Water Supply Summary Report - Kawartha Downs & Speedway, Fraserville, Ontario

October 14, 2021

Prepared for:
Romspen Investment Corporation

Cambium Reference: 12579-001

CAMBIUM INC.

866.217.7900

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Romspen Investment Corporation (Client) to conduct a water supply assessment for the Kawartha Downs and Speedway, located at 1382 County Road 28, in the community of Fraserville, in the County of Peterborough, Ontario (Site).

The present land-use for the middle and southern section of the Site is as a commercial raceway; the northern section of the site is presently rural residential with some agricultural uses (Figure 1). Cambium understands that the Client is exploring a subdivision development for the subject property.

The water supply assessment was completed in support of a proposed re-development and includes a general review of available surrounding hydrogeological and water supply information and an evaluation of the results of pumping tests conducted on two (2) on-site wells. As part of the scope of work, Cambium was also retained to complete a Geotechnical Investigation (Cambium, 2021a), a Phase I and Phase II Environmental Site Assessment (ESA) (Cambium, 2021b; Cambium, 2021c; Cambium, 2021d), a Preliminary Natural Features Assessment & Ecological Constraints (Cambium, 2021e), a Wastewater Packaged Treatment Plant Concept (Cambium, 2021f), and an Environmental Impact Study (EIS) (Cambium, 2021g); each of these reports will be presented under a different cover.

1.1 Site Description

The Site is 267 acres (108 ha) and is L-shaped. The southern portion of the Site is developed with a commercial building, paved parking, paved driveways, and a 3/8-mile paved oval racetrack; it is zoned Commercial District 4 (C4) as per plate ‘D-4’ per the Township of Cavan-Monaghan Zoning By-Law 2015-58 Schedule. The northern portion of the Site is currently vacant field; it is zoned Agricultural (A) as per ‘Map D-4’ per the Township of Cavan-Monaghan Zoning By-Law 2015-58 Schedule. The Site is bordered by natural core, rural residential, and agricultural to the west, hamlet residential and agricultural to the south, County Road 28 to the

east, and Moore Drive to the North. Refer to **Error! Reference source not found.** for Zoning By-Law and land information.

2.0 Surrounding Area Hydrogeology and Water Supply

2.1 Water Well Records

The Ministry of Environment Conservation and Parks (MECP) Water Well Information System (WWIS) was accessed to review water well records in the area of the Site. There were 48 water well records located within approximately 500 m of the borders of the Site (see Figure 2). The following water well records were identified:

- Forty-four (44) water well records for drilled wells
- One (1) water well record for a monitoring well
- One (1) record outlined no information
- Two (2) records outlined well abandonments

The soil profile generally consisted of >1 m of topsoil, underlain by overburden. Overburden generally consisted of interlayered beds of brown clay with clasts and sand and sand with silt and gravel sediments. 24 well records reported bedrock (limestone and shale) contact between 8.23 to 14.48 metres below ground surface (mbgs).

Water bearing sediments were identified within overburden at various depths. Water bearing strata were also identified at the overburden bedrock contact and within bedrock (within 0 to 26.51 m, average 4.88 m of bedrock contact).

The static water level of overburden wells ranged from 1.22 to 9.14 mbgs, average of 4.70 mbgs. The recommended flow rate reported from the overburden supply wells ranged from 3 gallon per minute (gpm, assumed to be US gallons per minute) to 30 gpm, averaging 11 gpm. These flow rates equate to ranges between 11 L/min and 114 L/min, averaging 41 L/min.

The static water level of bedrock wells ranged from 0.61 to 7.01 mbgs, average of 3.42 mbgs. The recommended flow rate reported from the bedrock supply wells ranged from 4 gpm to 25 gpm, averaging 11 gpm. These flow rates equate to ranges between 15 L/min and 95 L/min, averaging 41 L/min. Further information summarized from the water well records are listed below in Table 1.

Table 1: Water Well Record Information

		Total Depth (mbgs)	Depth Water Encountered (m)	Depth Installed into Bedrock (m)	Static Water Level (mbgs)	**Recommended Pumping Rate (gpm)**
Overburden Wells Count:22	Min	9.14	7.01	-	1.22	3.00
	Max	17.37	17.37	-	9.14	30.00
	Avg.	11.53	11.25	-	4.70	10.82
Bedrock Wells Count: 22	Min	10.67	8.23	0.30	0.61	4.00
	Max	41.15	39.62	28.04	7.01	25.00
	Avg.	20.12	14.87	10.13	3.42	10.91

2.1.1 Tested Water Wells

The following MECP wells records correlate to the wells that were used for the pump testings for the scope of work for this assessment. The MECP well records can be found in Appendix B.

2.1.1.1 Well 1: 5119296

Well 1 (MECP Tag # 5119296) was installed on November 20, 2002, approximately 400 m southeast of the existing residential dwelling at 1627 Moore Drive, Fraserville, Ontario. Well 1 was installed to a depth of 22.86 mbgs, with an open bedrock hole extending from 14.48 mbgs to 22.86 mbgs. During installation, sediments were described as sandy clay transitioning into sandy clay with gravel and some boulders. A water-bearing gravel layer was encountered at the overburden – bedrock contact at 14.48 mbgs. Limestone bedrock continued until well termination at 22.86 mbgs. Static water level on the day on the well installation was 3.35 mbgs. The well driller's recommended pumping rate was 38 L/min.The location of Well 1 is provided on Figure 1.

2.1.1.2 Well 2: 5119297

Well 2 (MECP Tag # 5119297) was installed on November 18, 2002, approximately 350 m east of the existing residential dwelling at 1627 Moore Drive, Fraserville, Ontario. Well 2 was installed to a depth of 23.16 mbgs, with an open bedrock hole extending from 11.58 mbgs to 23.16 mbgs. During installation, sediments were described as silty sand overlying sandy clay

with gravel. A water-bearing gravel layer was encountered at the overburden – bedrock contact at 11.58 mbgs. Limestone bedrock continued until well termination at 23.16 mbgs. Static water level on the day on the well installation was 3.05 mbgs. The well driller's recommended pumping rate was 45 L/min. The location of Well 2 is provided on Figure 1.

2.1.2 Minimum Yield Rate

As per Guideline D-5-5 (Ministry of the Environment, 1996) the minimum yield rate per person is 450 litres per day (0.3125 L/min). As per the most up-to-date proposed site plan at the preparation of this report (Appendix A), there will be 588 single-family dwellings built. At an average of 2.5 residents per dwelling, the minimum yield from one supply well for the proposed development would average approximately 460 L/min continually. Guideline D-5-5 also dictates that peak demand occurs for a period of 120 minutes per day and the peak demand rate is a minimum of 3.75 L/min per person. This yield of a minimum rate for the proposed development to approximately 5,500 L/min.

As per the MECP WWIS, the average yields of the overburden supply wells and bedrock supply wells were both approximately 41 L/min. This yield rate is insufficient for a communal/municipal supply that would be required for the proposed development.

2.2 Wetlands

A provincially significant wetland (PSW) is located within the boundaries of the Site. The PSW was identified as Cavan Creek Wetland. Existing Ministry of Natural Resources and Forestry (MNRF) PSW mapping shows two pieces of the PSW on the property, one extending eastward into the property from the western property boundary, in the central portion of the Site and the other extending southward onto the property from the northwest corner. Mapped unevaluated wetlands are approximate; as such, they require field verification in order to determine their presence and confirm their boundaries. In addition, areas of unevaluated wetlands are mapped surrounding the PSW's perimeter on the Site and adjacent lands. Mapped unevaluated wetlands are approximate; as such, they require field verification to determine their presence and confirm their boundaries (Cambium, 2021e).

The central portion of the Cavan Creek Wetland drains westwards off the Site. The northern portion of the Cavan Creek Wetland drains northwards off the Site. Other wetland areas in the northeastern portion of the Site drain eastwards off-site. All drainage from the Site converges with Cavan Creek before outletting to the Otonabee River.

2.3 Vulnerable and Regulated Areas

As per the Ministry of the Environment, Conservation and Parks (Ministry) Source Water Protection Information Atlas (SPIA) the Site is within the following areas:

- Highly Vulnerable Aquifer
- Significant Groundwater Recharge Area
- Intake Protection Zone 3

The SPIA mapping is attached in Appendix A.

There are several setback areas associated with the wetlands present on-site that should be considered as part of development on the property. Further studies to delineate on-site wetland boundaries and associated setback will be required (Cambium, 2021e).

2.4 Hydrogeological Conditions

Available information indicates that there are fine- to medium-grained sediments located at surface on the Site. Overburden sediments generally were water bearing indicating a shallow aquifer in the area averaging 4.70 mbgs. 22 drilled well records encountered bedrock on average 10.9 mbgs; each of these records recorded water found at or below the overburden bedrock contact, indicating an additional deeper bedrock aquifer averaging 14.9 mbgs.

Groundwater flow within the shallow overburden sediments on-site was assumed to follow the overlying topography of the Site, and groundwater to the north and west of the topographic high was assumed to flow northward off-site into the PSW (Cavan Creek Wetland). Groundwater to the south and east of the topographic high flows to the east toward the Otonabee River (**Error! Reference source not found.**; **Error! Reference source not**

found.). The on-site unevaluated wetland is assumed to be sourced both from surface runoff and shallow groundwater discharge.

3.0 Pumping Test Results

This section presents the results of the pumping tests for two (2) on-site wells.

3.1 Well 1

The static water level of Well 1 was 2.77 mtop (which corresponds to a depth of 2.15 mbgs) just prior to the pumping test. The pumping test commenced at 10:20 am on August 16, 2021 at a rate of 30 L/min. Within 10 minutes after the commencement of the pumping test, the water level of Well 1 lowered to 6.88 mtop. After the initial 10 minute interval the water level of Well 1 lowered consistently until 12:20 pm to a level of 8.27 mtop. At 12:20 pm, the pumping rate was increased to 45 L/min. Within 10 minutes of the new pumping rate, the water level lowered to 9.85 mtop; water levels then lowered consistently until 2:20 pm to a level of 10.88 mtop. Finally, the pumping rate was adjusted to 60 L/min at 2:20 pm. Again, after the initial 10 minute interval the water level was lowered to 13.92 mtop. Water levels consistently lowered after this until the end of the pumping test at 3:32 pm with a recorded water level of 14.88 mtop. The depth of drawdown achieved at Well 1 upon completion of the pumping test was 10.41 m. The pumping rate was maintained at an average rate of 30 L/min throughout the first two hours of the test, which equated to approximately 3,600 L of water and an initial interval Specific Capacity of 5.45 L/min/m and a theoretical yield of 113.3 L/min. The next two hours of the test maintained a pumping rate of 45 L/min which corresponds to 5,400 L of water and an interval Specific Capacity of 25.00 L/min/m. The final two hours of the test maintained a pumping rate of 60 L/min which corresponds to 7,200 L of water and an interval Specific Capacity of 18.99 L/min/m; the total amount of water withdrawn is approximately 16,200 L.

Upon completion of the pumping test the water level of Well 1 was allowed to recover. By 3:58 pm on August 16, 2021 the water level in Well 1 recovered to 4.47 mtop (or 86% recovery to pre-test static conditions). The water level responses of Well 1 during the pumping test are provided on a time/drawdown plot in Figure 3.

The drawdown data recorded from Well 1 were imported into AquiferTest Pro™ and processed to determined transmissivity and hydraulic conductivity. The transmissivity was calculated to

be 4.89 m²/day; the hydraulic conductivity was 6.75 x 10^{-6} m/s. The results of the aquifer test analyses are outlined below in Table 2. The AquiferTest Pro™ results are included in Appendix C.

The stepped – drawdown test indicates a sustainable yield of between 45 and 60 L/min.

3.2 Well 2

The static water level of Well 2 was 2.66 mtop (which corresponds to a depth of 1.67 mbgs) just prior to the pumping test. The pumping test commenced at 10:58 am on August 17, 2021 at a rate of 65 L/min. The water level within Well 2 dropped quickly upon initiation of the pumping test, and had reached 21.63 mtop within 6 minutes. Due to the rate that the water level was dropping at and the pump being installed at 23.3 mtop, the pumping test was ended at the 6 minute mark. Throughout the duration of the pumping test, the pumping rate was maintained at an average rate of 65 L/min.

Upon completion of the pumping test the water level of Well 2 was allowed to recover. By 12:45 pm on August 16, 2021 the water level in Well 2 recovered to 4.12 mtop (or 92% recovery to pre-test static conditions). The water level responses of Well 2 during the pumping test are provided on a time/drawdown plot in Figure 4.

The drawdown data recorded from Well 2 were imported into AquiferTest Pro™ and processed to determined transmissivity and hydraulic conductivity. The transmissivity was calculated to be 0.18 m²/day; the hydraulic conductivity was 1.79 x 10^{-7} m/s. The results of the aquifer test analyses are outlined below in Table 2. The AquiferTest Pro™ results are included in Appendix C.

The sustainable yield of Well #2 is less than 65L/min.

Table 2: Aquifer Test Pro™ Results

Well	Transmissivity (m²/day)	Hydraulic Conductivity (m/s)
Well 1	4.89	6.75×10^{-6}
Well 2	0.18	1.79×10^{-7}

3.3 Extrapolated Drawdown

The lowering water levels trend recorded near the end of the pumping test for Well 1 (when a stable lowering was recorded) was extrapolated to 1 year and 20 years on a logarithmic time scale. Because it has to be assumed that the pumping rate would remain stable; only the extrapolated drawdown for the pumping rate of 30 L/min was viable as it was the pumping rate that started at static water level (Figure 5). Well 2 could not be analysed in this way as it never reached a stable lowering trend. This kind of assessment is valuable in estimating long-term impacts related to water withdrawal at a well. The results of the drawdown extrapolation for Well 1 are in Table 3:

Table 3: Results of Drawdown Extrapolation

Well 1	Time Frame	Extrapolated Drawdown (m)	Available Drawdown (m)
30 L/min	Beginning of Test	-	20.79
	End of Test	5.50	15.29
	1 Year	11.80	8.99
	20 Years	13.00	7.79

Note: Extrapolated drawdown indicates the expected drawdown from the static water level of each respective well

The results of the extrapolated drawdown analysis indicate that if water withdrawal at the Well 1 is continued for 1 and 20 Years at 30 L/min, the depths of drawdown were estimated to be 11.80 m and 13.00 m, respectively. The corresponding depths of available drawdown for the 1 and 20 Year periods were estimated to be 8.99 m and 7.79 m, respectively.

4.0 Conclusions and Recommendations

Cambium completed a pumping test on two (2) previously installed wells on-Site. Both of these wells are drilled into similar stratigraphy which characterizes the area: overburden extended until approximately 12.5 mbgs and consisting of sandy clay with some gravel, and bedrock extending until well termination and composed of limestone. Both wells draw from the aquifer that exists at or within several metres of the overburden – bedrock contact.

Water withdrawal occurred for a continuous 6 hour period for the pumping test at Well 1; the pumping test at Well 2 was cut short at 6 minutes due to insufficient water supply. The rate at Well 1 was initially 30 L/min for the first 2 hours, stepped up to 45 L/min for the middle 2 hours, and finally increased to 60 L/min for the final 2 hours. The pumping rate at Well 2 was initiated at 65 L/min. In total, 16,200 L and 390 L of water was withdrawn from the Well 1 and Well 2, respectively. The Specific Capacity of Well 1 during the 30 L/min pumping rate was 5.50 L/min/m with a theoretical yield of 113.3 L/min, during the 45 L/min pumping rate the Specific Capacity was 1.80 L/min/m, and during the 60 L/min pumping rate the Specific Capacity was 3.16 L/min. The Specific Capacity of Well 2 with a 65 L/min pumping rate was calculated to be 3.43 L/min/m with a theoretical yield of 73.72 L/min.

Upon completion of the pumping test for Well 1, approximately 16,200 L was pumped from the well and a maximum drawdown of 5.50 m was recorded (leaving approximately 15.29 m of available drawdown in the well). With a sustained pumping rate of 30 L/min, the depths of drawdown were extrapolated to be 11.80 m after 1 year of pumping and 13.00 m after 20 years of pumping. The corresponding depths of available drawdown for the 1 and 20 year periods were estimated to be 8.99 m and 7.79 m, respectively. This is a sufficient supply for a single residential dwelling use, however a pumping rate of 30 L/min is not sufficient for communal or municipal use. Because the pumping rates of 45 L/min and 60 L/min for Well 1 did not start at static water level, an accurate extrapolated drawdown could not be established. However, based off of the pumping test for Well 2 at 65 L/min which is installed in the same stratigraphy and is assumed to draw from the same aquifer, the higher pumping rate of 60 L/min (and most likely 45 L/min) would not be sustainable for any significant period of time and therefore would

not be sufficient. Furthermore, the proposed development would require a higher pumping rate than 65 L/min to sustain the amount of single-family dwellings proposed (see Section 2.1.2); therefore, neither well would be sufficient for the proposed development as neither can sustain a pumping rate of 65 L/min, and a pumping rate of 65 L/min would still be insufficient for the proposed development requirements of municipal/communal use.

In summary, the pumping test data collected from the two (2) on-Site wells are consistent with the MECP well records for water supply wells in the area: that there is insufficient water supply in the area for communal or municipal purposes. However, should private on-site servicing be considered in future, there is adequate supply for single family homes.

Given the objective of the study was to determine if an adequate communal supply was available on-site, water quality testing was not performed as there was no indication from the onsite wells that an adequate yield was available.

Cambium recommends that the proponent investigate off-site municipal supply well potential, The Township of Cavan Monaghan recently undertook a study to investigate the possibility of providing a Municipal Supply to the Fraserville Settlement Area and secured a property at 1256 Syer Line where a water well was installed in overburden sediments that was pumped continuously for 72 hours and provided a potential yield of ~9000L/min based on the pumping rate and extrapolation of Specific Capacity.

4.1 Respectfully submitted,

Cambium Inc.

Nicole Heikoop, M.Sc., GIT
Technician

Mike Bingham, P.Geo.
Senior Project Manager/Hydrogeologist

P:\12500 to 12599\12579-001 RIC (KDL Lands) Inc. - Site Development & Servicing Constraints - Kawartha Downs\Deliverables\REPORT - Water Supply Summary\2021-10-01 Water Supply Summary, Kawartha Downs & Speedway, Fraserville, ON.docx

5.0 References

Cambium. (2021a). *Geotechnical Investigation Report - 1683 Moore Drive and 1490 County Road 28, Fraserville, Ontario.* Cambium Inc.

Cambium. (2021b). *Phase I Environmental Site Assessment - 1382 County Road 28, Fraserville, Ontario.*

Cambium. (2021c). *Phase I Environmental Site Assessment - 1683 Moore Drive and 1490 County Road 28, Fraserville, Ontario.*

Cambium. (2021d). *Phase II Environmental Site Assessment - 1683 Moore Drive and 1490 County Road 28, Fraserville, Ontario.*

Cambium. (2021e). *Preliminary Natural Features Assessment & Ecological Constraints Analysis at Kawartha Downs & Speedway, Fraserville, Ontario.*

Cambium. (2021f). *Kawartha Downs - Wastewater Packaged Treat Plant Concept.*

Cambium. (2021g). *Environmental Impact Study - 1490 County Road 28 and 1683 Moore Drive, Fraserville, Cavan-Monaghan, County of Peterborough, Ontario.*

Ministry of the Environment. (1996). *Procedure D-5-5, Technical Guideline for Private Wells: Water Supply Assessment.*

6.0 Standard Limitations

Limited Warranty

In performing work on behalf of a client, Cambium relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium determines the precise nature of the work to be performed. Cambium undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

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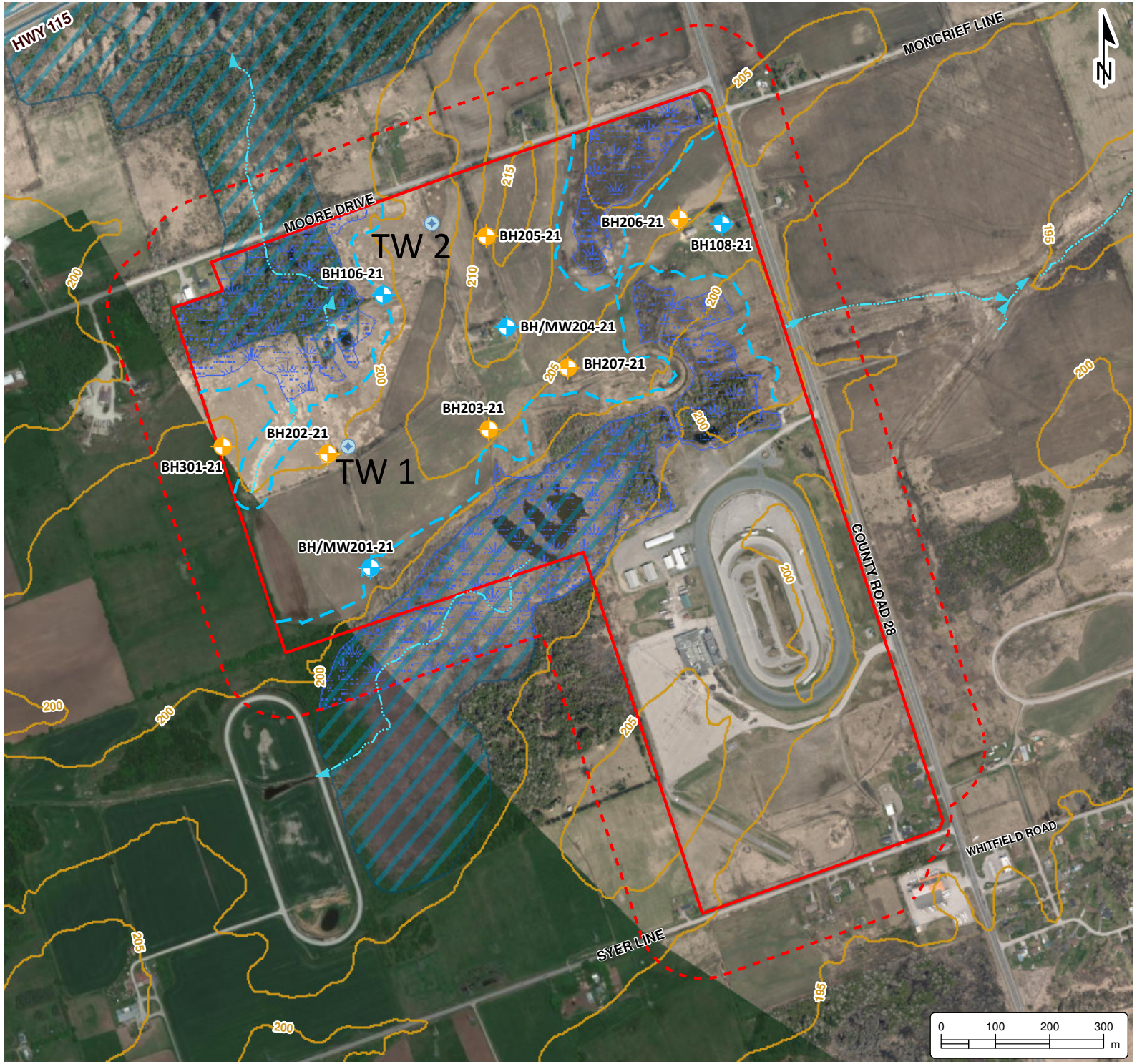
Appended Figures



WATER SUPPLY ASSESSMENT

ROMSPEN INVESTMENT CORPORATION
Kawartha Downs and Speedway
Fraserville, Ontario

LEGEND

- Pump Test Well
- Borehole
- Monitoring Well
- 120 m Adjacent Lands
- 30m Wetland Setback
- Watercourse, Intermittent
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Provincially Significant Wetland
- Wetland Community
- Site (approximate)

Notes:
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

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SITE PLAN

Project No.: 12579-001		Date: October 2021 Rev.:	
Scale: 1:10,000		Projection: NAD 1983 UTM Zone 17N	
Created by: MAT	Checked by: MB	Figure:	1

O:\GIS\MXDs\12500-12999\12579-001 RIC (KDL Lands) Inc. - Site Development & Servicing Constraints - Kawartha Downs\2021-04-06 FIG 1 - Site Plan.mxd

WATER SUPPLY ASSESSMENT

ROMSPEN INVESTMENT CORPORATION
Kawartha Downs and Speedway
Fraserville, Ontario

LEGEND

- Water Well Record
- 500 m Buffer
- Site

Notes:
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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WATER WELL RECORDS LOCATED WITHIN 500 m OF SITE

Project No.: 12579-001		Date: October 2021 Rev.:	
Scale: 1:14,000		Projection: NAD 1983 UTM Zone 17N	
Created by: MAT	Checked by: MB	Figure:	2

O:\GIS\MXDs\12500-12999\12579-001 RIC (KDL Lands) Inc. - Site Development & Servicing Constraints - Kawartha Downs\2021-04-06 FIG 3 - Water Well Records.mxd

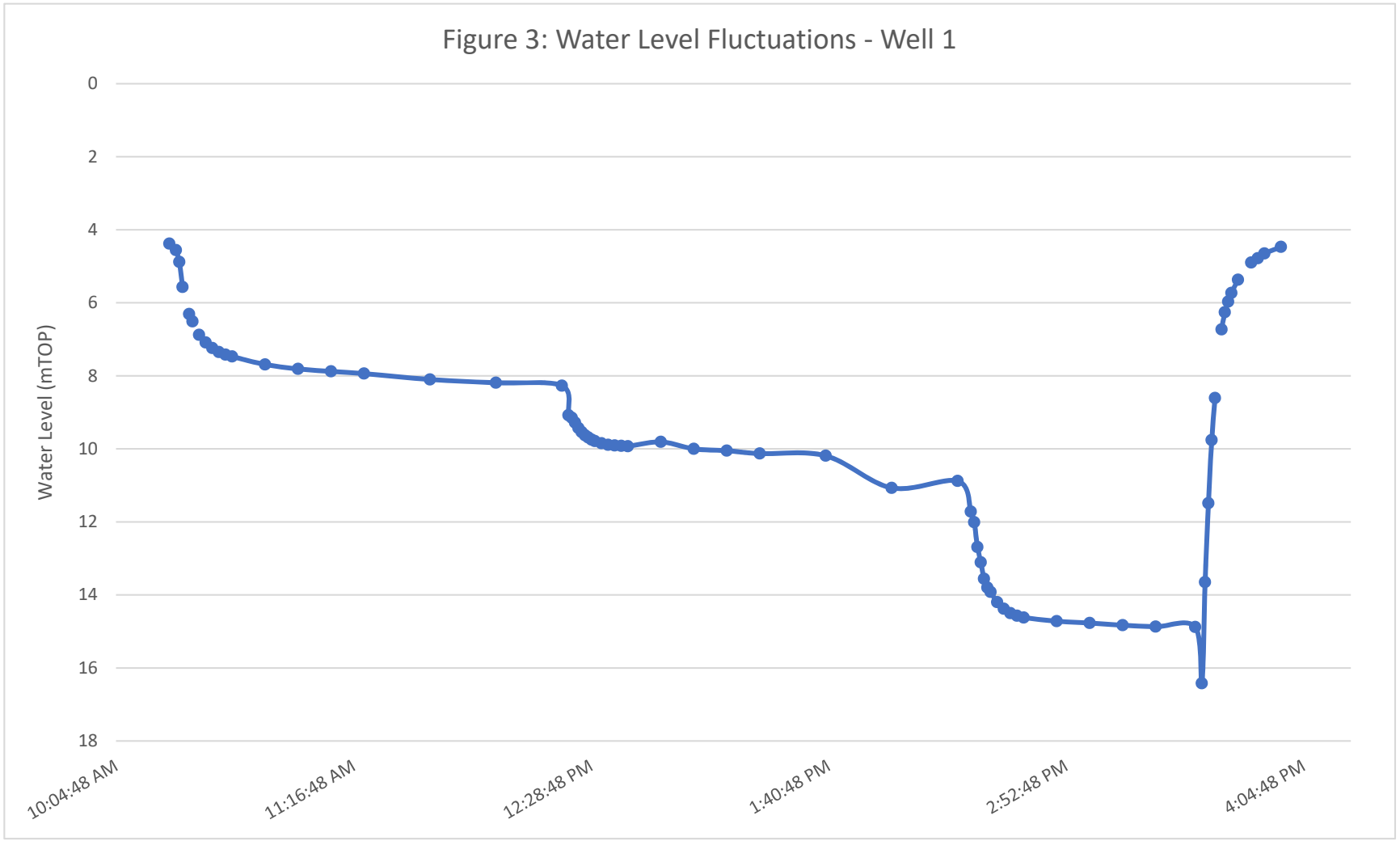


Figure 3: Water Level Fluctuations - Well 1
Water Level (mTOP)
0
2
4
6
8
10
12
14
16
18
10:04:48 AM
11:16:48 AM
12:28:48 PM
1:40:48 PM
2:52:48 PM
4:04:48 PM

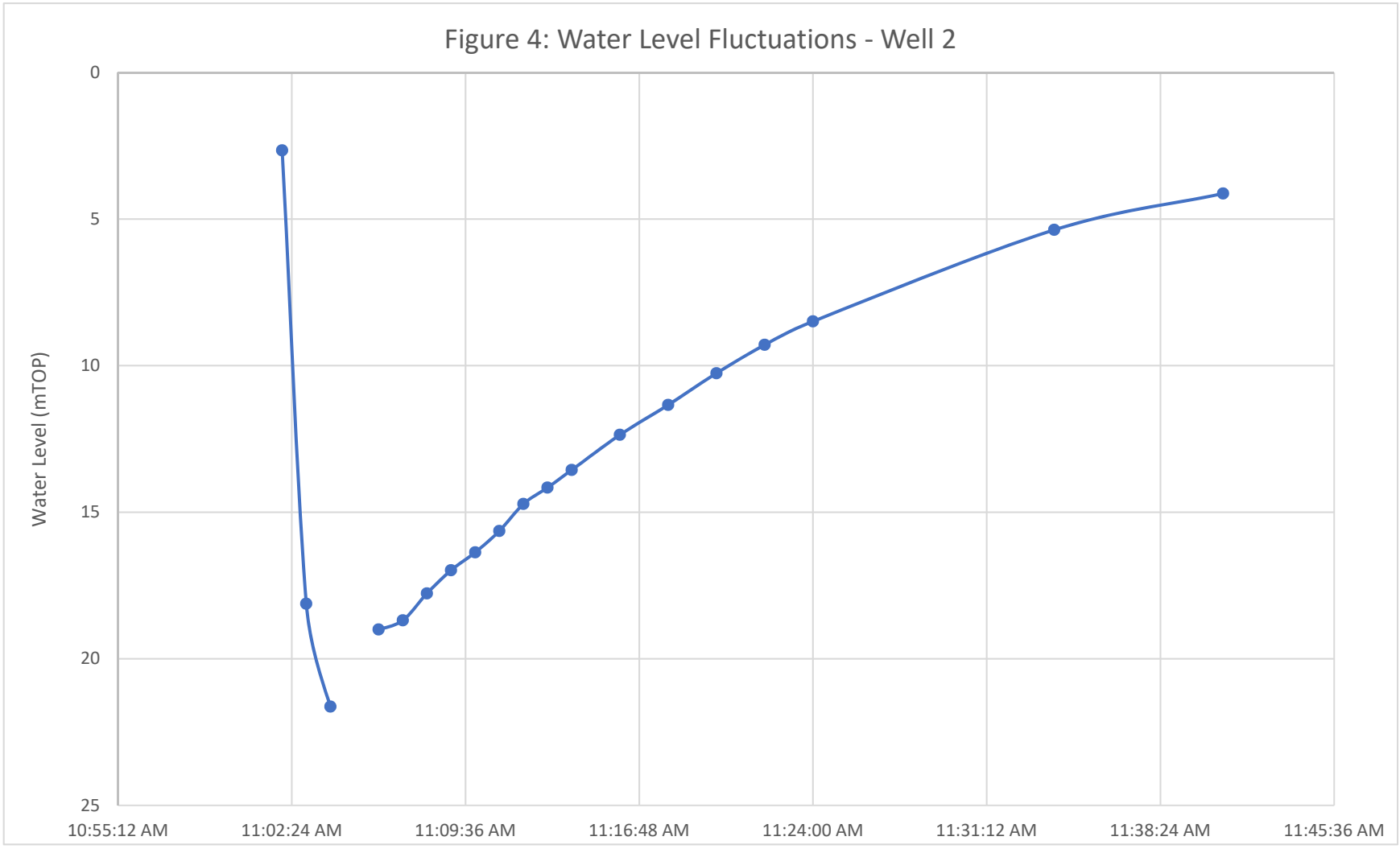
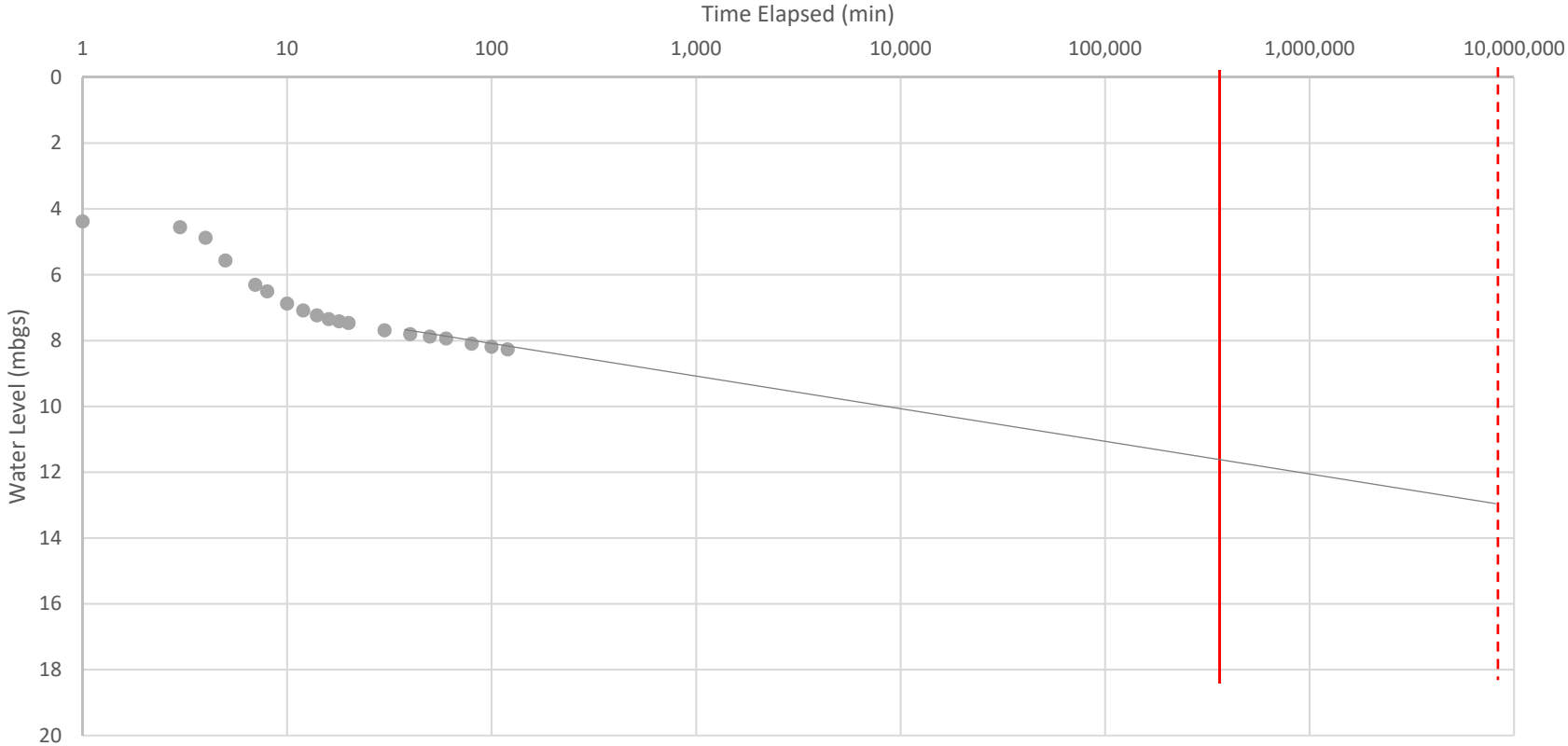


Figure 4: Water Level Fluctuations - Well 2
Water Level (mTOP)
0
5
10
15
20
25
10:55:12 AM
11:02:24 AM
11:09:36 AM
11:16:48 AM
11:24:00 AM
11:31:12 AM
11:38:24 AM
11:45:36 AM

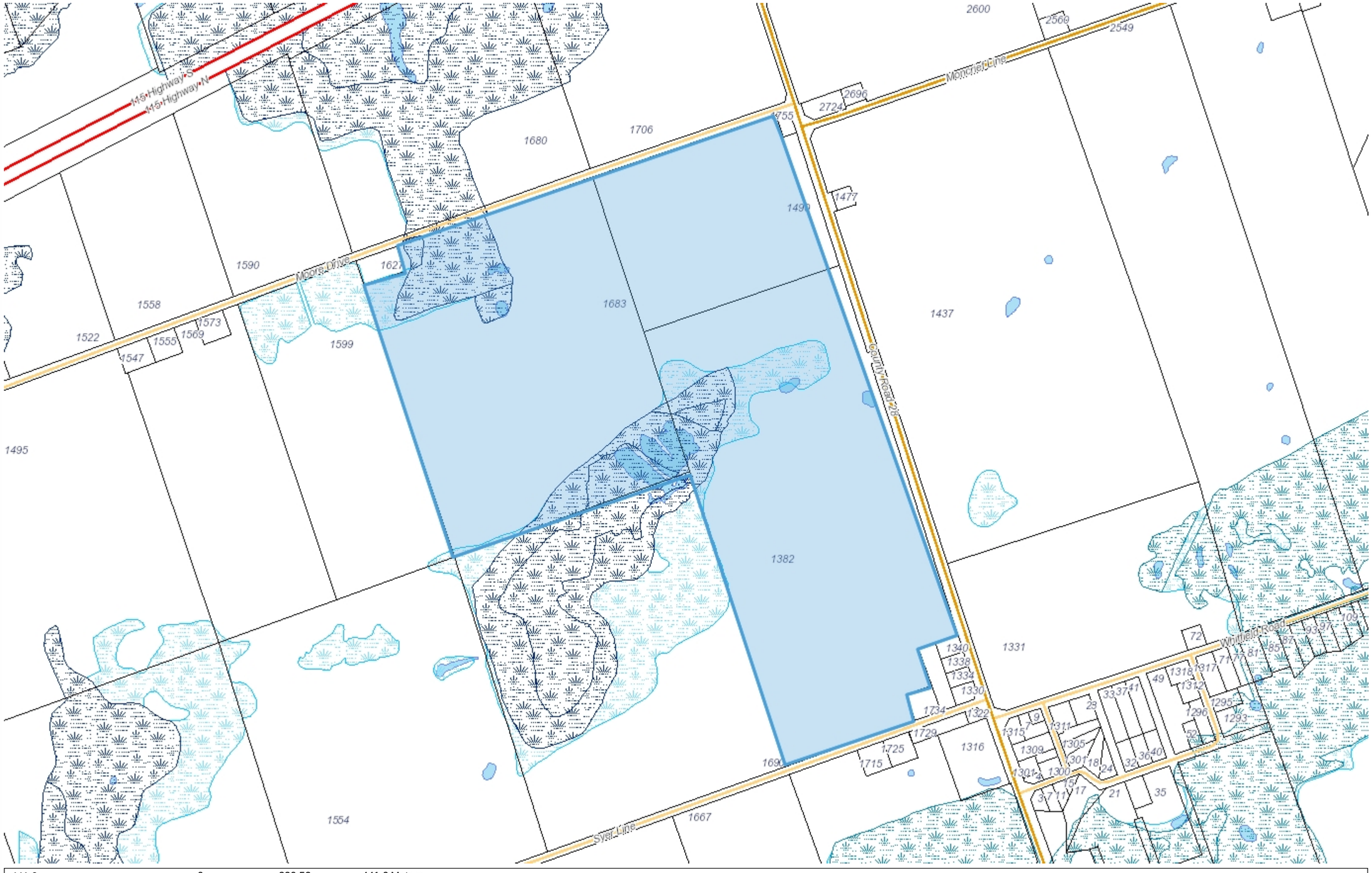
Figure 5: Extrapolated Drawdown



Appendix A

Land Information and Proposed Development Plan

County of Peterborough



Legend

- Roads < 50,000
  - PRIV ; Private; PRIV
  - City Arterial
  - City Collector and Local
  - City Owned Unclassified
  - Provincial
  - County
  - Township
  - Water Access Only
- Outside Roads < 50,000
  - Major Roads
  - Local Roads
- First Nations
- Civic Address
- Parcel Fabric
- Parcel First Nations - Canada
- Clean Water Act Policies Appl
- Provincially Significant Wetlan
- Locally Significant Wetlands
- Non-evaluated Wetlands
- Lakes - Local Scale
- Municipal Boundary - Upper Ti
  - <all other values>
  - COUNTY OF PETERBOROUGH

1: 8,682

441.0 0 220.52 441.0 Meters

North_American_1983_CSRS_UTM_Zone_17N

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

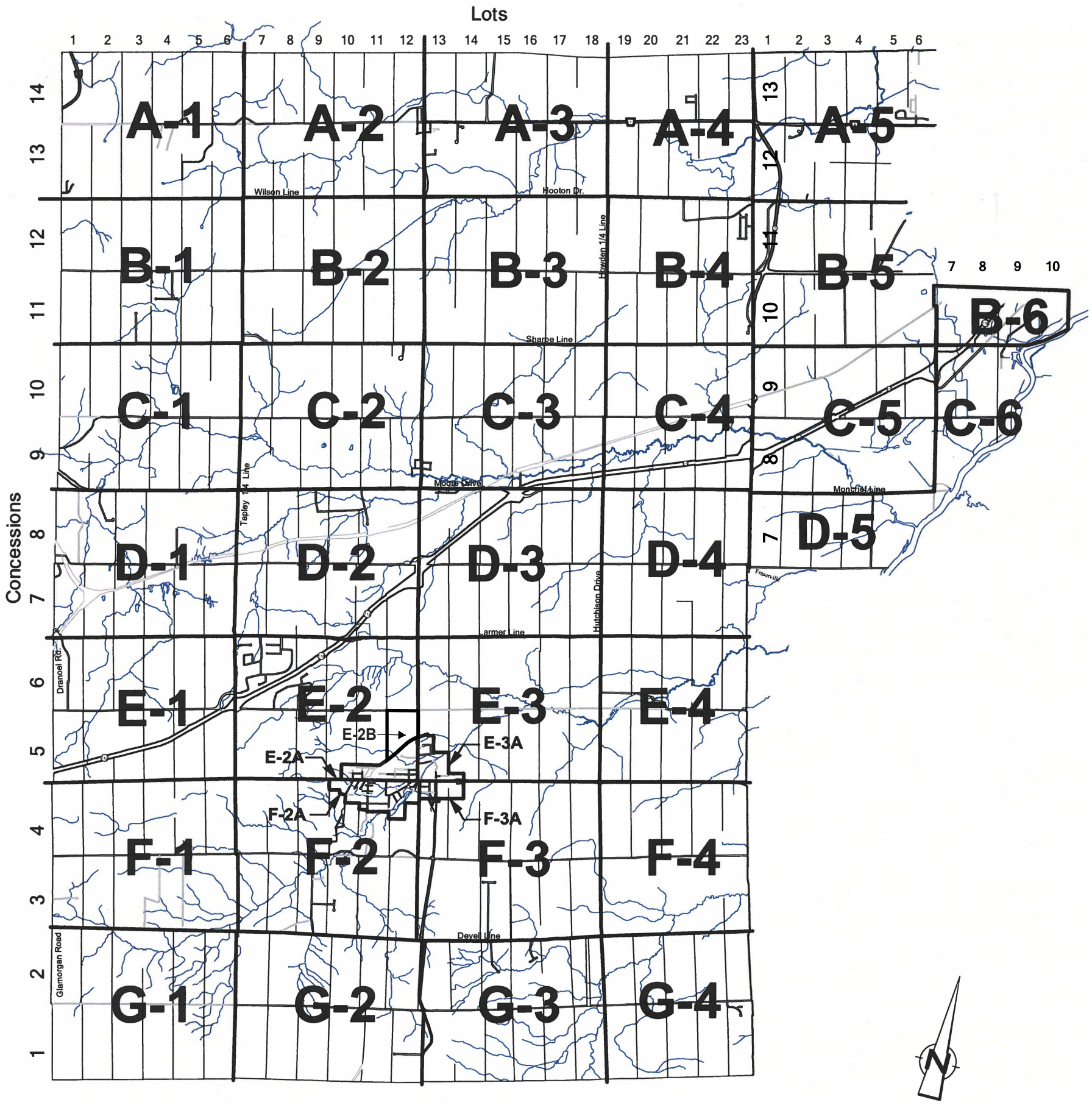
This map was automatically generated using Geocortex Essentials.

INDEX MAP

Schedule A Zoning By-Law

Township of Cavan Monaghan

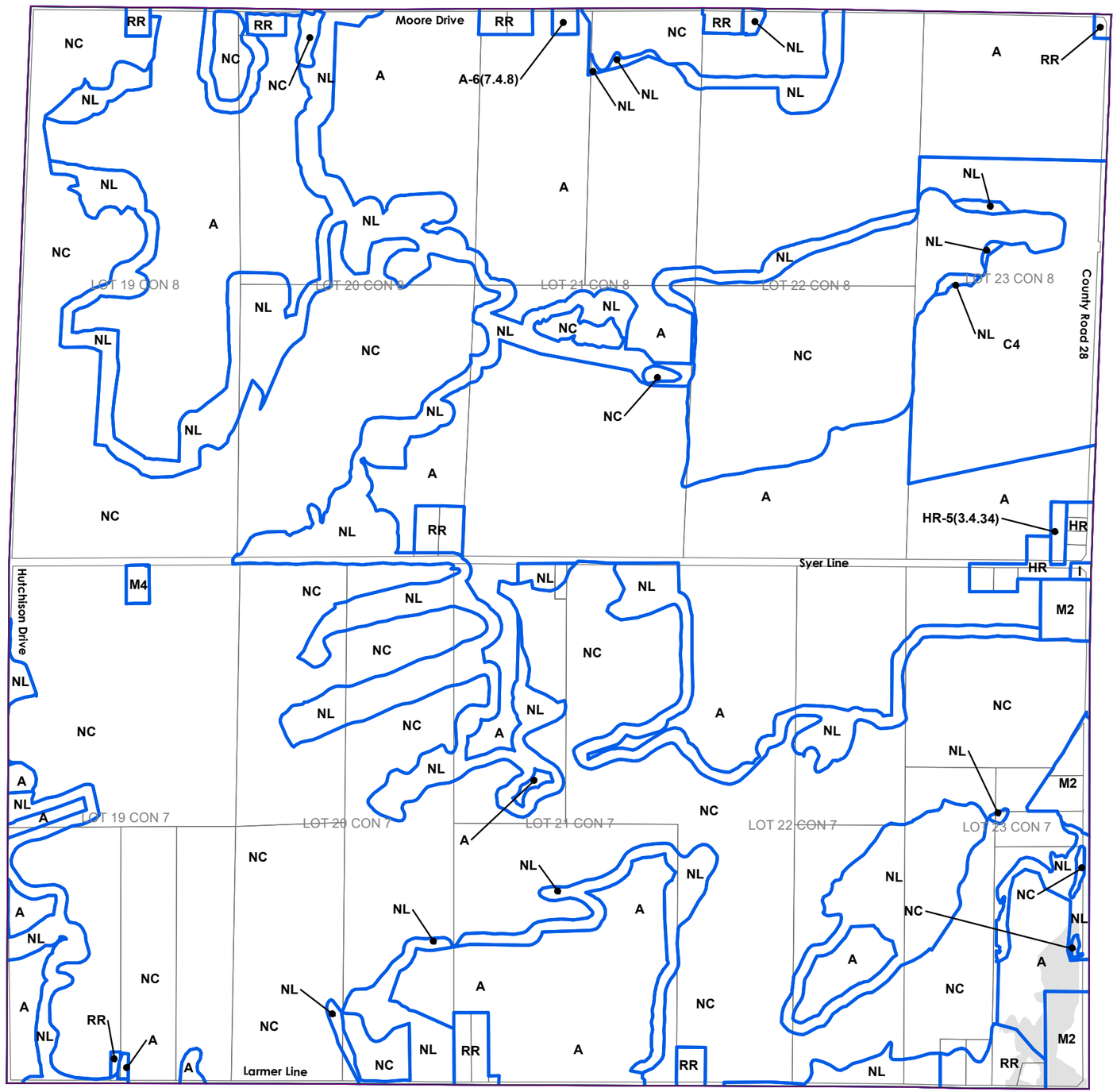
By-Law No. 2018-58, as amended



TOWNSHIP OF CAVAN MONAGHAN

MLS PLANNING CONSULTING

Plan-It Geographical



N

TOWNSHIP OF CAVAN MONAGHAN

Legend

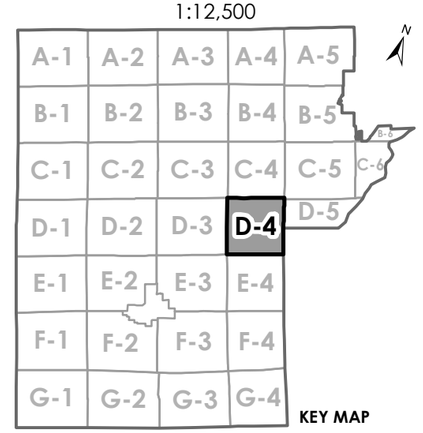
- Land Parcels
- Zoning
- Floodplain Overlay

Zone Description

A - Agricultural
C4 - Entertainment Commercial
HR - Hamlet Residential
I - Institutional
M2 - Rural Employment
M4 - Disposal Industrial
NC - Natural Core
NL - Natural Linkage
RR - Rural Residential

0 200 400 600 800 m

1:12,500



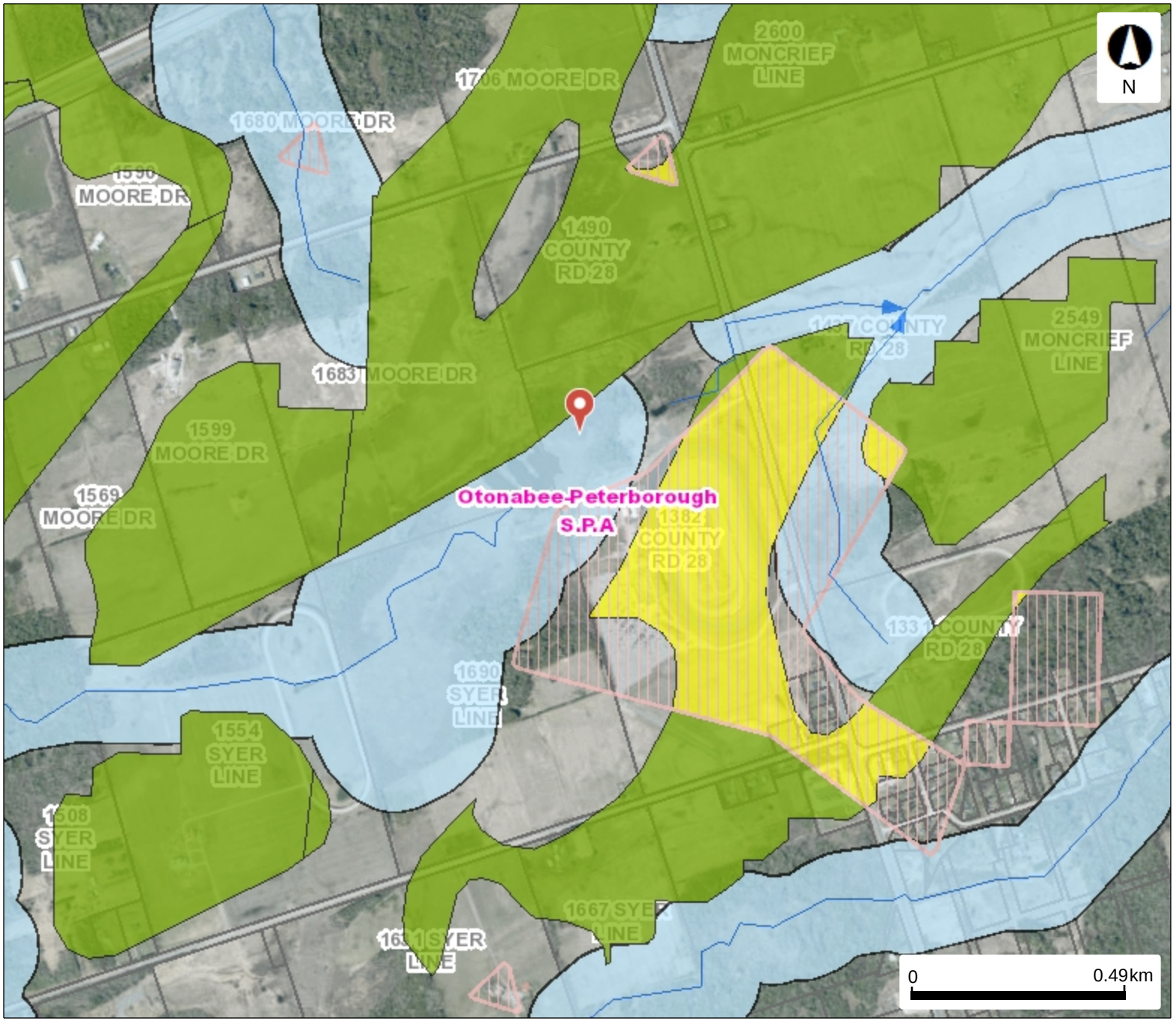
Schedule A Zoning By-law

Township of Cavan Monaghan
Zoning By-law No. 2018-58

Map D-4

October 1, 2018

SPIA Mapping



Legend

- Source Protection Areas
- Intake Protection Zone Name
- Watercourse Direction
- Issue Contributing Areas
- Highly Vulnerable Aquifers
- Significant Groundwater Recharge Area
  - 0
  - 2
  - 4
  - 6
- WHPA Groundwater Under Direct Influence (WHPA-E)
- Intake Protection Zone 3
- Vulnerable Scoring Area - Surface Water
  - 0 - 3.9
  - 4 - 7.9
  - 8 - 8.9
  - 9 - 10
- Assessment Parcel

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Ontario

Map Created: 3/23/2021
Map Center: 44.20943 N, -78.39505 W

Ontario

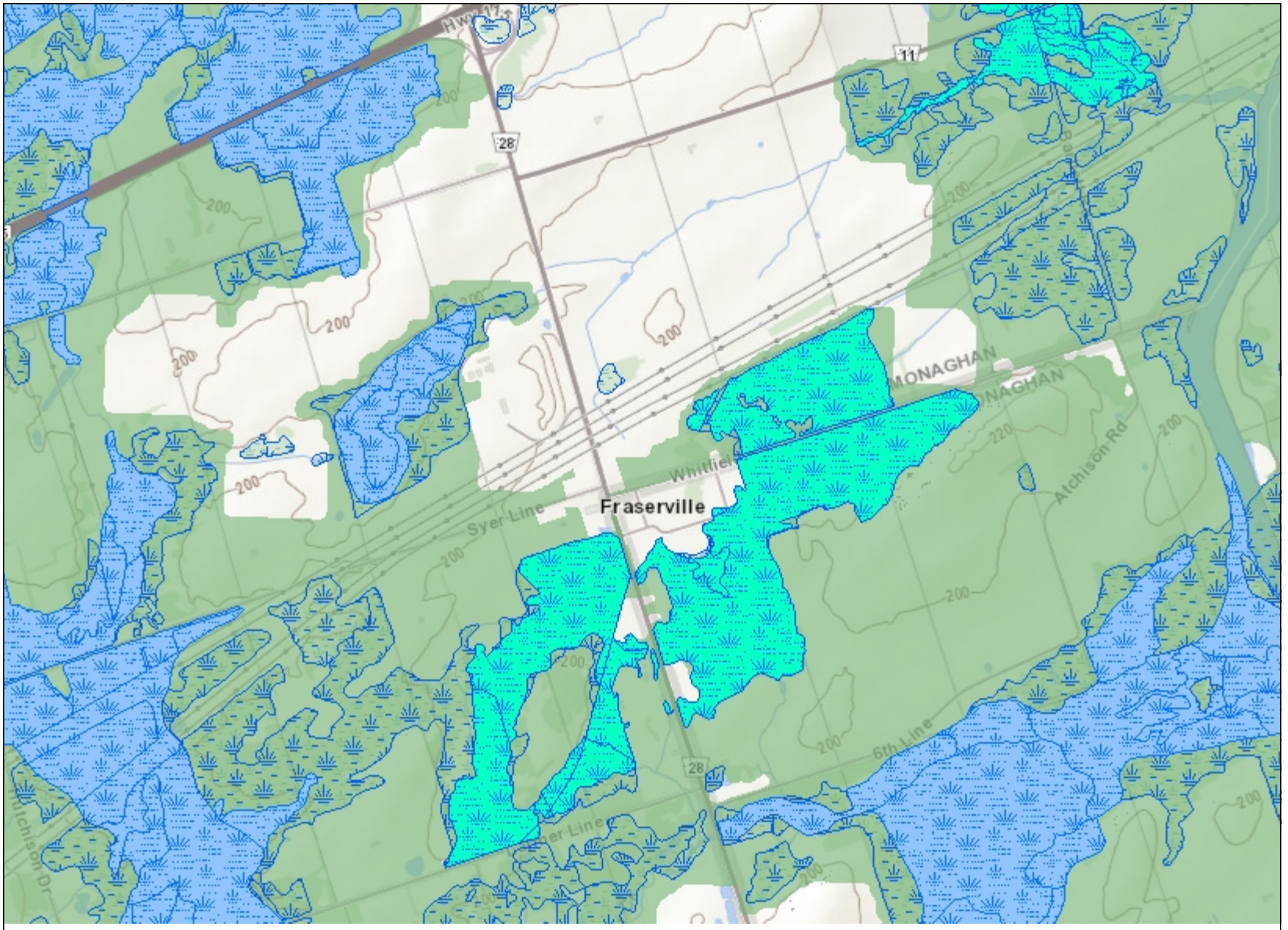
Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Kawartha Downs

Map created: 3/5/2021

Notes: Enter map notes



Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion

Wetland

- Provincially Significant Wetland Evaluated
- Non - Provincially Significant Wetland Evaluated
- Unevaluated Wetland

Area of Natural Heritage & Scientific Interest (ANSI)

- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI

Greenbelt Plan

- Boundary
- Greenbelt External Connections

Land Use Designations

- Protected Countryside
- Greenbelt Towns and Villages
- Greenbelt Hamlets
- Urban River Valley
- Greenbelt Specialty Crop Area

Niagara Escarpment Plan (NEP)

- Boundary
- Parks and Open Space System

Land Use Designations

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre

Oak Ridges Moraine Conservation Plan (ORM)

- Boundary

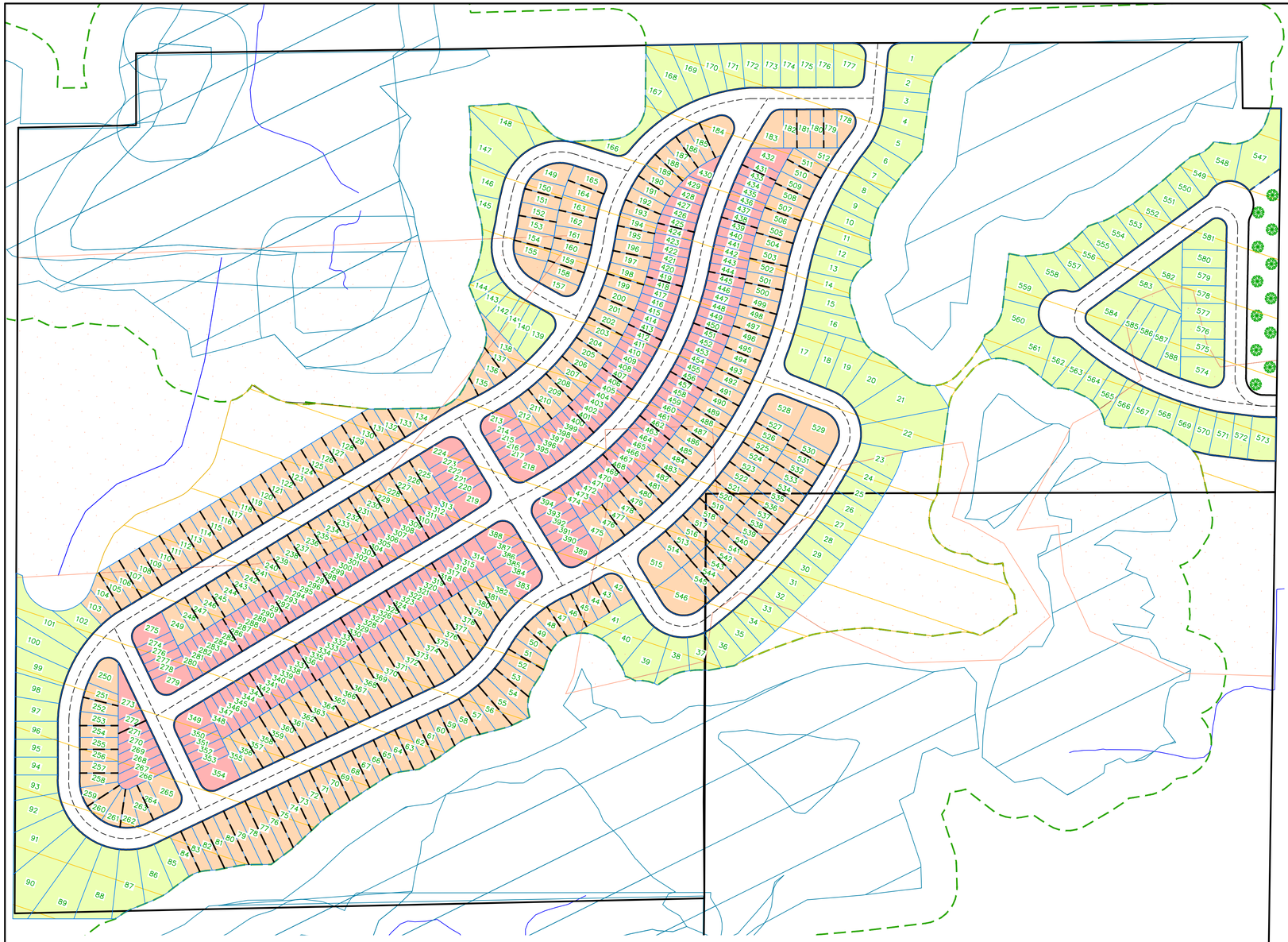
Land Use Designations

- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement
- Palgrave Estates Residential Community
- Settlement Area

1.3 0 0.66 1.3 Kilometers

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

This map may not display all features listed in the legend because the feature layer was not turned on at the time the map was made; the features do not exist in the geographic range; or features have not been mapped. Absence of a feature in the map does not mean they do not exist in this area.



Parcel #	Area	Parcel #	Area	Parcel #	Area	Parcel #	Area	Parcel #	Area	Parcel #	Area
1	1419.75m	99	828.28m	197	351.68m	295	248.74m	393	279.23m	491	325.00m
2	581.60m	100	1031.48m	198	351.85m	296	248.94m	394	386.34m	492	325.00m
3	585.73m	101	1332.19m	199	351.94m	297	249.13m	395	240.50m	493	325.00m
4	719.40m	102	555.00m	200	351.95m	298	249.33m	396	240.50m	494	325.00m
5	770.21m	103	325.00m	201	351.88m	299	249.53m	397	240.50m	495	325.00m
6	634.75m	104	394.79m	202	351.73m	300	249.73m	398	240.50m	496	325.00m
7	555.00m	105	370.34m	203	351.50m	301	249.93m	399	240.50m	497	325.00m
8	555.00m	106	370.81m	204	351.18m	302	250.12m	400	240.50m	498	325.00m
9	555.00m	107	371.29m	205	350.79m	303	250.32m	401	240.50m	499	325.00m
10	557.72m	108	370.91m	206	350.32m	304	250.52m	402	240.50m	500	325.00m
11	601.96m	109	371.59m	207	349.78m	305	250.72m	403	240.50m	501	325.00m
12	632.34m	110	371.52m	208	349.15m	306	250.91m	404	240.50m	502	342.86m
13	555.00m	111	371.45m	209	348.46m	307	251.11m	405	240.50m	503	344.70m
14	555.00m	112	371.37m	210	347.69m	308	251.31m	406	240.50m	504	344.70m
15	671.82m	113	371.30m	211	346.85m	309	251.51m	407	240.50m	505	344.70m
16	849.74m	114	371.23m	212	359.44m	310	251.71m	408	240.50m	506	344.70m
17	1113.78m	115	371.16m	213	414.62m	311	251.90m	409	240.50m	507	344.70m
18	682.91m	116	371.09m	214	257.28m	312	250.39m	410	240.50m	508	344.70m
19	970.94m	117	371.01m	215	257.28m	313	250.30m	411	240.50m	509	344.70m
20	1198.00m	118	370.94m	216	257.28m	314	391.03m	412	240.50m	510	344.70m
21	1819.03m	119	370.87m	217	257.28m	315	261.05m	413	240.50m	511	344.68m
22	1872.70m	120	370.80m	218	589.20m	316	246.24m	414	240.50m	512	325.00m
23	763.81m	121	370.73m	219	570.01m	317	247.06m	415	240.50m	513	339.46m
24	577.66m	122	370.65m	220	289.43m	318	247.88m	416	240.50m	514	339.46m
25	577.66m	123	370.58m	221	290.85m	319	248.70m	417	240.50m	515	845.94m
26	577.66m	124	370.51m	222	292.27m	320	249.52m	418	240.50m	516	339.46m
27	577.66m	125	370.44m	223	293.68m	321	250.33m	419	240.50m	517	339.46m
28	577.66m	126	370.37m	224	515.11m	322	251.15m	420	240.50m	518	339.46m
29	577.66m	127	370.29m	225	337.04m	323	251.97m	421	240.50m	519	339.46m
30	577.66m	128	370.22m	226	325.00m	324	252.79m	422	249.80m	520	339.46m
31	577.66m	129	370.15m	227	325.00m	325	253.61m	423	251.24m	521	339.46m
32	577.66m	130	370.08m	228	325.00m	326	254.43m	424	251.47m	522	339.46m
33	577.66m	131	364.37m	229	325.00m	327	255.24m	425	247.10m	523	339.46m
34	577.66m	132	325.00m	230	325.00m	328	256.06m	426	240.54m	524	339.46m
35	577.66m	133	325.00m	231	325.00m	329	256.88m	427	240.54m	525	339.46m
36	686.60m	134	604.75m	232	325.00m	330	257.70m	428	240.54m	526	339.46m
37	629.17m	135	325.00m	233	325.00m	331	258.52m	429	240.54m	527	339.46m
38	727.77m	136	325.00m	234	325.00m	332	259.33m	430	284.42m	528	684.19m
39	1065.91m	137	352.38m	235	325.00m	333	260.15m	431	241.77m	529	1020.12m
40	876.79m	138	465.22m	236	325.00m	334	260.97m	432	508.27m	530	354.25m
41	709.93m	139	687.47m	237	325.00m	335	261.79m	433	241.77m	531	354.25m
42	323.32m	140	394.44m	238	325.00m	336	262.61m	434	241.77m	532	354.25m
43	325.00m	141	380.35m	239	325.00m	337	263.42m	435	241.77m	533	354.25m
44	325.00m	142	431.38m	240	325.00m	338	264.24m	436	241.77m	534	354.25m
45	325.00m	143	399.49m	241	325.00m	339	265.06m	437	241.77m	535	354.25m
46	325.00m	144	349.62m	242	325.00m	340	265.88m	438	241.77m	536	354.25m
47	325.00m	145	894.09m	243	325.00m	341	266.70m	439	241.77m	537	354.25m
48	325.00m	146	680.96m	244	325.00m	342	267.51m	440	241.77m	538	354.25m
49	325.00m	147	1103.60m	245	325.00m	343	268.33m	441	241.77m	539	354.25m
50	325.00m	148	1271.27m	246	325.00m	344	269.15m	442	241.77m	540	354.25m
51	332.53m	149	466.35m	247	325.00m	345	269.97m	443	241.77m	541	354.25m
52	399.90m	150	326.47m	248	325.00m	346	270.79m	444	255.56m	542	354.25m
53	411.34m	151	354.89m	249	471.53m	347	271.60m	445	255.96m	543	354.25m
54	508.23m	152	351.51m	250	544.16m	348	338.08m	446	256.34m	544	354.25m
55	557.73m	153	368.77m	251	325.00m	349	591.64m	447	256.72m	545	354.25m
56	494.40m	154	357.61m	252	325.00m	350	243.75m	448	257.07m	546	1107.96m
57	426.86m	155	336.28m	253	325.00m	351	243.75m	449	257.41m	547	1595.16m
58	378.84m	156	360.78m	254	325.00m	352	243.75m	450	257.74m	548	856.25m
59	335.60m	157	364.30m	255	325.00m	353	243.75m	451	258.04m	549	555.00m
60	347.40m	158	358.61m	256	325.00m	354	716.57m	452	258.34m	550	555.00m
61	365.96m	159	358.61m	257	325.00m	355	338.21m	453	258.61m	551	555.00m
62	377.60m	160	358.61m	258	325.00m	356	379.85m	454	258.87m	552	555.00m
63	384.17m	161	358.61m	259	325.00m	357	391.09m	455	259.11m	553	555.00m
64	359.22m	162	392.44m	260	325.00m	358	402.34m	456	259.34m	554	555.00m
65	332.92m	163	392.44m	261	325.00m	359	413.58m	457	259.54m	555	570.53m
66	331.86m	164	392.44m	262	325.00m	360	424.83m	458	259.73m	556	559.18m
67	344.79m	165	440.20m	263	325.00m	361	436.07m	459	259.91m	557	558.41m
68	358.32m	166	1320.23m	264	325.00m	362	447.32m	460	260.06m	558	853.56m
69	372.57m	167	663.80m	265	636.07m	363	458.57m	461	260.20m	559	1123.78m
70	388.88m	168	1009.44m	266	317.95m	364	469.81m	462	260.32m	560	1188.92m
71	405.33m	169	847.88m	267	318.99m	365	481.06m	463	260.42m	561	1121.81m
72	423.22m	170	732.40m	268	292.38m	366	492.30m	464	260.50m	562	740.11m
73	451.81m	171	664.06m	269	265.71m	367	503.55m	465	260.57m	563	604.33m
74	483.74m	172	627.87m	270	240.00m	368	514.79m	466	260.61m	564	555.00m
75	515.67m	173	561.56m	271	240.00m	369	526.04m	467	260.64m	565	561.75m
76	543.15m	174	561.31m	272	240.00m	370	537.28m	468	260.65m	566	677.59m
77	563.25m	175	561.05m	273	473.74m	371	548.53m	469	260.64m	567	555.00m
78	567.41m	176	560.80m	274	243.75m	372	559.14m	470	260.62m	568	555.00m
79	524.49m	177	938.81m	275	537.74m	373	572.82m	471	260.57m	569	555.00m
80	482.50m	178	367.39m	276	243.75m	374	578.60m	472	260.51m	570	589.48m
81	454.48m	179	367.39m	277	243.75m	375	568.96m	473	260.43m	571	608.43m
82	427.44m	180	367.39m	278	243.75m	376	544.36m	474	270.27m	572	555.00m
83	392.58m	181	367.39m	279	527.19m	377	505.96m	475	450.26m	573	813.90m
84	373.76m	182	367.39m	280	245.72m	378	455.58m	476	325.00m	574	841.05m
85	613.44m	183	605.42m	281	245.97m	379	403.75m	477	325.00m	575	555.00m
86	903.38m	184	647.29m	282	246.17m	380	374.44m	478	325.00m	576	555.00m
87	1129.58m	185	325.00m	283	246.36m	381	352.95m	479	325.00m	577	556.83m
88	1428.74m	186	325.00m	284	246.56m	382	327.73m	480	325.00m	578	555.00m
89	1846.97m	187	325.00m	285	246.76m	383	473.37m	481	325.00m	579	555.00m
90	2068.21m	188	325.00m	286	246.96m	384	262.43m	482	325.00m	580	555.00m
91	1228.87m	189	325.00m	287	247.16m	385	263.14m	483	325.00m	581	727.01m
92	859.28m	190	325.00m	288	247.35m	386	263.84m	484	325.00m	582	853.93m
93	682.33m	191	325.00m	289	247.55m	387	264.55m	485	325.00m	583	853.93m
94	555.00m	192	325.00m	290	247.75m	388	527.09m	486	325.00m	584	1064.34m
95	555.00m	193	325.00m	291	247.95m	389	566.91m	487	325.00m	585	620.42m
96	555.00m	194	325.00m	292	248.14m	390	279.23m	488	325.00m	586	651.89m
97	664.77m	195	325.00m	293	248.34m	391	279.23m	489	325.00m	587	673.45m
98	706.00m	196	368.37m	294	248.54m	392	279.23m	490	325.00m	588	555.00m

MUNICIPAL SERVICES

123 LOTS

URBAN RESIDENTIAL ONE ZONE:
SINGLE DETACHED DWELLING
MIN. LOT AREA: 555 SQ.M.
MIN. LOT FRONTAGE: 15 M. AND 18 M. FOR CORNER LOT

272 LOTS

URBAN RESIDENTIAL TWO ZONE:
SEMI-DETACHED AND SEMI DETACHED LINKED
MIN. LOT AREA: 325 SQ.M.
MIN. LOT FRONTAGE: 10 M. AND 15 M. FOR CORNER LOT

193 LOTS

URBAN RESIDENTIAL THREE ZONE:
TOWNHOUSE
MIN. LOT AREA: 800 SQ.M. AND 240 SQ. M. PER TOWNHOUSE UNIT
MIN. LOT FRONTAGE: 20 M. AND 7.5 M. PER TOWNHOUSE UNIT

RIGHT OF WAY

CITY OF PETERBOROUGH STANDARD CROSS SECTION
URBAN CROSS SECTION
FULLY SERVICED
SIDEWALK ON BOTH SIDES

8.5m ROAD WIDTH (GUTTER TO GUTTER)
18.5m ROW
MIN. CURB RADIUS 10.7m

PROBABLY BREEDING GRASSLANDS (DEVELOPED GRASSLANDS 6.13ha)

DEVELOPMENT AREA

WETLAND

BENCH MARK 1

BENCH MARK 2

TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	DRAFT	-/06/21

METRIC — Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

NOT FOR CONSTRUCTION

WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

KAWARTHA DOWNS REDEVELOPMENT

FRASERVILLE, ON

Drawing Title

Drawn By:	LC	SCALE: Horz.	Vert.
Designed By:	LC	Plot Date:	10/09/2021
Checked By:	—	Project No.:	21-85152
Engineer:	—	Dwg File No.:	

Sht. No.:

Appendix B

MECP Water Well Records for Test Wells

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 — 5119296 — Municipality 5102 4 — Con. CON 08

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Peterborough	Cavan Twp.	Con.8	23

[redacted]

Address: General Delivery, Fraserville, ON K0L 1V0

Date completed: 20 02 11 (day month year)

21 — UTM — Northing — RC — Elevation — RC — Basin Code — ii — iii — iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Black	Topsoil			0	1
Brown	Sandy clay			1	5
Brown	Sandy clay & gravel			5	12
Gray	Sandy clay & gravel	boulders		12	19
Gray	Silty sand & gravel	some clay, boulders		19	47½
Gray	Limestone			47½	75

31 — 32

41 WATER RECORD

Water found at - feet	Kind of water
47½	1 [X] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas — Untested
	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas
	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas
	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas
	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6¼	1 [X] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [ ] Open hole 5 [ ] Plastic	.188	+2½	47½
6	1 [ ] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [X] Open hole 5 [ ] Plastic		47½	75
	1 [ ] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [ ] Open hole 5 [ ] Plastic			

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet

Material and type: | Depth at top of screen feet:

61 PLUGGING & SEALING RECORD

[X] Annular space [ ] Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
0	20	Bentonite

71 PUMPING TEST

Pumping test method: 1 [ ] Pump 2 [ ] Bailer — Pumping rate: 12 GPM — Duration of pumping: 1 Hours 30 Mins

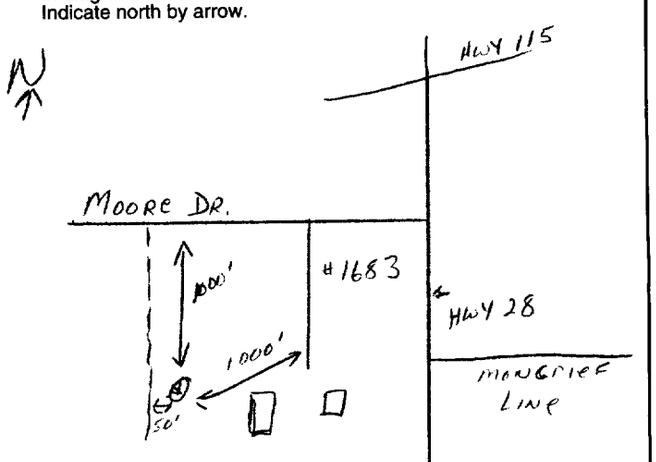
Static level	Water level end of pumping	Water levels during: 1 [ ] Pumping 2 [X] Recovery			
11 feet	74 feet	15 minutes: 17 feet	30 minutes: 15 feet	45 minutes: 13.5 feet	60 minutes: 12.5 feet

If flowing give rate: GPM — Pump intake set at: feet — Water at end of test: [X] Clear [ ] Cloudy

Recommended pump type: [ ] Shallow [X] Deep — Recommended pump setting: 70 feet — Recommended pump rate: 10 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



252377

FINAL STATUS OF WELL

1 [ ] Water supply 2 [ ] Observation well 3 [X] Test hole 4 [ ] Recharge well 5 [ ] Abandoned, insufficient supply 6 [ ] Abandoned, poor quality 7 [ ] Abandoned (Other) 8 [ ] Dewatering 9 [ ] Unfinished 10 [ ] Replacement well

WATER USE

1 [ ] Domestic 2 [ ] Stock 3 [ ] Irrigation 4 [ ] Industrial 5 [ ] Commercial 6 [ ] Municipal 7 [ ] Public supply 8 [ ] Cooling & air conditioning 9 [ ] Not used 10 [X] Other: Test hole

METHOD OF CONSTRUCTION

1 [ ] Cable tool 2 [ ] Rotary (conventional) 3 [ ] Rotary (reverse) 4 [X] Rotary (air) 5 [X] Air percussion 6 [ ] Boring 7 [ ] Diamond 8 [ ] Jetting 9 [ ] Driving 10 [ ] Digging 11 [ ] Other

Name of Well Contractor	Well Contractor's Licence No.
G.Hart & Sons Well Drilling Ltd.	2662
Address: Box 850, Fenelon Falls, ON	
Name of Well Technician: Bryan Watson	Well Technician's Licence No.: T-2441
Signature of Technician/Contractor: Bryan Watson	Submission date: day mo yr

MINISTRY USE ONLY

Data source	Contractor	Date received
	2662	FEB 19 2003
Date of inspection	Inspector	
Remarks: CSS.ES3		

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Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 (1 2) **5119297** Municipality 51024 (10 14) Con. CON 08 (15 22 23 24)

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Peterborough	Cavan Twp.	Con.8	23

[redacted]

Address: General Delivery, Fraserville, ON K0L 1V0

Date completed (28-33): 18 (day) 11 (month) 02 (year)

21 (1 2) UTM (10) Northing (12-17) (18-24) RC (25) Elevation (26) RC (30) Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Black	Topsoil			0	1
Brown	Silty sand			1	3
Brown	Silty clay			3	8
Gray	Sandy clay & gravel			8	21
Gray	Silty sand & gravel	some clay	wet	21	38
Gray	Limestone			38	76

31 (10 14 15 21) 32 (32 43 54 65 75 80)

41 WATER RECORD

Water found at - feet (10-13)	Kind of water
38	1 [X] Fresh 2 [ ] Salty (Minerals) 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas (14)
(15-18)	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas (19)
(20-23)	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas (24)
(25-28)	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas (29)
(30-33)	1 [ ] Fresh 2 [ ] Salty 3 [ ] Sulphur 4 [ ] Minerals 5 [ ] Gas (34) (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
(10-11) 6¼	1 [X] Steel (12) 2 [ ] Galvanized 3 [ ] Concrete 4 [ ] Open hole 5 [ ] Plastic	.188	+2½	38 (13-16)
(17-18) 6	1 [ ] Steel (19) 2 [ ] Galvanized 3 [ ] Concrete 4 [X] Open hole 5 [ ] Plastic		38	76 (20-23)
(24-25)	1 [ ] Steel (26) 2 [ ] Galvanized 3 [ ] Concrete 4 [ ] Open hole 5 [ ] Plastic			(27-30)

SCREEN

Sizes of opening (Slot No.) (31-33)	Diameter inches (34-38)	Length feet (39-40)
Material and type	Depth at top of screen feet (41-44)	(30)

61 PLUGGING & SEALING RECORD

[X] Annular space [ ] Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
(10-17) 0	20	Bentonite
(18-21)	(22-25)	
(26-29)	(30-33) (80)	

71 PUMPING TEST

Pumping test method (9) 1 [ ] Pump 2 [ ] Bailer: Air — Pumping rate (11-14) 12 GPM — Duration of pumping (15-16) 1 Hours (17-18) 30 Mins

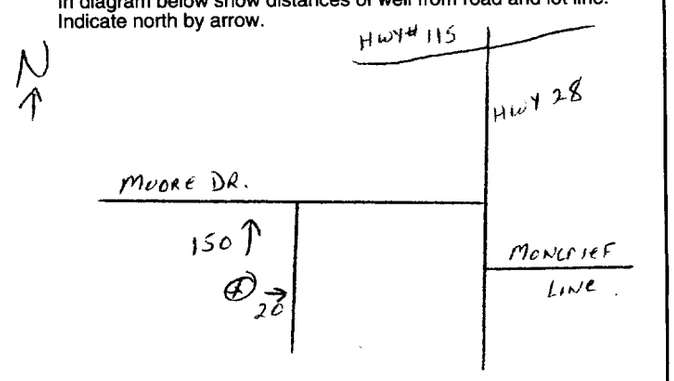
Static level (19-21)	Water level end of pumping (22-24)	Water levels during (25) 1 [ ] Pumping 2 [X] Recovery: 15 minutes (26-28)	30 minutes (29-31)	45 minutes (32-34)	60 minutes (35-37)
10 feet	75 feet	25 feet	21 feet	18.5 feet	17 feet

If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	[X] Clear [ ] Cloudy
Recommended pump type: [ ] Shallow [X] Deep	Recommended pump setting (43-45) 72 feet	Recommended pump rate (46-49) 12 GPM

(50-53)

LOCATION OF WELL

In diagram below show distances of well from road and lot line. Indicate north by arrow.



252375

FINAL STATUS OF WELL (54)

1 [ ] Water supply 2 [ ] Observation well 3 [X] Test hole 4 [ ] Recharge well 5 [ ] Abandoned, insufficient supply 6 [ ] Abandoned, poor quality 7 [ ] Abandoned (Other) 8 [ ] Dewatering 9 [ ] Unfinished 10 [ ] Replacement well

WATER USE (55-56)

1 [ ] Domestic 2 [ ] Stock 3 [ ] Irrigation 4 [ ] Industrial 5 [ ] Commercial 6 [ ] Municipal 7 [ ] Public supply 8 [ ] Cooling & air conditioning 9 [ ] Not use 10 [X] Other Test Hole

METHOD OF CONSTRUCTION (57)

1 [ ] Cable tool 2 [ ] Rotary (conventional) 3 [ ] Rotary (reverse) 4 [X] Rotary (air) 5 [X] Air percussion 6 [ ] Boring 7 [ ] Diamond 8 [ ] Jetting 9 [ ] Driving 10 [ ] Digging 11 [ ] Other

Name of Well Contractor	Well Contractor's Licence No.
G.Hart & Sons Well Drilling Ltd.	2662
Address: Box 850, Fenelon Falls, ON	
Name of Well Technician: Bryan Watson	Well Technician's Licence No.: T-2441
Signature of Technician/Contractor: Clyde Watson	Submission date: day mo yr

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	2662	FEB 19 2003
Date of inspection	Inspector	
Remarks: CSS.ES3		

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Appendix C

AquiferTest Pro™ Results

194 Sophia St.
Peterborough, ON
K9H1E5

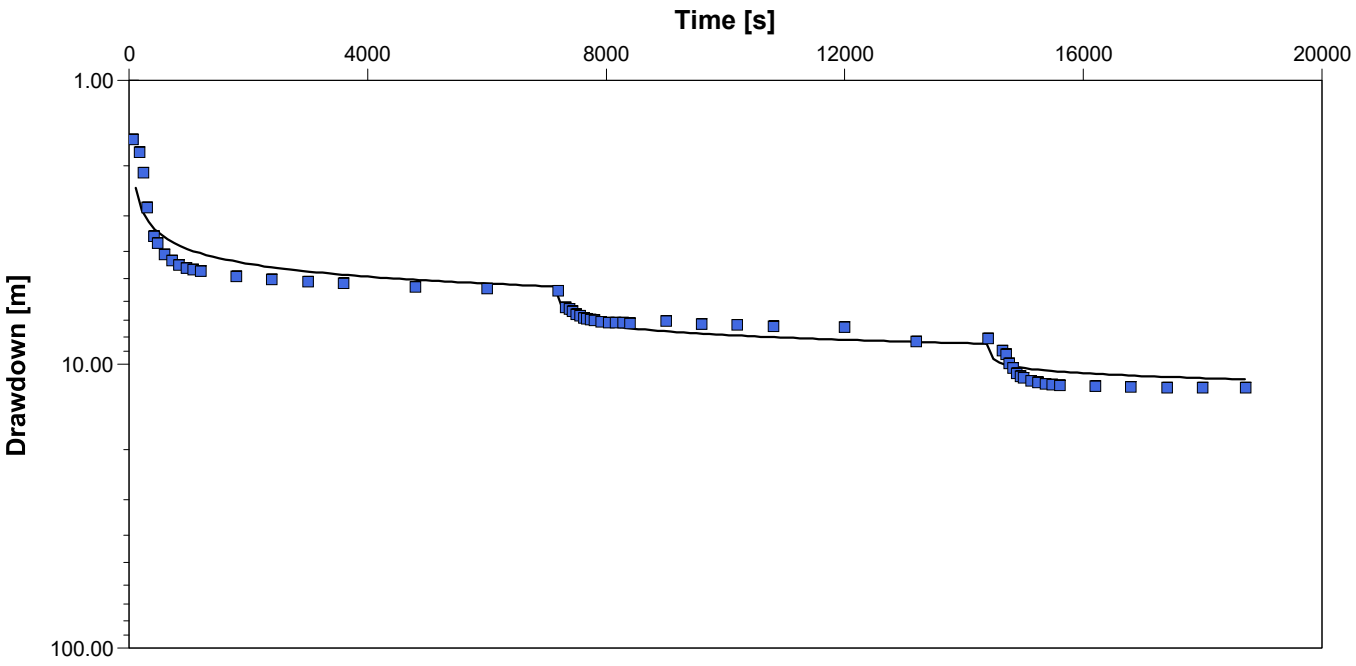
Pumping Test Analysis Report

Project: Water Supply Assessment, Kawartha Downs

Number: 12579-001

Client: Romspen Investment Corporation

Location: Kawartha Downs, Fraserville, ON	Pumping Test: Pumping Test - Well 1	Pumping Well: Well 1
Test Conducted by: C. Kinsella		Test Date: 9/16/2021
Analysis Performed by: N. Heikoop	Pumping Test - Well 1	Analysis Date: 10/6/2021
Aquifer Thickness: 8.38 m	Discharge: variable, average rate 11.278 [U.S. gal/min]	



Calculation using Hantush

Observation Well	Transmissivity [m²/s]	Hydraulic Conductivity [m/s]	Storage coefficient	P	Hydr. resistance [s]	Leakage factor [m]	Radial Distance to PW [m]
Well 1	5.66×10^{-5}	6.75×10^{-6}	8.12×10^{-2}	9.40×10^{3}	5.01×10^{11}	5.32×10^{3}	0.08

194 Sophia St.
Peterborough, ON
K9H1E5

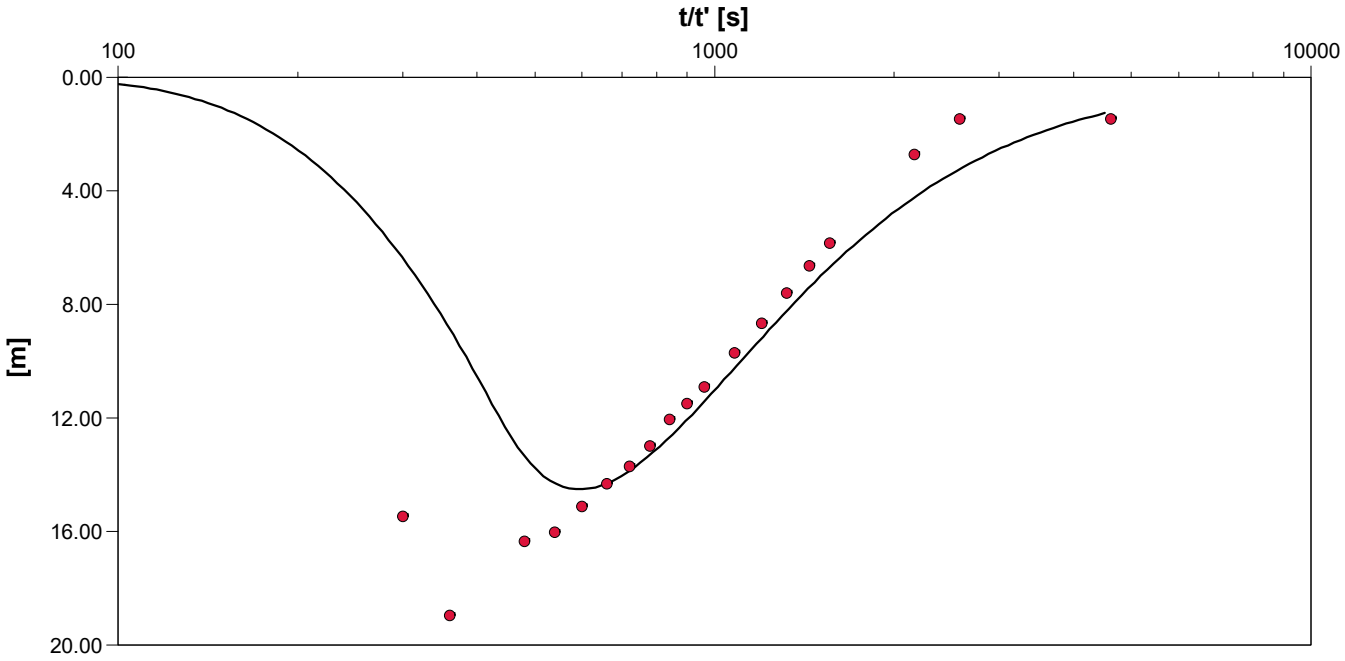
Pumping Test Analysis Report

Project: Water Supply Assessment, Kawartha Downs

Number: 12579-001

Client: Romspen Investment Corporation

Location: Fraserville, ON	Pumping Test: Pumping Test - Well 2	Pumping Well: Well 2
Test Conducted by: C. Kinsella		Test Date: 9/17/2021
Analysis Performed by: N. Heikoop	Pumping Test - Well 2	Analysis Date: 10/6/2021
Aquifer Thickness: 11.33 m	Discharge: variable, average rate 17.17 [U.S. gal/min]	



Calculation using Theis

Observation Well	Transmissivity [m²/s]	Hydraulic Conductivity [m/s]	Storage coefficient	P	Radial Distance to PW [m]
Well 2	2.03×10^{-6}	1.79×10^{-7}	5.21×10^{-1}	2.60×10^{0}	0.08