot sampling surveys will be conducted again in 2024 and floristic and ELC surveys will be conducted in 2028.

### 3.2.1 Ecological Land Classification Mapping

No significant changes to any of the ecological communities were observed during the 2019 review, however minor adjustments were made to the boundaries of several communities. The changes are as follows:

- ELC unit 22 changed from Cultural Woodland (CUW1) to Fresh-Moist White Cedar Coniferous Forest (FOC 4-1) due to increased size and dominance of Eastern White Cedar; and
- ELC Unit 11 changed from Mineral Meadow Marsh (MAM2) to Cattail Mineral Shallow Marsh/Reed Canary Grass Mineral Meadow Marsh (MAS2-1/MAM2-2) due to a shift in dominance of cattails and reed canary grass.

The revised ELC mapping is presented in **Figure 4** and a table summarizing the various ecological communities is presented in **Appendix A**.

### 3.2.2 Flora

Floristic surveys completed between 2007 and 2019 have documented a total of 255 vascular plant species. Of these, 242 have been determined to the species level and 13 could only be determined to genus for various reasons. An updated checklist is provided in **Appendix B**. Of the species identified, 56 are considered non-native to Ontario and represents 23% of the total site flora. Native species are ranked S4 or S5 by the NHIC, indicating that they are generally common and secure in Ontario.

Two regionally rare and six regionally uncommon species have been documented on the subject property, which are summarized in **Table 6**.

**Table 6. Regionally Rare and Uncommon Plants Species**

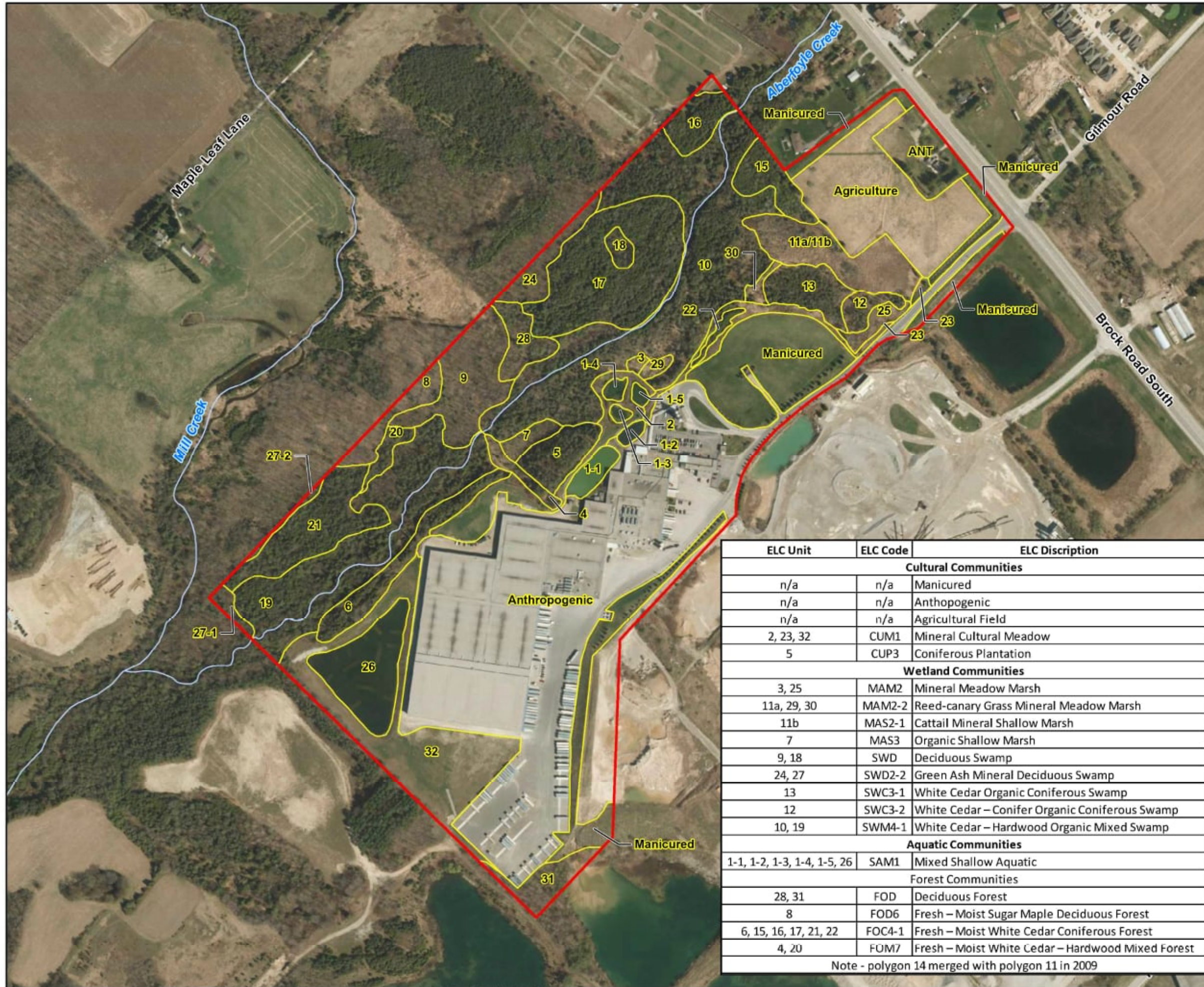
Scientific Name	Common Name	Region Status <sup>1</sup>
<i>Asplenium platyneuron</i>	Ebony Spleenwort	Rare
<i>Brachyelytrum erectum</i>	Long-awned Wood Grass	Rare
<i>Symphyotrichum urophyllum</i>	Arrow-leaved Aster	Uncommon
<i>Cardamine pensylvanica</i>	Pennsylvania Bitter-cress	Uncommon
<i>Equisetum sylvaticum</i>	Woodland Horsetail	Uncommon
<i>Cinna latifolia</i>	Slender Wood Reedgrass	Uncommon
<i>Ranunculus pensylvanicus</i>	Bristly Crowfoot	Uncommon
<i>Symphyotrichum pilosum</i>	Frost Aster	Uncommon

<sup>1</sup>Draft Wellington Country Vascular Plant List (Cecile 2017)

Aberfoyle 2022 Biological Monitoring Program

**Legend**

- Subject Property
- ELC Communities
- Watercourse



ELC Unit	ELC Code	ELC Discription
<b>Cultural Communities</b>		
n/a	n/a	Manicured
n/a	n/a	Anthopogenic
n/a	n/a	Agricultural Field
2, 23, 32	CUM1	Mineral Cultural Meadow
5	CUP3	Coniferous Plantation
<b>Wetland Communities</b>		
3, 25	MAM2	Mineral Meadow Marsh
11a, 29, 30	MAM2-2	Reed-canary Grass Mineral Meadow Marsh
11b	MAS2-1	Cattail Mineral Shallow Marsh
7	MAS3	Organic Shallow Marsh
9, 18	SWD	Deciduous Swamp
24, 27	SWD2-2	Green Ash Mineral Deciduous Swamp
13	SWC3-1	White Cedar Organic Coniferous Swamp
12	SWC3-2	White Cedar – Conifer Organic Coniferous Swamp
10, 19	SWM4-1	White Cedar – Hardwood Organic Mixed Swamp
<b>Aquatic Communities</b>		
1-1, 1-2, 1-3, 1-4, 1-5, 26	SAM1	Mixed Shallow Aquatic
<b>Forest Communities</b>		
28, 31	FOD	Deciduous Forest
8	FOD6	Fresh – Moist Sugar Maple Deciduous Forest
6, 15, 16, 17, 21, 22	FOC4-1	Fresh – Moist White Cedar Coniferous Forest
4, 20	FOM7	Fresh – Moist White Cedar – Hardwood Mixed Forest

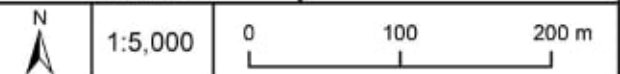
Note - polygon 14 merged with polygon 11 in 2009



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Client: Blue Triton Brands

Prepared by: SZ  
Checked by: KU



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### 3.2.3 Vegetation Plot Sampling

A total of 115 plants were recorded from the six vegetation plots in 2019, including five that were identified to genus. Of the 110 species identified, 85 (85%) are native, and 16 (15%) are considered non-native in Ontario. The proportion of native/non-native is similar to previous years with 88% native in 2008, 87% in 2010, 85% in 2013, 87% in 2014, and 92% in 2016. **Photograph 1** shows a portion of Plot 5 that was surveyed in 2019.

Data for individual vegetation plots has not been included in this report but is on file with Beacon.



**Photograph 1. Representative Photograph of Plot 5 on August 12, 2019**

#### 3.2.3.1 Floristic Quality Assessment

FQA values for each plot between 2008 and 2019 is summarized in **Table 7**. A comparison of FQA values averaged across all plots is provided in **Table 8**. Species richness is noticeably lower in 2008 compared to the following five monitoring years. The data show a spike in species richness and a corresponding increase in FQI between 2008 and 2010. After 2010, the numbers decrease somewhat and generally level off between 2013 and 2019.

**Table 7. FQA Summary by Plot for 2008-2019**

Plot	Variable/ Parameter	2008	2010	2013	2014	2016	2019
1	Total Species	22	52	41	44	39	35
	Native Species	19	43	31	36	31	30
	Introduced Species	3	9	10	8	8	5
	Wetness Index	-2.18	-2.33	-1.24	-1.93	-1.49	-2.26

Plot	Variable/ Parameter	2008	2010	2013	2014	2016	2019
	Mean Total CC	3.32	2.98	2.20	2.65	2.59	3.17
	Mean Native CC	3.84	3.60	2.90	3.51	3.26	3.60
	Total FQI	15.56	21.49	13.86	17.55	16.17	18.76
	Native FQI	16.75	23.64	16.16	21.09	18.15	19.72
2	Total Species	30	53	40	41	41	41
	Native Species	27	48	34	38	34	35
	Introduced Species	3	5	6	5	7	6
	Wetness Index	-1.93	-2.52	-1.73	-1.93	-1.61	-1.78
	Mean Total CC	3.23	3.88	3.08	3.32	3.1	3.12
	Mean Native CC	3.59	3.51	3.62	3.78	3.74	3.66
	Total FQI	17.71	25.55	18.14	21.24	19.85	19.99
	Native FQI	18.67	26.85	21.09	22.67	21.81	21.64
3	Total Species	23	62	47	50	48	47
	Native Species	20	55	39	45	42	41
	Introduced Species	3	7	8	6	7	6
	Wetness Index	-1.09	-1.86	-1.26	-2.18	-2.10	-1.89
	Mean Total CC	3.26	3.60	3.21	3.62	3.42	3.57
	Mean Native CC	3.75	4.05	3.97	4.11	3.90	4.10
	Total FQI	15.64	28.45	20.36	25.60	23.7	24.5
	Native FQI	16.77	30.33	24.18	27.29	27.27	26.24
4	Total Species	17	30	28	31	37	39
	Native Species	15	27	25	29	32	34
	Introduced Species	2	3	3	3	5	4
	Wetness Index	-0.29	-1.63	-1.61	-1.42	-1.27	-1.33
	Mean Total CC	4.00	4.17	3.82	4.10	3.97	3.92
	Mean Native CC	4.53	4.63	4.28	4.54	4.59	4.50
	Total FQI	16.49	22.82	18.92	22.81	24.13	24.5
	Native FQI	17.56	24.06	21.4	24.00	25.98	26.24
5	Total Species	21	46	37	36	41	47
	Native Species	19	39	33	34	36	42
	Introduced Species	2	7	4	3	5	5
	Wetness Index	-1.19	-0.48	-0.95	-0.75	-1.15	-1.26
	Mean Total CC	4.05	3.85	3.78	3.88	3.71	3.77
	Mean Native CC	4.47	4.54	4.24	4.33	4.27	4.21
	Total FQI	18.55	26.10	21.6	23.27	23.74	25.82
	Native FQI	19.50	28.34	24.37	24.89	25.32	27.31
6	Total Species	16	29	26	28	24	24
	Native Species	14	21	20	22	19	20
	Introduced Species	2	8	6	6	5	4
	Wetness Index	-1.00	0.21	-0.46	-0.32	-0.1	-0.63
	Mean Total CC	3.06	2.45	2.62	2.86	2.92	2.71
	Mean Native CC	3.50	3.38	3.40	3.64	3.68	3.25
	Total FQI	12.25	13.18	12.85	15.12	14.31	13.27
	Native FQI	13.10	15.49	15.21	17.06	16.04	14.53

**Table 8. Comparison of Floristic Quality Assessment scores averaged across all plots, 2008-2019**

Parameter	2008	2010	2013	2014	2016	2019
Average Total Species Richness	21.50	45.33	36.50	38.33	38.33	38.83
Average Native Species richness	19.00	38.83	30.33	34.00	32.33	33.67
Average Non-native Species Richness	2.50	6.50	6.17	5.17	6	5.16
Average Wetness Index	-1.28	-1.44	-1.21	-1.42	-1.29	-1.52
Average Native CC	3.95	3.95	3.74	3.99	3.90	3.89
Average Total CC	3.49	3.49	3.12	3.41	3.28	3.38
Average Native FQI	17.06	24.79	20.40	22.83	22.1	22.61
Average Total FQI	16.03	23.04	17.62	20.93	20.31	21.14

The fluctuations in the floristic parameters could be attributed to various environmental factors such as precipitation, herbivory, competition from dominant species, and natural dieback, which can vary on a seasonal and annual basis. Based on the monitoring data available, it is not possible to directly attribute the observed changes to specific environmental factors or variables. Some of the variability observed is likely attributable to observer bias, especially in plots where certain species occur in low numbers and can be easily overlooked or are not reliably detected.

Overall, there have been some minor shifts in species composition and abundance from year-to-year, which is to be expected within a dynamic natural environment. The general composition and structure of the vegetation within the plots have not changed substantially and the observed changes are within the expected range of natural variation for the wetland community types present.

### 3.2.4 Marsh Vegetation Surveys

As part of the ELC confirmation work completed by Dougan & Associates in 2009, marshes on the subject property were assessed and recorded, and some ELC was updated from 2008 to 2009. These surveys were again conducted by Dougan & Associates in 2010, 2011 and 2013 (not in 2012). The resulting predominant vegetation species and the biophysical characteristics of each marsh surveyed have been included in Dougan and Associates' annual monitoring reports.

In 2010, the overall conditions that had been recorded in 2009 had not changed substantially. However, ELC Unit 7 (**Figure 4**) appeared drier due to lack of deep standing water and a new moisture gradient was observed in ELC Unit 29. No changes or re-classifications to ELC communities were made in 2010.

Again, the hydrologic conditions and vegetation composition observed in 2011 were not significantly different from 2010. Common Reed had spread, but the abundance of hydrophilic species (which would be indicative of changing wetland conditions) did not significantly change. No changes or re-classifications to ELC communities were made in 2010.

The conditions of the marshes observed in 2013 were slightly drier in comparison to what was noted in 2010 and 2011. Dougan & Associates attributed these changes to the much lower than average level

of precipitation in 2012 and the slightly lower than average precipitation in 2013. No changes or re-classifications to ELC communities were made in 2013.

Dougan & Associates note that ELC Units 3, 29, 5 and 6 are impacted by discharge of water from the complex of small ponds west of the parking lot. The water level in these ponds are being artificially regulated, which could explain fluctuations. Dougan & Associates also noted that the variation in vegetation in marshes could also be a result of plant responses to variations in weather patterns and environmental conditions rather than permanent trends.

### 3.2.5 Invasive Species Mapping

Since monitoring was initiated on the property, colonies of Common Reed have been slowly expanding (Figure 5). Patch sizes were recorded in 2013, 2016 and 2017 (Table 9).

**Table 9. Comparison of Common Reed Patch Size between 2013, 2016 and 2017**

Colony	Size (m <sup>2</sup> )			Difference (m <sup>2</sup> )	Difference (%)
	2013	2016	2017		
A	172.28	254.43	255.04	0.61	0.24%
B	1,698.69	1,813.99	1,964.49	150.50	8.30%
C	1,920.17	1,401.47	2,886.44	266.24	10.16%
D	1,511.74	1,218.73	-	-	-
E	3,095.25	1,913.31	2,439.94	526.63	27.52%
F	1,061.60	202.67	123.36	-79.31	-39.13%
G	101.73	84.08	118.58	34.50	41.03%
H	-	127.31	162.44	35.13	27.59%
I	-	4.92	7.55	2.63	53.46%
J	-	25.05	18.73	-6.32	-25.23%
K	-	1,655.91	1,456.14	199.77	-12.06%
L	-	182.24	210.49	28.25	15.50%
M	-	-	16.77	-	-
N	-	-	70.55	-	-
O	-	-	132.15	-	-
P	-	-	62.52	-	-
Q	-	-	6.23	-	-
<b>Total</b>	<b>9,561.46</b>	<b>8,884.11</b>	<b>9,931.42</b>	<b>1,047.31</b>	<b>11.79%</b>

Aberfoyle 2022 Biological Monitoring Program

Legend

- Subject Property
- Common Reed Colonies (December 2017)
- Common Reed Colonies (December 2017)
- Common Reed Colonies (2016)
- Common Reed Colonies (December 2017)



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Client: Blue Triton Brands

Prepared by: SZ  
Checked by: KU



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Monitoring of the Common Reed colonies in 2016 revealed a decrease in the rate of expansion of these colonies, but an increase in the colony size was observed in 2017. Between these two years, the following changes in Common Reed on the property were documented:

- Notable increases in colonies B, C (which has now joined with colony D), E and K;
- Small increases in colonies A, G, H, I and L;
- Small decreases in colonies F and J;
- Five new colonies, M through Q, were identified; and
- 32 additional points that were too small to map as polygons were identified.

The change in cover of Common Reed on the subject property increased by 1,047.31 m<sup>2</sup>, or 11.79% between 2016 and 2017. The Common Reed cover in 2017 was similar to that of the patch size recorded in 2013. It is anticipated that Common Reed will continue to spread throughout suitable open habitat on the property. An area being invaded by Common Reed is shown in **Photograph 2**.



Photograph 2. Common Reed within Colony E on December 18, 2017

### 3.3 Wildlife Surveys

#### 3.3.1 Breeding Amphibians

Three anuran species were recorded from three stations on the subject property during the 2022 nocturnal amphibian call surveys. Species include American Toad (*Anaxyrus americanus*), Green Frog (*Lithobates clamitans*), and Spring Peeper (*Pseudacris crucifer*). The findings of these amphibian breeding surveys are summarized in **Table 10**.

The primary amphibian breeding area on the property is the group of two to three small ponds/shallow aquatic features (“fire ponds”) located just west of the parking lot. In 2022, no water was observed in the west fire pond and no amphibians were observed there.

Some indication of amphibian breeding was also observed in Pond 1 and the pond at Brock Road S, which is just east of the property. No indication of amphibian breeding was observed in Pond 2 in 2022.

Amphibians observed incidentally in 2022 during other field surveys included: Northern Leopard Frog (*Lithobates pipiens*) and American Bullfrog (*Lithobates catesbeianus*).

**Table 10. Breeding Amphibian Survey Results (2022)**

Location (Figure 3)	Round 1 (April 25, 2022)	Round 2 (May 11, 2022)	Round 3 (June 24, 2022)
1	No calls	SPPE – 1(1)	GRFR – 2(11) GRFR*
2	SPPE – 3	SPPE – 3	GRFR – 1(5)
3	SPPE*	AMTO – 1(1)	GRFR – 2(9)

\* = Call recorded from outside of station area

AMTO = American Toad, GRFR = Green Frog, SPPE = Spring Peeper

Code 0 - No calling

Code 1 - Individuals can be counted; calls not simultaneous. Estimated number of individuals indicated in brackets

Code 2 - Calls distinguishable; some simultaneous calling. Estimated number of individuals indicated in brackets

Code 3 - Full chorus; calls continuous and overlapping.

Due to lower-than-average rainfall in 2022, amphibian breeding activity appeared generally lower than previous years (2008-2011 and 2015-2020). Additionally, some species heard in previous years were not heard during the 2022 surveys (Gray Tree Frog [*Hyla versicolor*] and Wood Frog [*Lithobates sylvaticus*]).

Results of amphibian breeding surveys are shown in **Table 11**. Spring Peeper and Green Frog have been observed each year monitoring has been completed. American Toad has been heard every year since 2016. Gray Tree Frog has been observed in all years except 2022. Wood Frog has been observed in 2008, from 2015 to 2017, and from 2019 to 2021. Northern Leopard Frog was incidentally observed in many years, and was documented calling during the nocturnal amphibian surveys at Pond 1 in 2015, 2016, 2017 and 2019. American Bullfrog was observed incidentally near Pond 1 in 2021 and on the access road near the pond that is east of the property (Station 1) in 2022. Previously, American Bullfrog had been heard calling in 2017 and 2019 within the pond just east of the property.

**Table 11. Breeding Amphibian Monitoring Results (2008–2022)**

Year	SPPE	GRTR	GRFR	CHFR	WOFR	AMTO	NLFR	BUFR
2008	X	X	X	X	X	-	-	-
2009	X	X	X	-	-	-	-	-
2010	X	X	X	-	-	-	X*	-
2011	X	X	X	X	X	X	-	-
2015	X	X	X	-	X	-	X*	X*
2016	X	X	X	-	X	X	X*	-
2017	X	X	X	-	X	X	X	X
2018	X	X	X	-	-	X	-	-
2019	X	X	X	-	X*	X	X	X
2020	X	X	X	-	X	X	-	X*
2021	X	X	X	-	X	X	-	X*
2022	X	-	X	-	-	X	X*	X*

SPPE = Spring Peeper, GRTR = Gray Treefrog, GRFR = Green Frog, CHFR = Western Chorus Frog, WOFR = Wood Frog, AMTO = American Toad, NLFR = Northern Leopard Frog, BUFR = American Bullfrog

\* Indicates species observed incidentally and not recorded during amphibian monitoring surveys (from 2015 onward)

Overall, the results of these surveys have been relatively consistent with minor variations from year-to-year, which are to be expected based on the types of habitat present on the property and daily/annual species variations. Adult anurans are very mobile and often travel over upland areas to find suitable habitats.

### 3.3.2 Breeding Birds

A total of 36 species of birds (**Appendix C**) was documented on and directly adjacent to the subject property in 2022. Of the 36 species documented, 31 exhibited evidence of breeding and are considered to be breeding on the subject property.

During the field surveys in 2022, species that were observed flying or foraging over the property, or observed during migration and not considered to be breeding on the property, included: Great Blue Heron (*Ardea herodias*), Cooper’s Hawk (*Accipiter cooperi*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), European Starling (*Sturnus vulgaris*) and Common Grackle (*Quiscalus quiscula*). These species were either observed flying overhead or were using the property to forage (e.g., swallow species).

Of the 31 species that exhibited breeding evidence, two are species that have conservation status. Eastern Wood-Pewee (*Contopus virens*), which is designated as Special Concern under the federal *Species at Risk Act* (2002) and provincial *Endangered Species Act* (2007), was recorded on the property during the 2022 breeding bird survey for the first time since the 2019 breeding bird survey. Eastern Meadowlark (*Sturnella magna*), which is designated as Threatened federally and provincially, was recorded on the property during the 2022 breeding bird survey for the first time since the 2009 breeding bird survey conducted by Dougan and Associates. All species have a conservation rank of S5 (Secure) or S4 (Apparently Secure) (NHIC 2022).

Eastern Wood-Pewee is a common breeding bird species for the property in Aberfoyle and is often associated with wooded features. In 2022 Eastern Wood-Pewee was heard singing at breeding bird monitoring station 3.

Eastern Meadowlark breeds in a variety of grassland habitats including hayfields, pasturelands and weedy meadows. In 2022 this species was incidentally heard calling outside of a monitoring station in the weedy meadow near Pond 1. Although this is a relatively small suitable patch of habitat, this species will on occasion choose small areas to breed.

Six of the 31 bird species that displayed some level of breeding evidence on the property are considered to be "priority landbird species" in Bird Conservation Region (BCR) 13, the Lower Great Lakes – St. Lawrence Plain. Priority species are those that meet Partners in Flight criteria for Species of Continental or Regional Importance, because of high conservation concern / vulnerability and/or high stewardship responsibility scores (OPIF 2008). Species include:

- Northern Flicker (*Colaptes auratus*);
- Eastern Wood-Pewee;
- Eastern Kingbird (*Tyrannus tyrannus*);
- Savannah Sparrow (*Passerculus sandwichensis*);
- Eastern Meadowlark; and
- Baltimore Oriole (*Icterus galbula*).

Northern Flicker was heard calling from breeding bird monitoring stations 3 and 5, and also incidentally during the September basking turtle survey. Eastern Kingbird was heard calling from breeding bird monitoring stations 1 and 3 and also incidentally in the open areas of the property along the eastern property boundary and in the meadow by Pond 1. One Savannah Sparrow was recorded incidentally along the eastern property boundary during the first 2022 breeding bird survey. One Baltimore Oriole was recorded singing from breeding bird monitoring station 1.

Eight of the 31 breeding bird species are considered significant in Wellington County (Dougan & Associates 2009). These species include:

- Northern Flicker;
- Eastern Wood-Pewee;
- Eastern Kingbird;
- Black-and-White Warbler (*Mniotilta varia*);
- American Redstart (*Setophaga ruticilla*);
- Savannah Sparrow;
- Eastern Meadowlark; and
- Baltimore Oriole.

One Black-and-White Warbler was recorded at breeding bird monitoring station 2. An American Redstart was recorded incidentally during the second 2022 breeding bird survey in the deciduous forest at the southeastern edge of the property.

Four of the 31 breeding bird species observed in 2022 are considered area-sensitive. Area-sensitive species require larger areas of suitable habitat in order to sustain their populations (OMNR 2000) and are therefore considered more sensitive to habitat loss and fragmentation. These species include:

- Black-and-White Warbler;
- American Redstart;
- Savannah Sparrow; and
- Eastern Meadowlark.

Black-and-White Warbler and American Redstart are associated with the forested habitats on the property. Savannah Sparrow and Eastern Meadowlark are associated with the open areas on the property.

The number of breeding and total birds recorded each year through the monitoring surveys is shown in **Table 12**.

**Table 12. Breeding Bird Monitoring Results (2008-2021)**

Monitoring Year	Number of Total Bird Species	Number of Breeding Bird Species
2008	40	34
2009	45	39
2010	48	36
2011	50	38
2015	39	33
2016	48	40
2017	51	37
2018	39	32
2019	44	34
2020	47	35
2021	44	32
2022	36	31

The lower number of total birds is due to a decrease in incidental observations of migrating waterfowl, raptor flyovers and foraging swallow species from what was observed in previous years. Breeding bird species that were not recorded this year were primarily woodland species that breed in the forested habitat north of the plant. Birds in this area can be difficult to hear from the point count stations if wind levels are towards the higher end of what is permitted for breeding bird surveys.

However, the overall results of the breeding bird surveys in 2022 are similar to the results of breeding bird surveys that were completed in previous years at the site. Differences in the results of these surveys can be attributed to daily and annual species variations.

### 3.3.3 Owl Surveys

During the two Barred Owl surveys conducted in 2010, Barred Owl was not recorded. However, during the second owl survey in 2010 on July 27, a Northern Saw-whet Owl was recorded calling continuously for 5 minutes in the northeast corner. The Ontario Breeding Bird Atlas states that this species breeds in

a variety of forest types but is most abundant in coniferous forests (Cadman *et al.* 2007). Therefore, the Blue Triton Brands Aberfoyle property provides suitable habitat for this owl species. Northern Saw-whet Owl is considered locally rare in Wellington County (Dougan and Associates 2009) and ranked as “secure” (S5) by NHIC (2022).

As a result of this record, the 2011 field surveys included broadcasting calls for Northern Saw-whet Owls, as discussed in **Section 2.3.3**. However, in 2011, no owls were heard during the survey, and no formal owl surveys or incidental observations of owls have occurred since.

### 3.3.4 Basking Turtle Survey

The results of the basking turtle surveys are shown below in **Table 13**. Pond locations are shown on **Figure 3**.

**Table 13. Basking Turtle Survey Results (2022)**

	Survey 1 (May 5, 2022)			Survey 2 (May 24, 2022)			Survey 3 (September 20, 2022)		
	<i>Pond 1</i>	<i>Pond 2</i>	<i>Fire Ponds</i>	<i>Pond 1</i>	<i>Pond 2</i>	<i>Fire Ponds</i>	<i>Pond 1</i>	<i>Pond 2</i>	<i>Fire Ponds</i>
Midland Painted Turtle ( <i>Chrysemys picta marginata</i> )	10	0	0	11	0	1	6	0	0
Snapping Turtle ( <i>Chelydra serpentina</i> )	1	0	0	1	1	1	0	0	0

The majority of the turtles that were observed on the subject property were Midland Painted Turtles, most of which were observed in Pond 1 and one was observed in the Fire Ponds (**Figure 3**). This species is not considered significant at the local (Dougan & Associates 2009), regional (Plourde *et al.* 1989), or provincial (NHIC 2022) level. In April 2018, COSEWIC updated this species’ status to Special Concern due to loss of wetlands in Ontario; on April 23, 2021, the *Species at Risk Act* (2002) added Midland Painted Turtle to Schedule 1 with the Special Concern status.

The number of Midland Painted Turtles seen in 2018-2022 is lower than what has previously been recorded (refer to **Table 14**). This is likely due to the establishment of Common Reed and willows around the edge of Pond 1, which is reducing basking opportunities.

One Snapping Turtle was observed basking along the edges of Pond 1 during the first turtle basking survey. This basking behaviour is typical for Snapping Turtles, which typically only leave the water to migrate between suitable habitats or to lay their eggs. Additionally, as has been noted in previous years, Snapping Turtle nests were observed adjacent to Pond 1. In 2019, Blue Triton Brands staff indicated that Snapping Turtle are frequently observed nesting in the gravel around the ponds.

A summary of the basking turtle survey results from the Blue Triton Brands monitoring program on the Aberfoyle property are shown below in **Table 14**.

**Table 14. Basking Turtle Monitoring Results (2008-2022)**

Year	Snapping Turtle*	Midland Painted Turtle*
2008	1	0
2010	0	8 (5)
2011	1	38 (23)
2015	2 (1)	80 (36)
2016	5 (4)	42 (23)
2017	5	44 (25)
2018	1	30 (13)
2019	4 (2)	34 (22)
2020	6	34 (17)
2021	3 (2)	34 (21)
2022	4 (1)	28 (11)

\* Maximum number observed per survey event are noted in parentheses.

### 3.3.5 Odonate Surveys

Baseline odonate surveys were completed by Dougan & Associates in 2010 and 2011 in the vicinity of Pond 1. The following taxa were observed:

- Common Green Darner - *Anax junius*;
- Northern/Vernal Bluet - *Enallagma annexum*/*E. vernale*;
- Rainbow Bluet - *Enallagma antennatum*;
- Boreal Bluet - *Enallagma boreale*;
- Marsh Bluet - *Enallagma eribium*;
- Unidentified Bluet species - *Enallagma sp.*;
- Eastern Pondhawk - *Erythemis simplicicollis*;
- Eastern Forktail - *Ischnura verticalis*;
- Dot-tailed Whiteface - *Leucorrhinia intacta*; and
- Unidentified Spreadwing species - *Sympetrum sp.*

Additionally, Canada Darner and Eastern Pondhawk were noted incidentally in 2009.

Dougan & Associates note that this list is likely quite conservative since the survey was focussed in the Pond 1 area, and there are likely many other taxa present on the subject property. Common Green Darner, Boreal Bluet, Marsh Bluet, Eastern Pondhawk, Eastern Forktail and Dot-tailed Whiteface are ranked as "secure" (S5) while Rainbow Bluet, Northern Bluet and Vernal Bluet are ranked as "apparently secure" (S4) (NHIC 2022). Both Northern and Vernal Bluets are also considered Significant in Wellington County (Dougan & Associates 2009).

No additional odonate surveys are proposed in the near future.

### 3.3.6 Other Wildlife Species Observations

Other wildlife that were recorded on the subject property during the 2022 field season included:

- Eastern Gray Squirrel (*Sciurus carolinensis*);
- Eastern Cottontail (*Sylvilagus floridanus*); and
- Eastern Chipmunk (*Tamias striatus*).

These incidental wildlife observations are similar to those noted in previous years.

## 4. Conclusion and Recommendations

This annual monitoring report describes the methods and findings of the 2022 biological monitoring field programs for the Blue Triton Brands Aberfoyle property. Aquatic and terrestrial monitoring completed in 2022 included:

- Salmonid spawning (redd) surveys in Aberfoyle Creek;
- Amphibian breeding surveys;
- Breeding bird surveys; and
- Turtle basking surveys.

Consistent with the required aquatic monitoring program, salmonid spawning surveys were completed along Aberfoyle Creek in 2022 by C. Portt and Associates. No evidence of spawning was observed. These findings are consistent with those of previous years (2007-2021).

Amphibian breeding surveys completed in 2022 documented three species and two additional species documented incidentally. These findings are consistent with previous survey years and there are no significant changes to the resident breeding populations.

Breeding bird surveys were completed in 2022. Thirty-one (31) species were noted to be breeding on the property, which is consistent with numbers observed in 2018 and 2021. These numbers are average in comparison to other years and are consistent with normal year to year variation.

Turtle basking surveys of the pond habitats on site were completed in 2022 and confirmed that Painted Turtle and Snapping Turtle are actively using the site for basking, breeding and over-wintering. While the survey methodologies employed have been standardized, year to year variation in numbers observed remains relatively high.

Floristic surveys of the property were completed in 2019 to update the overall plant species checklist which was last updated in 2011. A total of 255 species were documented. Over 77% of the species present are considered native to Ontario and reflects the quality of the ecological communities present.

In 2019, ecological communities on the subject property were verified and ELC mapping updated. The last update was in 2009. No significant changes were observed to warrant re-classification; however the boundaries of several communities were adjusted slightly.

Monitoring of vegetation in the six permanent sampling plots located in select wetland communities was completed in 2019. The data indicate that while there have been minor shifts in species composition and abundance from year-to-year, that most of this variation is attributable to sampling biases and does not reflect changes related to altered hydrology or disturbance; although there is some evidence to suggest compositional changes in some plots are related to expansion of Common Reed colonies.




No vegetation surveys were conducted in 2022. It is expected that vegetation plot surveys will be conducted again in 2024 and ELC and floristic surveys will resume in 2028.

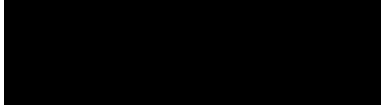
In summary, the findings suggest that there have not been any significant changes to the various terrestrial and aquatic parameters being monitored on the Aberfoyle property. Species richness, abundance, and distribution are generally within the range expected and attributable to natural variation and succession. The subject property continues to support high quality terrestrial and wetland habitats that support a diverse range of native wildlife. The aquatic environment is strongly influenced by the thermal loading from the Aberfoyle Mill Pond.

Based on findings of the 2022 biological monitoring program, we recommend that Core wildlife monitoring (amphibian, reptiles and birds) be completed in 2023. Additionally, Salmonid spawning surveys in Aberfoyle Creek should be conducted as required in 2023 by C. Portt and Associates.

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## 5. References

- Beacon Environmental. 2022.  
2021 Biological Monitoring Program Nestlé Waters Canada Aberfoyle Property. 52 pp.
- Bird Studies Canada. 2009.  
Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. 2009 Edition. 13 pages. Published by Bird Studies Canada in cooperation with Environment Canada and the U.S. Environment Protection Agency. February 2009.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.) 2007.  
Atlas of the Breeding Birds of Ontario, 2001 – 2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologist, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto. Xxii + 706 pp.
- C. Portt and Associates. 2023.  
Examination of the Temperature Suitability of Aberfoyle Creek for Resident Fishes: 2006-2022. February 2023.
- Canadian Wildlife Services. 2006.  
Forest Bird Monitoring Program: Site Set-up and Bird Survey Instructions. 6p.
- Cecile, C. 2017.  
DRAFT Wellington County Vascular Plant List.
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2018.  
Canadian Wildlife Species at Risk. Committee on the Status of Endangered Wildlife in Canada. Web Site: [https://wildlife-species.canada.ca/species-risk-registry/sar/index/default\\_e.cfm](https://wildlife-species.canada.ca/species-risk-registry/sar/index/default_e.cfm) [Accessed November 2018]
- Dougan & Associates. 2007/2008.  
2007/2008 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada. pp 48.
- Dougan & Associates. 2009.  
Guelph Natural Heritage Strategy. Phase 2: Terrestrial Inventory & Natural Heritage System Updates. Volume 2 – Appendices.
- Dougan & Associates. 2010.  
2009 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada. June 2, 2010. pp 43.
- Dougan & Associates. 2011.  
2010 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada. January 28, 2011. pp 72.

- Dougan & Associates. 2012.  
2011 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada. March 2012. pp 72
- Dougan & Associates. 2013.  
2012 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada.
- Dougan & Associates. 2014.  
2013 Biological Monitoring Program - Final Report. Prepared for Nestlé Waters Canada, 101 Brock Road, Aberfoyle, Ontario, Canada. March 2014. pp 25
- Howe, R.W., G.J. Niemi, S.J. Lewis, and D.A. Welsh. 1997.  
A standard method for monitoring songbird populations in the Great Lakes Region. *The Passenger Pigeon* 59(3): 189-194.
- Jones, C. A., Kingsley A., Burke, P. and Holder, M. 2008.  
The Dragonflies and Damselflies of Algonquin Provincial Park and Surrounding Area. Published by The Friends of Algonquin Park, Whitney, Ontario. 263 pp.
- Lam, E. 2004.  
Damselflies of the Northeast. A guide to the species of eastern Canada and the northeastern United States. Biodiversity Books. Forest Hills, New York. 96 pp.
- Stanfield L. (editor). 2010.  
Ontario Stream Assessment Protocol. Version 8.0. Fisheries Policy Section. Ontario Ministry of Natural Resources. Peterborough, Ontario. 376 pages.
- NHIC. 2022.  
Natural Heritage Reference Center. Available at: <https://www.ontario.ca/page/get-natural-heritage-information> [Accessed June 2022].
- Oldham M. J., Bakowsky W. D., Sutherland D. A. 1995.  
Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Center, OMNR (Ontario Ministry of Natural Resources). Peterborough, Ontario. 69 pp.
- Oldham, M.J. and S.R. Brinker, S.R. 2009.  
Rare Vascular Plants of Ontario. Fourth Edition. Natural Heritage information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario. 188 pages.
- Ontario Ministry of Natural Resources. 2000.  
Significant Wildlife Habitat Technical Guide. 151 pp.
- Ontario Partners in Flight. 2008.  
Ontario Land Bird Conservation Plan: Lower Great Lakes / St. Lawrence Plain, North American Bird Conservation Region 13. Ontario Ministry of Natural Resources, Bird Studies Canada, Environment Canada. Final Draft, June 2008.

Plourde, S.A., E.L. Szepesi, J.L. Riley, M.J. Oldham and C. Campbell. 1989.  
Distribution and Status of the Herpetofauna of Central Region, Ontario Ministry of Natural Resources and Recreational Areas Section, OMNR, Open File Ecological Report SR8903, Central Region, Richmond Hill, Ontario. 27 pp.

# Appendix A

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## Key Biophysical Attributes of the Vegetation Communities in the Study Area

## Appendix A

### Key Biophysical Attributes of the Vegetation Communities in the Study Area<sup>1</sup>

Unit. ELC Code	1 SAM1	2 CUM1	3 MAM2	4 FOM7	5 CUP3
<b>Vegetation Type</b>	Mixed Shallow Aquatic Ecosite	Mineral Cultural Meadow Ecosite	Mineral Shallow Marsh Ecosite	Fresh-Moist White Cedar - Hardwood Mixed Forest Ecosite	Coniferous Plantation Ecosite
<b>Overstorey Composition</b>	<i>Salix sp</i>	<i>Thuja occidentalis, Populus tremuloides, Populus deltoides ssp. deltoides,</i>	<i>Alnus incana ssp. rugosa, Thuja occidentalis, Sambucus nigra ssp. Canadensis, Fraxinus pennsylvanica, Fraxinus nigra</i>	<i>Acer rubrum, Acer negundo, Fraxinus pennsylvanica, Thuja occidentalis, Populus tremuloides, Salix amygdaloides</i>	<i>Pinus strobes, Pinus sylvestris, Thuja occidentalis, Betula papyrifera, Prunus serotina, Acer saccharum var. saccharum, Carya cordiformis, Fraxinus americana, Rhamnus cathartica, Lonicera tatarica</i>
<b>Understorey Composition</b>	<i>Polygonum hydropiper, Rumex crispus, Schoenoplectus tabernaemontani, Typha angustifolia, Verbena hastata</i>	<i>Salix eriocephala, Rhamnus cathartica, Lonicera tatarica, Salix purpurea, Cornus sericea ssp. sericea, Vitis riparia, Rubus idaeus ssp. idaeus, Salix exigua</i>	<i>Ribes triste Cornus sericea ssp. sericea</i>	<i>Cornus sericea ssp. sericea, Salix sp, Rubus idaeus ssp. idaeus</i>	<i>Rubus idaeus ssp. idaeus, Prunus virginiana var. virginiana</i>
<b>Groundcover Composition</b>	<i>Lemna minor</i>	<i>Solidago Canadensis, Daucus carota, Aster sp, Symphyotrichum novae-angliae, Asclepias syriaca, Echium vulgare, Achillea millefolium var. millefolium, Oenothera biennis, Tussilago farfara, Verbascum Thapsus, Fragaria virginiana ssp. Virginiana, Anemone sp, Trifolium sp</i>	<i>Typha latifolia, Carex stricta, Solanum dulcamara, Phalaris arundinacea, I halictum dioicum, Laportea canadensis, Mentha sp, Solidago rugosa ssp. Rugosa, Onoclea sensibilis, Carex intumescens, Eupatorium maculatum var. maculatum, Eupatorium perfoliatum, Symphyotrichum puniceum var. puniceum, Impatiens capensis, Lysimachia thyrsiflora, Ranunculus hispidus var. hispidus, Glyceria striata, Leersia oryzoides, Carex sp</i>	<i>Equisetum arvense, Tussilago farfara, Phalaris arundinacea</i>	<i>Asarum canadense Solidago flexicaulis Maianthemum canadense Tussilago farfara Eurybia macrophylla Carex granularis Sanguinaria canadensis</i>
<b>Diameter Range</b>	N/A	N/A	1	1– 2	2– 3
<b>Structural Diversity</b>	1	1	2	2	2
<b>Canopy Closure</b>	N/A	1	1	2(3)	3
<b>Relative Age</b>	2	1	2	2	2
<b>Soil Texture</b>	L	L	Om 15/ L	L – rip/rap	LfS
<b>Drainage Class</b>	3	1	3	1	1
<b>Slope Class</b>	1	1	1	2	2– 3
<b>Topographic Class</b>	1	1	2	1	1
<b>Botanical Quality</b>	1	1	2	1	1

<sup>1</sup> Appendix A is based off the 2011 Biological Monitoring Program - Final Report (Dougan & Associates 2012) with minor updates from work done by Beacon in 2019.

Unit. ELC Code	6 FOC4-1	7 MAS3	8 FOD6	9 SWD	10 SWM4-1
<b>Vegetation Type</b>	Fresh-Moist White Cedar Coniferous Forest	Organic Shallow Marsh Ecosite	Fresh-Moist Sugar Maple Deciduous Forest Ecosite	Deciduous Swamp	White Cedar - Hardwood Organic Mixed Swamp
<b>Overstorey Composition</b>	<i>Thuja occidentalis</i> <i>Fraxinus pennsylvanica</i> <i>Acer saccharum</i> var. <i>saccharum</i>	<i>Thuja occidentalis</i> , <i>Betula papyrifera</i> , <i>Ulmus americana</i> , <i>Fraxinus nigra</i> , <i>Betula alleghaniensis</i> , <i>Acer saccharum</i> var. <i>saccharum</i> <i>Fraxinus pennsylvanica</i> , <i>Acer rubrum</i> , <i>Prunus serotina</i> , <i>Carpinus caroliniana</i> ssp. <i>virginiana</i> , <i>Tilia americana</i> ,	<i>Acer saccharum</i> var. <i>saccharum</i> , <i>Ostrya virginiana</i> , <i>Tilia americana</i> , <i>Thuja occidentalis</i> , <i>Betula alleghaniensis</i> , <i>Betula papyrifera</i> , <i>Tsuga canadensis</i> , <i>Fagus grandifolia</i> , <i>Fraxinus pennsylvanica</i> , <i>Fraxinus americana</i>	<i>Fraxinus nigra</i> <i>Populus tremuloides</i> <i>Betula alleghaniensis</i> <i>Acer rubrum</i> <i>Tilia americana</i> <i>Thuja occidentalis</i> <i>Fraxinus pennsylvanica</i> <i>Fagus grandifolia</i>	<i>Thuja occidentalis</i> , <i>Populus tremuloides</i> , <i>Fraxinus pennsylvanica</i> , <i>Ulmus americana</i> , <i>Fraxinus nigra</i> , <i>Betula papyrifera</i> , <i>Betula alleghaniensis</i> , <i>Acer rubrum</i> ,
<b>Understorey Composition</b>	<i>Sambucus racemosa</i> var. <i>racemosa</i> <i>Cornus alternifolia</i> <i>Ribes</i> sp	<i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Rubus pubescens</i> , <i>Parthenocissus vitacea</i> , <i>Sambucus nigra</i> ssp. <i>canadensis</i>	-	<i>Sambucus nigra</i> ssp. <i>canadensis</i> , <i>Cornus sericea</i> ssp. <i>sericea</i>	<i>Rhamnus cathartica</i> , <i>Rubus idaeus</i> ssp. <i>idaeus</i> , <i>Salix petiolaris</i> , <i>Amelanchier alnifolia</i> , <i>Hamamelis virginiana</i> , <i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Sambucus nigra</i> ssp. <i>canadensis</i> , <i>Parthenocissus vitacea</i> , <i>Lonicera dioica</i> , <i>Prunus virginiana</i> var. <i>virginiana</i> , <i>Cornus alternifolia</i> , <i>Alnus incana</i> ssp. <i>rugosa</i> , <i>Frangula alnus</i> , <i>Cornus racemosa</i> , <i>Rubus pubescens</i> , <i>Prunus serotina</i> ,
<b>Groundcover Composition</b>	<i>Cystopteris bulbifera</i> <i>Tussilago farfara</i> <i>Carex communis</i> <i>Asarum canadense</i> <i>Onoclea sensibilis</i>	<i>Phragmites australis</i> , <i>Thelypteris palustris</i> var. <i>pubescens</i> , <i>Carex hystericina</i> , <i>Solanum dulcamara</i> , <i>Scirpus atrovirens</i> , <i>Epilobium hirsutum</i> , <i>Onoclea sensibilis</i> , <i>Cicuta maculata</i> , <i>Bidens frondosa</i> , <i>Typha latifolia</i> , <i>Sium suave</i> , <i>Rorippa nasturtium-aquaticum</i> , <i>Lycopus americanus</i> , <i>Agrostis stolonifera</i>	<i>Carex pennsylvanica</i> , <i>Onoclea sensibilis</i> , <i>Solidago flexicaulis</i> , <i>Tussilago farfara</i> , <i>Polystichum acrostichoides</i> , <i>Caulophyllum thalictroides</i> , <i>Asarum canadense</i> , <i>Anemone acutiloba</i> , <i>Carex pedunculata</i>	<i>Phalaris arundinacea</i> <i>Carex</i> sp <i>Solidago rugosa</i> ssp. <i>rugosa</i> <i>Onoclea sensibilis</i> , <i>Boehmeria cylindrica</i> <i>Carex lupulina</i> <i>Euonymus obovata</i>	<i>Solanum dulcamara</i> , <i>Agrimonia gryposepala</i> , <i>Thalictrum dioicum</i> , <i>Onoclea sensibilis</i> , <i>Oxalis stricta</i> , <i>Carex eburneari</i> , <i>Cystopteris bulbifera</i> , <i>Pilea pumila</i> , <i>Viola sororia</i> , <i>Clematis virginiana</i> , <i>Echinocystis lobata</i> , <i>Lysimachia thyrsoiflora</i> , <i>Circaea lutetiana</i> ssp. <i>canadensis</i> , <i>Phalaris arundinacea</i> , <i>Aster puniceus</i> var. <i>puniceus</i> , <i>Anemone virginiana</i> var. <i>cylindroidea</i> , <i>Dryopteris carthusiana</i> , <i>Echinocystis lobata</i>
<b>Diameter Range</b>	3	1	2- 3	2- 3	2- 3
<b>Structural Diversity</b>	2	2	2	2	2
<b>Canopy Closure</b>	3	1	3	3	3
<b>Relative Age</b>	2	2	2	2	2
<b>Soil Texture</b>	LfS	Om/SiL	L	L	O/L
<b>Drainage Class</b>	2	3	2	3	3
<b>Slope Class</b>	2(3)	1	1- 2	1	1
<b>Topographic Class</b>	2	2	1	2	2
<b>Botanical Quality</b>	2	2	2	2	3

Unit.	11	12	13	14-merged with Polygon 11 in 2009	15
ELC Code	MAS2-1/MAM2-2	SWC3-2	SWC3-1	SWT2	FOC4-1
<b>Vegetation Type</b>	Cattail Mineral Shallow Marsh/Reed Canary Grass Mineral Meadow Marsh	White Cedar - Conifer Organic Coniferous Swamp	White Cedar Organic Coniferous Swamp	Mineral Thicket Swamp Ecosite	Fresh-Moist White Cedar Coniferous Forest
<b>Overstorey Composition</b>	<i>Populus tremuloides</i> , <i>Thuja occidentalis</i>	<i>Thuja occidentalis</i> <i>Larix laricina</i>	<i>Thuja occidentalis</i> , <i>Populus balsamifera</i> ssp. <i>balsamifera</i> <i>Larix laricina</i> , <i>Betula papyrifera</i>	<i>Thuja occidentalis</i>	<i>Thuja occidentalis</i>
<b>Understorey Composition</b>	<i>Rhamnus cathartica</i> <i>Salix</i> sp <i>Salix petiolaris</i> <i>Ribes</i> sp <i>Cornus sericea</i> ssp. <i>sericea</i>	<i>Lonicera tatarica</i>	<i>Parthenocissus vitacea</i> <i>Lonicera tatarica</i>	<i>Salix</i> sp <i>Parthenocissus vitacea</i>	-
<b>Groundcover Composition</b>	<i>Typha latifolia</i> , <i>Phalaris arundinacea</i> , <i>Solidago canadensis</i> var. <i>scabra</i> <i>Tussilago farfara</i> , <i>Lysimachia thyrsiflora</i> , <i>Solanum dulcamara</i> , <i>Equisetum arvense</i> , <i>Carex hystericina</i> , <i>Carex stipata</i> <i>Aster puniceus</i> var. <i>puniceus</i> , <i>Eupatorium maculatum</i> var. <i>maculatum</i> , <i>Caltha palustris</i> , <i>Onoclea sensibilis</i> , <i>Impatiens capensis</i> , <i>Poa</i> sp, <i>Schoenoplectus tabernaemontani</i> , <i>Cicuta maculate</i> , <i>Carex stricta</i>	<i>Carex stricta</i> , <i>Carex pellita</i> <i>Dryopteris carthusiana</i> <i>Thelypteris palustris</i> var. <i>pubescens</i> , <i>Osmunda cinnamomea</i> , <i>Galium aparine</i> , <i>Equisetum arvense</i> , <i>Aster</i> sp, <i>Typha latifolia</i> , <i>Tussilago farfara</i> , <i>Fragaria virginiana</i> ssp. <i>virginiana</i> , <i>Caltha palustris</i> , <i>Solidago canadensis var. scabra</i> , <i>Thalictrum pubescens</i> , <i>Cypripedium parviflorum</i> , <i>Phragmites australis</i> , <i>Onoclea sensibilis</i>	<i>Equisetum arvense</i> , <i>Tussilago farfara</i> , <i>Onoclea sensibilis</i> <i>Galium aparine</i> , <i>Solanum dulcamara</i> , <i>Carex stipata</i> , <i>Phalaris arundinacea</i> , <i>Aster puniceus var. puniceus</i> <i>Thalictrum pubescens</i> <i>Dryopteris carthusiana</i> , <i>Caltha palustris</i> , <i>Eupatorium perfoliatum</i> , <i>Impatiens capensis</i> , <i>Eupatorium maculatum</i> var. <i>maculatum</i> , <i>Carex rosea</i> , <i>Cypripedium parviflorum</i> , <i>Taraxacum officinale</i>	<i>Typha latifolia</i> <i>Aster puniceus</i> var. <i>puniceus</i> <i>Phalaris arundinacea</i> <i>Solanum dulcamara</i> <i>Carex stipata</i> <i>Cicuta maculata</i> <i>Impatiens capensis</i> <i>Lysimachia thyrsiflora</i> <i>Onoclea sensibilis</i> <i>Thalictrum pubescens</i> <i>Asclepias syriaca</i> <i>Typha angustifolia</i>	-
<b>Diameter Range</b>	N/A	1– 2	2– 3	1	3
<b>Structural Diversity</b>	2	2	2	2	2
<b>Canopy Closure</b>	N/A	2– 3	3	1	3
<b>Relative Age</b>	2	2	2	2	2
<b>Soil Texture</b>	L	Om	Om	L	LfS
<b>Drainage Class</b>	3	3	3	3	2
<b>Slope Class</b>	1	1	1	1	1
<b>Topographic Class</b>	2	2	2	2	2
<b>Botanical Quality</b>	2	2	2	2	2



Unit. ELC Code	16 FOC4-1	17 FOC4-1	18 SWD	19 SWM4-1	20 FOM7
<b>Vegetation Type</b>	Fresh-Moist White Cedar Coniferous Forest	Fresh-Moist White Cedar Coniferous Forest	Deciduous Swamp	White Cedar - Hardwood Organic Mixed Swamp	Fresh-Moist White Cedar - Hardwood Mixed Forest Ecosite
<b>Overstorey Composition</b>	<i>Thuja occidentalis</i>	<i>Thuja occidentalis, Pinus strobus, Populus tremuloides, Betula papyrifera, Prunus serotina, Picea abies, Abies balsamea</i>	<i>Fraxinus nigra, Rubus idaeus ssp. idaeus, Rubus pubescens, Parthenocissus vitacea, Rhamnus cathartica, Thuja occidentalis, Vitis riparia, Frangula alnus, Populus tremuloides</i>	Species composition similar to unit 10	<i>Thuja occidentalis, Tilia americana, Acer saccharum ssp. saccharum, Ostrya virginiana, Tsuga canadensis</i>
<b>Understorey Composition</b>	-	<i>Prunus virginiana var. virginiana, Rhamnus cathartica</i>	-	-	<i>Acer saccharum ssp. saccharum</i>
<b>Groundcover Composition</b>	-	<i>Carex flacca, Danthonia spicata, Solidago nemoralis</i>	<i>Anemone canadensis, Solanum dulcamara, Geum sp, Thalictrum pubescens, Circaea lutetiana ssp. canadensis, Arisaema triphyllum ssp. triphyllum, Galium sp, Solidago rugosa ssp. rugosa</i>	-	<i>Carex pensylvanica, Dryopteris carthusiana, Asarum canadense</i>
<b>Diameter Range</b>	2- 3	2- 3	1- 2	2- 3	2- 3
<b>Structural Diversity</b>	1	1	2	2	2
<b>Canopy Closure</b>	3	3	2	3	3
<b>Relative Age</b>	2	2	1	2	2
<b>Soil Texture</b>	L	L	L	O/L	L
<b>Drainage Class</b>	1	1	3	3	2
<b>Slope Class</b>	1	1	1	1	1- 2
<b>Topographic Class</b>	2	2	2	2	2
<b>Botanical Quality</b>	2	2	2	3	2

Unit. ELC Code	21 FOC4-1	22 FOC4-1	23 CUM1	24 SWD2-2	25 MAM2
<b>Vegetation Type</b>	Fresh-Moist White Cedar Coniferous Forest	Fresh-Moist White Cedar Coniferous Forest	Mineral Cultural Meadow Ecosite	Red Ash Mineral Deciduous Swamp	Common Reed Mineral Meadow Marsh
<b>Overstorey Composition</b>	<i>Populus tremuloides</i> <i>Thuja occidentalis</i> <i>Fraxinus pennsylvanica</i> <i>Fraxinus americana</i> <i>Acer saccharum</i> var. <i>saccharum</i> <i>Betula alleghaniensis</i>	<i>Thuja occidentalis</i> , <i>Betula papyrifera</i> <i>Salix fragilis</i> , <i>Populus balsamifera</i> ssp. <i>balsamifera</i> , <i>Populus tremuloides</i> ,	<i>Acer negundo</i>	-	<i>Populus balsamifera</i> ssp. <i>balsamifera</i> <i>Acer negundo</i>
<b>Understorey Composition</b>	-	<i>Salix purpurea</i> , <i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Lonicera tatarica</i>	<i>Rhamnus cathartica</i> , <i>Rubus idaeus</i> ssp. <i>idaeus</i> , <i>Vitis riparia</i>	-	<i>Vitis riparia</i> , <i>Parthenocissus vitacea</i>
<b>Groundcover Composition</b>	<i>Solidago canadensis</i>	<i>Equisetum arvense</i> , <i>Solidago canadensis</i> , <i>Tussilago farfara</i> , <i>Taraxacum officinale</i>	<i>Solidago canadensis</i> var. <i>scabra</i> , <i>Echium vulgare</i> , <i>Linaria vulgaris</i> , <i>Thlaspi arvense</i> , <i>Equisetum arvense</i> , <i>Symphyotrichum novae-angliae</i> , <i>Bromus inermis</i> ssp. <i>pumpellianus</i> , <i>Leucanthemum vulgare</i> , <i>Solidago canadensis</i> , <i>Arctium minus</i> , <i>Lotus corniculatus</i> , <i>Daucus carota</i> , <i>Cirsium arvense</i> , <i>Rumex crispus</i> , <i>Tussilago farfara</i> , <i>Anemone canadensis</i> , <i>Asclepias syriaca</i> , <i>Trifolium repens</i>	-	<i>Phalaris arundinacea</i> <i>Rumex crispus</i> <i>Anemone canadensis</i> , <i>Ranunculus acris</i> , <i>Phragmites australis</i>
<b>Diameter Range</b>	2– 3	2– 3	N/A	2– 3	N/A
<b>Structural Diversity</b>	1	2	1	2	1
<b>Canopy Closure</b>	3	3	N/A	3	N/A
<b>Relative Age</b>	2	2	1	2	1
<b>Soil Texture</b>	L	L	L	L	L
<b>Drainage Class</b>	1	1	1	3	2
<b>Slope Class</b>	1	2	1– 2	1	1
<b>Topographic Class</b>	2	2	1	2	1
<b>Botanical Quality</b>	2	2	1	2	1

Unit. ELC Code	26 SAM1	27 SWD2-2	28 FOD	29 MAM2-2	30 MAM2-2
<b>Vegetation Type</b>	Mixed Shallow Aquatic Ecosite	Green Ash Mineral Deciduous Swamp	Deciduous Forest	Reed Canary-grass Mineral Meadow Marsh	Reed Canary-grass Mineral Meadow Marsh
<b>Overstorey Composition</b>	<i>Salix exigua</i>	<i>Fraxinus pennsylvanica, Fraxinus nigra, Ulmus americana, Betula allegheniensis, Tilia Americana, Populus tremuloides</i>	<i>Fraxinus pennsylvanica, Populus tremuloides, Thuja occidentalis, Pinus strobus</i>	<i>Thuja occidentalis, Fraxinus nigra</i>	-
<b>Understorey Composition</b>	-	<i>Rubus idaeus ssp melanolasius, Rhamnus cathartica, Sambucus canadensis, Thuja occidentalis, Viburnum trilobum (R)</i>	<i>Thuja occidentalis, Cornus sericea ssp sericea, Rhamnus frangula, abies balsamea</i>	<i>Cornus sericea ssp sericea, Rubus idaeus ssp strigosus, Thuja occidentalis</i>	-
<b>Groundcover Composition</b>	<i>Coronilla varia, Poa sp, Achillea millefolium var. millefolium, Typha latifolia, Juncus effusus ssp. solutes, Silene vulgaris, Melilotus officinalis Rumex crispus, Schoenoplectus tabernaemontani, Ranunculus sceleratus var. sceleratus</i>	<i>Onoclea sensibilis, Solidago rugosa, Clematis virginiana, Cystopteris bulbifera</i>	<i>Carex pennsylvanica, Solidago canadensis var. scabra, Pteridium aquilinum, solidago rugosa, Solanum dulcamara, Solidago rugosa</i>	<i>Phalaris arundinacea -D, Symphyotrichum lateriflorum var. angustifolium, Eupatorium maculatum, Aster puniceus, Carex sp.,</i>	<i>Phalaris arundinacea -D, Aster puniceus-A, Typha angustifolia, Typha latifolia, Symphyotrichum lanceolatum var. lanceolatum, Cyperipedium parviflorum var. makasin</i>
<b>Diameter Range</b>	N/A	2	1,2 (3)	1	1
<b>Structural Diversity</b>	1	2	2	1	1
<b>Canopy Closure</b>	N/A	3	3	1	1
<b>Relative Age</b>	1	2	1-2	1	1
<b>Soil Texture</b>	L	L	L	L	L
<b>Drainage Class</b>	3	2-3	1	2-3	2-3
<b>Slope Class</b>	1	1	1	1	1
<b>Topographic Class</b>	1	1	1	1	1
<b>Botanical Quality</b>	2	2	2	2	2

Unit. ELC Code	31 FOD	32 CUM1
<b>Vegetation Type</b>	Deciduous Forest Remnant	Cultural Meadow
<b>Overstorey Composition</b>	<i>Acer saccharum ssp saccharum, Tilia americana</i>	-
<b>Understorey Composition</b>	-	-
<b>Groundcover Composition</b>	-	Some areas manicured turf, some areas seeded; <i>Medicago sativa, Melilotus sp, Daucus carota</i>
<b>Diameter Range</b>	2	1
<b>Structural Diversity</b>	1	1
<b>Canopy Closure</b>	3	1
<b>Relative Age</b>	2	1
<b>Soil Texture</b>	L	L
<b>Drainage Class</b>	1	1
<b>Slope Class</b>	1	1
<b>Topographic Class</b>	1	1
<b>Botanical Quality</b>	2	1

**LEGEND**

Diameter Range (1 = &lt;15 cm dbh.; 2 = 15 – 30 cm dbh.; 3 = &gt;30 cm dbh.)

Structural Diversity (1 = strata 1 &amp; 2; 2 = &gt;2 strata; 3 = &gt; 3 strata, old growth)

Canopy Closure (1 = &lt;25%; 2 = 25– 50%; 3 = &gt;50%)

Relative Age (1 = Immature; 2 = mature; 3 = old growth)

Soil Texture (sand/silt/clay/org)

Drainage Class (1 = well-drained; 2 = imperfectly drained (1 – 3 mottles); 3 = poorly drained (&gt;3 mottles)

Slope Class (1 = &lt;10%; 2 = 10– 25%; 3 = &gt;25%)

Topographic Class (1 = uniform; 2 = uneven; 3 = high variability (hummocky)

Botanical Quality (1 = disturbed, exotics; 2 = low diversity; 3 = high diversity (sig spp. present)

Edge Abbreviations: ( ) represent localized condition; D = Dominant (51– 100%); A = Abundant (21– 50%); F = Frequent (11– 20%); O = Occasional (5– 10%); S = Scarce (&lt;5%)

# Appendix B

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## Flora Checklist

## Appendix B

### Flora Checklist

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Alisma triviale</i>	Northern Water-plantain	1	-5	S5	-
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	4	-5	S5	-
<i>Toxicodendron rydbergii</i>	Western Poison Ivy	0	0	S5	-
<i>Cicuta bulbifera</i>	Bulb-bearing Water-hemlock	5	-5	S5	-
<i>Cicuta maculata</i>	Spotted Water-hemlock	6	-5	S5	-
<i>Daucus carota</i>	Queen Anne's Lace	0	5	SNA	-
<i>Hydrocotyle americana</i>	American Water-pennywort	7	-5	S5	-
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	S5	-
<i>Apocynum androsaemifolium</i> ssp. <i>androsaemifolium</i>	Spreading Dogbane	3	5	S5	-
<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	Jack-in-the-pulpit	5	-2	S5	-
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	S5	-
<i>Asarum canadense</i>	Wild Ginger	6	5	S5	-
<i>Asclepias incarnata</i> ssp. <i>incarnata</i>	Swamp Milkweed	6	-5	S5	-
<i>Asclepias syriaca</i>	Common Milkweed	0	5	S5	-
<i>Asplenium platyneuron</i>	Ebony Spleenwort	6	3	S4	R
<i>Achillea millefolium</i> var. <i>occidentalis</i>	Woolly Yarrow	0	3	S5	-
<i>Ambrosia trifida</i>	Great Ragweed	0	-1	S5	-
<i>Bidens frondosa</i>	Devil's Beggar's Ticks	3	-3	S5	-
<i>Cichorium intybus</i>	Chicory	0	5	SNA	-
<i>Cirsium vulgare</i>	Bull Thistle	0	4	SNA	-
<i>Erigeron philadelphicus</i> var. <i>philadelphicus</i>	Philadelphia Fleabane	1	-3	S5	-
<i>Eupatorium perfoliatum</i>	Common Boneset	2	-4	S5	-
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	S5	-
<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe-pye Weed	3	-5	S5	-
<i>Hieracium</i> sp.	Hawkweed Species	0	0	-	-
<i>Lactuca biennis</i>	Tall Blue Lettuce	6	0	S5	-
<i>Lactuca</i> sp.	Lettuce Species	0	0	-	-
<i>Leucanthemum vulgare</i>	Oxeye Daisy	0	5	SNA	-
<i>Solidago altissima</i> var. <i>altissima</i>	Tall Goldenrod	1	3	S5	-
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	S5	-
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod	6	3	S5	-
<i>Solidago gigantea</i>	Smooth Goldenrod	4	-3	S5	-
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	Field Goldenrod	2	5	S5	-
<i>Solidago rugosa</i> ssp. <i>rugosa</i>	Rough Goldenrod	4	-1	S5	-
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sowthistle	0	1	SNA	-

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Sonchus asper</i> ssp. <i>asper</i>	Spiny-leaf Sowthistle	0	0	SNA	-
<i>Symphotrichum lanceolatum</i> ssp. <i>lanceolatum</i>	Panicked Aster	3	-3	S5	-
<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	Calico Aster	3	-2	S5	-
<i>Symphotrichum novae-angliae</i>	New England Aster	2	-3	S5	-
<i>Symphotrichum pilosum</i> var. <i>pilosum</i>	Hairy Aster	4	2	S5	U
<i>Symphotrichum puniceum</i> var. <i>puniceum</i>	Purple-stemmed Aster	6	-5	S5	-
<i>Symphotrichum urophyllum</i>	Arrow-leaved Aster	6	5	S4	U
<i>Taraxacum officinale</i>	Common Dandelion	0	3	SNA	-
<i>Tussilago farfara</i>	Colt's Foot	0	3	SNA	-
<i>Impatiens capensis</i>	Spotted Jewel-weed	4	-3	S5	-
<i>Caulophyllum giganteum</i>	Blue Cohosh	-	-	S5	-
<i>Caulophyllum thalictroides</i>	Blue Cohosh	6	5	S5	-
<i>Alnus incana</i> ssp. <i>rugosa</i>	Speckled Alder	6	-5	S5	-
<i>Betula alleghaniensis</i>	Yellow Birch	6	0	S5	-
<i>Betula papyrifera</i>	Paper Birch	2	2	S5	-
<i>Carpinus caroliniana</i> ssp. <i>virginiana</i>	American Hornbeam	6	0	S5	-
<i>Echium vulgare</i>	Common Viper's-bugloss	0	5	SNA	-
<i>Hackelia virginiana</i>	Virginia Stickseed	5	1	S5	-
<i>Myosotis laxa</i>	Small Forget-me-not	6	-5	S5	-
<i>Myosotis scorpioides</i>	True Forget-me-not	0	-5	SNA	-
<i>Symphytum officinale</i> ssp. <i>officinale</i>	Common Comfrey	0	5	SNA	-
<i>Cardamine diphylla</i>	Broad-leaved Toothwort	7	5	S5	-
<i>Cardamine pensylvanica</i>	Pennsylvania Bitter-cress	6	-4	S5	U
<i>Rorippa nasturtium-aquaticum</i>	True Watercress	0	-5	SNA	-
<i>Thlaspi arvense</i>	Field Penny-cress	0	5	SNA	-
<i>Lobelia siphilitica</i>	Great Blue Lobelia	6	-4	S5	-
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	0	3	SNA	-
<i>Sambucus canadensis</i>	Common Elderberry	5	-2	S5	-
<i>Sambucus nigra</i>	European Elderberry	-	-	SNA	-
<i>Viburnum opulus</i>	Guelder-rose Viburnum	0	0	SNA	-
<i>Silene vulgaris</i>	Maiden's Tears	0	5	SNA	-
<i>Euonymus obovatus</i>	Running Strawberry-bush	6	5	S5	-
<i>Hypericum perforatum</i>	St. John's-wort	0	5	SNA	-
<i>Convolvulus arvensis</i>	Field Bindweed	0	5	SNA	-
<i>Cornus alternifolia</i>	Alternate-leaf Dogwood	6	5	S5	-
<i>Cornus racemosa</i>	Gray Dogwood	2	-2	S5	-
<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	2	-3	S5	-
<i>Echinocystis lobata</i>	Wild Mock-cucumber	3	-2	S5	-
<i>Thuja occidentalis</i>	Northern White Cedar	4	-3	S5	-
<i>Carex bebbii</i>	Bebb's Sedge	3	-5	S5	-

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Carex bromoides</i>	Brome-like Sedge	7	-4	S5	-
<i>Carex communis</i>	Fibrous-root Sedge	6	5	S5	-
<i>Carex flacca</i>	Heath Sedge	0	0	SNA	-
<i>Carex flava</i>	Yellow Sedge	5	-5	S5	-
<i>Carex gracillima</i>	Graceful Sedge	4	3	S5	-
<i>Carex granularis</i>	Meadow Sedge	3	-4	S5	-
<i>Carex hystericina</i>	Porcupine Sedge	5	-5	S5	-
<i>Carex intumescens</i>	Bladder Sedge	6	-4	S5	-
<i>Carex lupulina</i>	Hop Sedge	6	-5	S5	-
<i>Carex pedunculata</i>	Longstalk Sedge	5	5	S5	-
<i>Carex pellita</i>	Woolly Sedge	4	-5	S5	-
<i>Carex pensylvanica</i>	Pennsylvania Sedge	5	5	S5	-
<i>Carex radiata</i>	Stellate Sedge	4	5	S5	-
<i>Carex sp.</i>	Sedge Species	0	0	-	-
<i>Carex stipata</i>	Stalk-grain Sedge	3	-5	S5	-
<i>Carex stricta</i>	Tussock Sedge	4	-5	S5	-
<i>Carex vulpinoidea</i>	Fox Sedge	3	-5	S5	-
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush	5	-5	S5	-
<i>Scirpus atrovirens</i>	Woolgrass Bulrush	3	-5	S5	-
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	Bracken Fern	2	3	S5	-
<i>Athyrium filix-femina</i> var. <i>angustum</i>	Lady-fern	4	0	S5	-
<i>Cystopteris bulbifera</i>	Bulblet Fern	5	-2	S5	-
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	S5	-
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	S5	-
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	5	0	S5	-
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	S5	-
<i>Matteuccia struthiopteris</i> var. <i>pensylvanica</i>	Ostrich Fern	5	-3	S5	-
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	S5	-
<i>Polystichum acrostichoides</i>	Christmas Fern	5	5	S5	-
<i>Equisetum arvense</i>	Field Horsetail	0	0	S5	-
<i>Equisetum sylvaticum</i>	Woodland Horsetail	7	-3	S5	U
<i>Coronilla varia</i>	Crown-vetch	0	5	SNA	-
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0	1	SNA	-
<i>Medicago lupulina</i>	Black Medic	0	1	SNA	-
<i>Trifolium repens</i>	White Clover	0	2	SNA	-
<i>Trifolium sp.</i>	Clover Species	0	0	-	-
<i>Fagus grandifolia</i>	American Beech	6	3	S5	-
<i>Geranium maculatum</i>	Wild Geranium	6	3	S5	-
<i>Geranium robertianum</i>	Herb-robert	0	5	S5	-
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	S5	-



Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Ribes triste</i>	Swamp Red Currant	6	-5	S5	-
<i>Iris versicolor</i>	Blueflag	5	-5	S5	-
<i>Carya cordiformis</i>	Bitternut Hickory	6	0	S5	-
<i>Juglans nigra</i>	Black Walnut	5	3	S4?	-
<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft Rush	4	-5	S5	-
<i>Galeopsis tetrahit</i>	Brittle-stem Hempnettle	0	5	SNA	-
<i>Lycopus americanus</i>	American Bugleweed	4	-5	S5	-
<i>Lycopus uniflorus</i>	Northern Bugleweed	5	-5	S5	-
<i>Mentha arvensis</i>	Corn Mint	3	-3	S5	-
<i>Nepeta cataria</i>	Catnip	0	1	SNA	-
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Self-heal	5	5	S5	-
<i>Prunella vulgaris</i> ssp. <i>vulgaris</i>	Common Heal-all	0	0	SNA	-
<i>Scutellaria galericulata</i>	Hooded Skullcap	6	-5	S5	-
<i>Scutellaria lateriflora</i>	Mad Dog Skullcap	5	-5	S5	-
<i>Scutellaria</i> sp.	Skullcap Species	0	0	-	-
<i>Lemna minor</i>	Lesser Duckweed	2	-5	S5	-
<i>Allium tricoccum</i>	Wild Leek	7	2	S5	-
<i>Maianthemum canadense</i>	Wild-lily-of-the-valley	5	0	S5	-
<i>Maianthemum stellatum</i>	Starflower False Solomon's Seal	6	1	S5	-
<i>Polygonatum pubescens</i>	Downy Solomon's Seal	5	5	S5	-
<i>Trillium grandiflorum</i>	White Trillium	5	5	S5	-
<i>Trillium</i> sp.	Trillium Species	0	0	-	-
<i>Lythrum salicaria</i>	Slender-spike Loosestrife	0	-5	SNA	-
<i>Fraxinus nigra</i>	Black Ash	7	-4	S5	-
<i>Fraxinus pennsylvanica</i>	Green Ash	3	-3	S5	-
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	Enchanter's Nightshade	3	3	S5	-
<i>Epilobium hirsutum</i>	Great-hairy Willow-herb	0	-4	SNA	-
<i>Epilobium parviflorum</i>	Small-flower Willow-herb	0	3	SNA	-
<i>Epilobium</i> sp.	Willow-herb Species	0	0	-	-
<i>Cypripedium parviflorum</i>	Small Yellow Lady's-slipper	7	-1	S5	-
<i>Epipactis helleborine</i>	Eastern Helleborine	0	5	SNA	-
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	S5	-
<i>Oxalis stricta</i>	Upright Yellow Wood Sorrel	0	3	S5	-
<i>Sanguinaria canadensis</i>	Bloodroot	5	4	S5	-
<i>Abies balsamea</i>	Balsam Fir	5	-3	S5	-
<i>Larix laricina</i>	American Larch	7	-3	S5	-
<i>Pinus nigra</i>	Black Pine	0	-5	SNA	-
<i>Pinus strobus</i>	Eastern White Pine	4	3	S5	-
<i>Tsuga canadensis</i>	Eastern Hemlock	7	3	S5	-
<i>Plantago lanceolata</i>	English Plantain	0	0	SNA	-

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Plantago major</i>	Nipple-seed Plantain	0	-1	SNA	-
<i>Agrostis gigantea</i>	Redtop	0	0	SNA	-
<i>Brachyelytrum erectum</i>	Long-awned Wood Grass	7	5	S4S5	R
<i>Bromus ciliatus</i>	Fringed Brome	6	-3	S5	-
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth Brome	0	5	SNA	-
<i>Cinna latifolia</i>	Slender Wood Reedgrass	7	-4	S5	U
<i>Danthonia spicata</i>	Poverty Oat-grass	5	5	S5	-
<i>Echinochloa crusgalli</i>	Barnyard Grass	0	-3	SNA	-
<i>Elymus hystrix</i>	Bottle-brush Grass	5	5	S5	-
<i>Elymus repens</i>	Quack Grass	0	3	SNA	-
<i>Elymus virginicus</i> var. <i>virginicus</i>	Virginia Wild-rye	5	-2	S5	-
<i>Glyceria grandis</i>	American Manna Grass	5	-5	S4S5	-
<i>Glyceria striata</i>	Fowl Manna Grass	3	-5	S5	-
<i>Leersia oryzoides</i>	Rice Cutgrass	3	-5	S5	-
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	S5	-
<i>Phleum pratense</i>	Timothy	0	3	SNA	-
<i>Phragmites australis</i> ssp. <i>australis</i>	European Common Reed	0	-4	SNA	-
<i>Poa palustris</i>	Fowl Bluegrass	5	-4	S5	-
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	0	1	SNA	-
<i>Schizachne purpurascens</i> ssp. <i>purpurascens</i>	Purple Oat	6	2	S5	-
<i>Polygonum hydropiper</i>	Water-pepper	4	-5	SNA	-
<i>Rumex crispus</i>	Curly Dock	0	-1	SNA	-
<i>Rumex orbiculatus</i>	Water Dock	6	-5	S4S5	-
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	S5	-
<i>Lysimachia thyrsoiflora</i>	Water Loosestrife	7	-5	S5	-
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Northern Starflower	6	-1	S5	-
<i>Adiantum pedatum</i>	Northern Maidenhair-fern	7	1	S5	-
<i>Actaea pachypoda</i>	White Baneberry	6	5	S5	-
<i>Anemone acutiloba</i>	Sharp-lobed Hepatica	6	5	S5	-
<i>Anemone canadensis</i>	Canada Anemone	3	-3	S5	-
<i>Anemone virginiana</i> var. <i>virginiana</i>	Virginia Anemone	4	5	S5	-
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	S5	-
<i>Caltha palustris</i>	Marsh Marigold	5	-5	S5	-
<i>Clematis virginiana</i>	Virginia Virgin-bower	3	0	S5	-
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup	2	-2	S5	-
<i>Ranunculus acris</i>	Tall Buttercup	0	-2	SNA	-
<i>Ranunculus hispidus</i> var. <i>caricetorum</i>	Swamp Buttercup	5	-5	S5	-
<i>Ranunculus pensylvanicus</i>	Bristly Crowfoot	3	-5	S5	U
<i>Ranunculus recurvatus</i> var. <i>recurvatus</i>	Hooked Crowfoot	4	-3	S5	-
<i>Ranunculus</i> sp.	Buttercup Species	0	0	-	-

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Thalictrum dioicum</i>	Early Meadowrue	5	2	S5	-
<i>Thalictrum pubescens</i>	Tall Meadowrue	5	-2	S5	-
<i>Frangula alnus</i>	Glossy Buckthorn	0	-1	SNA	-
<i>Rhamnus cathartica</i>	Buckthorn	0	0	SNA	-
<i>Agrimonia gryposepala</i>	Tall Hairy Agrimony	2	2	S5	-
<i>Fragaria virginiana</i>	Wild Strawberry	2	1	S5	-
<i>Geum canadense</i>	White Avens	3	0	S5	-
<i>Geum laciniatum</i>	Rough Avens	4	-3	S4	-
<i>Geum sp.</i>	Avens Species	0	0	-	-
<i>Geum urbanum</i>	Clover-root	0	5	SNA	-
<i>Malus sp.</i>	Apple Species	0	0	-	-
<i>Prunus serotina</i>	Wild Black Cherry	3	3	S5	-
<i>Rubus idaeus ssp. strigosus</i>	Wild Red Raspberry	0	-2	S5	-
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	S5	-
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	S5	-
<i>Galium aparine</i>	Cleavers	4	3	S5	-
<i>Galium asprellum</i>	Rough Bedstraw	6	-5	S5	-
<i>Galium palustre</i>	Marsh Bedstraw	5	-5	S5	-
<i>Galium sp.</i>	Bedstraw Species	0	0	-	-
<i>Populus balsamifera ssp. balsamifera</i>	Balsam Poplar	4	-3	S5	-
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	-	-	S5	-
<i>Populus tremuloides</i>	Quaking Aspen	2	0	S5	-
<i>Salix alba</i>	White Willow	0	-3	SNA	-
<i>Salix bebbiana</i>	Bebb's Willow	4	-4	S5	-
<i>Salix discolor</i>	Pussy Willow	3	-3	S5	-
<i>Salix eriocephala</i>	Heart-leaved Willow	4	-3	S5	-
<i>Salix exigua</i>	Sandbar Willow	3	-5	S5	-
<i>Salix fragilis</i>	Crack Willow	0	-1	SNA	-
<i>Salix petiolaris</i>	Meadow Willow	3	-4	S5	-
<i>Salix purpurea</i>	Basket Willow	0	-3	SNA	-
<i>Salix sp.</i>	Willow Species	0	0	-	-
<i>Acer negundo</i>	Manitoba Maple	0	-2	S5	-
<i>Acer platanoides</i>	Norway Maple	0	5	SNA	-
<i>Acer rubrum</i>	Red Maple	4	0	S5	-
<i>Acer saccharinum</i>	Silver Maple	5	-3	S5	-
<i>Acer saccharum var. saccharum</i>	Sugar Maple	4	3	S5	-
<i>Acer x freemanii</i>	Freeman's Maple	-	0	S5	-
<i>Mitella nuda</i>	Naked Bishop's-cap	6	-3	S5	-
<i>Tiarella cordifolia</i>	Heart-leaved Foam-flower	6	1	S5	-
<i>Chelone glabra</i>	Turtlehead	7	-5	S5	-

Scientific Name	Common Name (FOIBIS)	Coefficient of Conservatism	Wetness Index	S-Rank	Wellington
<i>Verbascum thapsus</i>	Common Mullein	0	5	SNA	-
<i>Veronica anagallis-aquatica</i>	Brook-pimpernell	0	-5	SNA	-
<i>Veronica officinalis</i>	Common Speedwell	0	5	SNA	-
<i>Smilax herbacea</i>	Smooth Herbaceous Greenbrier	5	0	S4	-
<i>Solanum dulcamara</i>	Climbing Nightshade	0	0	SNA	-
<i>Thelypteris palustris</i> var. <i>pubescens</i>	Marsh Fern	5	-4	S5	-
<i>Tilia americana</i>	American Basswood	4	3	S5	-
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	S5	-
<i>Typha latifolia</i>	Broad-leaf Cattail	3	-5	S5	-
<i>Ulmus americana</i>	American Elm	3	-2	S5	-
<i>Ulmus pumila</i>	Siberian Elm	0	5	SNA	-
<i>Boehmeria cylindrica</i>	False Nettle	4	-5	S5	-
<i>Laportea canadensis</i>	Wood Nettle	6	-3	S5	-
<i>Pilea pumila</i>	Canada Clearweed	5	-3	S5	-
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Slender Stinging Nettle	2	-1	S5	-
<i>Verbena hastata</i>	Blue Vervain	4	-4	S5	-
<i>Viola sororia</i>	Woolly Blue Violet	4	1	S5	-
<i>Viola</i> sp.	Violet Species	0	0	-	-
<i>Parthenocissus vitacea</i>	Thicket Creeper	3	3	S5	-
<i>Vitis riparia</i>	Riverbank Grape	0	-2	S5	-

a - COSEWIC = Committee on the Status of Endangered Wildlife in Canada: END = Endangered, THR = Threatened, SC = Special Concern

b - Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario): END = Endangered, THR = Threatened, SC = Special Concern

c - SRANK (from Natural Heritage Information Centre) for breeding status if: S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure) SNA (Not applicable... 'because the species is not a suitable target for conservation activities'; includes non-native species); last updated approximately 2019

d - Draft Wellington County Vascular Plant List (Cecile 2017). Status only shown if: R = Rare, U = Uncommon

# Appendix C

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## Breeding Bird Checklist (2022)

# Appendix C

## Breeding Bird Checklist (2022)

Common Name	Scientific Name	Status					2022-05-05 Incidentals	2022-05-24 Incidentals	2022-09-20 Incidentals	June 9, 2022						June 20, 2022				
		National Species at Risk COSEWIC <sup>a</sup>	Species at Risk in Ontario Listing <sup>b</sup>	Provincial breeding season SRANK <sup>c</sup>	Wellington Regional Status <sup>d</sup>	Area-sensitive (OMNR) <sup>e</sup>				PCS #1	PCS #2	PCS #3	PCS #4	PCS #5	Incidentals	PCS #1	PCS #2	PCS #3	PCS #4	PCS #5
Great Blue Heron	<i>Ardea herodias</i>			S4	S,R		F	F											F	
Green Heron	<i>Butorides virescens</i>			S4															1	
Canada Goose	<i>Branta canadensis</i>			S5			X													
Cooper's Hawk	<i>Accipiter cooperi</i>			S4	S	A														
Killdeer	<i>Charadrius vociferus</i>			S5																2
Mourning Dove	<i>Zenaida macroura</i>			S5																1
Downy Woodpecker	<i>Picoides pubescens</i>			S5																
Northern Flicker	<i>Colaptes auratus</i>			S4	S															2
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4	S															
Great Crested Flycatcher	<i>Myiarchus crinitus</i>			S4								1	2							
Eastern Kingbird	<i>Tyrannus tyrannus</i>			S4	S									1	1		1			1
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			S4										F					F	F
Blue Jay	<i>Cyanocitta cristata</i>			S5								1	1							
American Crow	<i>Corvus brachyrhynchos</i>			S5				X				1	1							
Black-capped Chickadee	<i>Poecile atricapillus</i>			S5				X				3			1			2	1	
House Wren	<i>Troglodytes aedon</i>			S5								1							1	
Marsh Wren	<i>Cistothorus palustris</i>			S4									1							
American Robin	<i>Turdus migratorius</i>			S5				X				1			1	2			1	2
Gray Catbird	<i>Dumetella carolinensis</i>			S4									1	2						1
Cedar Waxwing	<i>Bombycilla cedrorum</i>			S5								1	1							
European Starling	<i>Sturnus vulgaris</i>			SE										F					F	F
Red-eyed Vireo	<i>Vireo olivaceus</i>			S5									1							
Yellow Warbler	<i>Setophaga petechia</i>			S5								2				2				2
Black-and-white Warbler	<i>Mniotilta varia</i>			S5	S	A							1							
American Redstart	<i>Setophaga ruticilla</i>			S5	S	A														1
Common Yellowthroat	<i>Geothlypis trichas</i>			S5									1							
Northern Cardinal	<i>Cardinalis cardinalis</i>			S5									2	1						1
Indigo Bunting	<i>Passerina cyanea</i>			S4															1	1
Savannah Sparrow	<i>Passerculus sandwichensis</i>			S4	S	A														1
Song Sparrow	<i>Melospiza melodia</i>			S5								2		1	3	1	3		2	2
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			S4			F					4		3	4	1	4			2
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4	S	A														1
Common Grackle	<i>Quiscalus quiscula</i>			S5																F
Brown-headed Cowbird	<i>Molothrus ater</i>			S4																1
Baltimore Oriole	<i>Icterus galbula</i>			S4	S															1
American Goldfinch	<i>Spinus tristis</i>			S5								1	1	F	F					1

**KEY**

a - COSEWIC = Committee on the Status of Endangered Wildlife in Canada: END = Endangered, THR = Threatened, SC = Special Concern

b - Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario): END = Endangered, THR = Threatened, SC = Special Concern

c - SRANK (from Natural Heritage Information Centre) for breeding status if: S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure) SNA (Not applicable... 'because the species is not a suitable target for conservation activities'; includes non-native species); last updated approximately 2022

d - Significant Wildlife List for Wellington County from the City of Guelph Natural Heritage Strategy, Volume 2 (Dougan & Associates with Snell and Cecile 2009), last updated by the City of Guelph 2012. Status only shown if: S = Significant, R = Rare

Note that the following designations were excluded from this list:

\*\* = Only habitats that support or have recently supported active nests should be considered significant;

† = Bank Swallow: Significant only when found nesting in colonies equal to or greater than 100. However, recent OBBA data for Wellington County should be reviewed to see if this is appropriate.

‡ = Cliff Swallow: Significant only when found nesting in colonies equal to or greater than 8. However, recent OBBA data for Wellington County should be reviewed to see if this is appropriate.

‡ = Being small and secretive, these species are often overlooked. When more information is collected, it is possible that they may not merit significant species status in the future.

o = Habitat protection should be considered only when larval habitat is present at or in close proximity to where adults were documented.

Δ = Considered significant at present, but may prove to be too common to be so regarded in the future.

e - Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.

Beacon Breeding Status classifications:

# - breeding pair

F- foraging/flyover

x- Species observed not breeding

**APPENDIX I**

**Technical Memoranda: Analysis of  
Potential Recharge at the Blue  
Triton Brands Aberfoyle Facility  
SWB Model 2022 Update and TW3-  
80 Drawdown Analysis**





## Memorandum

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Date: January 27, 2023  
From: Xiaomin Wang and Christopher Neville  
To: Greg Padusenko, WSP  
Project: SSP-994-33  
Subject: **Analysis of potential recharge at the BlueTriton Brands Aberfoyle facility  
SWB model 2022 update**

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### Overview

S.S. Papadopoulos & Associates, Inc. (SSP&A) has applied the SWB model of the United States Geological Survey to estimate potential recharge in the Aberfoyle area during 2022. The analysis has been conducted to support the assessment of the likely variability in potential recharge and its distribution across the area around the production well TW3-80 at the Aberfoyle facility.

The results of the first SWB analysis for the Aberfoyle area were presented in the 2018 Aberfoyle Annual Monitoring Report (Golder Associates, March 2019). The analysis covered the years 2008 through 2018. The SWB analyses have subsequently been updated for the 2019 through 2022 Aberfoyle Annual Monitoring Reports (Golder Associates, March 2020, March 2021 and March 2022). Climate data from the Kitchener-Waterloo Airport station were specified for the analyses for the years 2018-2020. Prior to conducting the analysis for conditions in 2021, it was judged that the data from Kitchener-Waterloo Airport station were not representative. The analysis for the 2021 Annual Monitoring Report used 2021 climate data from the Grand River Conservation Authority (GRCA) Shade's Mills climate station. The climate data from the Shade's Mills climate station has been specified for the analysis of 2022 conditions. In addition, for consistency a complete analysis of potential recharge between 2008 and 2022 has been developed here specifying data exclusively from the Shade's Mills station.

In 2022 the total reported precipitation was 682 mm. The annual potential recharge estimated with the SWB model is about 85 mm. The results of the updated analysis are consistent with the general trends inferred from the analyses for 2008-2021.



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## **1. Introduction**

In March 2019, S.S. Papadopoulos & Associates, Inc. (SSP&A) applied the SWB model to estimate potential recharge to the water table over the area surrounding the Nestlé Waters Canada (now BlueTriton Brands) Aberfoyle facility. The SWB is a simplified Soil-Water Balance code developed by the United States Geological Survey (Westenbroek et al., 2010). The results of the analyses with 2008-2018 precipitation data were presented in the 2018 Aberfoyle Annual Monitoring Report (Golder Associates, March 2019). The SWB analyses have subsequently been updated with precipitation data from 2019 to 2021, with results presented in the corresponding Aberfoyle Annual Monitoring Reports (Golder Associates, March 2020, March 2021 and March 2022). This memorandum documents the results of the SWB analyses applied with 2022 daily precipitation and temperature data. The 2022 daily precipitation and temperature data are derived from the Shade's Mills climate station provided by the Grand River Conservation Authority. In the March 2022 report, analyses for 2008-2020 incorporated climate data from the Kitchener-Waterloo climate station; while the 2021 analysis incorporated climate data from the Shade's Mills station. In this memorandum, the analyses for 2008-2020 are updated with climate data from a consistent source, Shade's Mills climate station.

The SWB model refers consistently to "recharge". Following the guidance of Dr. Hugh Whiteley, the quantity that is reported as "recharge" should be interpreted as "potential recharge" (H. Whiteley, written communication December 7, 2021). Potential recharge is that portion of the precipitation that has moved downward across the earth surface plane (i.e., infiltration) and that has the potential to eventually recharge the water table (H. Whiteley, written communication December 7, 2021). The interval between the bottom of the root zone and the top of the water table is not considered in the SWB analysis. For cases in which the water table is close to the bottom of the root zone, the results of the SWB model should approximate the annual recharge. For cases in which there is a significant travel time between the bottom of the root zone and the water table, the SWB results may not match actual groundwater recharge rates in time or in space.

This memorandum consists of seven main sections:

1. Introduction [this section];
2. SWB conceptual model;
3. SWB model input;
4. Sources of input data for the Aberfoyle area;
5. SWB model update; and
6. Potential recharge calculated for 2022.



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## 7. References.

### 2. SWB conceptual model

The SWB model implements a modified Thornthwaite-Mather soil-water balance analysis (Westenbroek et al., 2010). The SWB model estimates each component of the soil-water balance for daily timesteps. Model outputs may be daily, monthly, or annual values of infiltration, along with estimates of interception, snow cover, runoff, potential and actual evapotranspiration. The spatial distributions of these quantities are calculated over time using a gridded data structure.

As indicated in the introduction, the documentation of the SWB model refers to infiltration. This nomenclature will be retained here, recognizing that “infiltration” is more correctly interpreted as “potential recharge”. The SWB model calculates infiltration with a modified Thornthwaite-Mather soil-water accounting method (Thornthwaite and Mather, 1957). Infiltration is calculated as the difference between the change in soil moisture and sources and sinks:

$$\text{infiltration} = (\text{precip} + \text{snowmelt} + \text{inflow}) - (\text{interception} + \text{outflow} + \text{ET}) \\ - \Delta \text{soil moisture}$$

The descriptions of the terms in the water balance are presented below, following the terminology of the documentation of the SWB model:

*Precip* – daily values of precipitation using ASCII or Surfer grid formats;

*Snowmelt* – daily values of snowmelt calculated based on air temperature of daily mean, maximum and minimum;

*Inflow* – daily values of water inflow into a cell calculated over a flow-direction grid derived from a digital elevation model;

*Interception* – daily values of rainfall trapped and used by vegetation, calculated by use of a “bucket” approach assuming a user-specified amount which varies from different land-use types and seasons;

*Outflow* – daily values of water outflow from a cell calculated based on curve number rainfall-runoff relation (Cronshey and others, 1986), soil type and runoff conditions;



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*ET* – daily values of evapotranspiration. There are five methods included in the SWB code. The simplest method is Thornthwaite and Mather (1957) requiring only daily maximum and minimum air temperature. The Thornthwaite-Mather method contains functions considering daylight length, radiation, sunset angle for the estimation of potential evapotranspiration; and

*Δ soil moisture* – daily values of the amount of water held in soil storage for a given cell calculated based on the Thornthwaite and Mather (1957) procedure.



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### 3. SWB model input

The datasets required for the application of the SWB model are listed below.

<b>Gridded (ESRI ASCII or Surfer)</b>
Land-use classification
Hydrologic soil group
Flow direction
Available soil-water capacity
<b>Tabular</b>
Climate data (e.g. precipitation and temperature)
Soil and land use property lookup table
Soil-water retention table (Thornthwaite and Mather, 1957)

A text model control file must be prepared for running the SWB code and the following additional information is required:

- Model domain, grid size;
- Growing season start and end;
- Initial soil moisture;
- Initial snow cover;
- Runoff calculation and routing method;
- Evapotranspiration method; and
- Output options.

Optional inputs for *ET* methods other than Thornthwaite and Mather (1957) and Hargreaves and Samani (1985) include daily average wind speed in m/s, average relative humidity in percent, maximum relative humidity in percent and percentage of possible sunshine.

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#### 4. Sources of input data for the Aberfoyle area

The limits of the area considered in the analysis are shown in Figure 1. The area has been selected to extend northeast beyond the expected limits of the capture zone of the Aberfoyle facility production well TW3-80, and southwest to the Sideroad 10 stream gauge on Mill Creek.



**Figure 1. Model limits**



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### **Climate data**

Two types of climate data are required: daily precipitation and temperature (minimum, maximum and average). Both sets of data are obtained from the climate station at Shade's Mills, monitored by the Grand River Conservation Authority. When data are missing from the station, gaps are filled using the daily precipitation data from the Kitchener/Waterloo (KW) Station.

### **Land cover data**

Land cover data are obtained from the Southern Ontario Land Resource Information System (SOLRIS v2) mapping compiled by OMNRF (2015).

<https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home>

### **Flow direction data**

Flow direction data are obtained from the Ontario Integrated Hydrology Data (OMNRF, 2012).

<https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home>

### **Hydrologic soil type data**

Hydrologic soil groups are used to estimate runoff from precipitation. The classification of soils within the study area has been obtained using the Ontario Data - Soil Survey Complex created by Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA, 2012).

<https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home>



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**Soil-water capacity data**

The soil-water capacity data are specified based on the textures of the surficial soils. The description of the soil textures, 'A' horizon, are provided in the field named "ATEXTURE1" of the Soil Survey Complex Data obtained from the OMAFRA website. A lookup table relating soil-water capacity and soil texture is reproduced below (Earthfx, 2016; Table 8.11).

Table 8.11: Soils mapping based parameters lookup table.

"A" Horizon Texture	Description	Proportion	PRMS Soil Type	Wilting Point (wp)	Field Capacity (Fc)	Porosity (n)	Plant Available Water (PAW)	Sat Hydraulic Conductivity (mm/hr)
SIL	Silt Loam	27%	Loam	0.14	0.32	0.48	0.18	12.2
L	Loam	22%	Loam	0.13	0.27	0.46	0.14	18.6
SL	Sandy Loam	15%	Sand	0.08	0.18	0.45	0.10	50.3
CL	Clay Loam	11%	Clay	0.21	0.35	0.47	0.14	16.7
Unclassified	Unclassified	8.7%	Loam	0.13	0.26	0.40	0.13	9.3
LS	Loamy Sand	5.9%	Loam	0.06	0.12	0.46	0.06	91.3
FSL	Fine Sandy Loam	3.5%	Loam	0.09	0.21	0.45	0.12	42.0
ORG	Organic	3.3%	Clay	0.16	0.34	0.65	0.18	2.1
GL	Gravelly Loam	1.9%	Sand	0.05	0.11	0.42	0.05	12.4
SICL	Silty Clay Loam	0.51%	Loam	0.21	0.38	0.51	0.17	5.9
FS	Fine Sand	0.14%	Sand	0.03	0.08	0.46	0.05	110.0
LFS	Loamy Fine Sand	0.12%	Loam	0.07	0.14	0.45	0.07	72.5
CG	Gravelly Sand	0.11%	Sand	0.02	0.05	0.41	0.03	76.0
VFSL	Very Fine Sandy Loam	0.08%	Loam	0.13	0.25	0.45	0.12	19.5
GSL	Gravelly Sandy Loam	0.01%	Sand	0.00	0.00	0.43	0.00	33.5

**Soil and land use property lookup table**

The soil and land use property lookup table is developed with the following procedure:

- Obtain the land use description provided by SOLRIS v2, e.g., Forest – tree cover > 60%;
- Download the Land Use Code (LU) "LU\_lookup\_WISCLAND\_w\_forested\_hillslope.txt" from the USGS website;
- Based on the land description, obtain the SCS number, maximum infiltration rates, interception storage values and depth of root zone from the USGS table; and
- Integrate all the information into a new lookup table for the Aberfoyle analysis.





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## **5. SWB model update**

The SWB model version 1.0.0 was applied previously to estimate potential recharge over the area surrounding the Aberfoyle facility for 2008-2021. The United States Geological Survey (USGS) compiled SWB version 1.0.0 on November 10, 2012 (“SWB\_2012”). The USGS referred to an updated version of the program, version 2.0, at the website <https://pubs.er.usgs.gov/publication/tm6A59>. However, the link to download the program did not actually work and the USGS has never made version 2.0 available.

A newer version of the SWB program, version 1.2, can be found via the following link: <https://www.sciencebase.gov/catalog/item/5d1281b1e4b0941bdc56cafb>. This specific version (“SWB\_2019”) was compiled in March 2019 and the main difference from the previous version of the model is the inclusion of the irrigation module. SWB Version 1.2 has been applied for the analysis of the 2022 climate data. Prior to conducting the analysis for the 2022 data, the consistency of the results from SWB versions 1.0.0 and 1.2 has been assessed. This has been accomplished by repeating the analyses for the 2021 climate data with both versions of the SWB model.

The SWB\_2019 model was applied for the 2021 Aberfoyle recharge analysis using the same input data applied for the SWB\_2012 model. There are some differences between the input requirements for the SWB\_2012 and SWB\_2019 models. For example, the reference column in the lookup table has to be removed and the potential ET binary output is no longer an option.

The annual potential recharge for 2021 estimated with the SWB\_2012 model was about 150 mm. The annual potential recharge estimated with the SWB\_2019 model is about 170 mm. The SWB\_2019 model predicts higher potential recharge rates during the hot summer months, as indicated with the green box shown in Figure 2.

The calculated distributions of annual potential recharge for 2021 using the SWB\_2012 and the SWB\_2019 models are shown in Figure 3 and Figure 4, respectively. Noting the overall difference of 20 mm, the results from the SWB\_2019 model are generally consistent with the SWB\_2012 model. The SWB\_2019 model will be used for the analyses of 2022 data and subsequent years. This switch is motivated by our concern that the USGS will no longer support the older version of the software and that the SWB\_2019 version is more computationally efficient.



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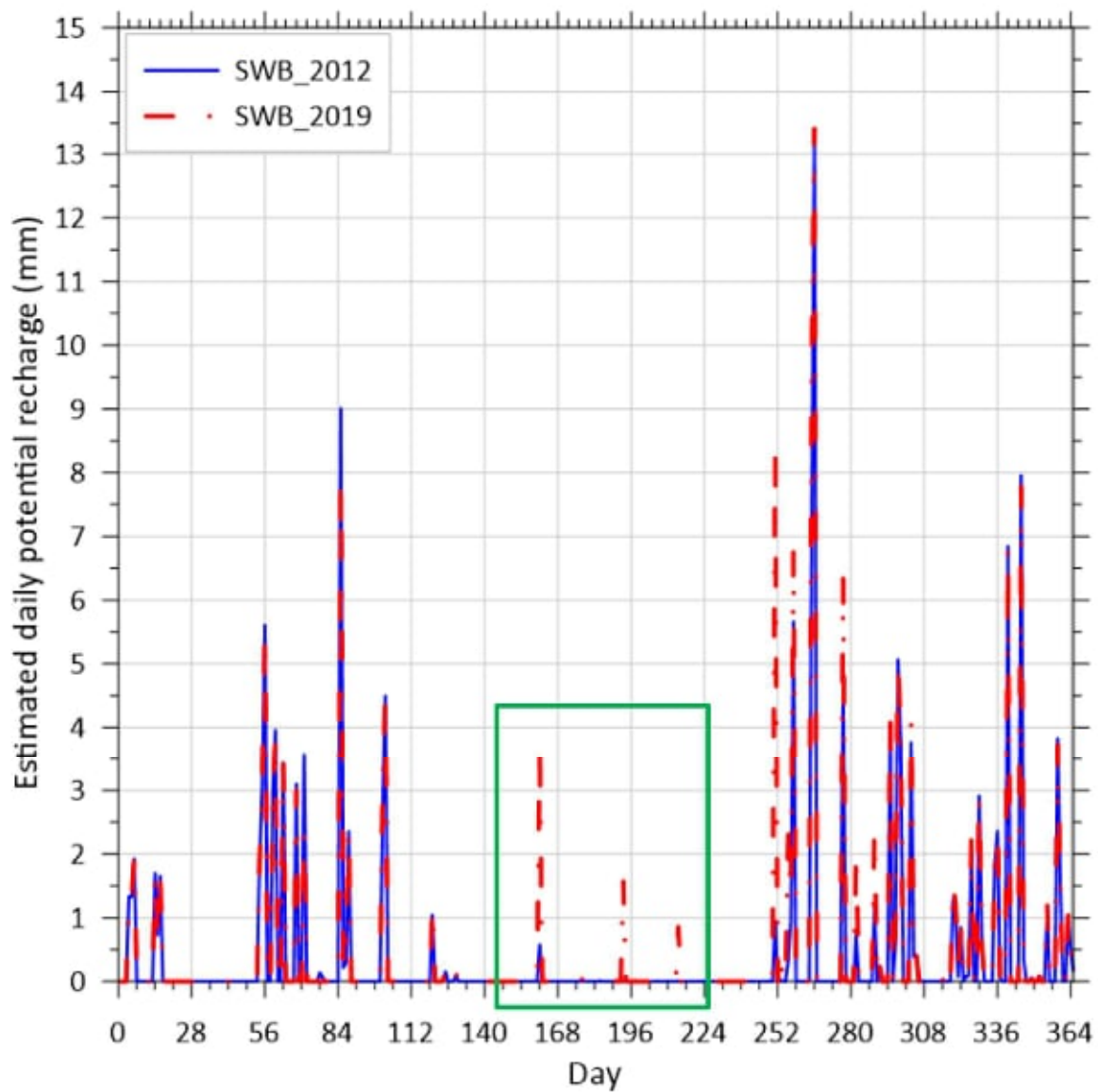


Figure 2. Estimated daily potential recharge over the study area using the SWB\_2012 and SWB\_2019 models

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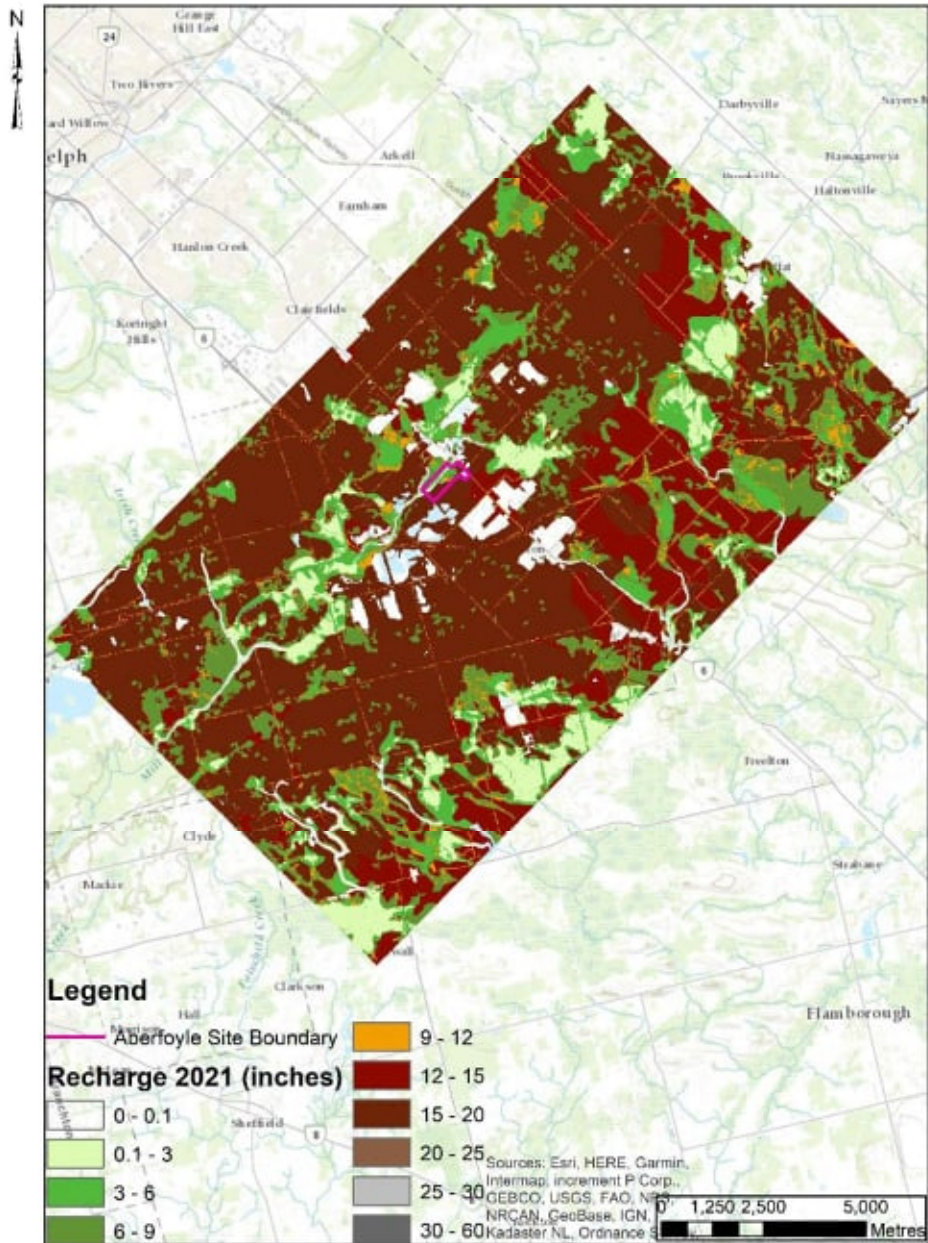


Figure 3. Calculated distribution of annual potential recharge for 2021, SWB\_2012 model



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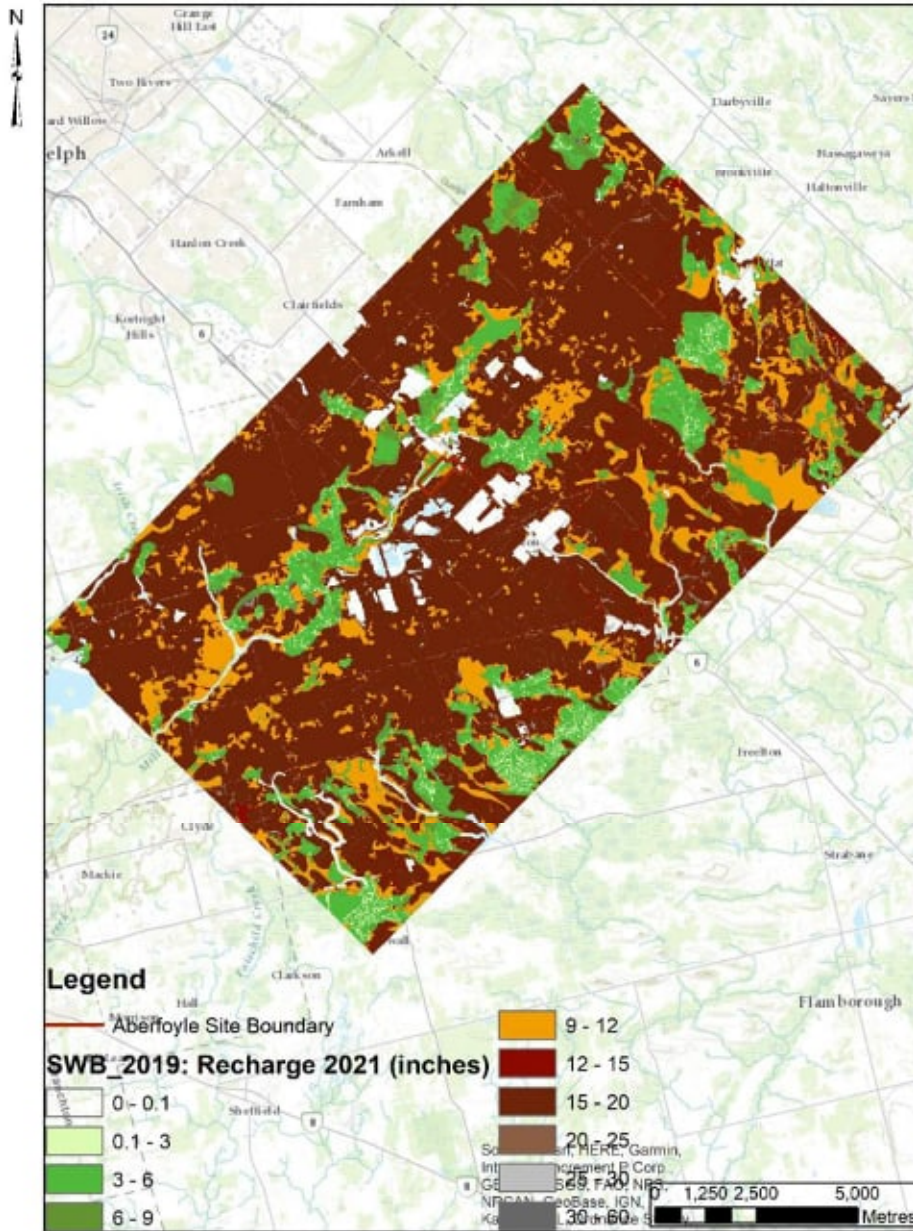


Figure 4. Calculated distribution of annual potential recharge for 2021, SWB\_2019 model



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## 6. SWB results for the Aberfoyle area for 2022

The calculated distribution of annual potential recharge for 2022 is shown in Figure 5. The distribution of estimated daily potential recharge values over the study area are shown in Figure 6.

The annual total precipitation and the annual total potential recharge values estimated with the SWB model from previous analyses are tabulated below. The estimates of potential recharge have been developed with a consistent precipitation record from the GRCA Shade's Mills climate station. Over the 15-year period of the analyses, the estimated annual potential recharge has varied over a relatively wide range, from about 85 mm to 221 mm. Values of estimated potential annual recharge are plotted against the total annual precipitation in Figure 7. As shown in the figure, the estimated annual potential recharge for 2022 follows the general trend of the results for previous years. The potential recharge for 2022 is the lowest estimated over the 15-year period.

<b>Year</b>	<b>Annual total precipitation (mm)</b>	<b>Annual potential recharge (mm)</b>
<b>2008</b>	1200.8	218.0
<b>2009</b>	1011.0	165.9
<b>2010</b>	921.5	144.7
<b>2011</b>	1023.9	202.2
<b>2012</b>	807.1	97.7
<b>2013</b>	1108.1	199.8
<b>2014</b>	898.7	171.3
<b>2015</b>	839.4	117.1
<b>2016</b>	937.8	127.0
<b>2017</b>	1091.8	210.3
<b>2018</b>	1048.6	221.2
<b>2019</b>	1058.9	205.1
<b>2020</b>	856.5	130.7
<b>2021</b>	1022.8	165.3
<b>2022</b>	682.3	84.8
<b>Mean</b>	967.3	164.1
<b>Median</b>	1011.0	165.9



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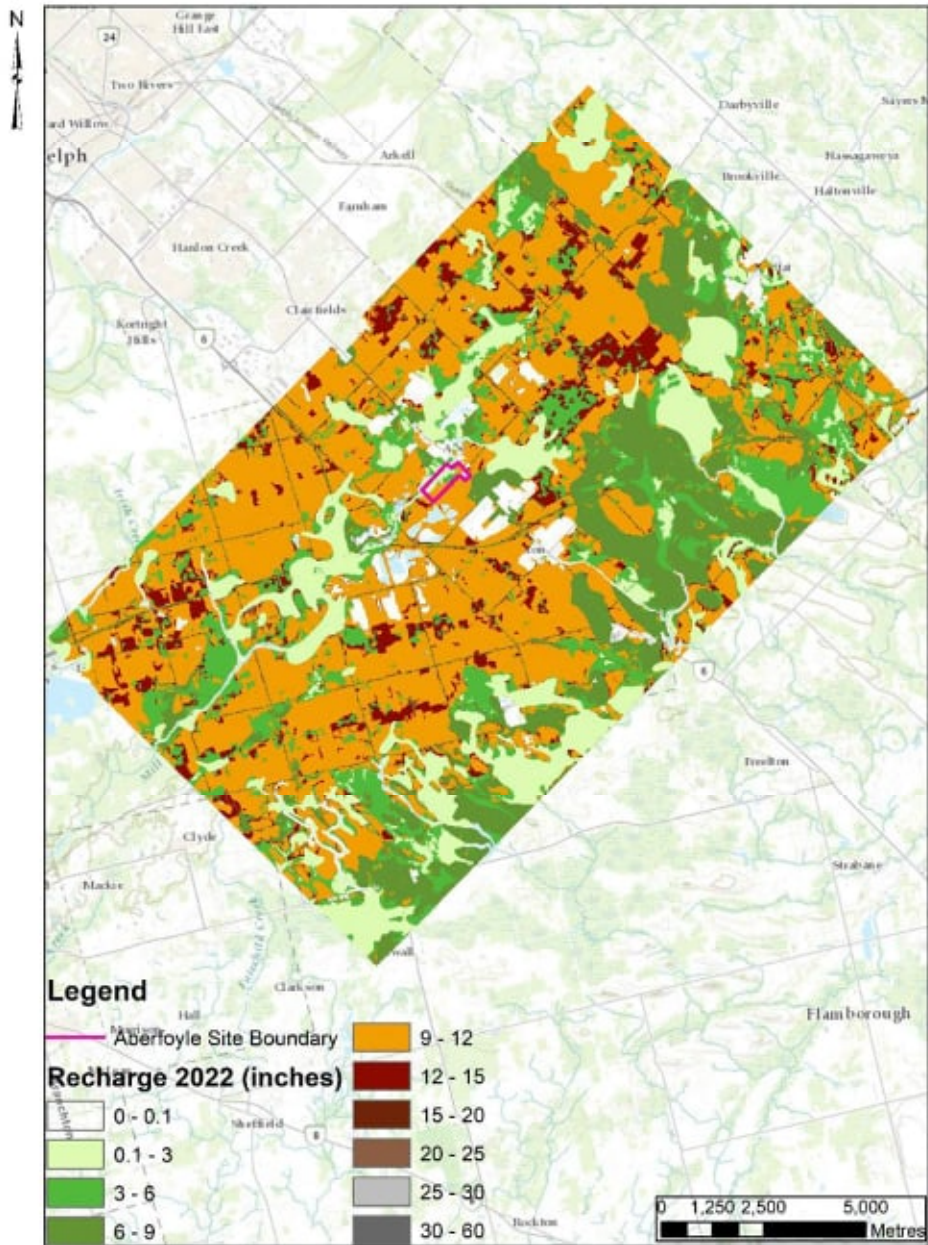
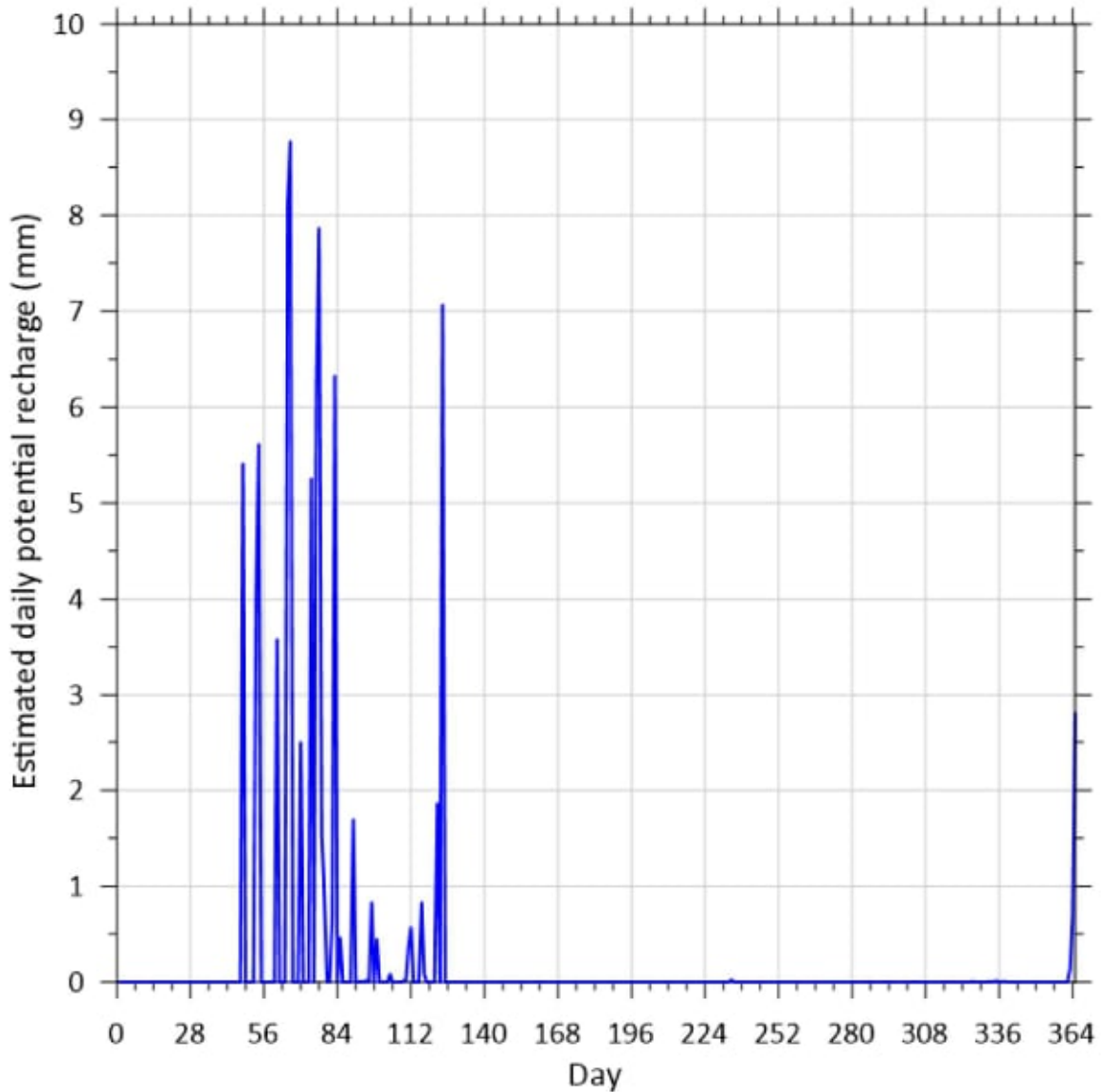


Figure 5. Calculated distribution of annual potential recharge for 2022



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**Figure 6. Estimated daily potential recharge over the study area**

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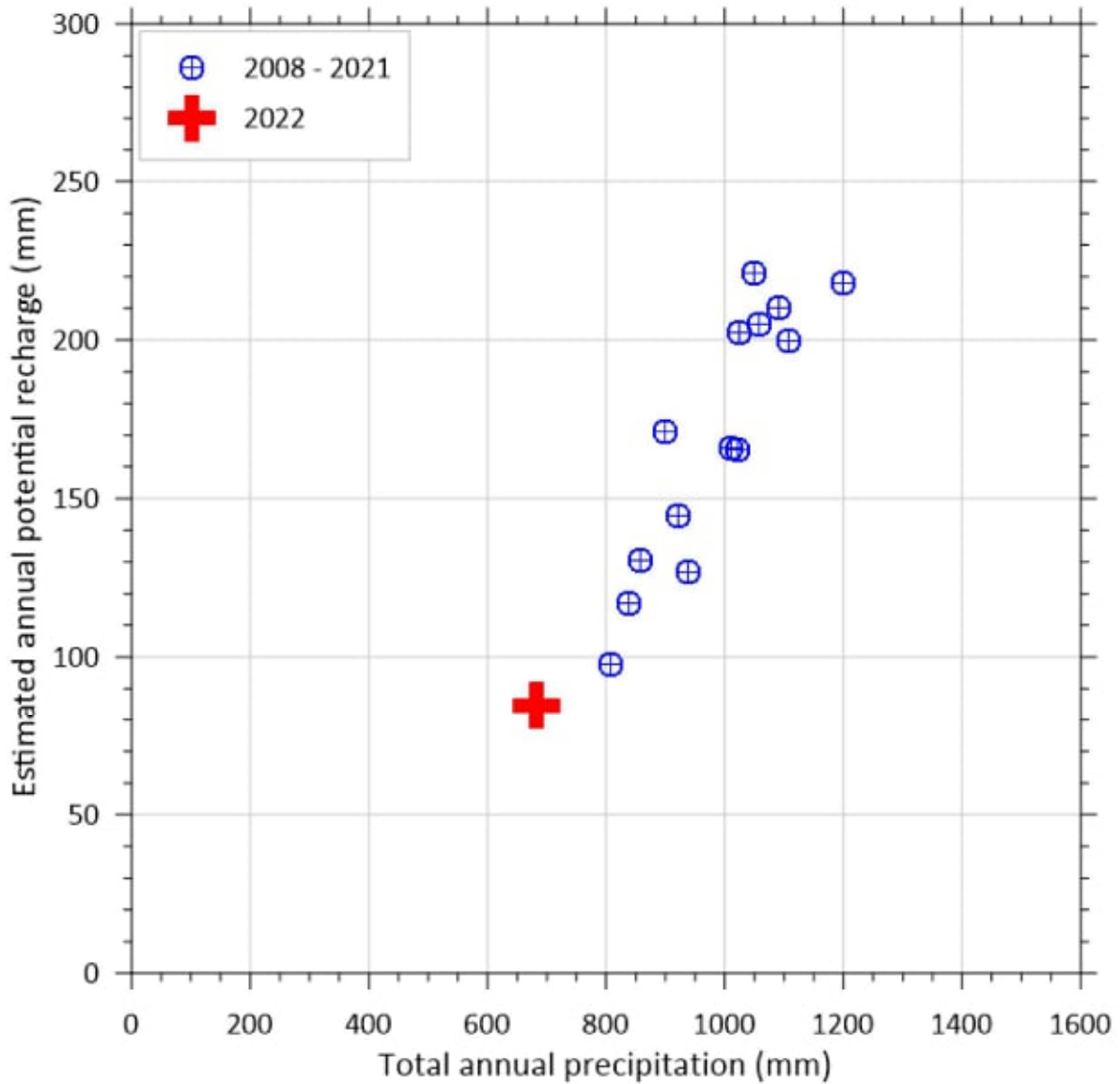


Figure 7. Relationship between estimated annual potential recharge and precipitation





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## **7. References**

- Cronshey, R., R. McCuen, N. Miller, W. Rawls, S. Robbins, and D. Woodward, 1986: Urban hydrology for small watersheds – TR-55 (2<sup>nd</sup> ed.), Washington, D.C., U.S. Dept. of Agriculture, Soil Conservation Service, Engineering Division, Technical Release 55, 164p.
- Earthfx, 2016: Whitemans Creek Tier Three Local Area Water Budget and Risk Assessment, Draft Model Development and Calibration Report, prepared for Grand River Conservation Authority, Toronto, Ontario.
- Golder Associates Ltd., 2019: Nestlé Waters Canada Aberfoyle Site: 2018 Annual Monitoring Report, submitted to Nestlé Waters Canada, March 2019.
- Golder Associates Ltd., 2020: Nestlé Waters Canada Aberfoyle Site: 2019 Annual Monitoring Report, submitted to Nestlé Waters Canada, March 2020.
- Golder Associates Ltd., 2021: Nestlé Waters Canada Aberfoyle Site: 2020 Annual Monitoring Report, submitted to Nestlé Waters Canada, March 2021.
- Golder Associates Ltd., 2022: Blue Triton Brands Aberfoyle Site: 2021 Annual Monitoring Report, submitted to Blue Triton Brands, March 2022.
- Hargreaves, G.H., and Z.A. Samani, 1985: Reference crop evapotranspiration from temperature, *Applied Engineering in Agriculture*, vol. 1, no. 2, pp. 96-99.
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), 2012: Land Information Ontario, Soil Survey Complex.
- Ontario Minister of Natural Resources and Forestry (OMNRF), 2012: Ontario Integrated Hydrology Data.
- Ontario Minister of Natural Resources and Forestry (OMNRF), 2015: Southern Ontario Land Resource Information System (SOLRIS) Version 2.0.
- Thornthwaite, C.W. and Mather, J.R., 1957: Instructions and tables for computing potential evapotranspiration and the water balance, Centerton, N.J., Laboratory of Climatology, *Publications in Climatology*, vol. 10, no. 3, pp. 185-311.



**S.S. PAPADOPULOS & ASSOCIATES, INC.**  
Environmental & Water-Resource Consultants

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Westenbroek, S.M., V.A. Kelson, W.R. Dripps, R.J. Hunt, and K.R. Bradbury, 2010: SWB—A Modified Thornthwaite-Mather Soil-Water-Balance code for estimating groundwater recharge, U.S. Geological Survey Techniques and Methods 6–A31, 60 p.



## TECHNICAL MEMORANDUM

**DATE** February 6, 2023

**TO** Andreeanne Simard, Ph.D., Natural Resource Manager  
Blue Triton Brands

**CC** John Piersol, Chris Neville

**FROM** Greg Padusenko

**Project No.** 20449101

**EMAIL** [gregory.padusenko@wsp.com](mailto:gregory.padusenko@wsp.com)

### TW3-80 DRAWDOWN ANALYSIS

Withdrawals from well TW3-80 by Blue Triton Brands (Blue Triton) are authorized by Permit to Take Water (PTTW) number 3133-C5BUH9. Water levels have consistently been presented as hydrographs that simultaneously present up to five years of daily pumping data from TW3-80, daily precipitation, and daily water level data (Figure D1a in Annual Report). Because water levels at TW3-80 can vary up to 15 m each day, the TW3-80 hydrograph illustrates both the daily maximum and daily minimum levels rather than each hourly measurement. The hydrographs are effective for enabling a rapid, qualitative assessment of multiple years of data, graphically illustrating the degrees of daily, seasonal, and annual variability. Furthermore, long-term trends in aquifer capacity can be noted in the multi-year hydrographs, and the absence of clear declining trends in water levels is a significant line of evidence that the aquifer is being sustainably managed.

However, a qualitative review of the hydrographs is limited in its ability to support the interpretation of long-term trends, and to distinguish between potential causes of water level changes. The pumping rate of TW3-80 is the primary influence on the water level in TW3-80. Other factors such as aquifer recharge and nearby competing withdrawals also influence water levels, but the degrees to which they contribute to water level changes cannot be distinguished by visual inspection. The following analysis has been completed to quantitatively determine the degree to which TW3-80 pumping rates affect water levels at TW3-80.

### TW3-80 Annual Withdrawal Volumes

Annual water withdrawals from well TW3-80 increased each year from 2011 through 2016, before decreasing in 2017 through 2019. The water takings from 2019 to 2021 are similar but have increased slightly over the three years. The water taking in 2022 increased compared to the previous three years and is similar to the volume taken in 2018. Figure 4.1 in the Annual Report shows a graph of the annual pumpage since 2001.

To quantitatively demonstrate the degree to which the water levels are directly related to pumping rates, the following analysis evaluates the relationship between monthly pumping rates with monthly average water levels in TW3-80.

### Analysis

The TW3-80 transducer dataset extends from September 2005 through December 2022. Hourly water level measurements for the entire dataset were averaged each day and then assembled in monthly averages. Months

in which fewer than 20 days of water levels were recorded, due to periodic data gaps related to transducer failure, are excluded from the analysis. Daily groundwater withdrawal data from TW3-80 are aggregated as monthly totals. The monthly averaged water levels are plotted against average monthly pumping on Figure 1.

Figure 1 illustrates the inverse linear relationship between the monthly TW3-80 pumping rate, and the average monthly water levels in TW3-80. Based on a regression of 201 months of data, every 100 L/min increase in pumping results in a 0.62 m decline in water level. Most individual data points do not fall directly on the regressed line, meaning that variables other than the pumping rate influence the TW3-80 water level; however, 186 of the 201 data points (93%) are within 1 m of the expected water level, defined by the regression.

The regression goodness of fit ( $r^2$  statistic) may be used to assess the ability of the regression relation to explain the relationship between the pumping level and the pumping rate. The  $r^2$  value of 0.89 means that the monthly average pumping rate accounts for 89% of the variation in the monthly average TW3-80 water level. The 11% balance is understood to be caused by the other external variables, such as variations in vertical flow into the deep bedrock and other nearby groundwater withdrawals.

### Effect of Precipitation

It is very challenging to quantitatively describe the relationship between precipitation and aquifer water levels, as precipitation is not the same as recharge which in turn is not the same as flow into the Lower Bedrock Aquifer. The relationship between precipitation and aquifer recharge is seasonally variable, with most recharge occurring in late winter and early spring, after the ground surface thaws and before plant transpiration becomes significant. The relationship between precipitation and aquifer recharge is not linear either, as unusually intense precipitation is likely to increase runoff, and not enhance recharge. Additionally, aquifer recharge (or the lack thereof during a drought) to the deep aquifer is not instantaneous, such that relating precipitation in a discrete month is unlikely to have a good correlation to the average water level in that same month.

However, the data illustrated on Figure 1 suggest that variations in aquifer recharge (and by extension, precipitation) have no greater than about +/-1 m effect on aquifer water levels. As stated, 186 of 201 data points in this regression are within +/-1 m of the regressed line. This means that even under drought conditions and significant precipitation deficits, the deep aquifer is affected by no greater than 1 m beyond what is predicted based only on the monthly pumping.

### Conclusions

Changes in groundwater withdrawals from TW3-80 account for 89% of the influence on changes in water levels measured at TW3-80. For each 100 L/min change in the monthly average pumping rate, water levels are predicted to change by 0.62 m. The effects of precipitation deficits that have been observed, affecting recharge volumes to the Lower Bedrock Aquifer, have been inferred to have no greater impact than about 1 m of additional decline on TW3-80 water levels.

**WSP Canada Inc.**

GRP/JAP/

Attachments: Figure 1

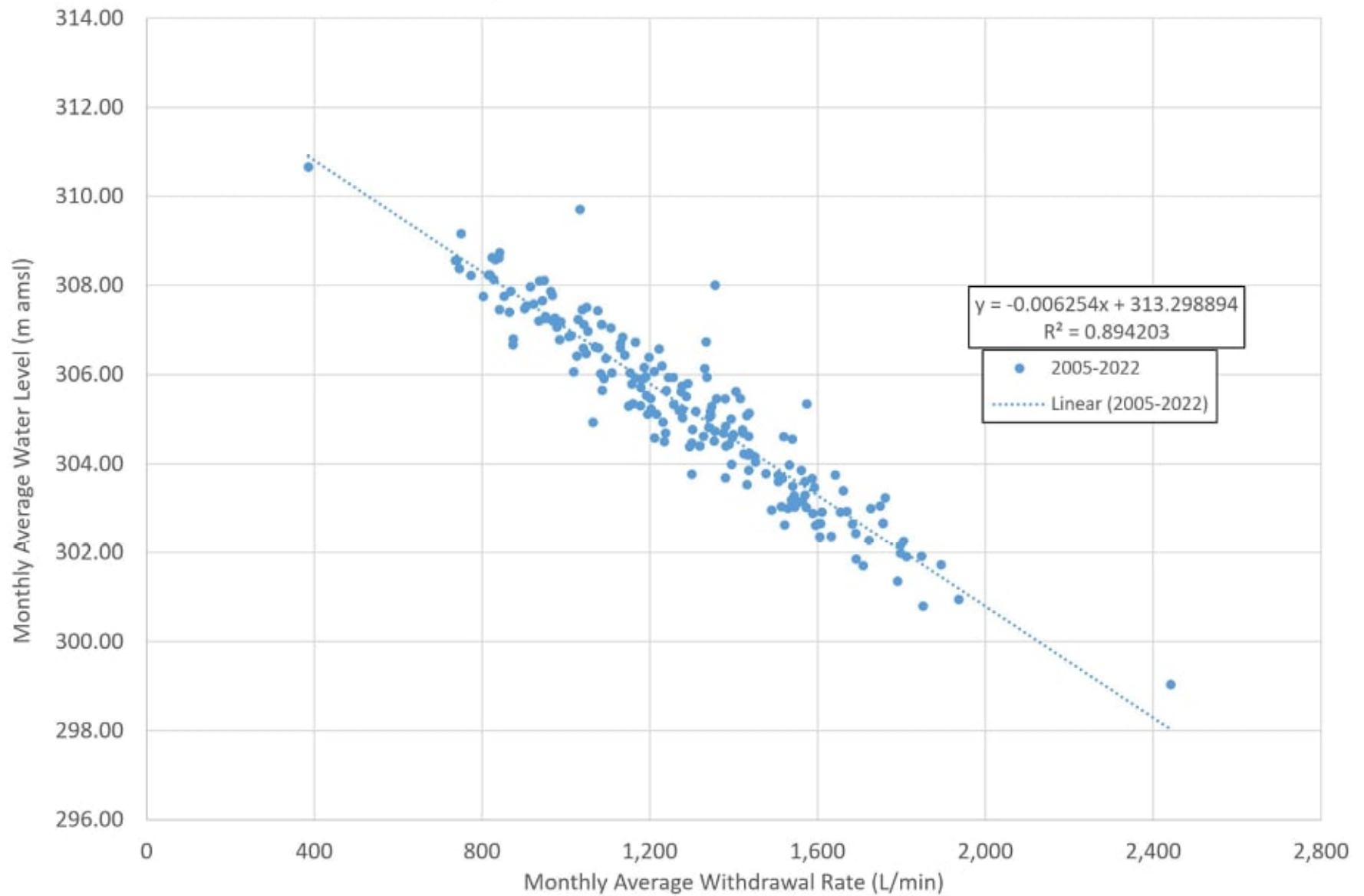
[https://golderassociates.sharepoint.com/sites/139500/project files/6 deliverables/aberfoyle/2022 annual report/draft/app | technical memo/memo info/20449101 tm aberfoyle tw3-80 drawdown 6feb2023.docx](https://golderassociates.sharepoint.com/sites/139500/project%20files/6%20deliverables/aberfoyle/2022%20annual%20report/draft/app%20technical%20memo/memo%20info/20449101%20tm%20aberfoyle%20tw3-80%20drawdown%206feb2023.docx)

**APPENDIX A**

**Figure 1**

Figure 1

Relationship between TW3-80 Withdrawal Rate and Water Level









**and lack of transparency and fairness in the Greenbelt removals, drawing conclusions that the changes unfairly benefitted private landowners, and;**

**Whereas, the role of Conservation Authorities in protecting natural heritage and mitigating/ adapting for climate change has never been more important in light of the 6<sup>th</sup> Mass Extinction in biodiversity and the increasing possibility that Canada and the world will not meet the Paris Accord greenhouse gas target limiting temperature rise to less than 1.5 degrees Celsius, and;**

**Whereas the Hamilton Conservation Authority's ability to provide comments on natural heritage to the City of Hamilton is critical and must be restored.**

**Therefore:**

**That the Hamilton Conservation Authority Board of Directors respectfully request that:**

- a) the Province of Ontario reverse recent changes to the Conservation Authorities Act and Provincially Significant Wetland Evaluation System that adversely affect natural heritage protection, and;**
- b) the Province of Ontario's Auditor General undertake an investigation into the processes that were followed to make the above policy decisions, and whether this decision-making structure and its outcomes provide Ontarians with value for money, and;**
- c) That the Hamilton Conservation Authority Board requests that City of Hamilton Council provide similar direction to the Province of Ontario and;**
- d) That a copy of this Hamilton Conservation Authority Board of Director's motion be shared with local Members of Provincial Parliament, Conservation Ontario and all conservation authorities in Ontario.**

Please accept this correspondence for your information and consideration.

Sincerely



Lisa Burnside  
Chief Administrative Officer

**THE CORPORATION OF THE TOWNSHIP OF PUSLINCH**

**BY-LAW NUMBER 041-2023**

Being a by-law to confirm the proceedings of the Council of the Corporation of the Township of Puslinch at its Council meeting held on SEPTEMBER 27, 2023.

**WHEREAS** by Section 5 of the *Municipal Act, 2001, S.O. 2001, c.25* the powers of a municipal corporation are to be exercised by its Council;

**AND WHEREAS** by Section 5, Subsection (3) of the *Municipal Act*, a municipal power including a municipality's capacity, rights, powers and privileges under section 8, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise;

**AND WHEREAS** it is deemed expedient that the proceedings of the Council of the Corporation of the Township of Puslinch at its Council meeting held on SEPTEMBER 27, 2023 be confirmed and adopted by By-law;

**NOW THEREFORE** the Council of the Corporation of the Township of Puslinch hereby enacts as follows:

- 1) The action of the Council of the Corporation of the Township of Puslinch, in respect of each recommendation contained in the reports of the Committees and each motion and resolution passed and other action taken by the Council at said meeting are hereby adopted and confirmed.
- 2) The Head of Council and proper official of the Corporation are hereby authorized and directed to do all things necessary to give effect to the said action of the Council.
- 3) The Head of Council and the Clerk are hereby authorized and directed to execute all documents required by statute to be executed by them, as may be necessary in that behalf and the Clerk authorized and directed to affix the seal of the said Corporation to all such documents.

**READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 27 DAY OF SEPTEMBER, 2023.**

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James Seeley, Mayor

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Courtenay Hoytfox, Clerk