# GAMAN CONSULTANTS INC.

**MECP D-5-5 GROUNDWATER SUPPLY INVESTIGATIONS**
**PART LOT 15, CON. 10, FORMERLY NORMANBY TWP. (AYTON)**
**WEST GREY, GREY COUNTY**

***Prepared for:***
***Domm Construction***

**June 2024**

**File 23008.00**

**Distribution:**
**1 c Client (PDF)**
**1 c File**

GAMAN CONSULTANTS INC.
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June 7, 2024

Domm Construction Ltd.
563 Louisa Street
Ayton, Ontario
N0G 1C0

Attention: Mr. Jake Domm

Dear Sirs:

Re: MECP D-5-5 Groundwater Supply Investigations
Part Lot 15, Con. 10, Formerly Normanby TWP, Ayton
West Grey, Grey County
Our File 23008.00

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GAMAN Consultants Inc. is pleased to submit this hydrogeological report to evaluate the feasibility of servicing this 13-lot subdivision using individual drilled wells. The study confirms the availability of groundwater of suitable quantity and quality to meet the individual residential daily water requirements of the proposed development. Water treatment may be needed for some aesthetic water quality parameters. The risk of affecting neighbouring wells is considered to be low. If you have any questions, please contact us.

Yours truly,
GAMAN Consultants Inc.

Gary R. Hendy, P.Eng.
Consulting Engineer

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## FIGURES



## TABLES

# 1.0 INTRODUCTION

## 1.1 BACKGROUND

This report provides the results of a hydrogeological assessment conducted by GAMAN Consultants Inc. (GAMAN) in support of a development application for the subject lands. The report was initiated to assess the feasibility of servicing the proposed development with individual drilled wells.

Domm Construction Ltd. retained GAMAN Consultants Inc. to complete a groundwater supply evaluation to support a proposed 13-lot subdivision at the above noted site. The proposed development is located on the west side of Ayton as shown on Figure 1. Existing land use adjacent to the site includes privately serviced residential lots and undeveloped land and agricultural land.

The proposed 5.423 ha parcel of land consists of Lots 1 to 12 on 4.182 ha and Lot 13 on 1.241 ha. It is proposed to service these residential lots with individual drilled wells and individual on-site subsurface sewage disposal systems.

## 1.2 STUDY OBJECTIVES & SCOPE

The purpose of this evaluation was to assess the feasibility of servicing this site with drilled wells in support of this 13-lot development. The Ministry of Environment, Conservation and Parks (MECP) Guideline D-5-5 was adopted in 1996 to address plans of subdivision serviced with private wells. The tasks required to complete the work program and address pertinent parts of the Guideline included:

- Background review of the physical setting of the site including physiography, surficial and bedrock geology, and groundwater;
- a site inspection of the site and surrounding area;

- a review of local water well records and existing services around the site;
- An evaluation of off-site groundwater quality
- drilling and construction of two test wells and completing two pumping tests assess groundwater quantity and groundwater quality;
- an evaluation of groundwater interference with other wells; and
- preparation of a hydrogeological report to support the proposed plan of subdivision application using private services at this site.

This report documents the study findings of these investigations.

## 2.0 PHYSICAL SETTING

### 2.1 PHYSIOGRAPHY, GEOLOGY AND DRAINAGE

The Dundalk Till Plain Physiographic Region as described by Chapman and Putnam (1984), forms the watershed for headwaters to several rivers including the Saugeen River. Ayton area appears to be located within the southwest boundary of this physiographic region and the Teeswater Drumlin Field to the west.

Figure 3 illustrates the surficial geology around the study area. The Saugeen Valley Source Protection Area Approved Assessment Report describes surficial geology at the watershed scale to be comprised of till. The drumlinized till plains extending from Teeswater to Ayton and Dundalk were formed from repeated advances and retreats of lobes of glacial ice. Overburden is thin (about 4 metres) on the south side of the property and thickens to the north and east.

Bedrock in the study area is illustrated in Figure 4 and shows Silurian aged Salina and Guelph Formations. The Salina Formation overlies the Guelph Formation. The contact between these two formations strikes northwest to southeast along a line between Allan Park to the north

of Ayton and Holstein to the southeast of Ayton. Bedrock Geology Maps shows Salina as the upper most bedrock unit beneath Ayton. The Salina is described as a soft green and grey to red shale with interbedded layers of grey brown dolostone. The Guelph Formation is characterized as a tan to brown, fine to medium crystalline, dolostone. These bedrock units underlie Mount Forest and Neustat and is a source of groundwater supplies for these communities. It is also a source of groundwater for Ayton.

## 2.2 SHALLOW GROUNDWATER MOVEMENT

The movement of groundwater through the subsurface is controlled by hydraulic gradients and the relative distribution of coarse and fine-grained sediments. Shallow groundwater movement should be influenced by local topography and drainage near the site. Groundwater is anticipated to flow southwest towards the South Saugeen River.

## 2.3 HYDROGEOLOGY

Aquifers are sources of groundwater yielding enough water to supply a well. Aquifers are commonly derived from saturated sand and/or gravel deposits within overburden and from fractured bedrock. Aquitards are barriers to groundwater movement and can provide protection to aquifers from sources of contamination. Aquitards are commonly comprised of silt, clay, till or bedrock.

Water well record data presented in Table 1 and plotted on Figure 5 show drilled wells extract groundwater dominantly from bedrock. The bedrock aquifer is comprised of brown, grey and brown limestone with varying amounts of shale. The uppermost bedrock unit is the Salina Formation within the study area.

## 2.4 LOCAL WATER SUPPLIES

Figure 5 illustrates the location of water wells in the vicinity of the site. The figure identifies the MECP well number and the reported test rate in litres per minute. Water well records are included in Table A-1, Appendix A.

Water wells were plotted according to the UTM coordinates provided in the MECP Database. Many wells located near the site were confirmed by the Well Tag numbers and are identified in Figure 5. The locations of some wells were adjusted after cross-referencing tabulated wells with the mapped wells from the website. In some cases, the individual well records provided enough information to locate the wells with greater accuracy than the UTM coordinates. GAMAN Consultants plotted the wells using best efforts.

Water well contractors consistently extend drilled wells into the bedrock aquifer within the study area. The reported test rates for the 49 bedrock wells range from 27 to 349 L/min in this area for wells appearing in Table A-1. The average test rate was 75 L/min.

The average day and peak demands for water presented in Section 3.1 were 2,250 L/day and 18.75 L/min for two hours of constant pumping. It is inferred from these test rates that there is a reasonable probability of successfully constructing drilled wells to yield enough water for dwellings at this site.

A door-to-door water well survey was completed for dwellings along Albert Street and Victoria Street near the site. Residents were provided with a letter explaining the survey and included a self-addressed stamped envelope. If a well tag was strapped to the well, the number was recorded to facilitate cross-referencing the information with the MECP water well record database.

GAMAN received two surveys. Both residents confirmed the well depths reflect bedrock wells. One resident has a water softener, iron filter and chlorination. No issues were reported with drinking water quality.

Background water quality was evaluated using existing dwellings on Victoria Street and on Albert Street. The water samples were labelled 829A and 1019V in Appendix C. Groundwater quality is suitable for consumption and does not require treatment other than water softening for naturally occurring hardness. Nitrate was detected at 3.17 mg/L and remained below the drinking water standard of 10 mg/L. Chlorides were present in both wells at concentrations below the aesthetic objective of 250 mg/L, but at levels that could be related to anthropogenic sources such as de-icing salts for example. Though bedrock in the study area includes the Salina Formation, which is known for high sulphate concentrations, sulphates at the two domestic wells were reported at 57 mg/L, below the aesthetic objective of 500 mg/L.

# 3.0 WATER SUPPLY INVESTIGATIONS

## 3.1 WATER SUPPLY REQUIREMENTS

The water supply requirements for plans of subdivision follow the requirements of the MECP Guideline D-5-5. The following assumptions were used in the estimation of daily water demands for each lot:

1. The per-person daily requirement for water is 450 L/day;
2. each residence will be constructed with up to four (4) bedrooms with 5 occupants.

In consideration of the assumptions detailed above, the total daily water demand for each lot is calculated as the product of the per-person daily requirement times the “likely number of persons per well” (MECP 1996). For a single-family dwelling, this is calculated as the number of bedrooms plus one. Thus, the resulting daily demand calculation is as follows:

$V_{daily}$ *= 450 L/day/person x 5 persons/residence = 2,250 L/day/residence*

Peak water demand for a residence is premised on 3.75 L/min/person and typically occurs twice per day, once in the morning and once in the evening, assuming 60 minutes each in

duration (MECP, 1996). Using the daily demand value calculated above, the peak demand rate for each residence is calculated as follows:

$Q_{Peak}$= *3.75 L/min x 5 persons per dwelling = 18.75 L/min*

Domestic wells that are unable to provide 18.75 L/min for at least two (2) hours would need to be supplemented with storage. It is assumed dwellings will not be equipped with irrigation systems or groundwater heat pumps and this should reduce the affects of water takings on the bedrock aquifer.

## 3.2 INDIVIDUAL WELL CAPACITY TESTS

Test wells TW24-1 and TW24-2 were constructed in January and February. These wells extend to bedrock as a source of groundwater. The wells are shown in Figures 2 and 5.

Test wells TW24-1 and TW24-2 were subject to 6-hour long pumping tests as required in Guideline D-5-5. Table 1 provides a summary of the test results for each well. Appendix B provides details of the water levels during each test and the information is presented graphically in these appendices.

Test well designated TW24-1 was test pumped at a discharge rate of 25.7 L/min for 6 hours. The drawdown at the end of pumping was 0.55 metres and remained above the available drawdown of 5.1 metres. The total volume of water removed from the well was about 9,257 litres and equates to the volume of water needed to service about 4 to 5 dwellings. Figure B-1 illustrates the drawdown and recovery phases versus the logarithm of time. The drawdown-time data shows dewatering of an upper fracture for the first 8-minutes of pumping, followed by a predictable downward trend with drawdown stabilizing shortly after about 90 minutes of pumping. The recovery-time data is irregular because of the dewatered upper fracture, but recovery provides evidence that the bedrock aquifer is elastic which is a positive aquifer

characteristic. Recovery was 96% complete shortly after pumping began and provides evidence of sustainable well yield.

The flow rate for this dwelling would be 18.75 L/min to accommodate periods of peak demand and results in a theoretical drawdown of 0.40 metres which is less than 10% of the available drawdown in the well. This well should be capable of satisfying the daily requirements of 2,250 L/day and the peak flow rate of 18.75 L/min without the need for supplemental storage other than to pressurize the pressure tank.

**TABLE 1: SUMMARY OF 6-HOUR TEST PUMPING RESULTS**

| Test Well | TW24-1<br>A-386882 | TW24-2<br>A-286881 |
|---|---|---|
| Well depth (mbgl) | 36.55 | 24.38 |
| Pumping level (mbgl) | 22.53 | 7.65 |
| Static water level (mbgl) | 21.98 | 7.06 |
| Drawdown (m) | 0.55 | 0.59 |
| Available drawdown to 1st Bedrock Fracture | 5.1 | 11.2 |
| Well recovery (%) | 96% | 96% |
| Pumping Rate (L/min) | 25.7 | 26.5 |
| Estimated Volume (Litres) Pumped from Well | 9,257 | 9,530 |
| Estimated drawdown (m) at 18.75 L/min | 0.4 | 0.42 |
| % Available drawdown (m) at 18.75 L/min | 8% | 4% |

TW24-2 was test pumped at a discharge rate of 26.5 L/min for 6 hours. The drawdown at the end of pumping was 0.59 metres and remained above the available drawdown of 11.2 metres. The available drawdown was calculated as the difference between the static water level and the depth to the bedrock fracture. The total volume of water removed from the well was about 9,530 litres and equates to the volume of water needed to service about 4 to 5 dwellings. Figure B-2 illustrates the drawdown and recovery phases of the test versus the logarithm of time. The drawdown-time data follows a predictable trend with drawdown stabilizing shortly

after the test began. The recovery-time data mirrors the drawdown-time trend and provides evidence that the overburden aquifer is elastic which is a positive aquifer characteristic. Recovery was 96% complete within 24-hours after pumping ceased. The design flow rate for this dwelling would be 18.75 L/min to accommodate periods of peak demand and results in a theoretical drawdown of 0.42 metres which is less than 5% of the available drawdown in the well. This well should be capable of satisfying the daily requirements of 2,250 L/day and the peak flow rate of 18.75 L/min without the need for supplemental storage other than to pressurize the pressure tank.

## 3.3 GROUNDWATER QUALITY

Groundwater quality was evaluated at each of the test wells to characterize drinking water quality and assess the need for water treatment.

The water quality program consisted of disinfecting each well prior to the test to prepare the wells for microbiological evaluations and to comply with the test requirements under MECP Guideline D-5-5. Samples of groundwater were collected at the start and end of each pumping test to observe and document potential changes in groundwater quality. The initial sample was collected around one hour into the test and after no residual chlorine was detected from field tests. The samples were labeled and stored in an ice-packed cooler and delivered to a certified laboratory the next morning to allow for microbiological tests within acceptable holding periods.

Field tests for chlorine residuals were completed during the test period. The laboratory water quality results are presented in Appendix C. The following is a summary of observations related to groundwater quality at each well.

Groundwater quality at TW24-1 is consistent with groundwater quality at the off-site domestic wells. The groundwater is naturally hard and this is common for carbonate bedrock

aquifers. Water softening could be used to remove the calcium and magnesium components that cause hard water. Nitrates were detected at about 4 mg/L and are below the maximum acceptable concentration of 10 mg/L. Nitrates reflect anthropogenic sources in the broader study area.

Groundwater quality at TW24-2 differs from groundwater quality at TW24-1 and at the off-site domestic wells as summarized below:

- High concentrations of sulphates (1,220-1,230 mg/L) exceed the aesthetic objective of 500 mg/L.
- Hardness at concentrations ranging from 1,320 to 1,330 mg/L are above the operational guideline of 100 mg/L.
- Iron was detected at 0.804-0.845 mg/L and is above the aesthetic objective of 0.3 mg/L.
- Total Dissolved Solids (1,850-1,870 mg/L) are elevated above the aesthetic objective of 500 mg/L because of the high levels of sulphates and hardness.
- Aluminum was reported at 0.14 to 0.16 mg/L and exceeds the Ontario operational criterion of 0.1 mg/L but is less than the Canadian Drinking Water Quality Standard of 2.9 mg/L. Aluminum can cause coating on distribution pipes.

Water treatment to reduce concentration of iron, sulphates, hardness, and Total Dissolved Solids is likely needed to improve drinking water quality at TW24-2. Water softening for example would lower the concentrations of hardness and iron. Reversed Osmosis (RO) could reduce the high sulphate concentrations and dissolved solids. The water treatment specialist should be consulted for the appropriate treatment equipment to improve water quality for residents. Residents should use disinfection, such as UV to provide an added level of protection to drinking water quality.

# 4.0 EFFECTS ASSESSMENT

A groundwater interference assessment is needed to determine the potential effects of groundwater extraction from this proposed development on receptors like other domestic wells. The effects assessment presented below was completed using physical evidence from the pumping tests and a predictive evaluation using the hydraulic properties of the bedrock aquifer.

## 4.1 AQUIFER PROPERTIES

Transmissivity and storativity are hydraulic properties of an aquifer that can be used to assess the potential for groundwater interference from pumping wells. Transmissivity characterizes the rate at which water can flow through the aquifer under a given set of conditions. Storativity characterizes the volume of water that is released from storage within the aquifer under a specified set of conditions. In an aquifer with a hydraulic response like an unconfined system, the storage coefficient (S) of the aquifer is influenced by the Specific Storage (Ss) and the Specific Yield (Sy). In a confined aquifer, storativity would be represented by specific storage. In a semi-confined aquifer, the movement of water from an overlying or underlying bed of water contributes leakage into the confined aquifer.

Groundwater levels at both wells demonstrated evidence of stability that could be related to anyone of the three hydraulic responses described above. The early drawdown vs time data for was evaluated for transmissivity using the Jacob-Cooper Method. Figure B-3 illustrates the Cooper-Jacob Method for the drawdown data at TW24-1. The transmissivity at TW24-1 was calculated at 40 $m^2$/day. This value is consistent with an aquifer capable of supporting domestic wells. The storage coefficient could not be calculated from pumping wells but experience with testing confined bedrock aquifers shows typical values range from 0.001 to 0.00001.

## 4.2 OBSERVED EFFECTS

The effects assessment presented below was completed using physical evidence documenting groundwater levels at pumping wells.

The pumping tests were completed at test rates above those required for a 4-bedroom dwelling. The observed drawdown used less than 10% of the available drawdown in the wells and showed no evidence of interference between each other. The total volume of water removed from the aquifer during these tests was about 18,800 litres and equates to the volume of water needed to service 8 of the 13 dwellings. Both test wells achieved equilibrium during the test and since there was no evidence of mutual interference between them, these observations are positive indicators of sustainable yields from the aquifer. The drawdown at these pumping wells was less than about 0.6 metres and we infer interference at neighbouring wells would less than this small amount of drawdown.

## 4.3 PREDICTED EFFECTS

Though the observed effects support an abundance of water in the aquifer, the following effects assessment was completed to assess the effects during for drought conditions. The drought condition was based on the assumptions that no recharge to the aquifer occurs for 150 days, May to September for example, and each well discharges 2,250 L/day of water. These assumptions are conservative.

The maximum daily demand of 2,250 L/day for thirteen dwellings could result in a daily demand of 29,250 litres. Section 4.1 presented aquifer properties. Using a method proposed by Theis, drawdown at a location in an aquifer can be evaluated. Tables D-1 to D-5, Appendix D show calculations of drawdown in the aquifer for thirteen, each pumping 2,250 L/day of water for 150 days. The aquifer properties presented in Section 4.1 were 40 $m^2$/day for transmissivity and assumed low value of 0.00001 for storativity. Figure 5 shows the predicted

drawdowns at the property boundaries and middle of the site at 0.6 to 0.7 metres. These predicted drawdowns are considered conservative because:

1) The estimates ignore the positive contribution of groundwater recharge.
2) The estimates ignore the positive contribution of equilibrium from the pumping tests.
3) It is unlikely the daily demand for water for thirteen dwellings will occur at 2,250 L/day/dwelling for 5 months on a continuous basis.
4) The predicted drawdowns of up to 0.7 metres are less than natural seasonal variations in aquifers that can exceed one metre.

In summary, observed and predicted changes in groundwater levels provide evidence illustrating there should be little to no effect on groundwater levels to neighbouring wells in the study area.

## 5.0 TECHNICAL JUSTIFCATION FOR TESTING TWO WELLS

MECP Guideline D-5-5 specifies a minimum of three wells be tested for developments less than 15 ha in area, such as this one. The Guideline allows for fewer wells to be drilled and evaluated where there is technical justification to support this approach. The decision to proceed on the basis of two test wells is based on the following rationale:

1. Both wells were evaluated at flow rates in excess of the daily demands for domestic wells.
2. Local water well records show the presence of a bedrock aquifer with test rates consistently above the water requirements for a residential dwelling and provide a good indication of a productive aquifer.
3. The total volume of water removed from the wells was about 19,000 litres in six hours and could have supplied about 8 to 9 of the 13 dwellings in this development. The rates appear sustainable and would have supplied enough water for all thirteen lots within about nine hours.

4. Drawdown at both test wells at the end of pumping was minor and indicates future water supply wells should not stress the aquifer.
5. Aquifer transmissivity of 40 $m^2$/day reflects a productive aquifer for domestic water supplies.
6. Groundwater quality on-site and off-site shows no health-related issues with drinking water quality.

In summary, the two pumping tests completed on proposed residential lots demonstrated the capacity of each well to provide for the average and peak water requirements for a 4-bedroom dwelling with five occupants as described in Section 3.1.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations presented below are premised on the data collected and reviewed as part of these investigations:

- The study area is situated within the Dundalk Till Plain Physiographic Region. Ayton appears to be located within the southwest boundary of this physiographic region, near the Teeswater Drumlin Field to the west.
- Water well contractors consistently extend drilled wells into the bedrock aquifer within the study area. The reported test rates for the 49 bedrock wells range from 27 to 349 L/min with an average test rate of 75 L/min. The test rates are higher than the daily drinking water needs for homes in the study area.
- Constant rate pumping tests at two test wells designated TW24-1 and TW24-2 demonstrated an abundance of groundwater to meet and exceed the average and peak water demands for a 4-bedroom dwelling with five occupants.
- Water wells should be located upgradient or cross-gradient of the proposed septic systems for this site to reduce the risk of cross contamination.
- The microbiological quality of groundwater is suitable for consumption. Residents are encouraged to use UV treatment to provide an added barrier of groundwater quality protection to safe drinking water. UV treatment is expected to include water softening to protect the UV lamp.
- The chemical quality of groundwater off-site was shown to be suitable for consumption. This is consistent with the water quality results at TW24-1. The presence of nitrates and chlorides provides evidence of anthropogenic sources of contamination in the study area.
- The water quality results at TW24-2 demonstrate the need for treatment to reduce elevated concentrations of naturally occurring hardness, iron, sulphates, and total dissolved solids. A water treatment specialist should be consulted for the appropriate equipment requirements at each dwelling.

- Constant pumping of the two wells for six hours resulted in enough water removed from the aquifer to service about eight to nine of the thirteen dwellings. The tests reasonably demonstrate that with an additional three hours of pumping, these two wells could have provided enough water for all the lots.
- The transmissivity of the bedrock aquifer was calculated at 40 $m^2$/day and this is indicative of a productive aquifer for domestic water supplies.
- The observed and predicted effects of providing water to this proposed subdivision show acceptable effects on groundwater levels with little to no risk of adverse effects to neighbouring wells.
- Samples of groundwater should be collected from future domestic wells at the site to verify groundwater quality and the need for treatment.

Respectfully Submitted,
GAMAN CONSULTANTS INC.


Gary R. Hendy, P.Eng.
Consulting Engineer

## 7.0 LIMITATIONS AND USE

This report has been prepared for the exclusive use of Domm Construction Ltd. for their exclusive use in the evaluation of the area for the proposed development. GAMAN Consultants Inc. accepts no responsibility for any damages incurred by any third party as a result of decisions made, or actions taken based upon the information contained within this report.

All background information used in the preparation of this report has been relied upon in good faith, and GAMAN does not accept any responsibility for any misstatements, inaccuracies, or deficiencies contained in those documents or records. The information contained in this report should be evaluated, interpreted, and implemented only in the context of the assignment.

The findings and conclusions included in this report reflect our best judgement in light of the information available at the time of report preparation and site inspection and are valid only at the date of issuance. If additional information is provided in the future, such as the results of additional site-specific assessments or monitoring, GAMAN will be pleased to re-evaluate our conclusions contained within this report, and issue amendments, as required.

## 8.0 REFERENCES

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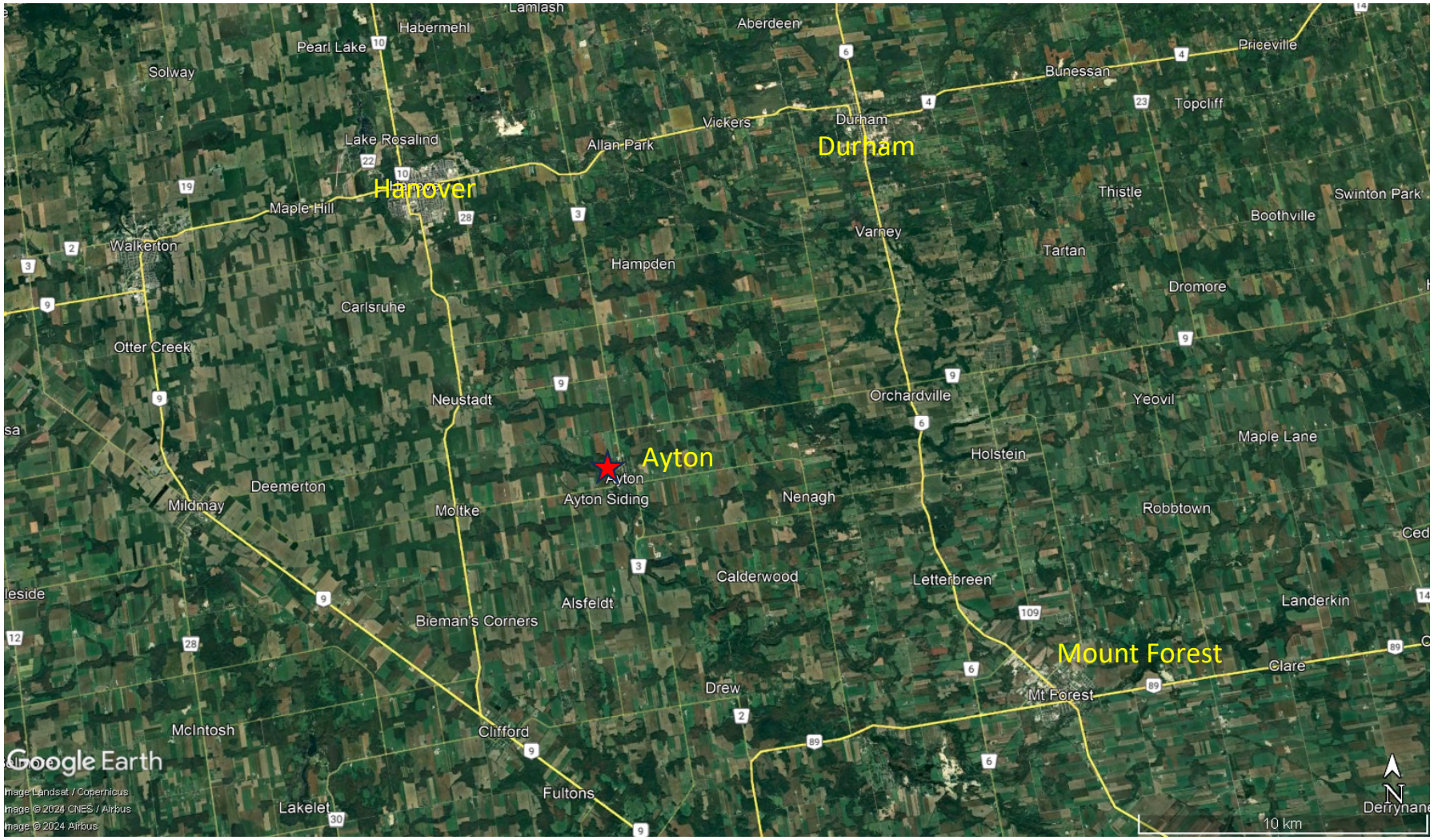
Ministry of Northern Mines and Development, 1991

Bedrock Geology of Ontario, Southern Sheet, Map 2544

# FIGURES




NOTES

★ **Site Location**

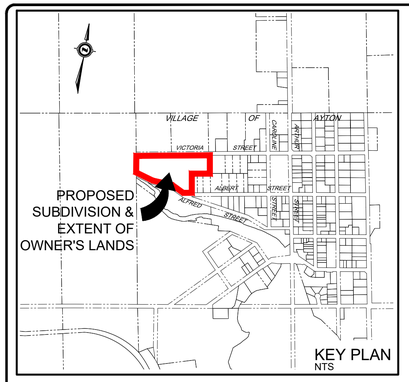
# Site Location

MECP D-5-5 Groundwater Supply Investigations
Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County
For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Apr-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

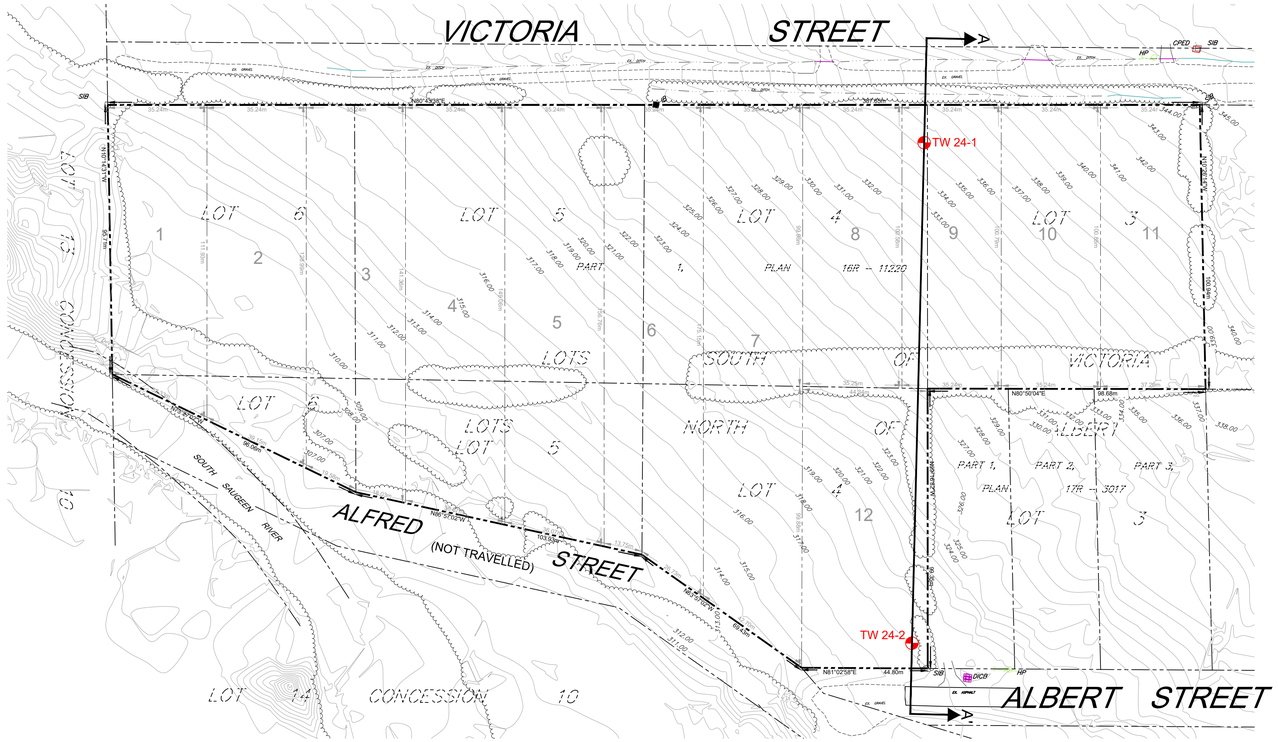
GAMAN Consultants Inc.

Figure 1




## LEGEND

- PROPERTY BOUNDARY
- PROPOSED STREET/PROPERTY LINES
- EDGE OF EXISTING PAVEMENT
- EDGE OF EXISTING GRAVEL
- EXISTING TREE LINE
- EXISTING CONTOUR LINE
- EXISTING HYDRO GUY WIRE
- EXISTING HYDRO POLE
- EXISTING CABLE TV PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- STANDARD IRON BAR
- IRON BAR
- BENCHMARK
- TEST WELL



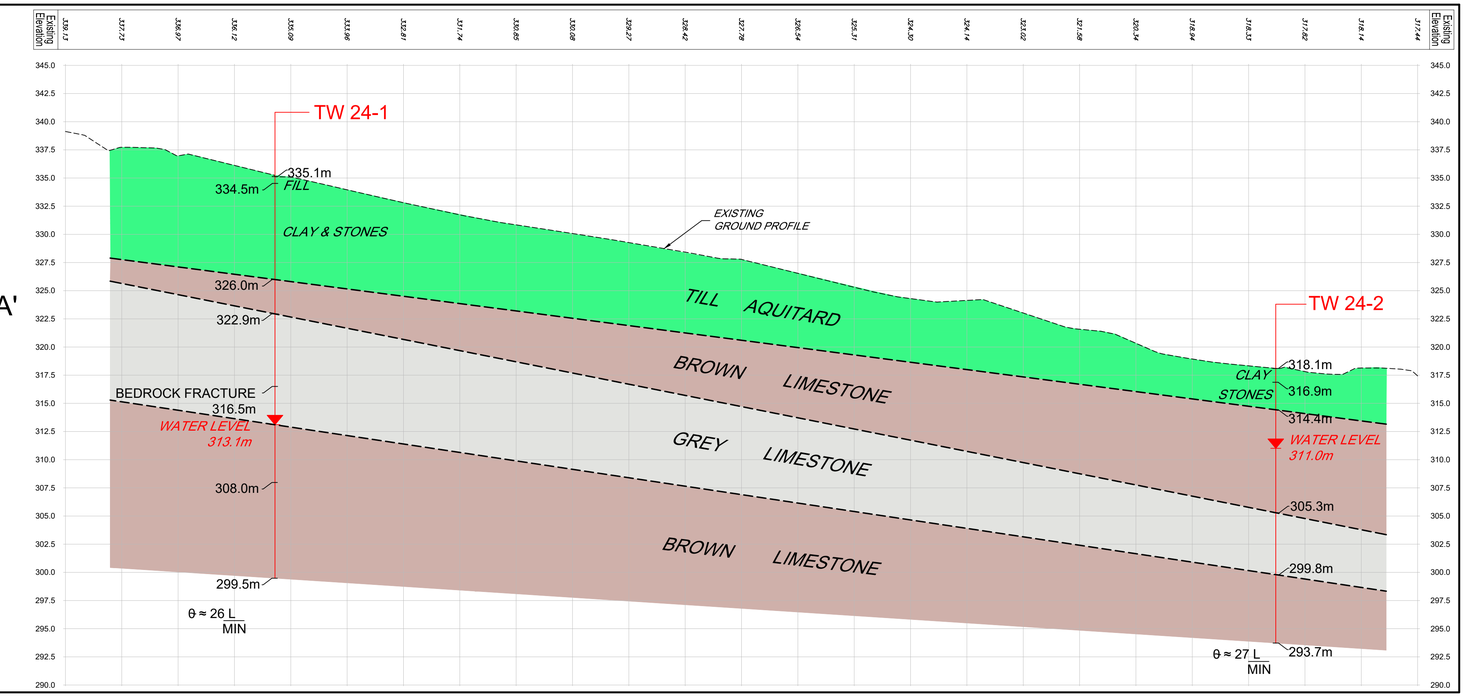

CAUTION:
THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

**Notes**

1. TOPOGRAPHICAL INFORMATION DERIVED FROM FIELD SURVEY BY COBIDE ENGINEERING INC. COMPLETED ON JANUARY 3, 2024 AND DRONE SURVEY.
2. PROPERTY BOUNDARY DERIVED FROM INFORMATION SHOWN ON PLAN 16R-11220.

## SECTION A-A'

SCALE
HORZ 1:500
VERT 1:250




SCALE 1:1000 (24 x 36)
10 0 5 15 25 50 75 METRES
50 0 25 50 100 250 FEET

| No. | DATE | DESCRIPTION | BY | APPD |
|---|---|---|---|---|
| 2 | SEP 24/24 | SECOND SUBMISSION | TLB | SJC |
| 1 | APR 15/24 | FIRST SUBMISSION | TLB | SJC |
| 0 | MAR 26/24 | PRELIMINARY SUBMISSION | TLB | SJC |

REVISION / ISSUE

Seal not valid unless signed and dated

COBIDE ENGINEERING INC
517 - 10th STREET, Hanover, Ontario N4N 1R4
Telephone: (519) 506-5959
www.cobideeng.com

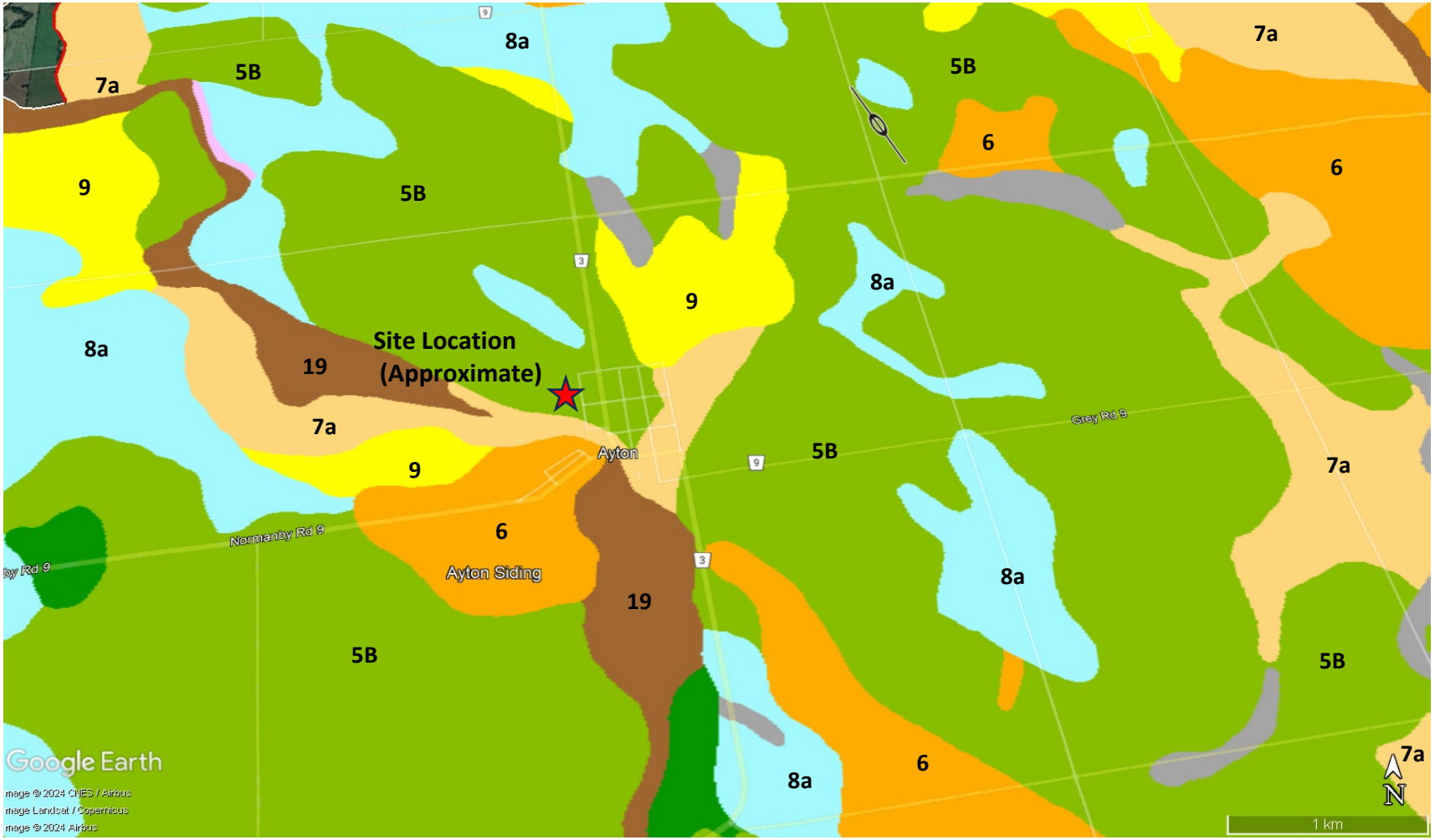
Title: PROPOSED SUBDIVISION
(VILLAGE OF AYTON)
GEOGRAPHIC TOWNSHIP OF NORMANBY
MUNICIPALITY OF WEST GREY
FIGURE 2
SITE PLAN & SECTION

Client: DOMM HOLDINGS LTD.

| | | | |
|---|---|---|---|
| Design: | TLB | Scale: | 1:1000 |
| Drawn: | JAF | Approved: | |
| Checked: | SJC | | |
| Date: | MAR 2024 | | Design Engineer |

DRAWING No. 05069-FIG2

H:\Domm Construction\05069 - Domm Subdivision - Ayton\Drawings\Submissions\2024-09-24 Fig 2 Site Plan & Sections - Rev fabric\05069 Site Plan- Wells Sept 24-24.dwg Sep 24, 2024 - 1:15pm




NOTES

| | |
|---|---|
| 2 | Bedrock Drift Complex |
| 5b | sandy silt to silty sand till |
| 6 | Ice-contact stratified deposits (sand & gravel) |
| 7a | Glacialfluvial deposits (sandy) |
| 8a | Fine Textured Glaciolacustrine Deposits (silt & clay) |
| 9 | Coarse Textured Glaciolacustrine Deposits |
| 19 | Modern Alluvial Deposits (gravel sand, silt, clay) |
| 20 | Organic Deposits (peat, muck marl) |

# Surficial Geology

MECP D-5-5 Groundwater Supply Investigations

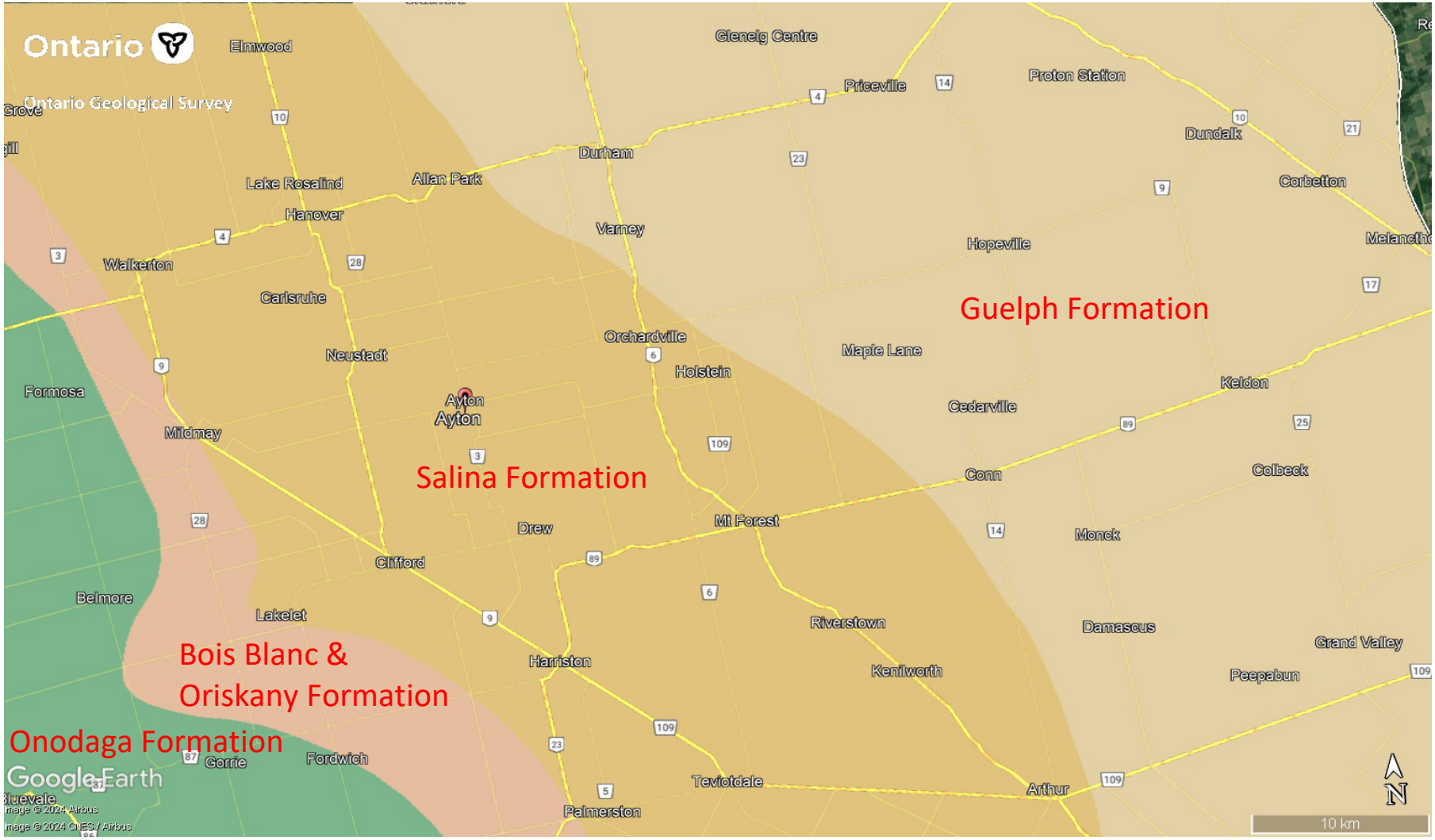
Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County

For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Jun-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

GAMAN Consultants Inc.

Figure 3




NOTES

# Bedrock Geology

MECP D-5-5 Groundwater Supply Investigations

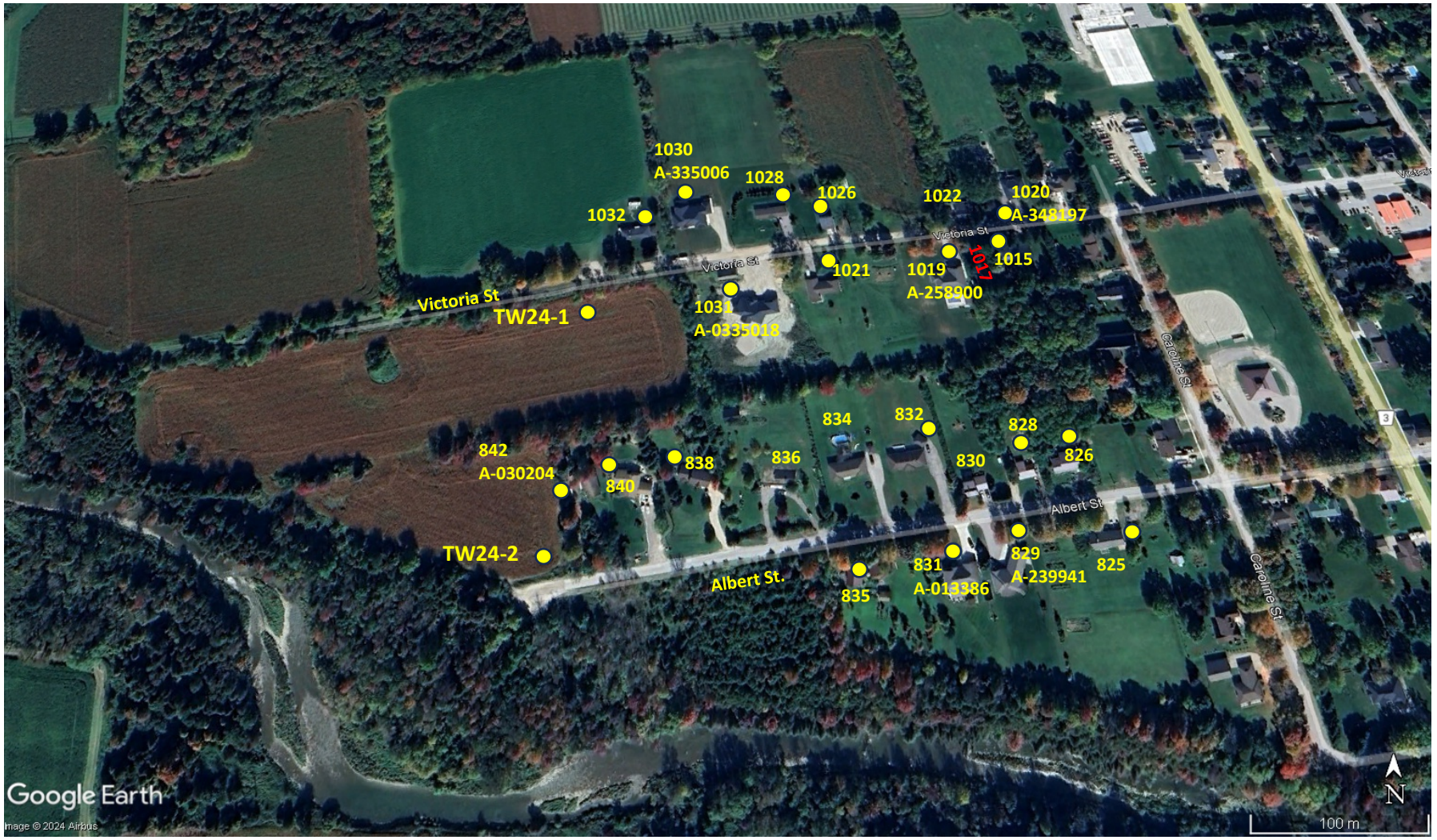
Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County

For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Jun-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

GAMAN Consultants Inc.

Figure 4




NOTES

- Field Confirmed well location and designation
- 842 Stree Address
- A-030204 Field Confirmed Water Well Tag Number
- 1017 Cemetary

# Water Well Location Map

MECP D-5-5 Groundwater Supply Investigations

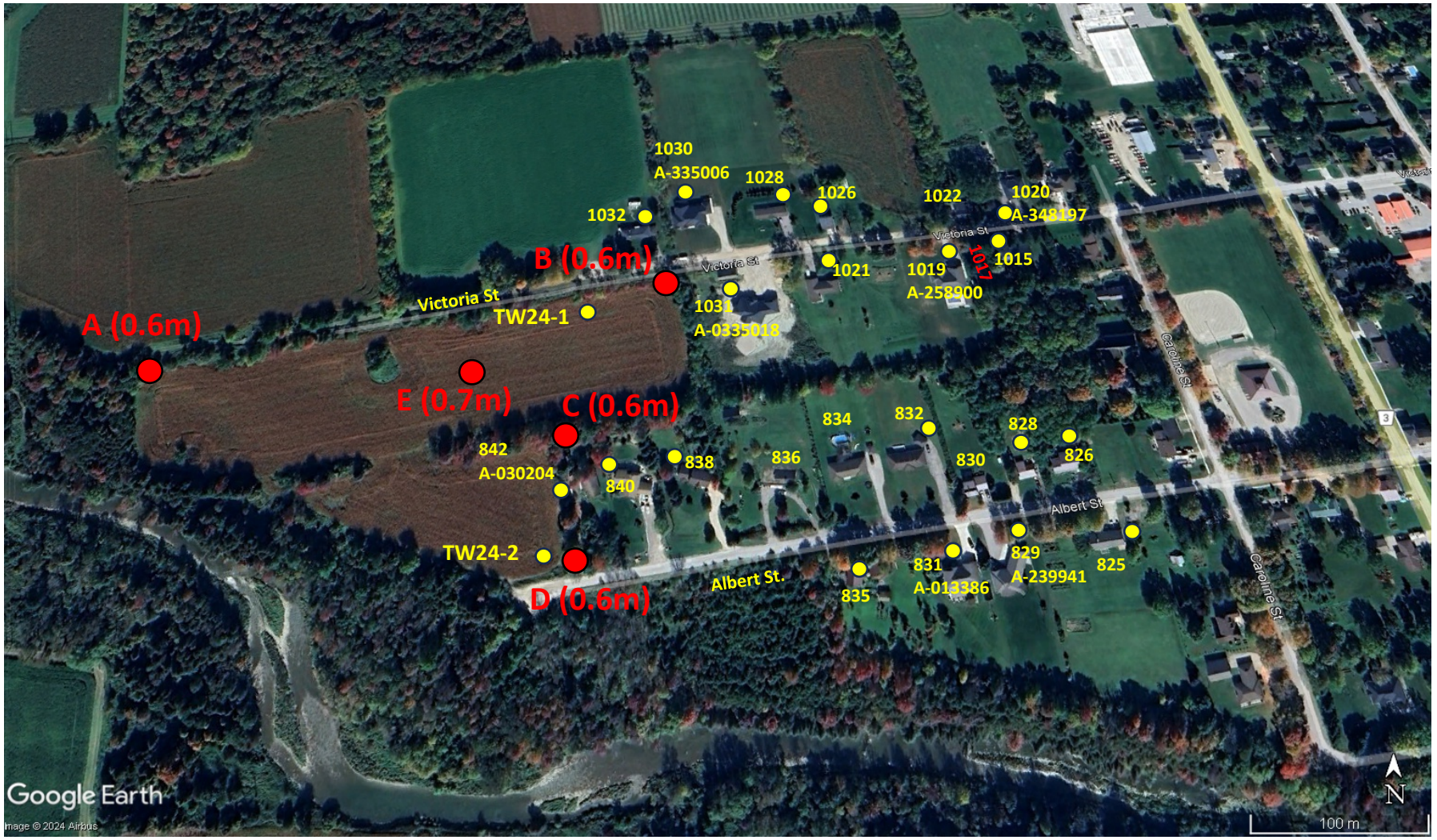
Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County

For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Jun-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

GAMAN Consultants Inc.

Figure 5




NOTES

| | |
|---|---|
| ○ | Field Confirmed well location and designation |
| 842 | Stree Address |
| A-030204 | Field Confirmed Water Well Tag Number |
| 1017 | Cemetary |
| A (0.6m) | Theoretical Drawdown after 150 days of pumping |

# Interpreted Drawdown 150 at Days

MECP D-5-5 Groundwater Supply Investigations

Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County

For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Jun-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

GAMAN Consultants Inc.

Figure 6

# APPENDICES

# APPENDIX A

## WELL RECORDS

## TABLE A-1 SUMMARY OF WATER WELL RECORDS

**MECP D-5-5 Water Supply Investigation Ayton Subdivision (Project 23008.00)**

| GREY HIGHLANDS TWP CON LOT | UTM (metres) | DATE & Driller | CASING DIA (In) | WATER FOUND (ft) | Static Level (Ft.bgl) | Pumping Level (ft. bgl) | Test Rate (lgpm) | time | WELL USE | SCREEN top / Length | WELL ID | FORMATION (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CON 10 014 | 17 505121 4877788 L | 1997/07 6634 | 6 | FR 0144 | 64 | 78 | 15 | 2:00 | DO | | 2513320 | LOAM 0002 CLAY SNDY STNS 0054 SHLE 0144 |
| CON 10 015 | 17 505514 4877873 W | 1977/10 2405 | 5 5 | FR 0045 FR 0067 | 44 | 50 | 8 | 3:00 | DO | | 2506274 | BLCK LOAM 0001 BRWN CLAY GRVL 0018 GREY SHLE LMSN 0043 BRWN LMSN 0054 BRWN SHLE LMSN 0068 |
| CON 10 015 | 17 505564 4878323 W | 1976/05 4856 | 6 | FR 0126 FR 0128 | 34 | 55 | 40 | 4:30 | CO | | 2505670 | BRWN GRVL STNS 0003 BRWN CLAY SAND STNS 0008 YLLW SAND CLAY 0017 GREY SHLE GRVL 0040 BRWN LMSN SHLE LYRD 0062 GREY LMSN SHLE LYRD 0067 BLUE SHLE 0084 BRWN LMSN SHLE LYRD 0130 |
| CON 10 015 | 17 505714 4877723 W | 1980/09 4869 | 4 4 | FR 0074 | 43 | 55 | 15 | 1:20 | DO | | 2507438 | BLCK LOAM 0001 BRWN SAND GRVL 0039 BLUE LMSN 0058 GREN SHLE SOFT 0070 BLUE LMSN DKCL 0075 |
| CON 10 015 | 17 505914 4877823 W | 1972/06 3111 | 4 4 | FR 0082 | 56 | 56 | 15 | 3:00 | DO | | 2503844 | PRDG 0004 PRDR 0048 GREY ROCK 0082 |
| CON 10 015 | 17 505664 4877623 W | 1973/05 3737 | 4 | FR 0083 | 6 | 12 | 18 | 1:00 | IN | | 2504185 | BLCK LOAM 0001 BRWN FILL STNS 0004 BRWN ROCK 0013 WHIT SHLE 0060 GREY LMSN 0085 |
| CON 10 015 | 17 505414 4878073 W | 1987/05 1737 | 5 | FR 0107 | 78 | 80 | 10 | 1:00 | DO | | 2508940 | BRWN CLAY STNS SOFT 0008 GREN SHLE SOFT 0031 BRWN LMSN SHLE SOFT 0089 BRWN LMSN SOFT 0108 |
| CON 10 015 | 17 505314 4877923 W | 1983/09 3740 | 5 5 4 | FR 0125 | 70 | 75 | 15 | 1:00 | DO | | 2508005 | BRWN CLAY STNS 0012 BRWN SHLE 0022 BRWN LMSN 0035 GREY SHLE LMSN 0125 |
| CON 10 015 | 17 505664 4877673 W | 1986/02 3740 | 5 | FR 0080 | 46 | 60 | 6 | 1:00 | DO | | 2508537 | BRWN CLAY 0025 GREY CLAY GRVL 0057 GREY CLAY 0068 GREY SHLE 0072 GREY LMSN GRVL 0080 |

## TABLE A-1 SUMMARY OF WATER WELL RECORDS

**MECP D-5-5 Water Supply Investigation Ayton Subdivision (Project 23008.00)**

| GREY HIGHLANDS TWP CON LOT | UTM (metres) | DATE & Driller | CASING DIA (In) | WATER FOUND (ft) | Static Level (Ft.bgl) | Pumping Level (ft. bgl) | Test Rate (lgpm) | time | WELL USE | SCREEN top / Length | WELL ID | FORMATION (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CON 10 015 | 17 505629 4877944 W | 2002/11 2576 | 6 6 | FR 0071 FR 0081 FR 0110 FR 0138 | 98 | 110 | 15 | 1:00 | DO | | 2515273 | LOAM 0001 BRWN CLAY 0012 GREY SHLE 0021 BLUE SHLE 0028 GREY LMSN 0068 BLUE SHLE 0074 GREY LMSN 0130 BLUE LMSN 0138 |
| CON 10 015 | 17 506087 4877523 W | 2002/05 6634 | 6 | FR 0070 | 27 | 38 | 20 | 1:30 | DO | | 2515011 | LOAM 0001 CLAY STNS 0019 LMSN SOFT 0024 LMSN HARD 0070 |
| CON 10 015 | 17 505599 4877923 W | 2002/11 2576 | 6 6 | UK 0057 UK 0083 UK 0110 | 93 | 110 | 15 | 1:00 | DO | | 2515275 | LOAM 0003 BRWN GRVL 0016 GREN SHLE 0030 BLUE SHLE 0036 GREY LMSN 0052 BLUE SHLE 0071 WHIT LMSN SHLE 0083 BRWN LMSN 0098 BRWN LMSN 0118 |
| CON 10 015 | 17 505500 4877528 W | 2002/04 6634 | | | | | | | | | 2514987 | |
| CON 10 015 | 17 505520 4877857 L | 1997/07 2576 | 6 6 | FR 0057 FR 0074 | 39 | | 6 | 1:00 | DO | | 2513333 | LOAM 0001 BRWN CLAY SLTY STNS 0021 GREY SHLE 0028 BLUE SHLE 0050 GREY LMSN 0065 GREY SHLE SOFT LYRD 0068 BRWN LMSN 0073 GREY LMSN 0078 |
| CON 10 015 | 17 505649 4878215 W | 1999/04 2576 | 6 6 | FR 0045 FR 0067 | 25 | | 60 | 1:00 | CO PS | | 2513857 | LOAM 0001 BRWN CLAY GRVL 0014 BRWN SHLE 0021 GREY SHLE FCRD LYRD 0036 BRWN LMSN 0064 GREY SHLE LMSN 0070 |
| CON 10 015 | 17 505663 4877977 W | 2001/11 6634 | 6 | FR 0114 | 18 | 22 | 50 | 2:00 | DO | | 2514969 | LOAM 0002 GRVL 0006 CLAY STNS 0112 LMSN SHLE 0114 |
| CON 10 015 | 17 505575 4877459 W | 2001/11 6634 | 6 | FR 0115 | 70 | 83 | 12 | 2:00 | DO | | 2514967 | LOAM 0002 CLAY STNS 0011 LMSN SHLE 0115 |
| CON 10 015 | 17 505593 4877938 W | 2002/11 2576 | 5 | UK 0098 UK 0118 | 98 | | 8 | 1:00 | DO | | 2515274 | WHIT LMSN 0090 BLUE LMSN SHLE 0122 |

## TABLE A-1 SUMMARY OF WATER WELL RECORDS

**MECP D-5-5 Water Supply Investigation Ayton Subdivision (Project 23008.00)**

| GREY HIGHLANDS TWP CON LOT | UTM (metres) | DATE & Driller | CASING DIA (In) | WATER FOUND (ft) | Static Level (Ft.bgl) | Pumping Level (ft. bgl) | Test Rate (lgpm) | time | WELL USE | SCREEN top / Length | WELL ID | FORMATION (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CON 10 015 | 17 505517 4877856 L | 2001/10 6634 | 6 | FR 0055 | 15 | 25 | 15 | 1:00 | DO | | 2514838 | LOAM 0002 CLAY STNS 0023 LMSN 0055 |
| CON 10 015 | 17 505517 4877856 L | 2001/08 2576 | 6 6 | FR 0041 FR 0070 | 37 | | 8 | 1:00 | DO | | 2514785 | LOAM 0001 BRWN CLAY GRVL 0021 BRWN SHLE LMSN 0032 BLUE SHLE LMSN 0076 |
| CON 10 015 | 17 505517 4877856 L | 2001/10 6634 | 6 | FR 0085 | 32 | 43 | 25 | 1:30 | DO | | 2514841 | LOAM 0002 CLAY STNS 0025 LMSN SHLE 0085 |
| CON 10 015 | 17 505517 4877856 L | 2001/10 6634 | 6 | FR 0070 | 29 | 32 | 15 | 1:30 | DO | | 251484 | LOAM 0002 CLAY STNS 0020 LMSN SHLE 0070 |
| CON 10 015 | 17 505517 4877856 L | 2001/07 6634 | 6 | FR 0175 | 65 | 130 | 20 | 2:00 | DO | | 2514667 | LOAM 0002 CLAY STNS 0038 UNKN LMSN SHLE 0090 BLUE LMSN SHLE HARD 0145 LMSN SHLE HARD 0175 |
| CON 10 015 | 17 505517 4877856 L | 2001/10 6634 | 6 | FR 0076 | 20 | 31 | 20 | 1:00 | DO | | 2514839 | LOAM 0002 CLAY STNS 0024 LMSN SHLE 0076 |
| CON 10 015 | 17 505763 4877897 W | 2014/11 6634 | 6 4 | FR 0130 | 68 | 76 | 7 | 2:00 | DO | | 7236150 A-171024 | FILL 0003 CLAY STNS 0022 BRWN LMSN SHLE SOFT 0074 RED LMSN SHLE SOFT 0086 BRWN LMSN SHLE SOFT 0130 |
| CON 10 015 | 17 505425 4877913 W | 2004/09 6634 | 6 | 130 | 72 | 95 | 7 | 2:00 | DO | | 2516106 A-013386 | LOAM 0002 CLAY STNS 0033 LMSN SHLE 0130 |
| CON 10 015 | 17 505943 4877611 W | 2010/08 6634 | 6 | FR 0115 | 60 | 75 | 76 | 1:30 | DO | | 7160048 A-095410 | LOAM 0002 CLAY STNS 0030 LMSN SHLE 0115 |
| CON 10 015 | 17 505529 4878107 W | 2005/11 2576 | 6 | FR 0090 FR 0135 | 108 | | 12 | 1:00 | DO | | 2516700 A-025006 | LOAM 0001 BRWN SAND CLAY GRVL 0008 GREY SHLE LMSN 0037 BRWN LMSN LYRD 0140 |

## TABLE A-1 SUMMARY OF WATER WELL RECORDS

**MECP D-5-5 Water Supply Investigation Ayton Subdivision (Project 23008.00)**

| GREY HIGHLANDS TWP CON LOT | UTM (metres) | DATE & Driller | CASING DIA (In) | WATER FOUND (ft) | Static Level (Ft.bgl) | Pumping Level (ft. bgl) | Test Rate (Igpm) | time | WELL USE | SCREEN top / Length | WELL ID | FORMATION (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CON 10 015 | 17 505620 4877662 W | 2014/08 6634 | 6 | FR 0065 FR 0097 | 29 | 50 | 15 | 2:00 | DO | | 7236128 A-161143 | LOAM 0002 CLAY STNS 0012 BRWN LMSN SHLE SOFT 0022 BRWN LMSN SHLE HARD 0097 |
| CON 10 015 | 17 505633 4877934 W | 2004/10 6634 | 6 | 142 | 100 | 110 | 7 | 2:00 | DO | | 2516217 A-019458 | LOAM 0002 CLAY STNS 0040 LMSN SHLE HARD 0142 |
| CON 10 015 | 17 505628 4877660 W | 2014/10 6634 | | | | | | | NU | | 7236180 A-171026 | |
| CON 10 015 | 17 506073 4877788 W | 2015/05 6634 | 6 4 | FR 0090 FR 0100 | 38 | 44 | 7 | 2:00 | DO | | 7258538 A-171014 | LOAM 0001 CLAY STNS 0018 BRWN LMSN SHLE SOFT 0023 BRWN LMSN SHLE 0090 BLUE LMSN SHLE 0100 |
| CON 10 015 | 17 505663 4877823 W | 2021/07 7563 | | | | | | | | | 7414399 A-336948 | |
| CON 10 015 | 17 505443 4878124 W | 2019/03 6634 | | | | | | | | | 7408862 A258900 | |
| CON 10 015 | 17 505722 4877904 W | 2018/07 6634 | 6 5 | FR 0127 | 85 | 92 | 7 | 0:00 | DO | | 7325611 A-249517 | LOAM 0003 CLAY STNS 0012 BRWN LMSN SHLE 0046 BLUE SHLE 0076 BRWN SHLE SOFT 0098 BLUE SHLE 0127 |
| CON 10 015 | 17 505515 4877719 W | 1964/12 3111 | 4 4 | FR 0062 | 29 | 30 | 14 | 2:15 | DO | | 2501743 | BRWN CLAY BLDR 0017 BRWN CLAY SHLE 0038 BRWN LMSN 0062 |
| CON 10 015 | 17 505464 4878123 W | 1965/06 3111 | 4 4 | FR 0078 | 40 | 63 | 12 | 2:00 | DO | | 2501744 | GRVL CLAY 0008 BRWN SHLE 0032 BLUE SHLE 0040 BLUE ROCK 0083 |
| CON 10 015 | 17 505463 4878222 W | 1961/11 1804 | 4 4 | UK 0080 FR 0095 | 22 | 45 | 15 | 3:00 | DO | | 2501742 | LOAM 0003 BRWN CLAY 0070 BRWN LMSN 0100 |
| CON 10 015 | 17 505564 4877974 W | 1966/01 5416 | 4 | FR 0100 | 37 | 37 | 10 | 2:00 | PS | | 2501741 | PRDR 0055 GREY LMSN 0104 |

## TABLE A-1 SUMMARY OF WATER WELL RECORDS

**MECP D-5-5 Water Supply Investigation Ayton Subdivision (Project 23008.00)**

| GREY HIGHLANDS TWP CON LOT | UTM (metres) | DATE & Driller | CASING DIA (In) | WATER FOUND (ft) | Static Level (Ft.bgl) | Pumping Level (ft. bgl) | Test Rate (lgpm) | time | WELL USE | SCREEN top / Length | WELL ID | FORMATION (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CON 10 015 | 17 505664 4877974 W | 1956/08 2313 | 4 4 | FR 0060 | 10 | 10 | 15 | 2:00 | PS | | 2501740 | CLAY 0016 SHLE 0068 |
| CON 10 015 | 17 505064 4878120 W | 1955/04 3111 | 4 4 | FR 0059 | 16 | 16 | 11 | 2:30 | PS | | 2501739 | GRVL STNS 0009 SHLE 0022 BRWN SHLE 0049 BRWN LMSN 0059 |
| CON 10 015 | 17 505664 4877923 W | 1969/11 3111 | 4 | FR 0090 | 47 | 60 | 10 | 0.05556 | DO | | 2503080 | GREY HPAN STNS 0023 BLUE CLAY FSND 0029 BRWN STNS 0040 BRWN LMSN 0090 |
| CON 10 015 | 17 505914 4877823 W | 1969/11 3111 | 4 | FR 0092 | 64 | 66 | 6 | 2:00 | DO | | 2503090 | PRDR 0072 BRWN LMSN 0098 |
| CON 10 015 | 17 505664 4878223 W | 1971/11 3111 | 4 | FR 0093 | 60 | 60 | 12 | 2:30 | DO | | 2503611 | PRDG 0026 GREY ROCK 0050 BLUE ROCK 0094 |
| CON 10 015 | 17 505661 4878238 W | 1967/05 2313 | 5 5 | FR 0135 | 80 | 90 | 15 | 1:00 | PS | | 2501745 | HPAN 0035 SNDS 0042 GREY LMSN 0137 |
| CON 11 014 | 17 504943 4878804 L | 2003/10 6634 | | | | | | | NU | | 2515839 | |
| CON 11 014 | 17 505013 4878943 W | 1961/07 3111 | 4 4 | FR 0168 | 96 | 100 | 12 | 3:30 | ST DO | | 2501761 | BRWN CLAY 0042 SHLE 0046 BRWN LMSN 0108 BLUE LMSN 0168 |
| CON 11 015 | 17 505569 4878527 W | 1974/06 3111 | 4 4 | FR 0065 | 18 | 25 | 10 | 1:00 | CO | | 2504639 | BRWN LOAM 0002 BRWN HPAN 0020 BRWN GRVL 0025 GREY SAND CLAY 0041 BLUE SHLE 0060 BRWN ROCK 0072 GREY LMSN 0075 |
| CON 11 015 | 17 505564 4878623 W | 1977/04 5507 | 5 5 | FR 0123 | 65 | 90 | 20 | 2:00 | DO | | 2506364 | CLAY STNS 0048 LMSN 0123 BLUE SHLE 0150 |
| CON 11 015 | 17 505364 4879323 W | 1979/09 5463 | 5 | FR 0078 FR 0085 | 48 | 49 | 12 | 4:00 | ST DO | | 2507211 | BLCK LOAM SOFT 0002 BRWN CLAY GRVL HARD 0018 BRWN LMSN FCRD LTCL 0035 GREY LMSN HARD 0076 GREY LMSN SOFT 0090 BLUE SHLE SOFT 0091 |

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☐ Imperial

Tag#:A386882

TAG# A386880

# Well Record

*Regulation 903 Ontario Water Resources Act*

Page 1 of 1

## Well Owner's Information

First Name | Last Name/Organization: DOMM CONSTRUCTION LTD | E-mail Address | ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): P.O. BOX 90 AYTON | Municipality: WESTGREY | Province: ONTARIO | Postal Code: N0G1C0 | Telephone No. (inc. area code)

## Well Location

Address of Well Location (Street Number/Name): VICTORIA ST. | Township: NORMANBY | Lot: 15 | Concession: 10

County/District/Municipality: WESTGREY | City/Town/Village: AYTON | Province: Ontario | Postal Code

UTM Coordinates: NAD 8 3 | Zone: 17 | Easting: 505152 | Northing: 4878079 | Municipal Plan and Sublot Number | Other

## Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

| General Colour | Most Common Material | Other Materials | General Description | Depth (m/ft) From | To |
|---|---|---|---|---|---|
| | FILL | | | 0 | 2FT |
| | CLAY & STONES | | | 2 | 30FT |
| BROWN | LIMESTONES SHALE | | MED-HARD | 30 | 40FT |
| GREY | LIMESTONE SHALE | | SOFT-MED | 40 | 72FT |
| BROWN | LIMESTONE SHALE | | SOFT-MED | 72 | 117FT |

## Annular Space

| Depth Set at (m/ft) From | To | Type of Sealant Used (Material and Type) | Volume Placed (m³/ft³) |
|---|---|---|---|
| 0 | 38FT | 50GAL GROUT SLURRY 150LBS 3/8 HOLEPLUG | |

## Method of Construction

☐ Cable Tool ☐ Diamond
☑ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

## Well Use

☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

## Construction Record - Casing

| Inside Diameter (cm/in) | Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel) | Wall Thickness (cm/in) | Depth (m/ft) From | To |
|---|---|---|---|---|
| 6INCH | STEEL | .188 | +2 | 38FT |
| 5INCH | PLASTIC | .188 | -17 | 117FT |
| | PLASTIC CASING SLOTTED | | | |

## Construction Record - Screen

| Outside Diameter (cm/in) | Material (Plastic, Galvanized, Steel) | Slot No. | Depth (m/ft) From | To |
|---|---|---|---|---|
| | | | | |

## Status of Well

☑ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

## Water Details

| Water found at Depth | Kind of Water | |
|---|---|---|
| 61 (m/ft) ☐ Gas | ☑ Fresh ☐ Untested | ☐ Other, specify |
| 89 (m/ft) ☐ Gas | ☑ Fresh ☐ Untested | ☐ Other, specify |
| 117 (m/ft) ☐ Gas | ☑ Fresh ☐ Untested | ☐ Other, specify |

## Hole Diameter

| Depth (m/ft) From | To | Diameter (cm/in) |
|---|---|---|
| 0 | 20FT | 10INCH |
| 20 | 38FT | 9INCH |
| 38 | 117FT | 6INCH |

## Results of Well Yield Testing

After test of well yield, water was:
☑ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 100 FT

Pumping rate (l/min / GPM): 5GAL/MIN

Duration of pumping: 3 hrs + ____ min

Final water level end of pumping (m/ft): 74 FT

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft): 100 FT

Recommended pump rate (l/min/GPM): 5GPM

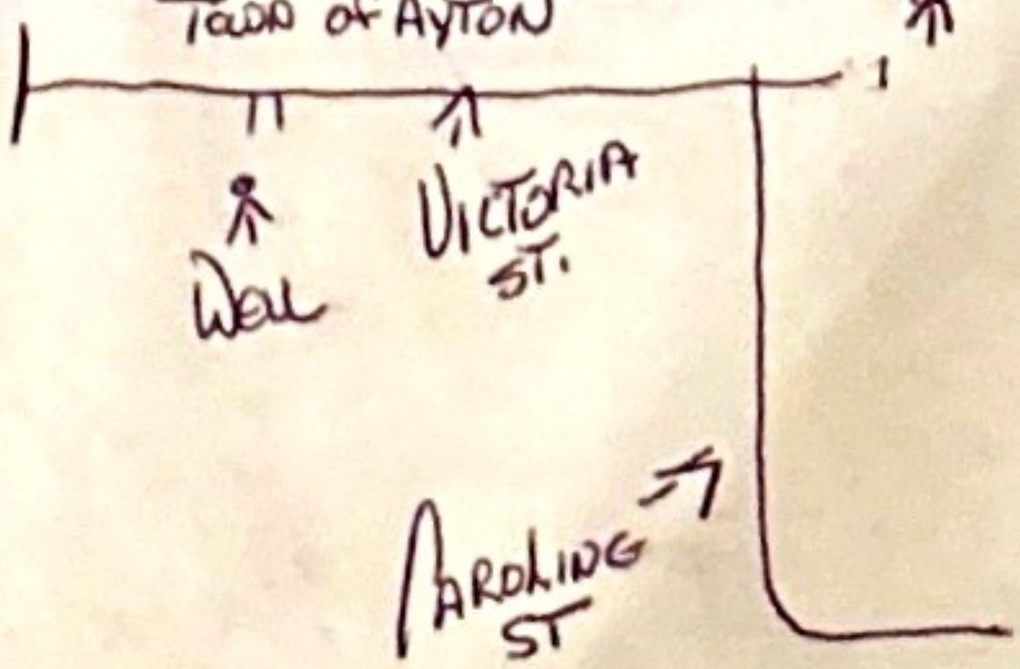
Well production (l/min/GPM): 6½ GPM

Disinfected? ☑ Yes ☐ No

| | Draw Down Time (min) | Draw Down Water Level (m/ft) | Recovery Time (min) | Recovery Water Level (m/ft) |
|---|---|---|---|---|
| Static Level | | 72FT | | 74FT |
| 1 | | | 1 | 73 |
| 2 | | | 2 | 72FT |
| 3 | | | 3 | 72FT |
| 4 | | | 4 | 72FT |
| 5 | | | 5 | 72FT |
| 10 | | 72½ | 10 | 72FT |
| 15 | | 73FT | 15 | |
| 20 | | 74FT | 20 | |
| 25 | | 74FT | 25 | |
| 30 | | 74FT | 30 | |
| 40 | | 74FT | 40 | |
| 50 | | 74FT | 50 | |
| 60 | | 74FT | 60 | |

## Map of Well Location

Please provide a map below following instructions on the back.




Comments:

## Well Contractor and Well Technician Information

Business Name of Well Contractor: KAUFMAN INVESTMENTS LTD | Well Contractor's Licence No.: 6634

Business Address (Street Number/Name): 314023 HWY #6 RR#1 DURHAM | Municipality: WESTGREY

Province: ONTARIO | Postal Code: N0G1R0 | Business E-mail Address: DURHAMDRILLING@BELL.NET

Bus. Telephone No. (inc. area code): 5193693344 | Name of Well Technician (Last Name, First Name): KAUFMAN PAUL

Well Technician's Licence No.: 1922 | Signature of Technician and/or Contractor | Date Submitted

Well owner's information package delivered: ☑ Yes ☐ No

Date Package Delivered: 2024 02 03

Date Work Completed

## Ministry Use Only

Audit No. Z414897

Received

0506E (2020/06) © Queen's Printer for Ontario, 2020

Ministry's Copy

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☑ Imperial

Tag#: A386881

TAG# A386881

**Regulation 903 Ontario Water Resources Act**

Page 1 of 1

## Well Owner's Information

First Name: DOMM | Last Name/Organization: CONSTRUCTION LTD | E-mail Address: | ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): P.O. BOX 90 AYTON | Municipality: | Province: ONTARIO | Postal Code: N0G1C0 | Telephone No. (inc. area code):

## Well Location

Address of Well Location (Street Number/Name): ALBERT ST. | Township: NORMANBY | Lot: 16 | Concession: 10

County/District/Municipality: WESTGREY | City/Town/Village: AYTON | Province: Ontario | Postal Code:

UTM Coordinates: Zone: 17 | Easting: 505170 | Northing: 4877904 | NAD 83 | Municipal Plan and Sublot Number: | Other:

## Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

| General Colour | Most Common Material | Other Materials | General Description | Depth (m/ft) From | To |
|---|---|---|---|---|---|
| | CLAY | | | 0 | 4FT |
| | STONES | | | 4 | 12FT |
| BROWN | SHALE/LIMESTONE | | MED - HARD | 12 | 42FT |
| GREY | SHALE LIMESTONE | | SOFT - MED | 42 | 60FT |
| BROWN | SHALE LIMESTONE | | SOFT - MED | 60 | 80FT |

## Annular Space

| Depth Set at (m/ft) From | To | Type of Sealant Used (Material and Type) | Volume Placed (m³/ft³) |
|---|---|---|---|
| 0 | 22FT | 50GAL GROUTSLURRY | |

## Method of Construction

☐ Cable Tool ☐ Diamond
☑ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

## Well Use

☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

## Construction Record - Casing

| Inside Diameter (cm/in) | Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel) | Wall Thickness (cm/in) | Depth (m/ft) From | To |
|---|---|---|---|---|
| 6INCH | STEEL | .188 | +2 | 22FT |
| 5INCH | PLASTIC LINER | .188 | -8 | 72FT |
| | PLASTIC LINER SLOTED | | | |

## Construction Record - Screen

| Outside Diameter (cm/in) | Material (Plastic, Galvanized, Steel) | Slot No. | Depth (m/ft) From | To |
|---|---|---|---|---|
| | | | | |
| | | | | |

## Status of Well

☑ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

## Water Details

| Water found at Depth | Kind of Water | |
|---|---|---|
| 60 (m/ft) ☐ Gas | ☑ Fresh ☐ Untested ☐ Other, specify | |
| 80 (m/ft) ☐ Gas | ☑ Fresh ☐ Untested ☐ Other, specify | |
| (m/ft) ☐ Gas | ☐ Fresh ☐ Untested ☐ Other, specify | |

## Hole Diameter

| Depth (m/ft) From | To | Diameter (cm/in) |
|---|---|---|
| 0 | 22FT | 10INCH |
| 22 | 80FT | 6INCH |

## Results of Well Yield Testing

After test of well yield, water was: ☑ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 50FT

Pumping rate (l/min / GPM): 5GPM

Duration of pumping: 3 hrs + ___ min

Final water level end of pumping (m/ft): 25½ FT.

If flowing give rate (l/min/GPM):

Recommended pump depth (m/ft): 50FT

Recommended pump rate (l/min/GPM): 5GPM

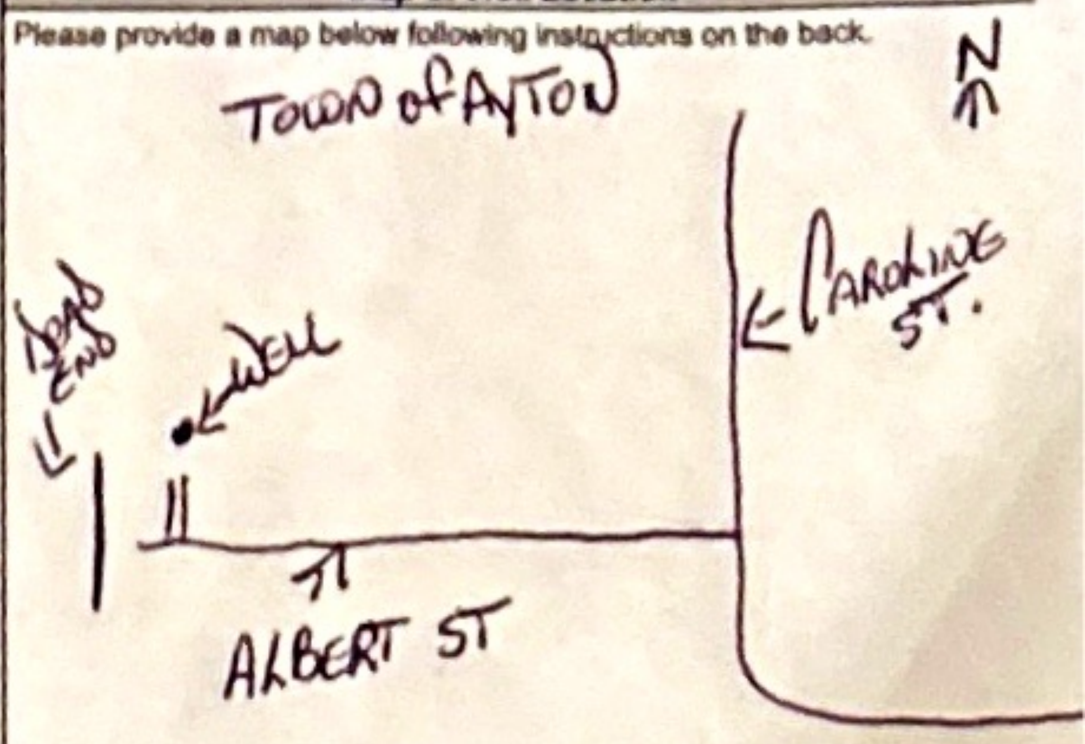
Well production (l/min/GPM): 7GPM

Disinfected? ☑ Yes ☐ No

| | Draw Down Time (min) | Draw Down Water Level (m/ft) | Recovery Time (min) | Recovery Water Level (m/ft) |
|---|---|---|---|---|
| Static Level | | 24 FT | | 25FT |
| 1 | | | 1 | 25FT |
| 2 | | | 2 | 24½FT |
| 3 | | | 3 | 24 |
| 4 | | | 4 | |
| 5 | | | 5 | |
| 10 | | 24½FT | 10 | |
| 15 | | | 15 | |
| 20 | | 25FT | 20 | |
| 25 | | 25FT | 25 | |
| 30 | | 25FT | 30 | |
| 40 | | 25FT | 40 | |
| 50 | | 25FT | 50 | |
| 60 | | 25FT | 60 | |

## Map of Well Location

Please provide a map below following instructions on the back.




Comments:

## Well Contractor and Well Technician Information

Business Name of Well Contractor: KAUFMAN INVESTMENTS LTD | Well Contractor's Licence No.: 6634

Business Address (Street Number/Name): 314023 HWY #6 RR#1 DURHAM | Municipality: WESTGREY

Province: ONTARIO | Postal Code: N0G1R0 | Business E-mail Address: DURHAMDRILLING@BELLNET

Bus. Telephone No. (inc. area code): 5193693344 | Name of Well Technician (Last Name, First Name): KAUFMAN PAUL

Well Technician's Licence No.: 1922 | Signature of Technician and/or Contractor: paul kaufman | Date Submitted: | Well owner's information package delivered: ☑ Yes ☐ No | Date Package Delivered: | Date Work Completed: 20240201

**Ministry Use Only**

Audit No.: Z414898

Received

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Ministry of Environment and Energy
Ontario

# The Ontario Water Resources Act
# WATER WELL RECORD

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

11 — 2513333 — Municipality 25010 — Con CON — 10

County or District [redacted]

Township/Borough/City/Town/Village: Village of Ayton (Wormanby)

Con block tract survey, etc.: Con 10

Lot: 15

Address: 741 Arthur St Ayton

Date completed: 18 day 7 month 97 year

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 |
|---|---|---|---|---|---|
| | Topsoil | | | 0 | 1 |
| Brown | silty | clay stones | | 1 | 21 |
| Gray/Brown | Shale | | | 21 | 28 |
| Grey | Limestone | | | 28 | 50 |
| Blue | Shale | | | 50 | 52 |
| Gray | Limestone | | | 52 | 65 |
| Gray | Shale | | soft layer | 65 | 68 |
| Brown | Limestone | | | 68 | 73 |
| Dark Gray | Limestone | | | 73 | 78 |
| | | | | | |
| | | | | | |

31

32

## 41 WATER RECORD

| Water found at – feet | Kind of water |
|---|---|
| 57 | 1 ☑ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas — UNTESTED |
| 74 | 1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas — UNTESTED |
| | 1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas |
| | 1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas |
| | 1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas |

## 51 CASING & OPEN HOLE RECORD

| Inside diam inches | Material | Wall thickness inches | Depth – feet From | Depth – feet To |
|---|---|---|---|---|
| 6 | 1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic | .188 | +1 | 32 |
| 6 | 1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic | | 32 | 78 |
| | 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

☑ Annular space ☐ Abandonment

| Depth set at – feet From | Depth set at – feet To | Material and type (Cement grout, bentonite, etc.) |
|---|---|---|
| 0 | 30 | Bensecl |
| | | |
| | | |

## 71 PUMPING TEST

Pumping test method: 1 ☐ Pump 2 ☐ Bailer — AIR

Pumping rate: 6 GPM

Duration of pumping: 1 Hours ..... Mins

| Static level | Water level end of pumping | Water levels during: 1 ☐ Pumping 2 ☑ Recovery | 15 minutes | 30 minutes | 45 minutes | 60 minutes |
|---|---|---|---|---|---|---|
| 39 feet | feet | | feet | feet | 39 feet | 39 feet |

If flowing give rate: GPM

Pump intake set at: feet

Water at end of test: ☑ Clear ☐ Cloudy

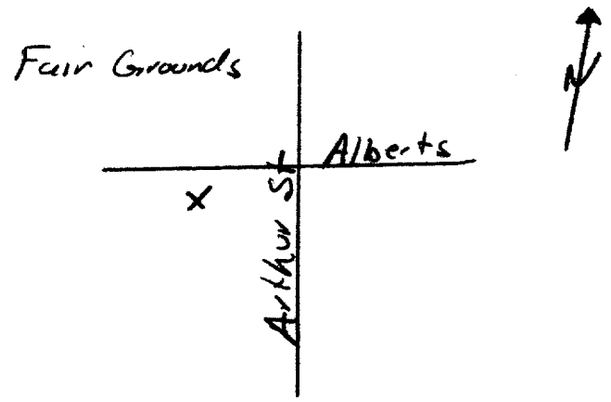
Recommended pump type: ☐ Shallow ☑ Deep

Recommended pump setting: 65 feet

Recommended pump rate: 6 GPM

## LOCATION OF WELL

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




177945

## FINAL STATUS OF WELL

1 ☑ Water supply 2 ☐ Observation well 3 ☐ 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 ☐ Other .....

## METHOD OF CONSTRUCTION

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

Name of Well Contractor: Highland Water Well — Well Contractor's Licence No.: T-2576

Address: Box 141 Durham

Name of Well Technician: Erich Wilson — Well Technician's Licence No.: 70113

Signature of Technician/Contractor — Submission date: day 29 mo 7 yr 97

## MINISTRY USE ONLY

Data source — Contractor: 2576 — Date received: AUG 06 1997

Date of inspection — Inspector

Remarks

2 - MINISTRY OF ENVIRONMENT & ENERGY COPY

Ontario | Ministry of the Environment

A011645 (and print number below)

A011645

# Well Record

*Regulation 903 Ontario Water Resources Act*

page ___ of ___

**Instructions for Completing Form**

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

**Ministry Use Only**

MUN | CON | LOT

## Well Owner's Information and Location of Well Information

| First Name | Last Name | Mailing Address (Street Number/Name, RR,Lot,Concession) |
|---|---|---|
| [redacted] | ESTATE | c/o [redacted], 327 Agusta St. |

| County/District/Municipality | Township/City/Town/Village | Province | Postal Code | Telephone Number (include area code) |
|---|---|---|---|---|
| Grey | Ayton | Ontario | N0G 1C0 | [redacted] |

| Address of Well Location (County/District/Municipality) | Township | Lot | Concession |
|---|---|---|---|
| Grey | Normanby Twp. | 15/16 | 10 |

| RR#/Street Number/Name | City/Town/Village | Site/Compartment/Block/Tract etc. |
|---|---|---|
| 825 Albert St. | Ayton | |

| GPS Reading | NAD | Zone | Easting | Northing | Unit Make/Model | Mode of Operation |
|---|---|---|---|---|---|---|
| | 83 | 17 | 505517 | 4877918 | Garmin eTREX Venture | [X] Undifferentiated [ ] Averaged [ ] Differentiated, specify |

## Log of Overburden and Bedrock Materials (see instructions)

| General Colour | Most common material | Other Materials | General Description | Depth From (Ft.) | Depth To (Ft.) |
|---|---|---|---|---|---|
| Brown | Sand | Stones | | 0 | 6' |
| Brown | Clay | Stones | | 6' | 14' |
| Brown | Limestone | | | 14 | 134 |

### Hole Diameter

| Depth From (Ft.) | Depth To (Ft.) | Diameter (centimetres) |
|---|---|---|
| 0 | 40' | 8" |
| 40' | 134' | 6" |

### Water Record

| Water found at (Metres) | Kind of Water | | |
|---|---|---|---|
| 120' | [X] Fresh | [ ] Sulphur | [ ] Gas |
| | [ ] Salty | [ ] Minerals | [ ] Other: |
| 134' | [X] Fresh | [ ] Sulphur | [ ] Gas |
| | [ ] Salty | [ ] Minerals | [ ] Other: |
| [ ] m | [ ] Fresh | [ ] Sulphur | [ ] Gas |
| | [ ] Salty | [ ] Minerals | [ ] Other: |

After test of well yield, water was
[X] Clear and sediment free
[ ] Other, specify

Chlorinated [X] Yes [ ] No

### Construction Record

| Inside diam (centimetres) | Material | Wall thickness (centimetres) | Depth From (Ft.) | Depth To (Ft.) |
|---|---|---|---|---|
| **Casing** | | | | |
| 6" | [X] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized | .188" | +2' | 40' |
| | [ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized | | | |
| | [ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized | | | |
| **Screen** | | | | |
| Outside diam | [ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized | Slot No. | | |
| **No Casing or Screen** | | | | |
| | [X] Open hole | | 40' | 134' |

### Test of Well Yield

| Pumping test method: Pump | Draw Down Time min | Draw Down Water Level (Metres) (Ft.) | Recovery Time min | Recovery Water Level (Metres) (Ft.) |
|---|---|---|---|---|
| Pump intake set at - (metres) | Static Level | 92' | | |
| Pumping rate - (litres/min) | 1 | 93.6' | 1 | 93.9 |
| Duration of pumping 1 hrs + ___ min | 2 | 94.2 | 2 | 93.2 |
| Final water level end of pumping 94.7' (Metres) | 3 | 94.7 | 3 | 92.4 |
| Recommended pump type: [ ] Shallow [X] Deep | 4 | 94.7 | 4 | 92.4 |
| Recommended pump depth. 120' (Metres) | 5 | 94.7 | 5 | 92.2 |
| Recommended pump rate. 10gpm (litres/min) | 10 | 94.7 | 10 | 92 |
| | 15 | 94.7 | 15 | 92 |
| If flowing give rate - (litres/min) | 20 | 94.7 | 20 | 92 |
| | 25 | 94.7 | 25 | 92 |
| If pumping discontinued, give reason. | 30 | 94.7 | 30 | 92 |
| | 40 | 94.7 | 40 | 92 |
| | 50 | 94.7 | 50 | 92 |
| | 60 | 94.7 | 60 | 92 |

### Plugging and Sealing Record

[X] Annular space [ ] Abandonment

| Depth set at - (Metres) From | To | Material and type (bentonite slurry, neat cement slurry) etc. | Volume Placed (cubic metres) |
|---|---|---|---|
| 0 | 40' | Bentonite Grout | |

### Method of Construction

[ ] Cable Tool [ ] Rotary (air) [ ] Diamond [ ] Digging
[X] Rotary (conventional) [ ] Air percussion [ ] Jetting [ ] Other
[ ] Rotary (reverse) [ ] Boring [ ] Driving

### Water Use

[X] Domestic [ ] Industrial [ ] Public Supply [ ] Other
[ ] Stock [ ] Commercial [ ] Not used
[ ] Irrigation [ ] Municipal [ ] Cooling & air conditioning

### Final Status of Well

[X] Water Supply [ ] Recharge well [ ] Unfinished [ ] Abandoned, (Other)
[ ] Observation well [ ] Abandoned, insufficient supply [ ] Dewatering
[ ] Test Hole [ ] Abandoned, poor quality [ ] Replacement well

### Well Contractor/Technician Information

| Name of Well Contractor | Well Contractor's Licence No. |
|---|---|
| Davidson Well Drilling Limited | 1737 |

Business Address (street name, number, city etc.): 147 North St.W. Wingham, Ontario N0G 2W0

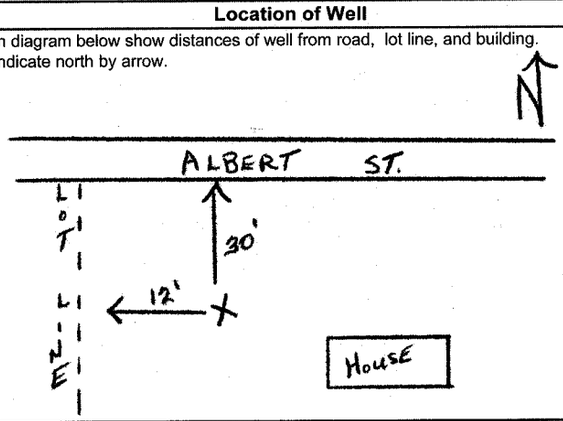
| Name of Well Technician (last name, first name) | Well Technician's Licence No. |
|---|---|
| Losch Kim | T0927 |

Signature of Technician/Contractor: x J.C. Davidson

Date Submitted: 2004 12 06

### Location of Well

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




Audit No. Z 11714

Date Well Completed: YYYY MM DD 2004 11 22

Was the well owner's information package delivered? [X] Yes [ ] No

Date Delivered: YYYY MM DD 2004 11 22

### Ministry Use Only

| Data Source | Contractor |
|---|---|
| | 1737 |
| Date Received: JAN 11 2005 | Date of Inspection: YYYY MM DD |
| Remarks | Well Record Number |

0506E (09/03)

Contractor's Copy [ ] Ministry's Copy [X] Well Owner's Copy [ ]

*Cette formule est disponible en français*

Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

**Well Tag No.** *(Place Sticker and/or Print Below)* A037161

# Well Record

*Regulation 903 Ontario Water Resources Act*

Page ____ of ____

[redacted]

## Well Location

| Address of Well Location (Street Number/Name) | Township | Lot | Concession |
|---|---|---|---|
| 826 Albert Street | Normanby | 16 | 10 |

| County/District/Municipality | City/Town/Village | Province | Postal Code |
|---|---|---|---|
| Grey | Ayton | Ontario | N0G1C0 |

| UTM Coordinates | Zone | Easting | Northing | Municipal Plan and Sublot Number | Other |
|---|---|---|---|---|---|
| NAD 83 | 17 | 505506 | 4877975 | | |

## Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

| General Colour | Most Common Material | Other Materials | General Description | Depth (m/ft) From | Depth (m/ft) To |
|---|---|---|---|---|---|
| Brown | Clay | | | 0 | 15 |
| Grey | Shale | Limestone | | 15 | 61 |
| Blue/Brown | Limestone | Shale | | 61 | 142 |

## Annular Space

| Depth Set at (m/ft) From | Depth Set at (m/ft) To | Type of Sealant Used (Material and Type) | Volume Placed ($m^3$/$ft^3$) |
|---|---|---|---|
| 0 | 61 | Bentonite Slurry | 15 |

## Method of Construction

☒ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☐ Other, *specify*

## Well Use

☐ Public ☐ Commercial ☐ Not used ☒ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☐ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, *specify*

## Construction Record - Casing

| Inside Diameter (cm/in) | Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel) | Wall Thickness (cm/in) | Depth (m/ft) From | Depth (m/ft) To |
|---|---|---|---|---|
| 6.25" | Steel | .188 | +2' | 92' |
| | Open Hole | | 62' | 142' |

## Construction Record - Screen

| Outside Diameter (cm/in) | Material (Plastic, Galvanized, Steel) | Slot No. | Depth (m/ft) From | Depth (m/ft) To |
|---|---|---|---|---|
| | | | | |

## Status of Well

☒ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, *specify* ☐ Other, *specify*

## Water Details

| Water found at Depth | Kind of Water | Other, specify |
|---|---|---|
| 117' (m/ft) ☐ Gas | ☒ Fresh ☐ Untested | |
| 142' (m/ft) ☐ Gas | ☒ Fresh ☐ Untested | |
| (m/ft) ☐ Gas | ☐ Fresh ☐ Untested | |

## Hole Diameter

| Depth (m/ft) From | Depth (m/ft) To | Diameter (cm/in) |
|---|---|---|
| 0 | 61' | 9.5" |
| 61' | 142' | 6.25" |

## Results of Well Yield Testing

After test of well yield, water was: ☒ Clear and sand free ☐ Other, *specify*

If pumping discontinued, give reason:

Pump intake set at (m/ft): 110'

Pumping rate (l/min / GPM): 12 GPM

Duration of pumping: 2 hrs + ____ min

Final water level end of pumping (m/ft): 106'

If flowing give rate (l/min / GPM):

Recommended pump depth (m/ft): 120'

Recommended pump rate (l/min / GPM): 10 GPM

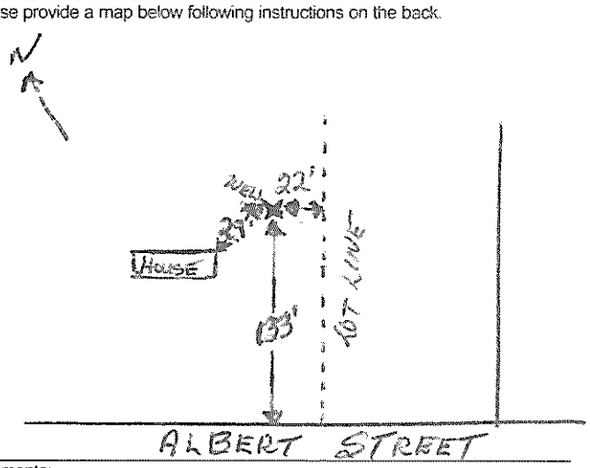
Well production (l/min / GPM):

Disinfected? ☒ Yes ☐ No

| Draw Down Time (min) | Draw Down Water Level (m/ft) | Recovery Time (min) | Recovery Water Level (m/ft) |
|---|---|---|---|
| Static Level | 105 | | 106 |
| 1 | 105'2" | 1 | 105'4" |
| 2 | 105'4" | 2 | 105'4" |
| 3 | 105'6" | 3 | 105'3" |
| 4 | 105'8" | 4 | 105'3" |
| 5 | 105'10" | 5 | 105'2" |
| 10 | 106' | 10 | 105'2" |
| 15 | 106' | 15 | 105'1" |
| 20 | 106 | 20 | 105'1" |
| 25 | 106' | 25 | 105' |
| 30 | 106' | 30 | 105' |
| 40 | 106' | 40 | 105' |
| 50 | 106' | 50 | 105' |
| 60 | 106' | 60 | 105' |

## Map of Well Location

Please provide a map below following instructions on the back.




Comments:

## Well Contractor and Well Technician Information

| Business Name of Well Contractor | Well Contractor's Licence No. |
|---|---|
| Donald Goll & Son Well Drilling | 2405 |

| Business Address (Street Number/Name) | Municipality |
|---|---|
| 69 Elora St. N., Box 593 | Harriston |

| Province | Postal Code | Business E-mail Address |
|---|---|---|
| ONT | N0G1Z0 | doug.goll@wightman.ca |

| Bus. Telephone No. (inc. area code) | Name of Well Technician (Last Name, First Name) | Well Technician's Licence No. | Signature of Technician and/or Contractor | Date Submitted |
|---|---|---|---|---|
| 519 338 3022 | Goll, Doug | 2562 | Donald Goll | 2009 08 12 |

Well owner's information package delivered: ☒ Yes ☐ No

Date Package Delivered: 2009 08 12 (Y Y Y Y M M D D)

Date Work Completed: 2009 08 05 (Y Y Y Y M M D D)

**Ministry Use Only**

Audit No. Z 81931

Received AUG 19 2009

0506E (12/2007) Ministry's Copy

Ontario Ministry of the Environment

Well T… A013386 …mber below)

A013386

# Well Record

*Regulation 903 Ontario Water Resources Act*

page ___ of ___

**Instructions for Completing Form**

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
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- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

**Ministry Use Only**

MUN 2501C CON CON LOT 10 16

**Well Owner's Information and Location of Well Information**

[redacted]

WEST GREY — RR#/Street Number/Name

NORMANBY — City/Town/Village

16 10 — Site/Compartment/Block/Tract etc.

GPS Reading — NAD 83 — Zone 17 — Easting 505425 — Northing 4877913

Unit Make/Model: MAGELLAN

Mode of Operation: ☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify

## Log of Overburden and Bedrock Materials (see instructions)

| General Colour | Most common material | Other Materials | General Description | Depth From | Depth To (Metres) |
|---|---|---|---|---|---|
| | | | TOPSOIL | 0 | 2 |
| | | | CLAY & STONES | 2 | 33 |
| | | | LIMESTONE SHALE | 33 | 130FT |

## Hole Diameter

| Depth From | Metres To | Diameter Centimetres |
|---|---|---|
| 0 | 20FT | 10 INCH |
| 20 | 37FT | 9 INCH |
| 37 | 130FT | 6 INCH |

## Water Record

Water found at (Metres) / Kind of Water

130FT ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was ☑ Clear and sediment free ☐ Other, specify

Chlorinated ☑ Yes ☐ No

## Construction Record

| Inside diam centimetres | Material | Wall thickness centimetres | Depth From | Depth To (Metres) |
|---|---|---|---|---|
| **Casing** | | | | |
| 6 inch | ☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | 1188 | 0 | 37FT |
| | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | | | |
| | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | | | |
| **Screen** | | | | |
| Outside diam | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | Slot No. | | |
| **No Casing or Screen** | | | | |
| | ☑ Open hole | | 37 | 130FT |

## Test of Well Yield

Pumping test method: AIR-PUMP

| | Draw Down Time min | Draw Down Water Level Metres | Recovery Time min | Recovery Water Level (Metres) |
|---|---|---|---|---|
| Static Level | | 72 FT. | | 95FT |
| 1 | 1 | 82 | 1 | 85 FT |
| 2 | 2 | 92 | 2 | 75 FT |
| 3 | 3 | 95FT | 3 | 72 FT |
| 4 | 4 | | 4 | |
| 5 | 5 | | 5 | |
| 10 | 10 | | 10 | |
| 15 | 15 | | 15 | |
| 20 | 20 | | 20 | |
| 25 | 25 | | 25 | |
| 30 | 30 | | 30 | |
| 40 | 40 | | 40 | |
| 50 | 50 | | 50 | |
| 60 | 60 | | 60 | |

Pump intake set at - (metres) 115FT

Pumping rate - 7GPM (litres/min)

Duration of pumping 2 hrs + ___ min

Final water level end of pumping 95 FT (metres)

Recommended pump type. ☐ Shallow ☑ Deep

Recommended pump depth. 115FT (metres)

Recommended pump rate. 7GPM (litres/min)

If flowing give rate - (litres/min)

If pumping discontinued, give reason.

## Plugging and Sealing Record

☑ Annular space ☐ Abandonment

| Depth set at - From | Metres To | Material and type (bentonite slurry, neat cement slurry) etc. | Volume Placed (cubic metres) |
|---|---|---|---|
| | | 150LBS 3/8 HOLEPLUG | |
| 0 | 20FT | 50GALS GROUT SLURRY | |

## Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☑ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

## Water Use

☑ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

## Final Status of Well

☑ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

## Well Contractor/Technician Information

Name of Well Contractor: KAUFMAN INVESTMENTS LTD — Well Contractor's Licence No.: 6634

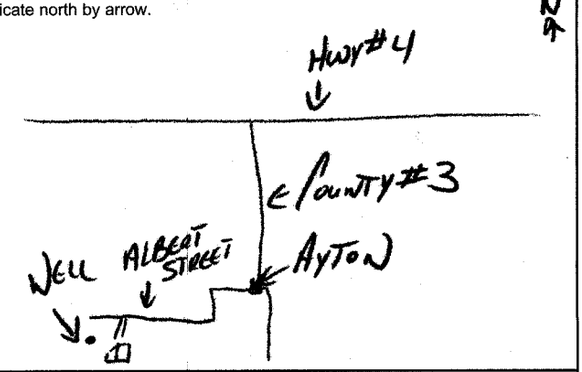
Business Address (street name, number, city etc.): RR#3 ELMWOOD, ONTARIO

Name of Well Technician (last name, first name): KAUFMAN, STEVEN — Well Technician's Licence No.: T-1922

Signature of Technician/Contractor: [signature] — Date Submitted YYYY MM DD: 2004 09 13

## Location of Well

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




Audit No. Z 13421

Date Well Completed YYYY MM DD: 2004 09 01

Was the well owner's information package delivered? ☐ Yes ☐ No

Date Delivered YYYY MM DD: 2004 09 13

## Ministry Use Only

Data Source

Contractor: 6634

Date Received YYYY MM DD: SEP 24 2004

Date of Inspection YYYY MM DD

Remarks

Well Record Number: 2516106

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

*Cette formule est disponible en français*

# Ontario Ministry of the Environment

**Well Tag Number** (Place sticker and print number below): A025006

# Well Record

*Regulation 903 Ontario Water Resources Act*

page ___ of ___

**Instructions for Completing Form**

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

**Ministry Use Only**

MUN | CON | LOT

[redacted]

Address of Well Location (County/District/Municipality): GREY COUNTY

Township: NORMANBY TWP | Lot: 15 | Concession: 10

RR#/Street Number/Name: #945 CAROLINE ST

City/Town/Village: AYTON | Site/Compartment/Block/Tract etc.:

GPS Reading | NAD: 83 | Zone: 17 | Easting: 505529 | Northing: 4878107

Unit Make/Model: | Mode of Operation: ☑ Undifferentiated ☑ Averaged ☐ Differentiated, specify

## Log of Overburden and Bedrock Materials (see instructions)

| General Colour | Most common material | Other Materials | General Description | Depth From | Depth To |
|---|---|---|---|---|---|
| | TOP SOIL | | | 0 | 1ft |
| BROWN | SANDY CLAY | GRAVEL | | 1ft | 85ft |
| GREY | SHALY LIMESTONE | | | 85ft | 375ft |
| BROWN | LIMESTONE | GREY LIMESTONE | LAYERS | 375ft | 140ft |

## Hole Diameter

| Depth From | Depth To (Metres) | Diameter (Centimetres) |
|---|---|---|
| 0 | 140ft | 6" |

## Water Record

| Water found at ___ Metres | Kind of Water |
|---|---|
| 90ft m | ☑ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: |
| 135ft m | ☑ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: |
| ___ m | ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: |

After test of well yield, water was ☑ Clear and sediment free ☐ Other, specify

Chlorinated ☑ Yes ☐ No

## Construction Record

| Inside diam centimetres | Material | Wall thickness centimetres | Depth From | Depth To (Metres) |
|---|---|---|---|---|
| **Casing** | | | | |
| 6" | ☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | .219 | +2 | 37ft |
| | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | | | |
| | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | | | |
| **Screen** | | | | |
| Outside diam | ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized | Slot No. | | |
| **No Casing or Screen** | | | | |
| | ☑ Open hole | | 37ft | 140ft |

## Test of Well Yield

Pumping test method: BAILER

| | Draw Down Time min | Draw Down Water Level Metres | Recovery Time min | Recovery Water Level Metres |
|---|---|---|---|---|
| Pump intake set at - (metres) 135ft | Static Level | 108ft | | |
| Pumping rate - (litres/min) 12GPM | 1 | | 1 | |
| Duration of pumping 1 hrs + ___ min | 2 | | 2 | |
| Final water level end of pumping ___ metres | 3 | | 3 | |
| Recommended pump type. ☐ Shallow ☑ Deep | 4 | | 4 | |
| Recommended pump depth. 130ft metres | 5 | | 5 | |
| Recommended pump rate. (litres/min) | 10 | | 10 | |
| If flowing give rate - (litres/min) | 15 | | 15 | |
| If pumping discontinued, give reason. | 20 | | 20 | |
| | 25 | | 25 | |
| | 30 | | 30 | |
| | 40 | | 40 | |
| | 50 | | 50 | |
| | 60 | | 60 | |

## Plugging and Sealing Record

☑ Annular space ☐ Abandonment

| Depth set at - Metres From | Depth set at - Metres To | Material and type (bentonite slurry, neat cement slurry) etc. | Volume Placed (cubic metres) |
|---|---|---|---|
| 0 | 30 | GROUT | |

## Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☑ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

## Water Use

☑ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

## Final Status of Well

☑ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

## Well Contractor/Technician Information

Name of Well Contractor: HIGHLAND WATER WELLS | Well Contractor's Licence No.: 2576

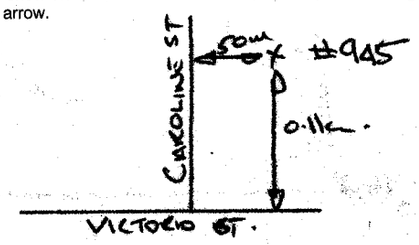
Business Address (street name, number, city etc.): BOX 141, OREMAN, ONT. N0G 1R0

Name of Well Technician (last name, first name): POPPLETON NIGEL / CHAD LIPPERT | Well Technician's Licence No.: 12130

Signature of Technician/Contractor: X [signature] | Date Submitted YYYY MM DD: 2005 12 07

## Location of Well

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




Audit No.: Z 36388 | Date Well Completed YYYY MM DD: 2005 11 09

Was the well owner's information package delivered? ☑ Yes ☐ No | Date Delivered YYYY MM DD: 2005 11 09

## Ministry Use Only

Data Source | Contractor: 2576

Date Received YYYY MM DD: JAN 16 2006 | Date of Inspection YYYY MM DD:

Remarks: 12-15 GPM | Well Record Number:

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

*Cette formule est disponible en français*

# APPENDIX B

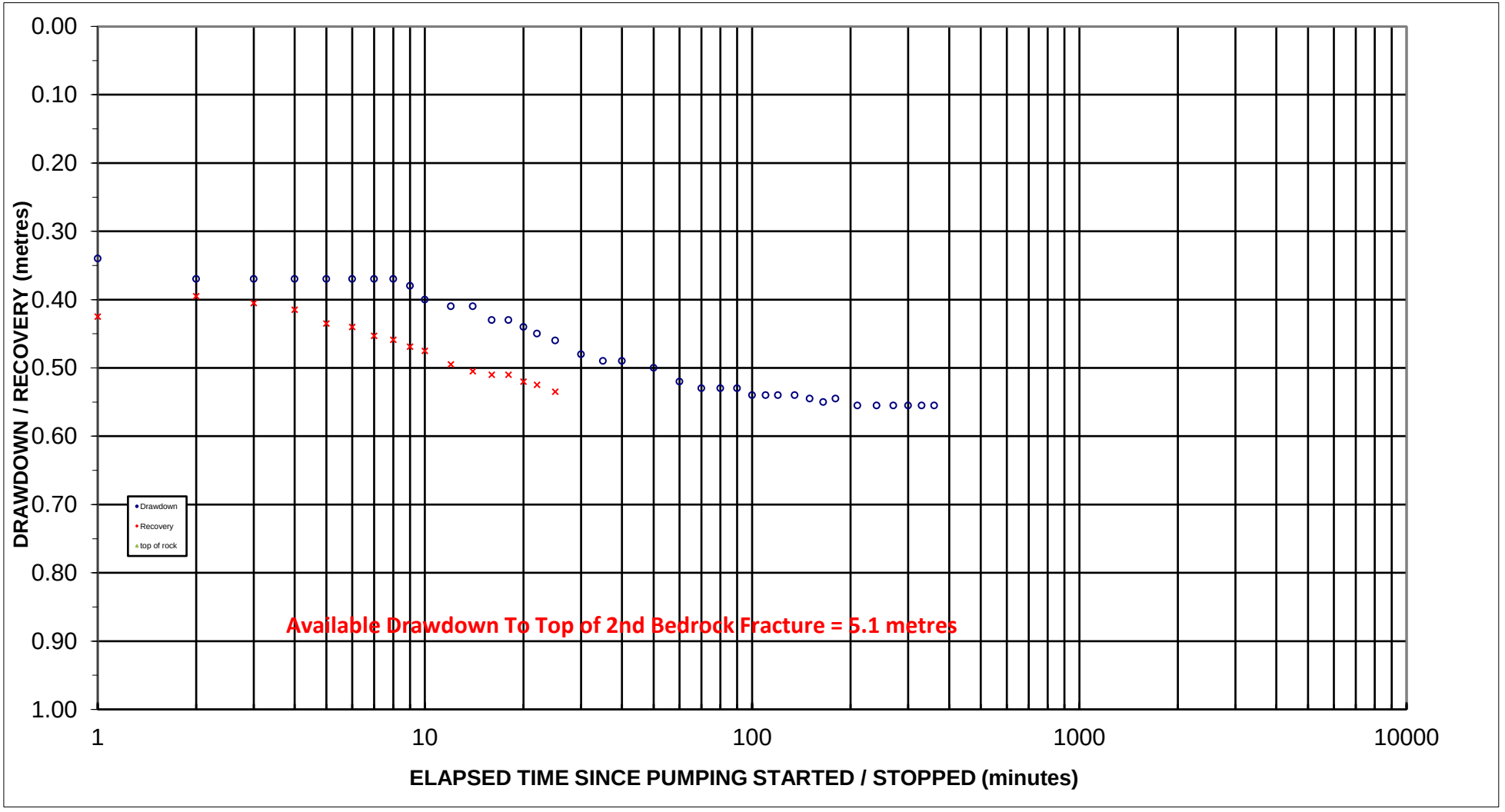
## PUMPING TEST DATA

# FIGURE B-1
## PUMPING WELL TW24-1 (A-386882)

| | | | | |
|---|---|---|---|---|
| Static Water Level : | 21.98 | m bgl | Project Name : | **Ayton Subdivision** |
| Well Depth: | 35.66 | m bgl | Project No : | 23008.00 |
| Pumping Rate: | 25.7 | L/min | Date: | 08-Apr-24 |

mbtoc - metres below top of casing
mbgl - metres below ground level L/min - litres per minute

Distance from pumping well (m) = 0.075




C:\Users\GARY\OneDrive\Documents\Projects\2023\23008 Ayton WS\00\Tech\Pumping Tests\Fig B-1 & Tab B-1 TW24-1 Pumping Well.xlsx

**TABLE B-1: PUMPING WELL TW24-1 (A-386882)**

**Project : Ayton Subdivision**

**Project # 23008.00**

| | | | | | |
|---|---|---|---|---|---|
| **OW:** | TW24-1 | DEPTH(m bgl): | 35.66 | mp top of 25mm pvc (agl)*: | 1.10 |
| PW: | TW24-1 | SWL(m bmp): | 23.08 | Avg. Discharge (L/min): | 25.7 |
| DATE: | 08-Apr-24 | SWL(m bgl): | 21.98 | Radius from pumped well (m): | 0.075 |
| TIME: | 9:05 AM | I.D. (mm): | 155 | Pump setting(mbgl): | |

| D R A W D O W N | | | RECOVERY | | | C O M M E N T S |
|---|---|---|---|---|---|---|
| **ELAPSED TIME (minutes)** | **WATER LEVEL (m bmp)** | **DRAWDOWN (metres)** | **ELAPSED TIME (minutes)** | **WATER LEVEL (m bmp)** | **RECOVERY (metres)** | |
| 1 | 23.420 | 0.340 | 1 | 23.210 | 0.425 | cascading water prior to test |
| 2 | 23.450 | 0.370 | 2 | 23.240 | 0.395 | cascading water during recovery |
| 3 | 23.450 | 0.370 | 3 | 23.230 | 0.405 | Residual Chlorine = 0 mg/L |
| 4 | 23.450 | 0.370 | 4 | 23.220 | 0.415 | |
| 5 | 23.450 | 0.370 | 5 | 23.200 | 0.435 | |
| 6 | 23.450 | 0.370 | 6 | 23.195 | 0.440 | |
| 7 | 23.450 | 0.370 | 7 | 23.182 | 0.453 | |
| 8 | 23.450 | 0.370 | 8 | 23.176 | 0.459 | |
| 9 | 23.460 | 0.380 | 9 | 23.166 | 0.469 | |
| 10 | 23.480 | 0.400 | 10 | 23.160 | 0.475 | |
| 12 | 23.490 | 0.410 | 12 | 23.140 | 0.495 | |
| 14 | 23.490 | 0.410 | 14 | 23.130 | 0.505 | |
| 16 | 23.510 | 0.430 | 16 | 23.125 | 0.510 | |
| 18 | 23.510 | 0.430 | 18 | 23.125 | 0.510 | |
| 20 | 23.520 | 0.440 | 20 | 23.115 | 0.520 | |
| 22 | 23.530 | 0.450 | 22 | 23.110 | 0.525 | cascading water during recovery |
| 25 | 23.540 | 0.460 | 25 | 23.100 | 0.535 | 96% Recovery |
| 30 | 23.560 | 0.480 | | | | |
| 35 | 23.570 | 0.490 | | | | |
| 40 | 23.570 | 0.490 | | | | |
| 50 | 23.580 | 0.500 | | | | |
| 60 | 23.600 | 0.520 | | | | |
| 70 | 23.610 | 0.530 | | | | |
| 80 | 23.610 | 0.530 | | | | |
| 90 | 23.610 | 0.530 | | | | |
| 100 | 23.620 | 0.540 | | | | |
| 110 | 23.620 | 0.540 | | | | |
| 120 | 23.620 | 0.540 | | | | |
| 135 | 23.620 | 0.540 | | | | |
| 150 | 23.625 | 0.545 | | | | |
| 165 | 23.630 | 0.550 | | | | |
| 180 | 23.625 | 0.545 | | | | |
| 210 | 23.635 | 0.555 | | | | |
| 240 | 23.635 | 0.555 | | | | |
| 270 | 23.635 | 0.555 | | | | |
| 300 | 23.635 | 0.555 | | | | |
| 330 | 23.635 | 0.555 | | | | water clear |
| 360 | 23.635 | 0.555 | | | | Water sample 2 @ 3pm (~6hrs) |

Q: discharge
SWL: static water level
L/min: litres per minute

r: distance from pumped well
PW: pumped well

mbmp: metres below measuring point
mbgl: metres below ground level

# FIGURE B-2
## PUMPING WELL TW24-2 (A-386881)

| | |
|---|---|
| Static Water Level : 7.06 m bgl<br>Well Depth: 24.4 m bgl<br>Pumping Rate: 26.5 L/min | Project Name : **Ayton Subdivision**<br>Project No : 23008.00<br>Date: 08-Apr-24 |
| mbtoc - metres below top of casing<br>mbgl - metres below ground level L/min - litres per minute | Distance from pumping well (m) = 0.075 |

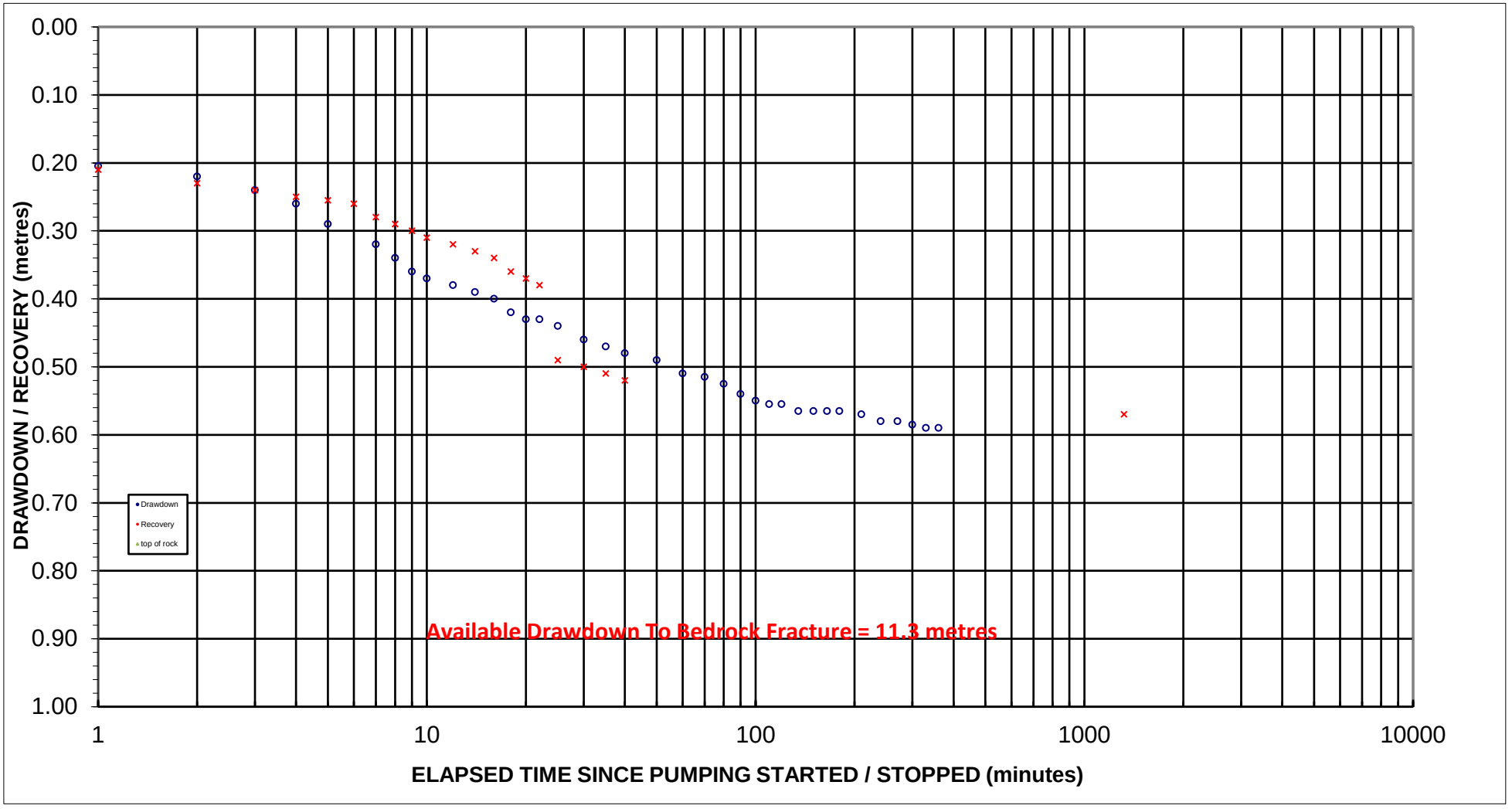



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**TABLE B-2: PUMPING WELL TW24-2 (A-386881)**

**Project : Ayton Subdivision**

**Project # 23008.00**

| | | | | | |
|---|---|---|---|---|---|
| **OW:** | TW24-2 | DEPTH(m bgl): | 24.38 | mp top of casing (agl)*: | 0.40 |
| PW: | TW24-2 | SWL(m bmp): | 7.46 | Avg. Discharge (L/min): | 26.5 |
| DATE: | 08-Apr-24 | SWL(m bgl): | 7.06 | Radius from pumped well (m): | 0.075 |
| TIME: | 8:40 AM | I.D. (mm): | 155 | Pump setting(mbgl): | |

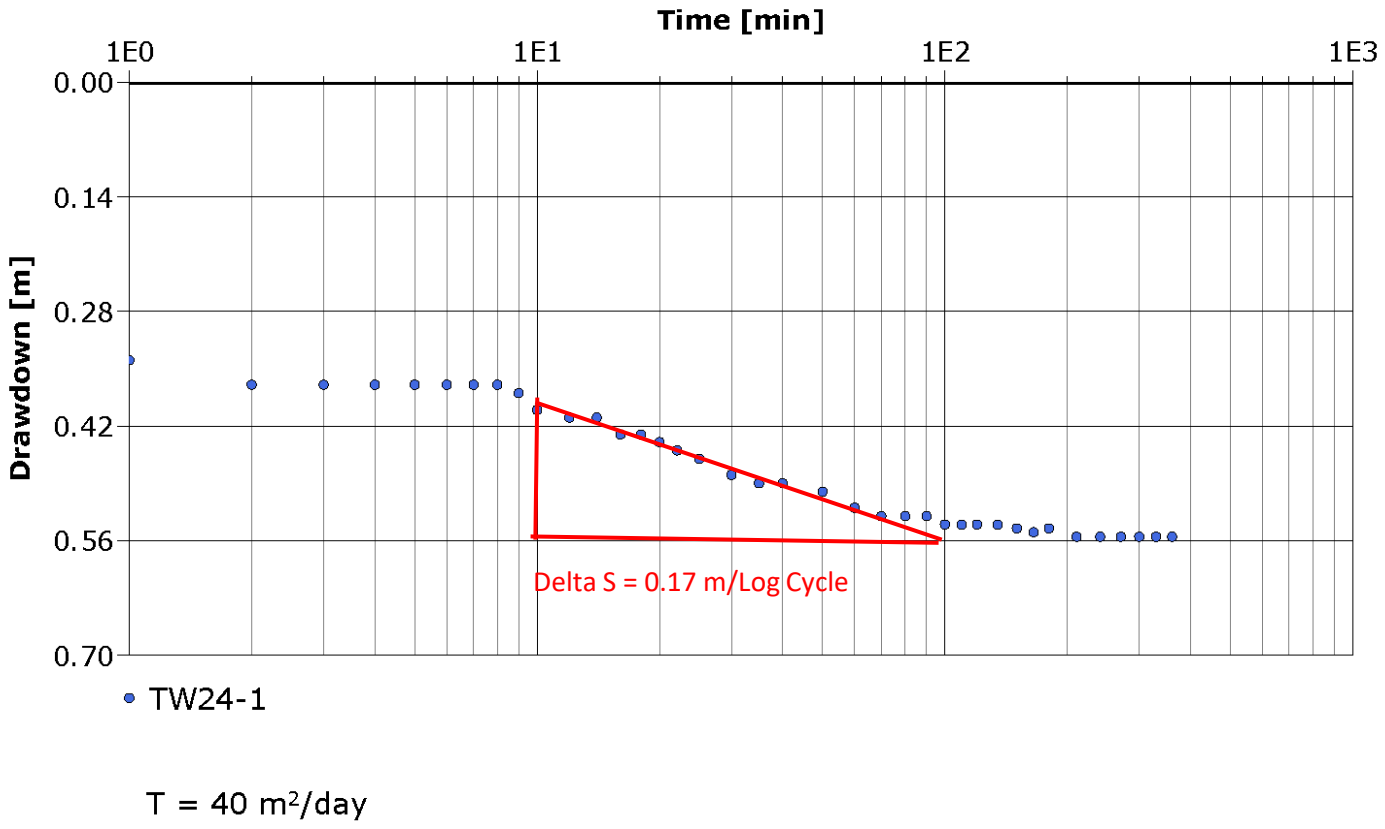
| D R A W D O W N | | | RECOVERY | | | C O M M E N T S |
|---|---|---|---|---|---|---|
| **ELAPSED TIME (minutes)** | **WATER LEVEL (m bmp)** | **DRAWDOWN (metres)** | **ELAPSED TIME (minutes)** | **WATER LEVEL (m bmp)** | **RECOVERY (metres)** | |
| 1 | 7.665 | 0.205 | 1 | 7.840 | 0.210 | |
| 2 | 7.680 | 0.220 | 2 | 7.820 | 0.230 | Residual chlorine = 0 mg/L |
| 3 | 7.700 | 0.240 | 3 | 7.810 | 0.240 | Q=15L/34sec |
| 4 | 7.720 | 0.260 | 4 | 7.800 | 0.250 | |
| 5 | 7.750 | 0.290 | 5 | 7.795 | 0.255 | water clear |
| 6 | | | 6 | 7.790 | 0.260 | |
| 7 | 7.780 | 0.320 | 7 | 7.770 | 0.280 | Q=15L/34sec |
| 8 | 7.800 | 0.340 | 8 | 7.760 | 0.290 | |
| 9 | 7.820 | 0.360 | 9 | 7.750 | 0.300 | |
| 10 | 7.830 | 0.370 | 10 | 7.740 | 0.310 | |
| 12 | 7.840 | 0.380 | 12 | 7.730 | 0.320 | |
| 14 | 7.850 | 0.390 | 14 | 7.720 | 0.330 | |
| 16 | 7.860 | 0.400 | 16 | 7.710 | 0.340 | |
| 18 | 7.880 | 0.420 | 18 | 7.690 | 0.360 | Q=15L/34sec |
| 20 | 7.890 | 0.430 | 20 | 7.680 | 0.370 | |
| 22 | 7.890 | 0.430 | 22 | 7.670 | 0.380 | |
| 25 | 7.900 | 0.440 | 25 | 7.560 | 0.490 | |
| 30 | 7.920 | 0.460 | 30 | 7.550 | 0.500 | |
| 35 | 7.930 | 0.470 | 35 | 7.540 | 0.510 | |
| 40 | 7.940 | 0.480 | 40 | 7.530 | 0.520 | water clear |
| 50 | 7.950 | 0.490 | 1320 | 7.480 | 0.570 | 96% recovery |
| 60 | 7.970 | 0.510 | | | | Water Sample #1 at ~ 1-hour |
| 70 | 7.975 | 0.515 | | | | Q=15L/45sec |
| 80 | 7.985 | 0.525 | | | | |
| 90 | 8.000 | 0.540 | | | | |
| 100 | 8.010 | 0.550 | | | | Q=15L/34sec |
| 110 | 8.015 | 0.555 | | | | |
| 120 | 8.015 | 0.555 | | | | |
| 135 | 8.025 | 0.565 | | | | |
| 150 | 8.025 | 0.565 | | | | |
| 165 | 8.025 | 0.565 | | | | |
| 180 | 8.025 | 0.565 | | | | Q=15L/34sec |
| 210 | 8.030 | 0.570 | | | | |
| 240 | 8.040 | 0.580 | | | | |
| 270 | 8.040 | 0.580 | | | | Q=15L/34sec |
| 300 | 8.045 | 0.585 | | | | water clear |
| 330 | 8.050 | 0.590 | | | | |
| 360 | 8.050 | 0.590 | | | | Water sample 2 @ 2:30pm (~6hrs) |

Q: discharge
SWL: static water level
L/min: litres per minute

r: distance from pumped well
PW: pumped well

mbmp: metres below measuring point
mbgl: metres below ground level

| | | |
|---|---|---|
| Location: Ayton | Pumping Test: TW24-1 | Pumping Well: TW24-1 |
| Test Conducted by: grh | | Test Date: 2024-04-08 |
| Analysis Performed by: grh | TW24-1 Cooper Jacob | Analysis Date: 2024-06-07 |
| Aquifer Thickness: 5.10 m | Discharge Rate: 37 [m³/d] | |
| | | |




NOTES

# TW24-1 Cooper Jacob

MECP D-5-5 Groundwater Supply Investigations
Part Lot 15, Con. 10, Normanby Twp. (Ayton) Grey County
For Domm Construction

| | | | |
|---|---|---|---|
| Date: | Jun-24 | Scale: | nts |
| Project: | 23008.00 | Ref No: | |

GAMAN Consultants Inc.

Figure B-3

# APPENDIX C

## GROUNDWATER CHEMISTRY

CADUCEON ENVIRONMENTAL LABORATORIES
*Client committed. Quality assured. Canadian owned.*

# CERTIFICATE OF ANALYSIS

## Final Report

**C.O.C.:** -

**REPORT No: 24-009434 - Rev. 0**

**Report To:**
Gaman Consultants Inc
7 Pinsent Court
Barrie, ON L4N 6E3

**CADUCEON Environmental Laboratories**
112 Commerce Park Dr Unit L
Barrie, ON L4N 8W8

**Attention: Gary Hendy**

DATE RECEIVED: 2024-Apr-09
DATE REPORTED: 2024-Apr-15
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: Ayton Subdivision
P.O. NUMBER: 23008.00

| Analyses | Qty | Site Analyzed | Authorized | Date Analyzed | Lab Method | Reference Method |
|---|---|---|---|---|---|---|
| Anions (Liquid) | 4 | OTTAWA | PCURIEL | 2024-Apr-11 | A-IC-01 | SM 4110B |
| Colour (Liquid) | 4 | OTTAWA | STAILLON | 2024-Apr-11 | A-COL-01 | SM 2120C |
| Cond/pH/Alk Auto (Liquid) | 4 | OTTAWA | SBOUDREAU | 2024-Apr-10 | COND-02/PH-02/ALK-02 | SM 2510B/4500H/2320B |
| Coliforms - DC Media (Liquid) | 4 | BARRIE | IPATEL | 2024-Apr-09 | ECTC-001 | MECP E3407 |
| DOC/DIC (Liquid) | 4 | OTTAWA | VKASYAN | 2024-Apr-11 | C-OC-01 | EPA 415.2 |
| Ion Balance (Calc) | 4 | OTTAWA | ASCHNEIDER | | CP-028 | MECP E3196 |
| ICP/MS (Liquid) | 4 | OTTAWA | TPRICE | 2024-Apr-11 | D-ICPMS-01 | EPA 200.8 |
| ICP/OES (Liquid) | 4 | OTTAWA | NHOGAN | 2024-Apr-11 | D-ICP-01 | SM 3120B |
| Ammonia (Liquid) | 4 | KINGSTON | JYEARWOOD | 2024-Apr-10 | NH3-001 | SM 4500NH3 |
| Organic Nitrogen (Liquid) | 4 | KINGSTON | KDIBBITS | 2024-Apr-15 | TPTKN-001 | MECP E3516.2 |
| Phenols (Liquid) | 4 | KINGSTON | JMACINNES | 2024-Apr-11 | PHEN-01 | MECP E3179 |
| Sulphide (Liquid) | 4 | KINGSTON | EHINCH | 2024-Apr-10 | H2S-001 | SM 4500-S2 |
| Tannins (Liquid) | 4 | KINGSTON | EHINCH | 2024-Apr-10 | TAN-001 | SM 5550 |
| TP & TKN (Liquid) | 4 | KINGSTON | KDIBBITS | 2024-Apr-12 | TPTKN-001 | MECP E3516.2 |
| Turbidity (Liquid) | 4 | OTTAWA | STAILLON | 2024-Apr-11 | A-TURB-01 | SM 2130B |

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

**Michelle Dubien**
**Data Specialist**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. | TW24-1 (1-hr) | TW24-1 (6-hr) | TW24-2 (1-hr) | TW24-2 (6-hr) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sample I.D. | 24-009434-1 | 24-009434-2 | 24-009434-3 | 24-009434-4 |
| | | | | | Date Collected | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 |
| | | | | | | - | - | - | - |
| Total Coliform (DC Media) | CFU/100mL | 1 | 0 | MAC | | 0 | 0 | 0 | 0 |
| E coli (DC Media) | CFU/100mL | 1 | 0 | MAC | | 0 | 0 | 0 | 0 |
| Background (DC Media) | CFU/100mL | 1 | | | | 28 | 22 | 2 | 0 |
| Alkalinity(CaCO3) to pH4.5 | mg/L | 5 | 500 | OG | | 333 | 335 | 203 | 206 |
| Conductivity @25°C | uS/cm | 1 | | | | 786 | 793 | 2120 | 2100 |
| pH @25°C | pH units | - | 8.5 | OG | | 7.86 | 7.90 | 7.64 | 7.89 |
| Colour | TCU | 2 | 5 | AO | | <2 | <2 | <2 | <2 |
| Turbidity | NTU | 0.1 | 5 | AO | | 1.3 | 0.4 | 12.8 | 11.5 |
| Fluoride | mg/L | 0.1 | 1.5 | MAC | | 0.1 | 0.1 | 0.5 | 0.5 |
| Chloride | mg/L | 0.5 | 250 | AO | | 33.6 | 33.4 | 6.2 | 6.5 |
| Nitrate (N) | mg/L | 0.05 | 10.0 | MAC | | 4.37 | 4.37 | <0.05 | <0.05 |
| Nitrite (N) | mg/L | 0.05 | 1.0 | MAC | | <0.05 | <0.05 | <0.05 | <0.05 |
| Sulphate | mg/L | 1 | 500 | AO | | 23 | 23 | 1210 | 1230 |
| Total Kjeldahl Nitrogen | mg/L | 0.1 | | | | 0.1 | <0.1 | 0.2 | 0.2 |
| Ammonia (N)-Total (NH3+NH4) | mg/L | 0.05 | | | | <0.05 | <0.05 | 0.10 | 0.10 |
| Organic Nitrogen | mg/L | 0.1 | 0.15 | OG | | 0.1 | <0.1 | <0.1 | <0.1 |
| Dissolved Organic Carbon | mg/L | 0.2 | 5 | AO | | 2.9 | 3.8 | 2.9 | 2.8 |
| Tannin & Lignin | mg/L | 0.5 | | | | <0.5 | <0.5 | <0.5 | <0.5 |
| Sulphide | mg/L | 0.01 | 0.05 | AO | | <0.01 | <0.01 | <0.01 | <0.01 |
| Phenolics | mg/L | 0.001 | | | | <0.001 | <0.001 | <0.001 | <0.001 |
| Hardness (as CaCO3) | mg/L as CaCO3 | 0.02 | 100 | OG | | 407 | 407 | 1320 | 1330 |

**Michelle Dubien**
**Data Specialist**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. | TW24-1 (1-hr) | TW24-1 (6-hr) | TW24-2 (1-hr) | TW24-2 (6-hr) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sample I.D. | 24-009434-1 | 24-009434-2 | 24-009434-3 | 24-009434-4 |
| | | | | | Date Collected | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 |
| | | | | | | - | - | - | - |
| Aluminum | mg/L | 0.01 | 0.1 | OG | | 0.06 | 0.06 | **0.16** | **0.14** |
| Barium | mg/L | 0.001 | 1 | MAC | | 0.148 | 0.149 | 0.009 | 0.008 |
| Boron | mg/L | 0.005 | 5 | MAC | | 0.007 | 0.007 | 0.238 | 0.238 |
| Calcium | mg/L | 0.02 | | | | 92.3 | 92.6 | 461 | 464 |
| Copper | mg/L | 0.002 | 1 | AO | | <0.002 | <0.002 | <0.002 | <0.002 |
| Iron | mg/L | 0.005 | 0.3 | AO | | 0.010 | <0.005 | **0.845** | **0.804** |
| Magnesium | mg/L | 0.02 | | | | 42.9 | 42.8 | 41.8 | 41.3 |
| Manganese | mg/L | 0.001 | 0.05 | AO | | 0.001 | <0.001 | 0.019 | 0.019 |
| Nickel | mg/L | 0.01 | | | | <0.01 | <0.01 | <0.01 | <0.01 |
| Potassium | mg/L | 0.1 | | | | 1.9 | 2.0 | 3.2 | 3.2 |
| Silicon | mg/L | 0.01 | | | | 2.73 | 2.70 | 3.98 | 3.89 |
| Silica | mg/L | 2 | | | | 6 | 6 | 9 | 8 |
| Sodium | mg/L | 0.2 | 200, 20, 20 | AO, WL, MAC | | 6.8 | 6.8 | 4.1 | 4.2 |
| Zinc | mg/L | 0.005 | 5 | AO | | <0.005 | <0.005 | 0.005 | 0.005 |
| Antimony | mg/L | 0.0001 | 0.006 | MAC | | 0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Arsenic | mg/L | 0.0001 | 0.01 | MAC | | 0.0002 | 0.0002 | 0.0003 | 0.0003 |
| Cadmium | mg/L | 0.000015 | 0.005 | MAC | | <0.000015 | <0.000015 | <0.000015 | <0.000015 |
| Chromium | mg/L | 0.001 | 0.05 | MAC | | <0.0010 | <0.0010 | <0.0010 | <0.0010 |
| Cobalt | mg/L | 0.0001 | | | | 0.0002 | 0.0002 | 0.0005 | 0.0005 |
| Lead | mg/L | 0.00002 | 0.010 | MAC | | 0.00012 | 0.00011 | 0.00016 | 0.00013 |
| Molybdenum | mg/L | 0.0001 | | | | 0.0008 | 0.0008 | 0.0011 | 0.0010 |

**Michelle Dubien**
**Data Specialist**

**Final Report**

**REPORT No: 24-009434 - Rev. 0**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. | TW24-1 (1-hr) | TW24-1 (6-hr) | TW24-2 (1-hr) | TW24-2 (6-hr) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sample I.D. | 24-009434-1 | 24-009434-2 | 24-009434-3 | 24-009434-4 |
| | | | | | Date Collected | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 | 2024-Apr-08 |
| | | | | | | - | - | - | - |
| Selenium | mg/L | 0.001 | 0.05 | MAC | | <0.001 | <0.001 | <0.001 | <0.001 |
| Silver | mg/L | 0.0001 | | | | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Thallium | mg/L | 0.00005 | | | | <0.00005 | <0.00005 | <0.00005 | <0.00005 |
| Uranium | mg/L | 0.00005 | 0.02 | MAC | | 0.00070 | 0.00073 | 0.00010 | 0.00008 |
| Vanadium | mg/L | 0.0001 | | | | 0.0001 | 0.0001 | 0.0001 | <0.0001 |
| Anion Sum | meq/L | - | | | | 8.39 | 8.43 | 29.6 | 29.9 |
| Cation Sum | meq/L | - | | | | 8.48 | 8.49 | 26.8 | 26.9 |
| % Difference | % | - | | | | 0.521 | 0.337 | 4.98 | 5.41 |
| TDS (Ion Sum Calc) | mg/L | 1 | 500 | AO | | 420 | 421 | **1850** | **1870** |
| Conductivity Calc | µmho/cm | - | | | | 771 | 772 | 2240 | 2250 |

**DWG - Drinking Water Guidelines**

ODWS - Ontario Drinking Water Standards
AO - Aesthetic Objectives
IMAC - Interim Maximum Acceptable Concentration
MAC - Maximum Acceptable Concentration
ODWO - D-5-5 Objective
OG - Operational Guidelines
WL - Warning Level - Sodium Restricted Diets

**Michelle Dubien**
**Data Specialist**

| Summary of Exceedances | | |
|---|---|---|
| **Aesthetic Objectives** | | |
| **TW24-2 (1-hr)** | **Found Value** | **Limit** |
| Turbidity | 12.8 | 5 |
| Sulphate | 1210 | 500 |
| Iron | 0.845 | 0.3 |
| TDS (Ion Sum Calc) | 1850 | 500 |
| **TW24-2 (6-hr)** | **Found Value** | **Limit** |
| Turbidity | 11.5 | 5 |
| Sulphate | 1230 | 500 |
| Iron | 0.804 | 0.3 |
| TDS (Ion Sum Calc) | 1870 | 500 |
| **Operational Guidelines** | | |
| **TW24-1 (1-hr)** | **Found Value** | **Limit** |
| Hardness (as CaCO3) | 407 | 100 |
| **TW24-1 (6-hr)** | **Found Value** | **Limit** |
| Hardness (as CaCO3) | 407 | 100 |
| **TW24-2 (1-hr)** | **Found Value** | **Limit** |
| Hardness (as CaCO3) | 1320 | 100 |
| Aluminum | 0.16 | 0.1 |
| **TW24-2 (6-hr)** | **Found Value** | **Limit** |
| Hardness (as CaCO3) | 1330 | 100 |
| Aluminum | 0.14 | 0.1 |

**Michelle Dubien**
**Data Specialist**

CADUCEON ENVIRONMENTAL LABORATORIES
*Client committed. Quality assured. Canadian owned.*

# CERTIFICATE OF ANALYSIS

## Final Report

**C.O.C.:** -

**REPORT No: 24-014858 - Rev. 0**

**Report To:**
Gaman Consultants Inc
7 Pinsent Court
Barrie, ON L4N 6E3

**CADUCEON Environmental Laboratories**
112 Commerce Park Dr Unit L
Barrie, ON L4N 8W8

**Attention: Gary Hendy**

DATE RECEIVED: 2024-May-23
DATE REPORTED: 2024-May-31
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: Ayton Subdivision
P.O. NUMBER: 23008.00

| Analyses | Qty | Site Analyzed | Authorized | Date Analyzed | Lab Method | Reference Method |
|---|---|---|---|---|---|---|
| Anions (Liquid) | 2 | OTTAWA | PCURIEL | 2024-May-27 | A-IC-01 | SM 4110B |
| Colour (Liquid) | 2 | OTTAWA | STAILLON | 2024-May-28 | A-COL-01 | SM 2120C |
| Cond/pH/Alk Auto (Liquid) | 2 | OTTAWA | SBOUDREAU | 2024-May-27 | COND-02/PH-02/ALK-02 | SM 2510B/4500H/2320B |
| DOC/DIC (Liquid) | 2 | OTTAWA | VKASYAN | 2024-May-27 | C-OC-01 | EPA 415.2 |
| Ion Balance (Calc) | 2 | OTTAWA | ASCHNEIDER | | CP-028 | MECP E3196 |
| ICP/MS (Liquid) | 2 | OTTAWA | TPRICE | 2024-May-28 | D-ICPMS-01 | EPA 200.8 |
| ICP/OES (Liquid) | 2 | OTTAWA | NHOGAN | 2024-May-30 | D-ICP-01 | SM 3120B |
| Ammonia (Liquid) | 2 | KINGSTON | JYEARWOOD | 2024-May-28 | NH3-001 | SM 4500NH3 |
| Organic Nitrogen (Liquid) | 2 | KINGSTON | KDIBBITS | 2024-May-31 | TPTKN-001 | MECP E3516.2 |
| Phenols (Liquid) | 2 | KINGSTON | JMACINNES | 2024-May-29 | PHEN-01 | MECP E3179 |
| Sulphide (Liquid) | 2 | KINGSTON | EHINCH | 2024-May-27 | H2S-001 | SM 4500-S2 |
| Tannins (Liquid) | 2 | KINGSTON | EHINCH | 2024-May-28 | TAN-001 | SM 5550 |
| TP & TKN (Liquid) | 2 | KINGSTON | KDIBBITS | 2024-May-30 | TPTKN-001 | MECP E3516.2 |
| Turbidity (Liquid) | 2 | OTTAWA | PLUSSIER | 2024-May-28 | A-TURB-01 | SM 2130B |

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

**Michelle Dubien**
**Data Specialist**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. 829 A | 1019V |
|---|---|---|---|---|---|---|
| | | | | | Sample I.D. 24-014858-1 | 24-014858-2 |
| | | | | | Date Collected 2024-May-23 | 2024-May-23 |
| | | | | | - | - |
| Alkalinity(CaCO3) to pH4.5 | mg/L | 5 | 500 | OG | 392 | 303 |
| Conductivity @25°C | uS/cm | 1 | | | 1010 | 799 |
| pH @25°C | pH units | - | 8.5 | OG | 7.63 | 7.57 |
| Colour | TCU | 2 | 5 | AO | <2 | 4 |
| Turbidity | NTU | 0.1 | 5 | AO | 0.9 | 4.0 |
| Fluoride | mg/L | 0.1 | 1.5 | MAC | <0.1 | 0.3 |
| Chloride | mg/L | 0.5 | 250 | AO | 57.0 | 42.3 |
| Nitrate (N) | mg/L | 0.05 | 10.0 | MAC | 3.17 | 0.06 |
| Nitrite (N) | mg/L | 0.05 | 1.0 | MAC | <0.05 | <0.05 |
| Sulphate | mg/L | 1 | 500 | AO | 57 | 57 |
| Total Kjeldahl Nitrogen | mg/L | 0.1 | | | 0.3 | 0.2 |
| Ammonia (N)-Total (NH3+NH4) | mg/L | 0.05 | | | <0.05 | <0.05 |
| Organic Nitrogen | mg/L | 0.1 | 0.15 | OG | 0.2 | 0.1 |
| Dissolved Organic Carbon | mg/L | 0.2 | 5 | AO | 3.0 | 3.0 |
| Tannin & Lignin | mg/L | 0.5 | | | <0.5 | <0.5 |
| Sulphide | mg/L | 0.01 | 0.05 | AO | <0.01 | <0.01 |
| Phenolics | mg/L | 0.001 | | | <0.001 | 0.001 |
| Hardness (as CaCO3) | mg/L as CaCO3 | 0.02 | 100 | OG | 480 | 390 |
| Aluminum | mg/L | 0.01 | 0.1 | OG | 0.07 | 0.06 |
| Barium | mg/L | 0.001 | 1 | MAC | 0.106 | 0.154 |
| Boron | mg/L | 0.005 | 5 | MAC | 0.018 | 0.016 |

**Michelle Dubien**
**Data Specialist**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. | 829 A | 1019V |
|---|---|---|---|---|---|---|---|
| | | | | | Sample I.D. | 24-014858-1 | 24-014858-2 |
| | | | | | Date Collected | 2024-May-23 | 2024-May-23 |
| | | | | | | - | - |
| Calcium | mg/L | 0.02 | | | | 112 | 93.4 |
| Copper | mg/L | 0.002 | 1 | AO | | 0.015 | <0.002 |
| Iron | mg/L | 0.005 | 0.3 | AO | | 0.090 | 0.168 |
| Magnesium | mg/L | 0.02 | | | | 48.6 | 38.1 |
| Manganese | mg/L | 0.001 | 0.05 | AO | | <0.001 | 0.001 |
| Nickel | mg/L | 0.01 | | | | <0.01 | <0.01 |
| Potassium | mg/L | 0.1 | | | | 1.6 | 1.8 |
| Silicon | mg/L | 0.01 | | | | 3.37 | 4.54 |
| Silica | mg/L | 2 | | | | 7 | 10 |
| Sodium | mg/L | 0.2 | 200, 20, 20 | AO, WL, MAC | | 23.5 | 8.4 |
| Zinc | mg/L | 0.005 | 5 | AO | | 0.019 | 0.009 |
| Antimony | mg/L | 0.0001 | 0.006 | MAC | | <0.0001 | <0.0001 |
| Arsenic | mg/L | 0.0001 | 0.01 | MAC | | <0.0001 | <0.0001 |
| Cadmium | mg/L | 0.000015 | 0.005 | MAC | | <0.000015 | <0.000015 |
| Chromium | mg/L | 0.001 | 0.05 | MAC | | <0.0010 | <0.0010 |
| Cobalt | mg/L | 0.0001 | | | | 0.0003 | 0.0001 |
| Lead | mg/L | 0.00002 | 0.010 | MAC | | 0.00018 | 0.00018 |
| Molybdenum | mg/L | 0.0001 | | | | 0.0012 | 0.0023 |
| Selenium | mg/L | 0.001 | 0.05 | MAC | | 0.001 | <0.001 |
| Silver | mg/L | 0.0001 | | | | <0.0001 | <0.0001 |
| Thallium | mg/L | 0.00005 | | | | <0.00005 | <0.00005 |

**Michelle Dubien**
**Data Specialist**

| Parameter | Units | R.L. | Limits | DWG | Client I.D. | 829 A | 1019V |
|---|---|---|---|---|---|---|---|
| | | | | | Sample I.D. | 24-014858-1 | 24-014858-2 |
| | | | | | Date Collected | 2024-May-23 | 2024-May-23 |
| | | | | | | - | - |
| Uranium | mg/L | 0.00005 | 0.02 | MAC | | 0.00134 | 0.00015 |
| Vanadium | mg/L | 0.0001 | | | | <0.0001 | <0.0001 |
| Anion Sum | meq/L | - | | | | 10.9 | 8.45 |
| Cation Sum | meq/L | - | | | | 10.7 | 8.22 |
| % Difference | % | - | | | | 0.951 | 1.42 |
| TDS (Ion Sum Calc) | mg/L | 1 | 500 | AO | | 549 | 423 |
| Conductivity Calc | µmho/cm | - | | | | 972 | 770 |

**DWG - Drinking Water Guidelines**
ODWS - Ontario Drinking Water Standards
AO - Aesthetic Objectives
IMAC - Interim Maximum Acceptable Concentration
MAC - Maximum Acceptable Concentration
ODWO - D-5-5 Objective
OG - Operational Guidelines
WL - Warning Level - Sodium Restricted Diets

**Michelle Dubien**
**Data Specialist**

| Summary of Exceedances | | |
|---|---|---|
| **Aesthetic Objectives** | | |
| **829 A** | **Found Value** | **Limit** |
| TDS (Ion Sum Calc) | 549 | 500 |
| **Maximum Acceptable Concentration** | | |
| **829 A** | **Found Value** | **Limit** |
| Sodium | 23.5 | 20 |
| **Operational Guidelines** | | |
| **829 A** | **Found Value** | **Limit** |
| Organic Nitrogen | 0.2 | 0.15 |
| Hardness (as CaCO3) | 480 | 100 |
| **1019V** | **Found Value** | **Limit** |
| Hardness (as CaCO3) | 390 | 100 |
| **Warning Level - Sodium Restricted Diets** | | |
| **829 A** | **Found Value** | **Limit** |
| Sodium | 23.5 | 20 |

**Michelle Dubien**
**Data Specialist**

# APPENDIX D

## GROUNDWATER INTEFERENCE TABLES

**TABLE D-1**
**PREDICTED GROUND WATER INTERFERENCE LOCATION "A"**
**Ayton MECP D-5-5 Water Supply Investigations (23008.00)**

## INTERFERENCE LOCATION: Southwest Corner Lot 1 "A"

INTERFERENCE = 0.6 metres

| t(days) | T(m2/day) | S | Q(m3/day) |
|---|---|---|---|
| 150 | 40.0 | 1.00E-05 | 2.25 |

| RESIDENTIAL LOT # | CO-ORDINATES OF RESIDENTIAL WELL NORTHING | CO-ORDINATES OF RESIDENTIAL WELL EASTING | CO-ORDINATES OF OBSERVATION POINT NORTHING | CO-ORDINATES OF OBSERVATION POINT EASTING | DISTANCE FROM WELL (metres) | INCREMENTAL DRAWDOWN (metres) |
|---|---|---|---|---|---|---|
| Lot 1 | 20 | 5 | 0 | 0 | 21 | 0.067 |
| Lot 2 | 55 | 5 | | | 55 | 0.058 |
| Lot 3 | 90 | 5 | | | 90 | 0.054 |
| Lot 4 | 125 | 5 | | | 125 | 0.051 |
| Lot 5 | 160 | 5 | | | 160 | 0.049 |
| Lot 6 | 195 | 5 | | | 195 | 0.047 |
| Lot 7 | 230 | 5 | | | 230 | 0.045 |
| Lot 8 | 265 | 5 | | | 265 | 0.044 |
| Lot 9 | 300 | 5 | | | 300 | 0.043 |
| Lot 10 | 335 | 5 | | | 335 | 0.042 |
| Lot 11 | 370 | 5 | | | 370 | 0.041 |
| Lot 12 | 300 | 185 | | | 352 | 0.042 |
| Lot 13 | 230 | 160 | | | 280 | 0.044 |
| | | | | **Total Drawdown** | | **0.6** |

**TABLE D-2**
**PREDICTED GROUND WATER INTERFERENCE LOCATION "B"**
**Ayton MECP D-5-5 Water Supply Investigations (23008.00)**

## INTERFERENCE LOCATION: Northwest Corner Lot 11 "B"

INTERFERENCE = 0.6 metres

| t(days) | T(m2/day) | S | Q(m3/day) |
|---|---|---|---|
| 150 | 40 | 1.00E-05 | 2.25 |

| RESIDENTIAL LOT # | CO-ORDINATES OF RESIDENTIAL WELL NORTHING | CO-ORDINATES OF RESIDENTIAL WELL EASTING | CO-ORDINATES OF OBSERVATION POINT NORTHING | CO-ORDINATES OF OBSERVATION POINT EASTING | DISTANCE FROM WELL (metres) | INCREMENTAL DRAWDOWN (metres) |
|---|---|---|---|---|---|---|
| Lot 1 | 20 | 5 | 385 | 0 | 365 | 0.041 |
| Lot 2 | 55 | 5 | | | 330 | 0.042 |
| Lot 3 | 90 | 5 | | | 295 | 0.043 |
| Lot 4 | 125 | 5 | | | 260 | 0.044 |
| Lot 5 | 160 | 5 | | | 225 | 0.046 |
| Lot 6 | 195 | 5 | | | 190 | 0.047 |
| Lot 7 | 230 | 5 | | | 155 | 0.049 |
| Lot 8 | 265 | 5 | | | 120 | 0.051 |
| Lot 9 | 300 | 5 | | | 85 | 0.054 |
| Lot 10 | 335 | 5 | | | 50 | 0.059 |
| Lot 11 | 370 | 5 | | | 16 | 0.069 |
| Lot 12 | 300 | 185 | | | 204 | 0.047 |
| Lot 13 | 230 | 160 | | | 223 | 0.046 |
| | | | | **Total Drawdown** | | **0.6** |

**TABLE D-3**
**PREDICTED GROUND WATER INTERFERENCE LOCATION "C"**
**Ayton MECP D-5-5 Water Supply Investigations (23008.00)**

## INTERFERENCE LOCATION: Northeast Corner Lot 8 "C"

INTERFERENCE = 0.6 metres

| t(days) | T(m2/day) | S | Q(m3/day) |
|---|---|---|---|
| 150 | 40 | 1.00E-05 | 2.25 |

| RESIDENTIAL LOT # | CO-ORDINATES OF RESIDENTIAL WELL NORTHING | CO-ORDINATES OF RESIDENTIAL WELL EASTING | CO-ORDINATES OF OBSERVATION POINT NORTHING | CO-ORDINATES OF OBSERVATION POINT EASTING | DISTANCE FROM WELL (metres) | INCREMENTAL DRAWDOWN (metres) |
|---|---|---|---|---|---|---|
| Lot 1 | 20 | 5 | 290 | 100 | 286 | 0.043 |
| Lot 2 | 55 | 5 | | | 253 | 0.045 |
| Lot 3 | 90 | 5 | | | 221 | 0.046 |
| Lot 4 | 125 | 5 | | | 190 | 0.047 |
| Lot 5 | 160 | 5 | | | 161 | 0.049 |
| Lot 6 | 195 | 5 | | | 134 | 0.050 |
| Lot 7 | 230 | 5 | | | 112 | 0.052 |
| Lot 8 | 265 | 5 | | | 98 | 0.053 |
| Lot 9 | 300 | 5 | | | 96 | 0.053 |
| Lot 10 | 335 | 5 | | | 105 | 0.052 |
| Lot 11 | 370 | 5 | | | 124 | 0.051 |
| Lot 12 | 300 | 185 | | | 86 | 0.054 |
| Lot 13 | 230 | 160 | | | 85 | 0.054 |
| | | | | **Total Drawdown** | | **0.6** |

**TABLE D-4**
**PREDICTED GROUND WATER INTERFERENCE LOCATION "D"**
**Ayton MECP D-5-5 Water Supply Investigations (23008.00)**

**INTERFERENCE LOCATION: Northeast Corner Lot 12 "D"**

INTERFERENCE = 0.6 metres

| t(days) | T(m2/day) | S | Q(m3/day) |
|---|---|---|---|
| 150 | 40 | 1.00E-05 | 2.25 |

| RESIDENTIAL LOT # | CO-ORDINATES OF RESIDENTIAL WELL NORTHING | CO-ORDINATES OF RESIDENTIAL WELL EASTING | CO-ORDINATES OF OBSERVATION POINT NORTHING | CO-ORDINATES OF OBSERVATION POINT EASTING | DISTANCE FROM WELL (metres) | INCREMENTAL DRAWDOWN (metres) |
|---|---|---|---|---|---|---|
| Lot 1 | 20 | 5 | 290 | 100 | 286 | 0.043 |
| Lot 2 | 55 | 5 | | | 253 | 0.045 |
| Lot 3 | 90 | 5 | | | 221 | 0.046 |
| Lot 4 | 125 | 5 | | | 190 | 0.047 |
| Lot 5 | 160 | 5 | | | 161 | 0.049 |
| Lot 6 | 195 | 5 | | | 134 | 0.050 |
| Lot 7 | 230 | 5 | | | 112 | 0.052 |
| Lot 8 | 265 | 5 | | | 98 | 0.053 |
| Lot 9 | 300 | 5 | | | 96 | 0.053 |
| Lot 10 | 335 | 5 | | | 105 | 0.052 |
| Lot 11 | 370 | 5 | | | 124 | 0.051 |
| Lot 12 | 300 | 185 | | | 86 | 0.054 |
| Lot 13 | 230 | 160 | | | 85 | 0.054 |
| | | | | **Total Drawdown** | | **0.6** |

**TABLE D-5**
**PREDICTED GROUND WATER INTERFERENCE LOCATION "E"**
**Ayton MECP D-5-5 Water Supply Investigations (23008.00)**

## INTERFERENCE LOCATION: Central Area Lot 7 "E"

INTERFERENCE = 0.7 metres

| t(days) | T(m2/day) | S | Q(m3/day) |
|---|---|---|---|
| 150 | 40 | 1.00E-05 | 2.25 |

| RESIDENTIAL LOT # | CO-ORDINATES OF RESIDENTIAL WELL NORTHING | CO-ORDINATES OF RESIDENTIAL WELL EASTING | CO-ORDINATES OF OBSERVATION POINT NORTHING | CO-ORDINATES OF OBSERVATION POINT EASTING | DISTANCE FROM WELL (metres) | INCREMENTAL DRAWDOWN (metres) |
|---|---|---|---|---|---|---|
| Lot 1 | 20 | 5 | 230 | 50 | 215 | 0.046 |
| Lot 2 | 55 | 5 | | | 181 | 0.048 |
| Lot 3 | 90 | 5 | | | 147 | 0.049 |
| Lot 4 | 125 | 5 | | | 114 | 0.052 |
| Lot 5 | 160 | 5 | | | 83 | 0.055 |
| Lot 6 | 195 | 5 | | | 57 | 0.058 |
| Lot 7 | 230 | 5 | | | 45 | 0.060 |
| Lot 8 | 265 | 5 | | | 57 | 0.058 |
| Lot 9 | 300 | 5 | | | 83 | 0.055 |
| Lot 10 | 335 | 5 | | | 114 | 0.052 |
| Lot 11 | 370 | 5 | | | 147 | 0.049 |
| Lot 12 | 300 | 185 | | | 152 | 0.049 |
| Lot 13 | 230 | 160 | | | 110 | 0.052 |
| | | | | **Total Drawdown** | | **0.7** |