Functional Stormwater Management Report

East Communication Road, Bridgenorth, Ontario

Township of Selwyn, County of Peterborough

Engage Project Number 25096

Engage Engineering Ltd.

Issued for Draft Plan of Subdivision

December 05, 2025

Revision Summary

Revision No.	Revision Title	Date	Revision Summary
1	Issued for OPA, ZBA and Draft Plan of Subdivision	2025-12-05	Final

Land Acknowledgement

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Executive Summary

Base Land Developments Inc. is proposing a 38-lot residential subdivision between Ward Street and East Communication Road in Bridgenorth, Ontario. This Functional Stormwater Management Report supports the OPA, ZBA, and Draft Plan of Subdivision applications by summarizing existing and proposed hydrologic conditions, sizing stormwater systems for quantity and quality control, and identifying suitable low impact development (LID) measures.

Hydrologic modeling using Visual OTTHYMO confirms that the proposed stormwater block can accommodate a wet pond designed to meet regulatory requirements for peak flow attenuation and water quality treatment. Due to shallow groundwater, infiltration-based LID features are not feasible; instead, the proposed stormwater strategy incorporates roof downspout disconnection, vegetated swales, soil amendments, and extended flow paths to promote infiltration and maintain water balance.

A conveyance system of culverts and swales will safely direct runoff into wet pond, reducing peak flows, improving water quality, and protecting downstream properties. The recommendations within this report ensure compliance with local guidelines and support sustainable development. This report provides a framework for detailed design.

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1.0 Introduction

1.1 Purpose

Engage Engineering Limited (Engage) has been retained by Base Land Developments Inc. to prepare a Functional Stormwater Management Report in support the proposed residential development located at East Communication Road and 7th Line in Bridgenorth. The development will include 38 single family lots, various new roads throughout the subdivision and supporting infrastructure.

The purpose of this report is to quantify the impact that the proposed development will have on stormwater, runoff rates and to recommend any stormwater management measures required to maintain post-development to pre-development flows and reduce water quality impact on downstream receivers.

Pre-consultation with Selwyn Township, Peterborough County and other stakeholders was completed in September 2025. The review agencies requested various documents including a Stormwater Management Report.

Recommendations made in this report are in accordance with Otonabee Region Conservation Authority (ORCA), Selwyn Township, and Peterborough County requirements, in addition to current stormwater management best practices.

1.2 Site Description

The Subject Site is located in Bridgenorth, Ontario, between Ward Street to the west and East Communications Road / 7th Line to the east. The site has street frontage to East Communications Road and Gore Street. The site has a total area of approximately 15.57 hectares and is currently used for agricultural purposes with no existing buildings or structures. There is a forested area in the central portion of the site and along parts of its perimeter.

The surrounding area features a mix of commercial, institutional, residential, and agricultural uses. To the north and east, the site is bordered by single family residential dwellings off Burnside Road and East Communication Road. The lands to the south are primarily agricultural. To the west of the site are commercial buildings along Ward Street and the Chemong Public School.

The location of the subject site is identified on the Location Plan included as **Figure 1**.



Figure 1: Location Plan

1.3 Background and Supporting Studies

A Hydrogeological and Geotechnical Investigation Report was prepared by GHD Limited (GHD) dated November 18, 2025. The Investigation Report was completed to obtain information about the soils and groundwater conditions at test hole locations and summarize the conditions encountered. The report determined approximate groundwater depths, includes preliminary water balance calculations, and provides a discussion and recommendations for a stormwater management pond. The sites subsurface conditions are generally described as a layer of topsoil, overlying a layer of native silty sand / sandy silt followed by a layer of sandy silt / silty sand till. Eight monitoring wells were installed to observe groundwater levels throughout the site and preliminary infiltration rates were determined through In-situ percolation rate testing. The Hydrogeological and Geotechnical Investigation Report is included in **Appendix H**.

Beninger Surveying Ltd prepared a topographic survey of the majority of the site dated January 24, 2011 and an additional topographic survey was completed on the west portion of the site was completed by Elliott and Parr (Peterborough) dated December 16, 2024. The surveys were used to determine existing elevations, locations of existing features on the site, and to establish proposed grading and functional servicing design for the proposed development of the site. Both topographic surveys can be found in **Appendix A.**

Engage completed a site visit on October 27, 2025 to gather field information in support of the stormwater management and grading design. The purpose of the visit was to confirm the sites topography, evaluate the existing drainage patterns, locate existing infrastructure and verify the potential stormwater outlets.

1.4 References

The following guidelines, regulations and resources were referenced during the preparation of this stormwater management design and report:

- Ontario Ministry of Environment, Conservation, and Parks. (2003). Stormwater Management Planning and Design Manual.
- Sustainable Technologies Evaluation Program, Toronto and Region Conservation Authority (2019). Erosion and Sediment Control Guide for Urban Construction.
- Sustainable Technologies Evaluation Program. LID SWM Planning and Design Guide. Online Wiki accessed (October 2025)
- Standards & Contracts Branch, Highway Desing Office, Ontario Ministry of Transportation, (2023, January). MTO Hydrotechnical Design Charts.
- Civica Infrastructure Inc. (2019, January) Visual OTTHYMO, Reference Guide. Version 6.0

- Conservation Authority Guidelines for Development Applications (2013, June). Hydrogeological Assessment Submissions.
- Ganaraska Region Conservation Authority (GRCA) (2014, December). Technical and Engineering Guidelines for Stormwater Management Submissions

These references provided the foundation for the design and implementation of the stormwater management strategies discussed in this report. Adhering to these established guidelines ensures that the practices used are not only effective, but also compliant with the necessary regulatory frameworks.

2.0 Hydrologic Analysis

2.1 Hydrologic Model

As part of this report, a hydrologic model representing the site under both existing and proposed conditions was developed using Visual OTTHYMO (VO) software. The model was used to simulate peak flows from the site under pre-development and post-development conditions for a variety of storm distributions and durations, as well as to verify stormwater management storage requirements and performance of the controls.

Rainfall data from the Metrological Services of Canada Peterborough A station was used to develop the storm distributions in the model following typical recommendations from Otonabee Conservation. The rainfall data can be found in **Appendix A**.

The Hydrogeological and Geotechnical Investigation Report, aerial imagery and the topographic survey were used to determine the land use and soil types for the hydrologic model**.** According to the Geotechnical Investigation the soils are generally characterized as silty sand / sandy silt. These soils have been classified as hydrologic Soils Group B for the purpose of this analysis. This classification aligns with the Hydrologic Soil Group mapping by the Ontario Ministry of Agriculture Food and Agribusiness, included in **Appendix A**.

Weighted Curve Numbers (CN) were established based on MTO Hydrotechnical Design Charts. These CN values were further converted into a CN* value using a total precipitation of 90 mm and initial abstraction of 5 mm.

Topographic information from the site survey, along with contour data from the County of Peterborough's online mapping, was used to delineate the existing and external catchment areas, and to determine the corresponding catchment lengths and times to peak.

2.2 Existing Conditions

The existing site is approximately 15.6 ha in size consisting primarily of crop land. There is a forested area in the centre of the site and treed hedge rows between the crop fields.

The site contains a highpoint that splits runoff northwest towards the commercial buildings, and southeast towards the adjoining agricultural lands.

2.2.1 Drainage Works

Based on discussions with the property owner, the stormwater runoff generated from the site has historically contributed to drainage issues for the neighbouring commercial property, which is also owned by the applicant. A berm and channel were constructed along the property boundary within the past seven years with the intent of alleviating the drainage problems. The berm alters the drainage patterns and creates a low area within the subject site that temporarily retains surface runoff during rainfall events. A small, corrugated pipe was installed through the berm, conveying limited flows into a catch basin located on the neighbouring property.

These features are understood to have been constructed as temporary measures to address localized drainage concerns rather than part of a regulated and approved stormwater management system. They have not been included in the existing site conditions.

The proposed stormwater management system will help alleviate the neighbouring properties drainage problems by properly capturing and controlling the stormwater runoff.

2.2.2 Existing Catchment Areas

There are three existing catchment areas, and one external catchment area, that can be identified on the **Pre Development Catchment Area Plan** included as **Figure 3**. A description of the catchment areas can be found below.

- **EX1** (11.34 ha): Is located in the northwestern portion of the site. This catchments landuse is a mix of grassed area, agricultural crop area and forested area. Runoff generated from this catchment flows northwest, towards the commercial area where it is collected in the existing storm sewers or flows overland into the Ward Street conveyance system. Runoff from this catchment will ultimately flow along Ward Street and Gore Street into Chemong Lake.

- **EX2** (2.63 ha): Is located in the south portion of the site. This catchment consists of agricultural crop areas and treed hedgerows. Runoff generated from this catchment sheet flows towards the southwest into the adjacent agricultural lands and eventually flows into Miller Creek.

- **EX3** (1.59 ha): is located in the southeastern portion of the site. This catchment consists of agricultural crop area and treed hedgerows. Runoff generated from this catchment drains towards the south eventually into the wetland southeast of the site and Miller Creek.

- **EXT4** (0.90 ha): Is located northeast of the site. This catchment consists of the five existing residential lots with grassed lawns and impervious roofs and driveways. Excess runoff generated from this catchment area will sheet flow west onto the site through EX1. 50% of the measured impervious area for this catchment area has been considered directly connected.

The existing characteristics of the drainage areas are summarized in **Table 1**. Area calculations and hydrologic characteristics are in **Appendix B**. Full VO model input parameters can be found in **Appendix C.**

Table 1 - Existing Catchment Area Characteristics

Catchment	Area (ha)	CN*	TP (hr)	VO Command
EX1	11.34	67	0.31	NASHYD
EX2	2.63	72	0.31	NASHYD
EX3	1.59	72	0.11	NASHYD
EXT4	0.90	59	0.13	STANDHYD

2.3 Proposed Conditions

Under the proposed conditions, the topography will change to accommodate the grading for the proposed buildings, roads and infrastructure. The proposed subdivision includes 38 residential lots with an average size of 2700 m^2 (2/3 acres) There are three proposed internal roads that connect Gore Street and East Communication Road. Along the north boundary of the site is a stormwater management block and dedicated park block. The proposed Draft Plan of Subdivision is included as **Figure 2**.

There are four proposed catchment areas and one external catchment area identified on the **Post Development Catchment Area Plan** included as **Figure 4.** The external catchment area, EXT4, is unchanged from the existing conditions.

The respective internal catchment areas and their characteristics are summarized below.

- **PR1** (12.63 ha): Is located on the northwest part of the site containing the majority of the site's total area. This area includes 30 of the proposed development lots, the majority of the proposed streets, the stormwater management block and park block. Runoff generated from this area will be collected in roadside swales and directed into the proposed wet pond for controls.

- **PR2** (0.56 ha): Is located on the west side of the site, containing the site entrance off Gore Street. Runoff generated from this catchment area will be collected in a roadside swale and directed into the existing storm sewer along Gore Street.

- **PR3** (1.16 ha): Is located on the southwest corner of the site, containing the rear portions of four residential lots. This area is composed of grassed lawns and impervious rooftops and driveways. Runoff generated from this catchment area is proposed to flow uncontrolled into the adjacent agricultural lands and eventually reach Miller Creek. Due to grading constraints and the sites existing high point it is not feasible to capture and control this area.

- **PR4** (1.22 ha): Is located on the southeast corner of the site, containing the rear portions of four residential lots. This area contains grassed lawns and impervious rooftops and driveways. Runoff generated from this catchment area is proposed to flow uncontrolled towards the east eventually reaching the wetland and Miller Creek. Due to grading constraints and the sites existing high point it is not feasible to capture and control this area.

The hydrological characteristics of the proposed catchment areas were determined using the proposed site plan and grading plan. The road surface area was measured directly from the concept site plan and increased by 20% to account for potential additional impervious surfaces in the right of way. The residential area has been assigned a percent impervious of 23% and directly connected percent impervious of 15% following suggested values for ½ acre lots from GRCA guidelines. The key characteristics are summarized in **Table 2**. A complete list of the hydrologic parameters and area calculations can be found in **Appendix B**. VO model parameter inputs are included in **Appendix C.**

Table 2 - Proposed Catchment Area Characteristics

Catchment	Area (ha)	TIMP	XIMP	CN*	VO Command
PR1	12.63	0.32	0.24	59	STANDHYD
PR2	0.56	0.33	0.33	59	STANDHYD
PR3	1.16	0.23	0.15	59	STANDHYD
PR4	1.22	0.23	0.15	59	STANDHYD

2.4 Existing and Proposed Peak Flows

Design storm events of various distributions and durations were simulated to capture a range of potential rainfall intensities and volumes and to identify the controlling peak

flow rates and maximum storage requirements. Shorter duration storms generally produce higher rainfall intensities, resulting in greater peak flows, while longer duration storms produce larger total rainfall volumes, which can govern storage requirements in stormwater management facilities. All storm events were derived using the Peterborough A's rainfall stations data. A summary of the 100 year peak flows and storage required to attenuate the peak flows is in **Table 3.**

Table 3 – Design Storm Comparison

100 Year Design Storm	EX1 Peak Flow [m^3/s]	PR1 Peak Flow [m^3/s]	Maximum Storage Required* [m^3]
AES 1hr 30%	0.553	1.412	1970
AES 12hr 30%	0.274	0.357	1829
Chicago 4hr	0.681	1.512	2308
Chicago 6hr	0.729	1.557	2412
Chicago 12hr	0.809	1.632	2545
SCS 6hr Type II	0.980	1.710	2778
SCS 12hr Type II	0.990	**2.127**	**2849**
SCS 24hr Type II	**0.995**	1.871	2838

*Maximum Storge Required based on the rating curve of a representative storage feature. This value is calculated early in the modeling to represent the approximate difference between design storms, not the actual storage requirements.

Based on the model results, the 12 hour storm was identified as the controlling event for pond storage, while the 24 hour SCS Type II storm produced the highest peak flow for existing conditions and the 12 hour SCS Type II storm produced the highest peak flow for proposed conditions. The 12 hour SCS Type II distribution and duration was selected as design storm for the site because it represents the critical condition for both peak flow and storage volume under the post development conditions and will result in appropriately sized infrastructure for the site.

Three sets of allowable release rates have been determined for the site based on existing peak flows of the corresponding catchment areas. The allowable release rates directed northwest, towards Ward Street, are the peak flows from catchment areas EX1 and EXT4. The allowable release rate for the areas directed southwest and southeast

are EX2 and EX3 respectively. The proposed catchment areas directed northwest include PR1, PR2 and EXT4. The proposed catchment areas directed southwest is PR3 and southeast is PR4.

Table 3, Table 4 and **Table 5** summarize the allowable release rates and proposed uncontrolled release rates for the site.

Table 4 – Allowable and Proposed Uncontrolled Peak Flows Northwest

Design Storm	Allowable Discharge Rate (EX1 + EXT4) [m^3/s]	Proposed Uncontrolled Discharge Rate (PR1 + PR2 + EXT4) [m^3/s]
2 Year	0.240	0.654
5 Year	0.422	1.015
10 Year	0.563	1.266
25 Year	0.756	1.604
50 Year	0.923	1.890
100 Year	1.076	2.342

The model results indicate that in the absence of any quantity controls, the peak flows discharging from the site will increase when compared to the allowable release rates. Some form of quantity control is required for the catchment areas directed towards the northeast. Detailed model results are included in **Appendix D**.

Table 5 – Allowable and Proposed Uncontrolled Peak Flows Southwest

Design Storm	Allowable Discharge Rate (EX2) [m^3/s]	Proposed Uncontrolled Discharge Rate (PR3) [m^3/s]
2 Year	0.062	0.040
5 Year	0.108	0.068
10 Year	0.142	0.087
25 Year	0.189	0.126
50 Year	0.228	0.152
100 Year	0.265	0.176

Table 6 – Allowable and Proposed Uncontrolled Peak Flows Southeast

Design Storm	Allowable Discharge Rate (EX3) [m^3/s]	Proposed Uncontrolled Discharge Rate (PR4) [m^3/s]
2 Year	0.070	0.042
5 Year	0.119	0.069
10 Year	0.155	0.088
25 Year	0.205	0.115
50 Year	0.247	0.138
100 Year	0.285	0.180

As outlined in **Table 5** and **Table 6**, the uncontrolled discharge rates under the proposed conditions are lower than the corresponding allowable release rates. Quantity control measures are not required for these catchments and the existing drainage patterns, and downstream capacity are expected to adequately convey the proposed uncontrolled flows without adverse impacts on adjacent properties.

3.0 Stormwater Management

A stormwater management strategy has been developed for the site to mitigate the potential impacts of the proposed development on the natural hydrologic cycle and neighbouring properties. The strategy includes a proposed wet pond, roadside swales, and culverts to provide the required quantity and quality control measures. In addition, Low Impact Development (LID) practices are incorporated to promote infiltration, and maintain the water balance of the site.

3.1 Quantity Control

The results of the hydrologic analysis indicate the peak flow rates directed towards the northwest will be greater than the allowable rates in absence of any quantity controls. A wet pond is proposed to provide control of post development runoff to allowable levels. VO model calculations were completed including the wet pond to determine the storage volumes and land area required to construct a pond that will attenuate the peak flows to allowable levels. The intent of the analysis at this stage is to ensure the feasibility of a wet pond within the provided stormwater block. The exact dimensions and details of the pond will be determined during the detailed design phase when additional details are available.

A functional wet pond surface was modeled within the pond block to determine a feasible stage storage relationship and size. The functional pond has side slopes of 5:1 and a permanent pool elevation set to 261.00 m, at the approximate high groundwater elevation observed in the nearby borehole BH4B-24 and BH4A-24. The total active storage within the pond is 4771 m^3 with a surface area of 5309 m^2.

A rating curve has been developed for the pond using the stage storage and a two stage control structure. The control structure consists of a 125 mm orifice tube and 1.5 m rectangular weir. The orifice tube can be constructed as a reverse sloped pipe that will control more frequent storms and extend the detention time beyond 24 hours. The weir controls the larger storm events up to and including the 100 year event. The weir can be constructed within the side wall of a box culvert and direct flows into a new storm sewer. An emergency overflow and forebay will be included in the detailed design of the pond. The exact configuration of the outlet will be reevaluated during the detailed design stage of the project.

An abbreviated stage storage discharge (SSD) relationship for the wet pond is shown in **Table 7**. The complete stage storage discharge table is included in **Appendix C**.

Table 7 – Wet Pond Stage Storage Discharge

Description	Stage [m]	Discharge [m³/s]	Active Storage Required [m³]
Permanent Pool	261.00	-	-
25 mm WQ Storm	261.25	0.017	829
2 Year	261.35	0.087	1349
5 Year	261.45	0.221	1760
10 Year	261.50	0.335	2045
25 Year	261.60	0.504	2418
50 Year	261.65	0.655	2721
100 Year	261.75	0.816	3026
Top of Pond	262.10	2.048	-

The proposed wet pond has sufficient active storage volume to attenuate the 2 year through 100 year design storm flows to acceptable levels. **Table 8** demonstrates the overall discharge rates directed towards the northwest are at or below pre development release rates. The proposed discharge rates include uncontrolled flows from PR2 and controlled flows from PR1. These results were extracted from the VO model results found in **Appendix D**.

Table 8 – Total Allowable and Proposed Release Rates Northwest

Design Storm	Allowable Discharge Rate (m^3/s)	Proposed Discharge Rate (m^3/s)
2 Year	0.240	0.091
5 Year	0.422	0.231
10 Year	0.563	0.350
25 Year	0.756	0.525
50 Year	0.923	0.679
100 Year	1.076	0.849

3.2 Quality Controls

Quality control is required for this site as the stormwater runoff from impervious surfaces will contain suspended solids and contaminants that can impact the receiving water course if released uncontrolled. Quality control for most of the site is provided by the permanent pool and extended detention within the wet pond.

No physical water quality controls are proposed for catchment areas PR2, PR3, and PR4. These catchments consist primarily of vegetated surfaces such as rear lots, landscaped areas and grassed swales, with very limited impervious coverage. Due to their relatively low potential for pollutant loading, dedicated water quality treatment measures are not warranted. In addition, the topography and site grading do not allow these areas to be efficiently conveyed to the proposed wet pond. These catchments will rely on natural infiltration and overland flow through vegetated areas to provide passive water quality treatment.

The remainder of the site will be controlled by the proposed wet pond. The total drainage area directed to the proposed wet pond is 13.54 ha, with an overall imperviousness of 32%. Based on the design criteria presented in Table 3.2 of the Stormwater Management Planning and Design Manual (2003), a water quality storage volume of 140 m^3/ha is required for a contributing area with 32% impervious cover. The total water quality storage requirement therefore equals 1,895 m^3. This volume includes two components: the permanent pool and the extended detention volume. The extended detention volume is defined as the greater of 40 m^3/ha or the volume necessary to retain the 25 mm design storm for more than 24 hours, while the remaining 100 m^3/ha is provided as the permanent pool below the outlet invert.

The proposed wet pond has a bottom surface area of approximately 3282 m². With a minimum permanent pool depth of 1.0 m, the available storage volume is approximately 3200 m³. This volume exceeds the required water quality volume even after accounting for storage reduction from the forebay berm that will be included in the detailed design. The proposed facility will therefore provide adequate water quality control for the site and is expected to achieve a long-term total suspended solids (TSS) removal efficiency greater than 80%. Detailed water quality calculations are included in **Appendix E**.

Drawdown calculations were completed using the preliminary wet pond to ensure it has sufficient volume to retain the 25 mm water quality storm for more than 24 hours. The proposed pond has a drawdown time of 32.2 hours. Full calculations are provided in **Appendix E**.

3.3 Low Impact Developments

The design and inclusion of various low impact development features was considered during the development stage of the stormwater management strategy. Multiple constraints present on this site limit the viability of infiltration low impact development features but alternative strategies are proposed to enhance infiltration throughout the site.

During the hydrogeological and geotechnical investigation, ten test pits and ten boreholes were placed throughout the site. Eight of the boreholes had monitoring wells installed to observe groundwater levels throughout the site. Groundwater seepage was observed in seven of the test pits and eight of the ten boreholes during the drilling process. Groundwater elevations readings were collected in April and May of 2024. The groundwater levels in April 2024 were all less than 1 m from the ground surface. Additional details can be found in the Hydrogeological and Geotechnical Investigation Report included in **Appendix H**.

Shallow groundwater presents challenges with respect to the location, design, and function of infiltration features. The Low Impact Development Stormwater Management Planning and Design Guide outlines the concerns related to potential for contamination of groundwater resources through the introduction of pollutants from stormwater into the groundwater system. The proposed residential development and surrounding properties rely on groundwater for their potable water supply therefore the protection of groundwater quality in these areas is critical. Infiltration features located within 1 m of the seasonally high water table could lead to groundwater contamination or practice failure.

According to Table 3.4.1 of the Low Impact Development Stormwater Management Planning and Design Guide. Four structural LID practices do not have restrictions related to minimum groundwater depths: rain barrels, green roofs, roof downspout disconnection and Biofilters (filtration only Bioretention Design).

Rain barrels can be promoted as effective rainwater harvesting systems for homeowners, but they require a high degree of owner compliance to perform as a reliable stormwater management control. The unpredictability and inconsistent nature of theses LIDs mean they are not a reliable strategy for this development but still should be promoted as a best practice.

Green roofs are generally suited for large, flat rooftops because they require significant large surface areas and specifically designed drainage systems to function effectively. These systems are typically not practical for single family residential developments, which often have sloped roofs, and smaller surface areas that make installation and maintenance challenging. Based on the constraints, green roofs have not been considered for this development.

Roof downspout disconnection is a reliable form of low impact development and has been incorporated in the stormwater management solution for the site. This practice involves directing flow from roof downspouts to a pervious area that drains away from the building. The redirection prevents stormwater from directly entering the conveyance system and provides the opportunity to infiltrate. The minimum flow length of 5 m will be provided, and the landscape will be tilled and amended to increase its infiltration rate. Additional details on the downspout disconnections, soil amendments and concerns with private property ownership will be included at the detailed design stage.

Biofilters are a design variation of infiltration bioretention features that feature an impermeable liner and underdrain. They are typically applied as pretreatment to another stormwater control features. Due to additional maintenance costs and minimal improvements to the stormwater management system, these features have not been considered viable for the proposed development.

Extended drainage flow paths have been designed for the proposed development. These extended paths will slow down flows and allow more opportunities for stormwater to be filtered and infiltrated. The extended flow paths follow vegetated open channels as a preferred alternative to curb and gutter and storm drains. Opportunities to enhance the grassed swales with check dams, amended soils, and wide bottom widths will be evaluated at the detailed design stage and used to the maximum extend possible.

3.4 Stormwater Conveyance

Stormwater runoff generated from the majority of the site will be collected and conveyed into the proposed wet pond through vegetated grass swales and culverts along the proposed roads. The swales and culverts will be sized to safely convey the 100 year design flows into the pond for controls. Conveyance calculations for typical proposed swales that can be used in the detailed design have been completed and are found in **Appendix F**. The calculation results are summarized in **Table 9**.

Table 9 – Conveyance Swale Calculations

Typical Swale	Design Flow	Design Parameters	Full Channel Capacity	% Capacity	Velocity
Swale Into Wet Pond	2.25 m^3/s, 100 Year	Bed Slope: 2% Side Slope: 3:1 Bottom Width: 1.5 m Depth: 1.0 m	14.68 m^3/s	15%	1.99 m/s
Swale Into Wet Pond	0.46 m^3/s, 25 mm WQ	Bed Slope: 2% Side Slope: 3:1 Bottom Width: 1.5 m Depth: 1.0 m	14.68 m^3/s	3%	1.26 m/s
Roadside Swale	1.13 m^3/s, 50% of 100 Year	Bed Slope: 2% Side Slope: 3:1 Bottom Width: 0.0 m Depth: 0.7 m	3.33 m^3/s	34%	1.73 m/s

Stormwater flows controlled by the wet pond will discharge into a new storm sewer located between the commercial buildings northwest of the pond. The commercial landowner has agreed to provide an easement through the property to allow for access to the storm pond and underground pipes. The storm sewer will connect to the existing system beneath Ward Street and ultimately outfall to Chemong Lake via Gore Street. A detailed downstream capacity assessment will be undertaken as part of the detailed design in conjunction with the Ward Street rehabilitation. The storm sewer will need to be sized to convey the controlled 100 year flows from the pond. The proposed flow route is outlined in **Figure 5**.

Alternative storm sewer outlet locations were reviewed as part of the preliminary design. No other feasible outlet locations were identified based on the existing site topography and proposed site layout.

3.5 Water Balance

Generic water balance calculations for the site were completed by GHD in the Hydrogeological and Geotechnical Investigation Report. The report concludes that annual pre development infiltration rates can be maintained using Low Impact Development features such as disconnected downspouts and enhanced swales. The water balance will be reviewed in conjunction with the design of enhanced swales during the detailed design stage.

4.0 Operation and Maintenance

Proper operation and maintenance are critical to ensure the long term effectiveness of stormwater management facilities. The wet pond and other stormwater features will be designed to allow simple inspections and maintenance. A comprehensive inspection, operation, and maintenance plan will be prepared during the detailed design phase of the project.

5.0 Erosion and Sediment Control Plan

The development of the site, particularly the stripping of the site, will result in an area of exposed native soil, which in turn has the potential to erode and contribute sediment to downstream receivers. To mitigate these effects, and erosion and sediment control plan will be developed that incorporate best practices as outlined in the Erosion and Sediment Control Guidelines for Urban Construction, GGHCA.

The erosion and sediment control plan will include a phased approach to controls with boundary controls, interceptor swales, and a temporary sediment pond within the stormwater block. The full plan will be developed during the detailed design of the site.

6.0 Summary

The proposed residential development at East Communication Road in Bridgenorth, Ontario, will include 38 single family lots, various new roads, and supporting infrastructure. The proposed development will alter the site's hydrology by increasing impervious surfaces and changing drainage patterns. A stormwater management strategy has been developed to mitigate the negative impacts of the development on stormwater and provide the required controls.

The strategy includes a wet pond designed to provide both quantity and quality control, ensuring post-development peak flows are reduced to allowable levels and achieving over 80% total suspended solids (TSS) removal efficiency. Additional measures such as vegetated swales, roof downspout disconnection, and extended flow paths will promote infiltration and maintain water balance.

Hydrologic modeling confirms that the proposed system is sufficiently sized to control runoff for all storm events up to the 100 year storm, protect downstream infrastructure, and minimizes risk to adjacent properties.

Prepared by:

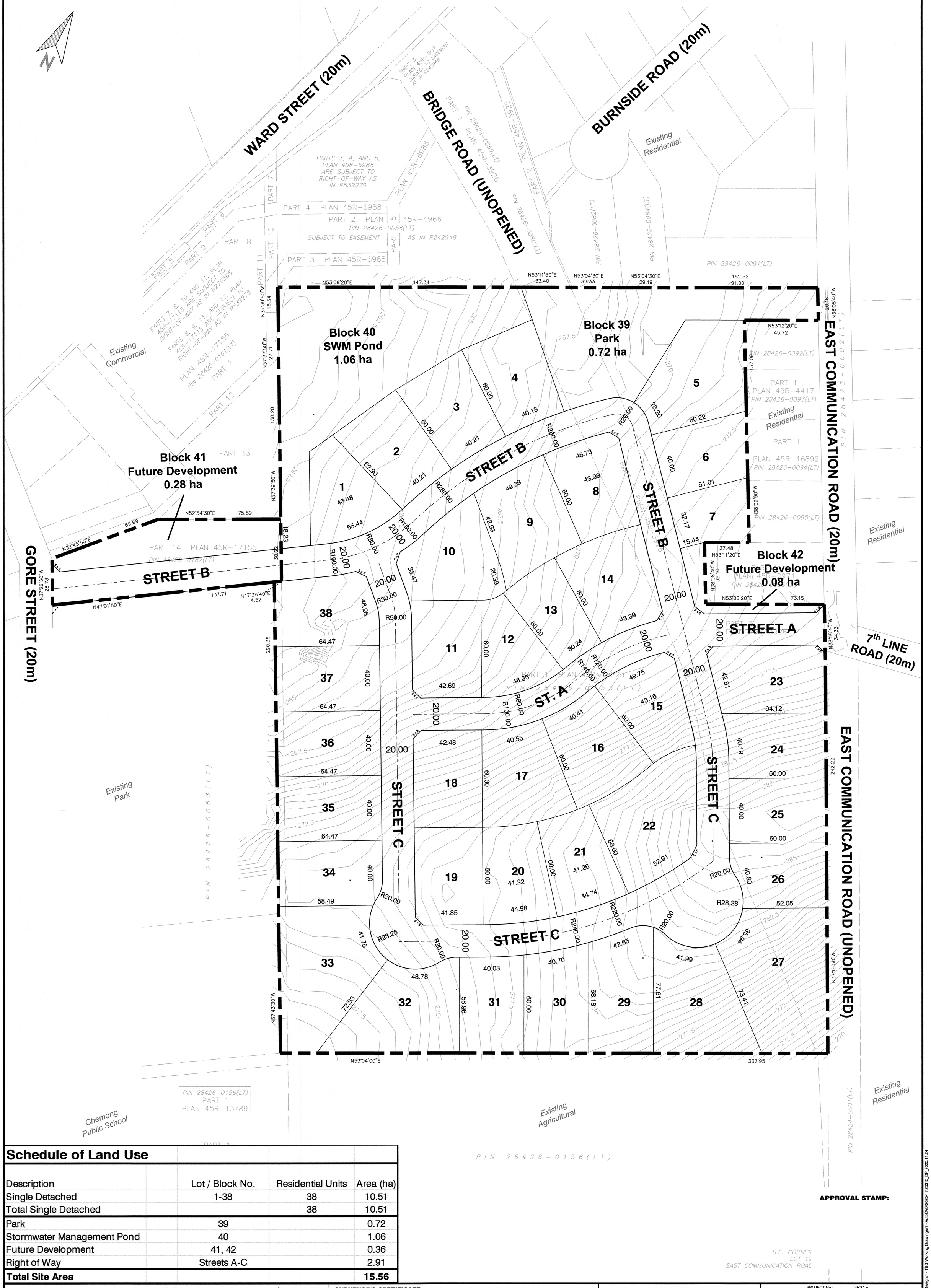


Logan Mattern, P. Eng.
Water Resources Engineer

Reviewed by:

Lucas Parsons. P. Eng.
Water Resources Group Manager

Figure 2: Draft Plan of Subdivision



Schedule of Land Use

Description	Lot / Block No.	Residential Units	Area (ha)
Single Detached	1-38	38	10.51
Total Single Detached		38	10.51
Park	39		0.72
Stormwater Management Pond	40		1.06
Future Development	41, 42		0.36
Right of Way	Streets A-C		2.91
Total Site Area			**15.56**

TITLE:

DRAFT PLAN OF SUBDIVISION

LEGAL DESCRIPTION:

DRAFT PLAN OF SUBDIVISION
PART OF LOT 12
EAST OF COMMUNICATION ROAD
GEOGRAPHIC TOWNSHIP OF SMITH
TOWNSHIP OF SELWYN
COUNTY OF PETERBOROUGH

CHEMONG LAKEVIEW ESTATES

KEY PLAN:

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATE AND CORRECTLY SHOWN IN ACCORDANCE WITH A PLAN OF SURVEY PREPARED BY ELLIOTT AND PARR

SHAWN M. O'CONNOR O.L.S.
ELLIOTT AND PARR

11/27/25
DATE

OWNER'S CERTIFICATE:

I HEREBY AUTHORIZE **THE BIGLIERI GROUP LTD.** TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE COUNTY OF PETERBOROUGH

JEFF PETERS
LAND DEVELOPMENTS INC.
BRIDGE NORTH LAND INC.

DATE

REQUIRED INFORMATION:

AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990.

(a) SEE PLAN
(b) SEE PLAN
(c) SEE KEY MAP
(d) SEE SCHEDULE OF LAND USE
(e) SEE PLAN
(f) SEE PLAN
(f.1) N/A
(g) SEE PLAN
(h) PRIVATE SERVICES AVAILABLE
(i) SILTY SAND, SANDY SILT, SILTY SAND TILL
(j) SEE PLAN
(k) PRIVATE SERVICES AVAILABLE
(l) SEE PLAN

NOTE:
DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

REVISIONS

No.	Description	Date	Int.
3			
2			
1			

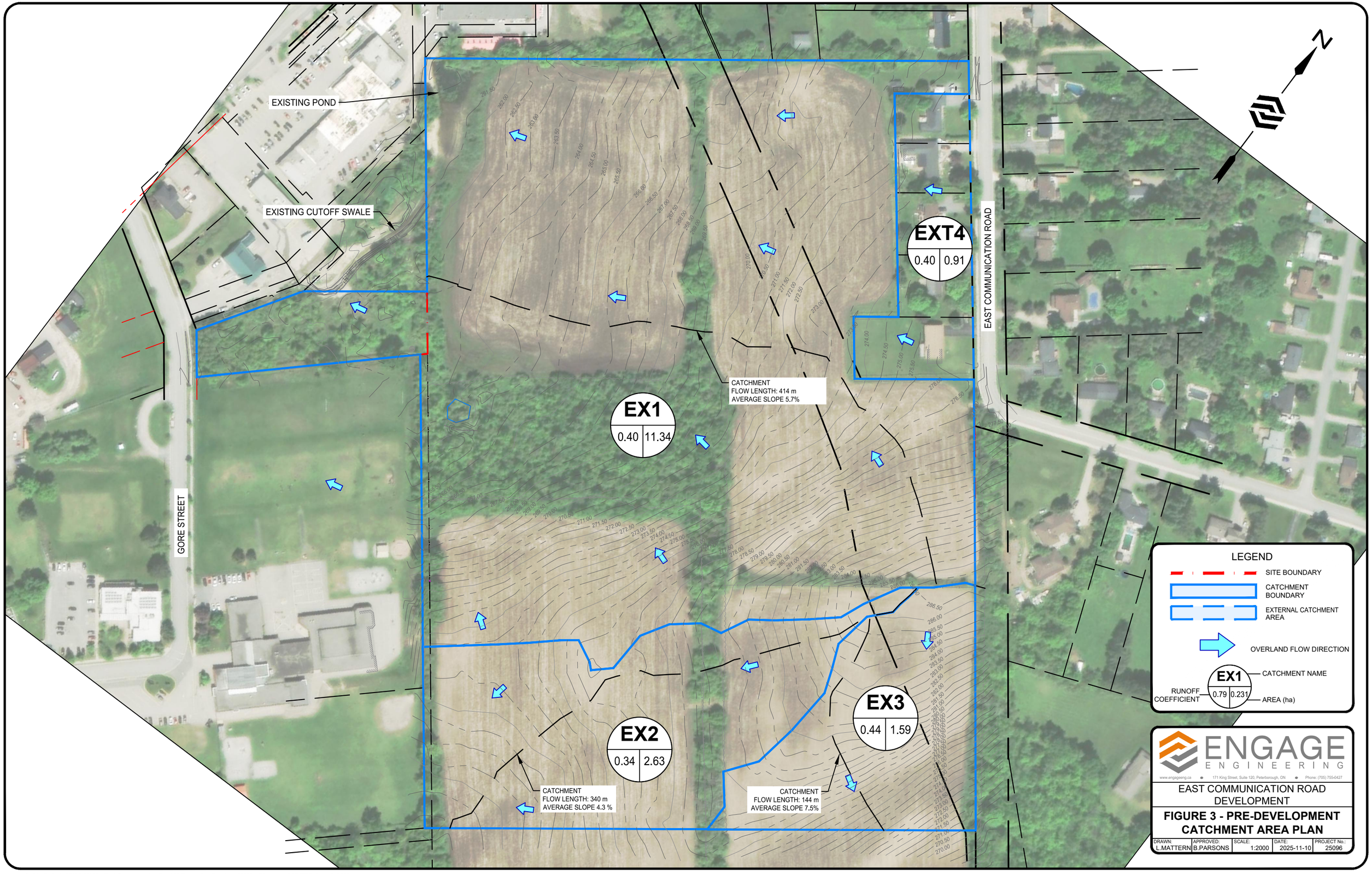
PROJECT No.:	25315
DATE:	November 13, 2025
SCALE:	1:1000
DRAFTED BY:	EC
CHECKED BY:	MP
DRAWING No.:	DP-01

APPROVAL STAMP:

Biglieri
2472 Kingston Road, Toronto
21 King Street W, Suite 1502, Hamilton
(416) 693-9155
thebiglierigroup.com

C:\Users\ericc\The Biglieri Group\TBG_Project - 2025-2029\2025\25315\2 - TBG Design\1 - TBG Working Drawings\1 - AutoCAD\2025-11\25315_DP_2025.11.24

Figure 3: Pre Development Catchment Area Plan



ENGAGE ENGINEERING
www.engageeng.ca • 171 King Street, Suite 120, Peterborough, ON • Phone: (705) 755-0427

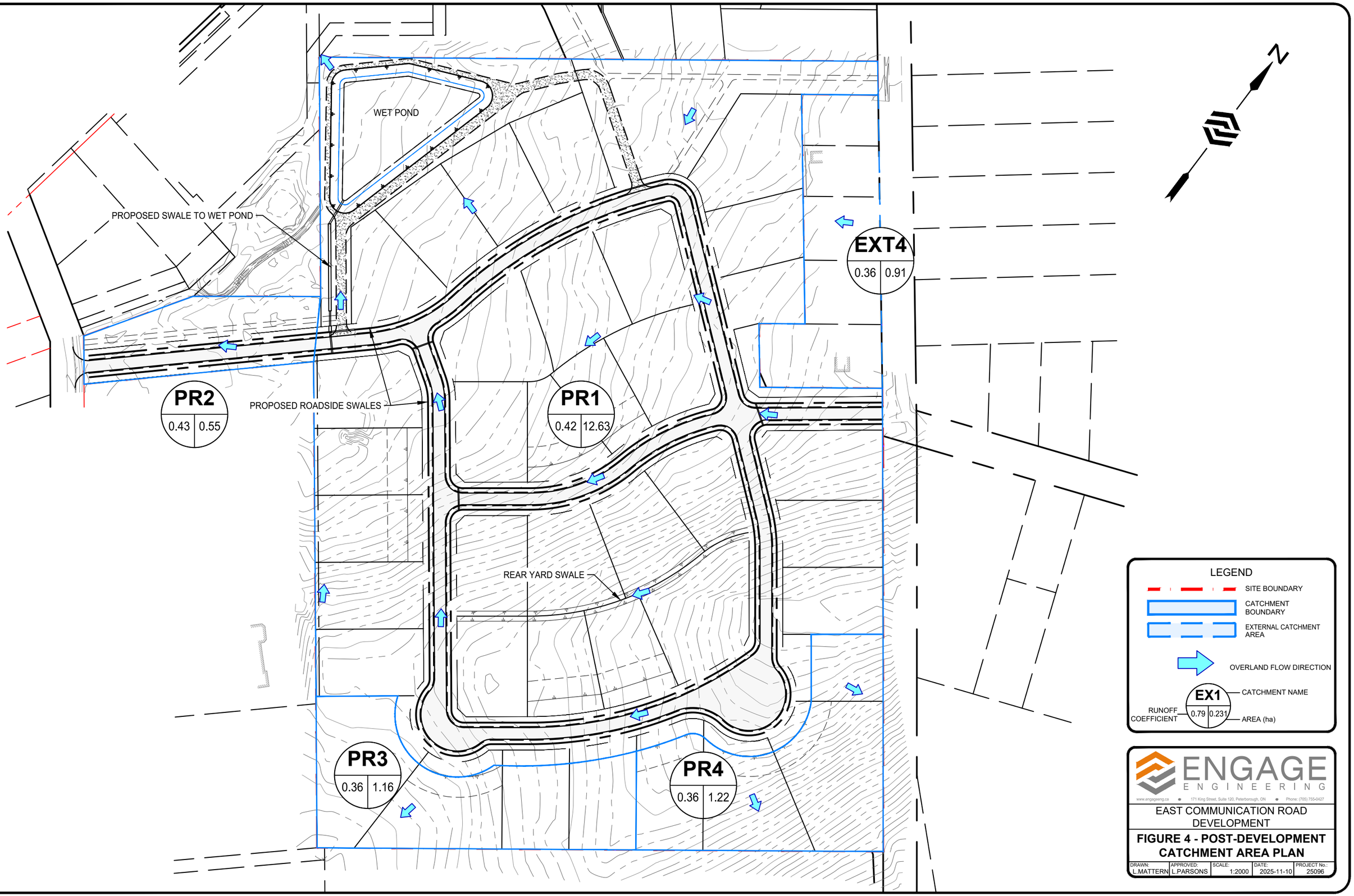
EAST COMMUNICATION ROAD DEVELOPMENT

FIGURE 3 - PRE-DEVELOPMENT CATCHMENT AREA PLAN

DRAWN:	APPROVED:	SCALE:	DATE:	PROJECT No.:
L.MATTERN	B.PARSONS	1:2000	2025-11-10	25096

S:\01 - Projects\25000\25096 - East Communication Road\02 Design\01 - Drawings\25096 - DA1.dwg PRINTED: Nov 10, 2025

Figure 4: Post Development Catchment Area Plans



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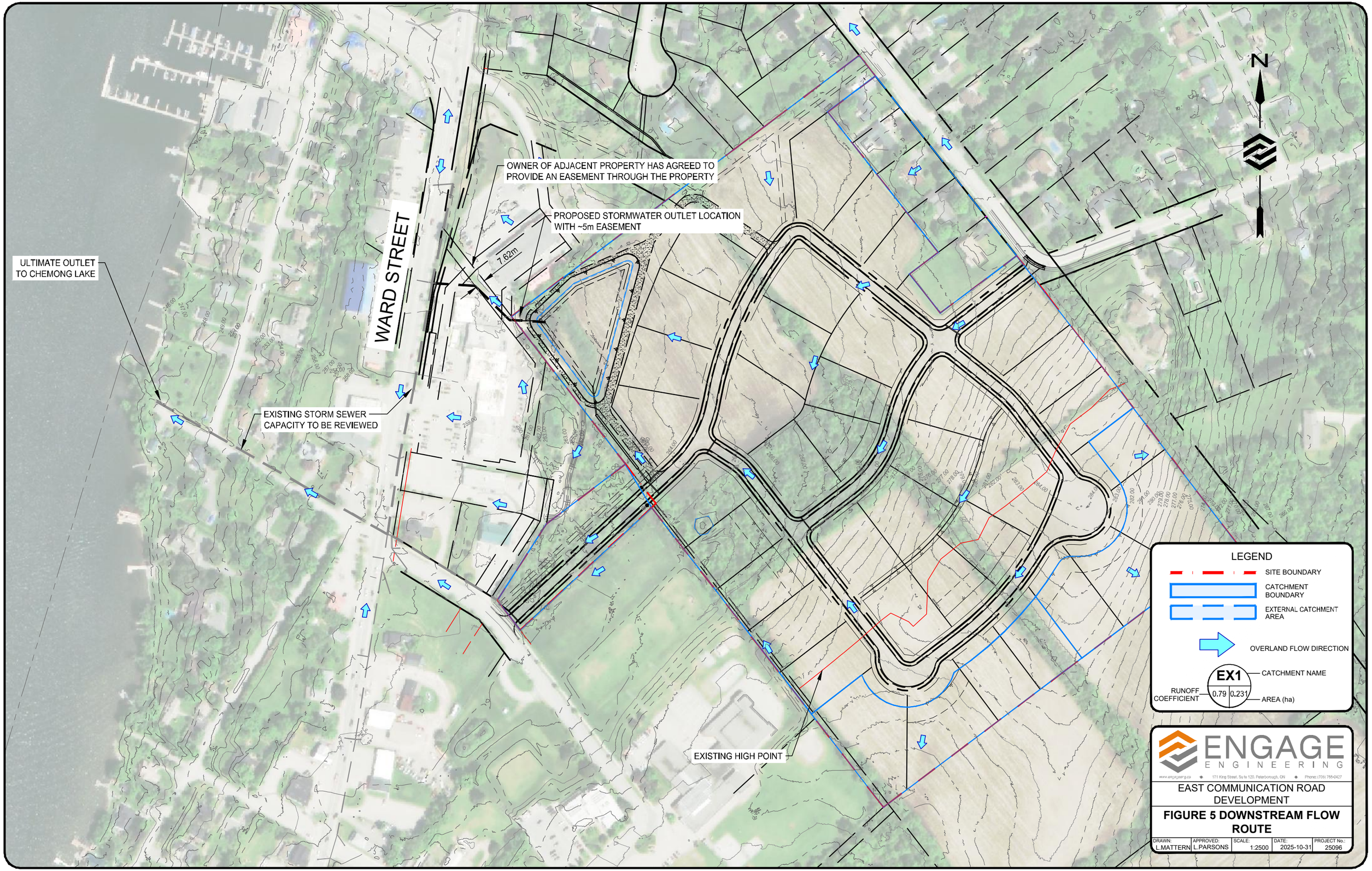
EAST COMMUNICATION ROAD DEVELOPMENT

FIGURE 4 - POST-DEVELOPMENT CATCHMENT AREA PLAN

DRAWN:	APPROVED:	SCALE:	DATE:	PROJECT No.:
L.MATTERN	L.PARSONS	1:2000	2025-11-10	25096

Figure 5: Downstream Flow Route



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EAST COMMUNICATION ROAD DEVELOPMENT

FIGURE 5 DOWNSTREAM FLOW ROUTE

DRAWN:	APPROVED:	SCALE:	DATE:	PROJECT No.:
L.MATTERN	L.PARSONS	1:2500	2025-10-31	25096

S:\01 - Projects\25000\25096 - East Communication Road\02 Design\01 - Drawings\25096 - FIG1 - SWM Outlet.dwg PRINTED: Dec 05, 2025

Appendix A: Background

TOPOGRAPHIC SURVEY OF

PART OF LOT 12
EAST OF COMMUNICATION ROAD

GEOGRAPHIC TOWNSHIP OF SMITH

NOW IN THE

TOWNSHIP OF SELWYN

COUNTY OF PETERBOROUGH

SCALE 1 : 300

5 0 5 10 20 metres

ELLIOT AND PARR (PETERBOROUGH),
A DIVISION OF J.D. BARNES LIMITED

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METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES

BEARINGS ARE GRID AND ARE REFERRED TO THE NORTH-WESTERLY LIMIT OF PART 14, PLAN 45R-17115, HAVING A BEARING OF N52°54'30"E REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81° WEST LONGITUDE) NAD 83 (CSRS)(2010).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.000093.

BENCHMARK AND ELEVATIONS

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM CGVD28:78 (HTv2.0) AND ARE REFERRED TO COSINE BENCHMARK No. 00819828147 HAVING A PUBLISHED ELEVATION OF 270.68 METRES.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
M	DENOTES	MEASURED
712	DENOTES	G.W. ELLIOTT, O.L.S.
JBF	DENOTES	JBF SURVEYORS
P&P	DENOTES	PIERCE & PIERCE INC.
P1	DENOTES	PLAN 45R-17115

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
XXXXXX

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3).

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON 13 DECEMBER, 2024

DATE

SHAWN M. O'CONNOR
ONTARIO LAND SURVEYOR

Elliott and Parr (PETERBOROUGH) SURVEYING MAPPING GIS
A Division of J.D. Barnes Limited
211 SHERBROOKE ST, PETERBOROUGH, ON K9J 2N2
T: (705) 745-8444 F: (705) 745-5314 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
MF	SMO	24-19-269-00
FILE: E&P SM'H ECR 12		DATED: 12/16/2024

PLOTTED: 12/17/2024

PLAN

SHOWING TOPOGRAPHIC DETATIL
OF PART OF LOT 12
EAST OF COMMUNICATION ROAD
GEOGRAPHIC TOWNSHIP OF SMITH
TOWNSHIP OF SMITH–ENNISMORE–LAKEFIELD
COUNTY OF PETERBOROUGH

SCALE – 1 : 1000

0 10 20 30 40 50 60 70 METRES

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

BENINGER SURVEYING LTD.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
BOUNDARY INFORMATION IS REFERRED TO PLAN OF SURVEY BY BENINGER SURVEYING LTD. DATED 24 JANUARY 2011.

24 JANUARY 2011
PETERBOROUGH, ONTARIO

JOHN S. DUNCAN
Ontario Land Surveyor

LEGEND & NOTES

- ■ . . . . . DENOTES SURVEY MONUMENT, FOUND.
- □ . . . . . DENOTES SURVEY MONUMENT, PLANTED, STAMPED 873.
- WIT. . . . . DENOTES WITNESS
- 873. . . . . DENOTES BENINGER SURVEYING LTD.
- P&P . . . . . .DENOTES PIERCE & PIERCE INC.
- P&L . . . . . .DENOTES PIERCE & LYONS INC.
- 712. . . . . DENOTES G.W. ELLIOTT O.L.S.
- E&P . . . . . .DENOTES ELLIOTT & PARR LTD.
- 282.53 + ... DENOTES SPOT ELEVATION.

OFFSET TIES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.

ELEVATIONS ARE GEODETIC, REFERRED TO VERTICAL CONTROL MONUMENT 0011972U417, BEING A TABLET IN COPING OF NORTH EAST END OF CONCRETE BRIDGE AT EAST END OF CAUSEWAY 1.2m BELOW TOP OF CONCRETE END POST AND 73cm NORTHWEST OF NORTHEAST END OF BRIDGE. ELEVATION 254.324m(CGVD–1928)

BEARINGS ARE UTM GRID, DERIVED FROM SIMULTANEOUS GPS OBSEVATIONS ON OP1 AND OP2 UTM ZONE 17 (81° WEST LONGITUDE) NAD 83(CSRS) (1997.0)

FOR BEARING COMPARISONS, APPLY A COUNTER–CLOCKWISE ROTATION OF 1°49'30" TO PLANS 45R–1227, 45R–2971, 45R–3926, 45R–4417 45R–6899, 45R–13789 AND PLAN 45M–89.

DISTANCES SHOWN ON GROUND CAN BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 1.00014

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM GPS OBSERVATIONS USING PRECISE POINT POSITIONING(PPP) SERVICE, UTM ZONE 17, NAD83(CSRS)(1997.0)
COORDINATES TO RURAL ACCURACY PER SEC. 14(2) OF O.REG 216/10

POINT ID	EASTING	NORTHING	DESCRIPTION
ORP P1	708624.7	4917832.7	IRON ROD
ORP P2	708881.6	4917636.0	IRON ROD
P3	709020.4	4917566.8	IRON BAR

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE–ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

BENINGER SURVEYING LTD.
414 WATER STREET
PETERBOROUGH, ONTARIO
K9H 3L8
FAX 705–743–3070
TELEPHONE 705–743–8634

JOB 25622–T
FILE SMITH 153

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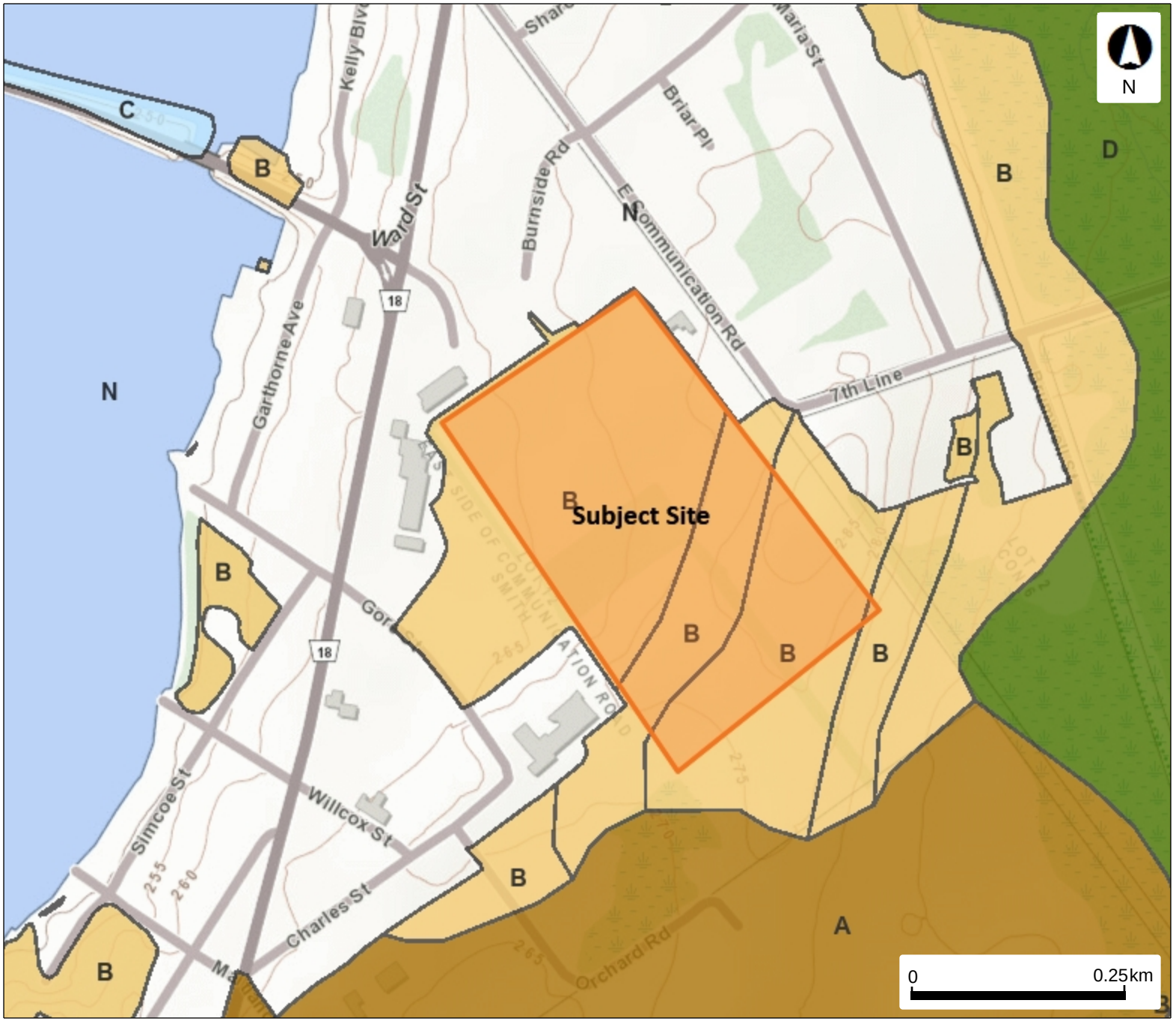
Hydrologic Soils Map



Legend

Hydrologic Soil Group

- A - High
- B - Moderate
- C - Slow
- D - Very Slow

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

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Map Created: 10/15/2025
Map Center: 44.38215 N, -78.3807 W

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Short Duration Rainfall Intensity-Duration-Frequency Data
Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

Gumbel - Method of moments/Méthode des moments

2022/10/31

==========

PETERBOROUGH A ON 6166418

Latitude: 44 14'N Longitude: 78 22'W Elevation/Altitude: 191 m

Years/Années : 1971 - 2006 # Years/Années : 33

==========

****

Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

****

Year / Année	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1971	4.3	5.8	7.4	11.7	17.5	24.6	30.7	34.8	34.8
1972	5.8	6.1	8.1	10.2	13.2	16.5	22.9	41.4	44.2
1973	6.9	13.2	18.0	19.3	20.8	26.7	48.0	48.3	58.2
1974	7.6	13.5	14.0	16.0	20.1	25.7	43.9	49.8	49.8
1975	6.3	9.9	13.7	21.8	39.6	55.1	55.1	67.8	67.8
1976	5.3	8.4	11.9	15.0	16.3	16.5	22.6	24.6	37.6
1977	8.4	12.7	13.7	19.6	24.9	24.9	52.3	62.2	62.5
1978	7.2	12.4	17.3	19.2	21.7	27.7	43.9	45.6	45.8
1979	10.1	13.8	15.3	17.5	26.2	31.6	33.3	33.7	33.7
1980	8.8	16.0	21.6	29.0	32.0	48.3	61.8	62.2	83.2
1981	9.7	18.6	27.9	42.3	52.2	53.2	53.4	53.4	54.1
1982	5.3	7.6	7.8	9.9	11.7	15.4	30.3	34.1	34.1
1983	11.3	18.3	23.3	25.1	26.1	36.3	56.8	57.1	77.5
1984	8.9	14.2	17.3	18.9	25.3	29.4	35.5	37.8	39.2
1985	7.6	10.4	12.0	19.7	22.7	26.8	36.4	53.6	53.6
1986	12.5	15.8	19.3	19.7	19.7	23.2	35.8	42.0	44.8
1987	17.9	21.3	22.7	23.2	23.2	23.2	23.2	26.0	29.0
1988	7.8	11.5	14.5	20.7	23.2	24.4	27.0	28.8	30.4
1989	9.9	14.2	15.7	18.7	20.2	26.3	46.1	47.8	52.8
1990	8.9	13.4	17.8	23.2	23.7	23.7	42.2	43.4	44.8
1991	4.1	6.8	7.6	8.8	9.2	12.2	17.1	21.2	29.6

1992	8.6	9.3	12.8	20.4	25.8	31.7	38.9	45.0	51.2
1993	9.1	10.9	14.1	20.4	21.9	23.3	29.9	34.2	42.0
1994	8.8	14.4	17.4	19.8	22.2	24.1	24.1	33.6	41.5
1995	9.3	12.1	18.1	32.2	49.0	82.5	89.8	90.1	90.1
1996	6.8	8.6	10.5	13.9	16.5	22.0	38.3	40.8	41.0
1997	3.6	7.2	7.6	9.2	17.8	30.6	35.0	35.2	35.2
1998	11.4	15.7	16.5	18.7	28.1	32.4	60.0	65.1	76.2
1999	8.4	11.4	13.5	18.6	23.2	32.5	39.9	46.8	55.6
2000	6.4	10.0	12.7	16.6	18.8	23.5	47.8	61.2	61.2
2002	7.3	9.6	10.4	13.8	23.4	35.1	50.9	73.6	73.6
2004	6.2	10.9	15.2	22.0	26.5	41.6	65.9	80.1	97.8
2006	7.4	11.1	12.5	14.2	15.0	17.8	22.0	34.0	42.5
# Yrs. Années	33	33	33	33	33	33	33	33	33
Mean Moyenne	8.1	12.0	14.8	19.1	23.6	30.0	41.2	47.1	52.0
Std. Dev. Écart-type	2.7	3.7	4.8	6.7	9.1	13.7	15.5	16.4	18.1
Skew. Dissymétrie	1.33	0.45	0.55	1.30	1.66	2.13	0.92	0.75	0.92
Kurtosis	7.16	3.29	3.67	6.74	6.80	9.09	4.68	3.45	3.35

*-99.9 Indicates Missing Data/Données manquantes

Warning: annual maximum amount greater than 100-yr return period amount
Avertissement : la quantité maximale annuelle excède la quantité pour une période de retour de 100 ans

Year/Année	Duration/Durée	Data/Données	100-yr/ans
1981	30 min	42.3	40.1
1981	1 h	52.2	52.0
1987	5 min	17.9	16.7
1995	2 h	82.5	72.9

****

Table 2a : Return Period Rainfall Amounts (mm)
Quantité de pluie (mm) par période de retour

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	7.7	10.1	11.7	13.7	15.2	16.7	33
10 min	11.4	14.6	16.8	19.5	21.5	23.5	33
15 min	14.0	18.3	21.1	24.7	27.4	30.0	33
30 min	18.0	23.9	27.8	32.8	36.4	40.1	33
1 h	22.1	30.1	35.4	42.1	47.1	52.0	33
2 h	27.7	39.8	47.8	57.9	65.4	72.9	33
6 h	38.7	52.4	61.5	72.9	81.4	89.9	33

12 h	44.4	58.9	68.5	80.6	89.5	98.4	33
24 h	49.0	65.0	75.6	88.9	98.9	108.7	33

****

Table 2b :

Return Period Rainfall Rates (mm/h) - 95% Confidence limits
Intensité de la pluie (mm/h) par période de retour - Limites de confiance de 95%

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	92.0	121.0	140.2	164.4	182.3	200.2	33
	+/- 10.3	+/- 17.3	+/- 23.3	+/- 31.5	+/- 37.7	+/- 43.9	33
10 min	68.2	87.7	100.7	117.0	129.1	141.1	33
	+/- 6.9	+/- 11.7	+/- 15.7	+/- 21.2	+/- 25.4	+/- 29.6	33
15 min	56.0	73.1	84.5	98.8	109.4	120.0	33
	+/- 6.1	+/- 10.2	+/- 13.8	+/- 18.6	+/- 22.3	+/- 26.0	33
30 min	35.9	47.8	55.6	65.5	72.9	80.2	33
	+/- 4.2	+/- 7.1	+/- 9.6	+/- 12.9	+/- 15.4	+/- 18.0	33
1 h	22.1	30.1	35.4	42.1	47.1	52.0	33
	+/- 2.8	+/- 4.8	+/- 6.5	+/- 8.7	+/- 10.4	+/- 12.1	33
2 h	13.9	19.9	23.9	29.0	32.7	36.4	33
	+/- 2.1	+/- 3.6	+/- 4.9	+/- 6.6	+/- 7.9	+/- 9.2	33
6 h	6.4	8.7	10.2	12.2	13.6	15.0	33
	+/- 0.8	+/- 1.4	+/- 1.8	+/- 2.5	+/- 3.0	+/- 3.5	33
12 h	3.7	4.9	5.7	6.7	7.5	8.2	33
	+/- 0.4	+/- 0.7	+/- 1.0	+/- 1.3	+/- 1.6	+/- 1.8	33
24 h	2.0	2.7	3.1	3.7	4.1	4.5	33
	+/- 0.2	+/- 0.4	+/- 0.5	+/- 0.7	+/- 0.9	+/- 1.0	33

****

Table 3 : Interpolation Equation / Équation d'interpolation: R = A*T^B

R = Interpolated Rainfall rate (mm/h)/Intensité interpolée de la pluie (mm/h)
RR = Rainfall rate (mm/h) / Intensité de la pluie (mm/h)
T = Rainfall duration (h) / Durée de la pluie (h)

****

Statistics/Statistiques	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans
Mean of RR/Moyenne de RR	33.4	44.0	51.0	59.9	66.5	73.1
Std. Dev. /Écart-type (RR)	32.1	41.8	48.1	56.2	62.2	68.1
Std. Error/Erreur-type	7.4	10.0	11.7	14.0	15.6	17.2
Coefficient (A)	20.5	27.4	31.9	37.7	41.9	46.1
Exponent/Exposant (B)	-0.680	-0.675	-0.672	-0.670	-0.669	-0.668

Mean % Error/% erreur moyenne	8.4	10.1	10.8	11.4	11.7	12.0

Appendix B: Area and Hydrologic Calculations

VO_2 Hydrology Modeling Parameters Selection

<table>
<tr><th>COMMAND</th><th>PARAMETER</th><th>PARAMETER VALUE RECOMMENDATIONS</th></tr>
<tr><td rowspan="2">STANDHYD when catchment area T_{imp}>20%</td><td>AREA</td><td>Digital delineation using software such as GIS or AutoCAD must be used to delineate subcatchment areas.</td></tr>
<tr><td>X_{imp}</td><td>Directly connected imperviousness shall be measured, if possible. Otherwise, use:
<table>
<tr><th>Land use</th><th>X_{IMP}[1] (Roof Leaders to Road)</th><th>X_{IMP}[2] (Roof Leaders to Lawn)</th></tr>
<tr><td>Estate Residential (>3/4 Acre Lot)</td><td>0.14</td><td>0.09</td></tr>
<tr><td>2 Acre Lot (180 ft wide)</td><td>0.11</td><td>0.08</td></tr>
<tr><td>1½Acre Lot (150 ft wide)</td><td>0.14</td><td>0.09</td></tr>
<tr><td>1 Acre Lot (130 ft wide)</td><td>0.17</td><td>0.10</td></tr>
<tr><td>Low Density Residential (1/3 to 3/4 Acre Lot)</td><td>0.23</td><td>0.15</td></tr>
<tr><td>¾ Acre Lot (110 ft wide)</td><td>0.18</td><td>0.13</td></tr>
<tr><td>½ Acre Lot (90 ft wide)</td><td>0.23</td><td>0.15</td></tr>
<tr><td>1/3 Acre Lot (70 ft wide)</td><td>0.29</td><td>0.18</td></tr>
<tr><td>Medium Density Residential (1/10 to 1/4 Acre Lot)</td><td>0.47</td><td>0.24</td></tr>
<tr><td>¼ Acre Lot (60 ft wide)</td><td>0.35</td><td>0.20</td></tr>
<tr><td>1/8 Acre Lot (50 ft wide)</td><td>0.52</td><td>0.25</td></tr>
<tr><td>1/10 Acre Lot (40 ft wide)</td><td>0.55</td><td>0.28</td></tr>
<tr><td>High Density Residential (<1/10 Acre Lot)</td><td>0.65</td><td>0.35</td></tr>
<tr><td>Institutional (e.g. school, religious centre)</td><td>0.55</td><td>0.30</td></tr>
<tr><td>Industrial</td><td>0.80</td><td>0.70</td></tr>
<tr><td>Commercial/ Business</td><td>0.90</td><td>0.90</td></tr>
<tr><td>Park</td><td>0.01</td><td>0.01</td></tr>
</table>
1. Roof leaders connected to impervious area (e.g. driveway) and to storm sewer for X_{imp} calculations.
2. Roof leaders are connected to pervious area (e.g. lawn) for X_{imp} calculations,
Public roads are included in all reported X_{imp} values.</td></tr>
</table>

<table>
<tr>
<td>STANDHYD
(con't)</td>
<td>T_{imp}</td>
<td>Total imperviousness shall be measured, if possible. Otherwise, T_{imp} based on:
<table>
<tr><th>Land use</th><th>T_{imp}
(Roof Leaders to Road)</th><th>Corresponding C</th></tr>
<tr><td>Estate Residential (>3/4 Acre Lot)</td><td>0.14</td><td>.3</td></tr>
<tr><td>2 Acre Lot (180 ft wide)</td><td>0.11</td><td>.28</td></tr>
<tr><td>1½Acre Lot (150 ft wide)</td><td>0.14</td><td>.3</td></tr>
<tr><td>1 Acre Lot (130 ft wide)</td><td>0.17</td><td>.32</td></tr>
<tr><td>Low Density Residential (1/3 to 3/4 Acre Lot)</td><td>0.23</td><td>.36</td></tr>
<tr><td>¾ Acre Lot (110 ft wide)</td><td>0.18</td><td>.32</td></tr>
<tr><td>½ Acre Lot (90 ft wide)</td><td>0.23</td><td>.36</td></tr>
<tr><td>1/3 Acre Lot (70 ft wide)</td><td>0.29</td><td>.40</td></tr>
<tr><td>Medium Density Residential (1/10 to ¼ Acre Lot)</td><td>0.47</td><td>.53</td></tr>
<tr><td>¼ Acre Lot (60 ft wide)</td><td>0.35</td><td>.45</td></tr>
<tr><td>1/8 Acre Lot (50 ft wide)</td><td>0.52</td><td>.56</td></tr>
<tr><td>1/10 Acre Lot (40 ft wide)</td><td>0.55</td><td>.59</td></tr>
<tr><td>High Density Residential (<1/10 Acre Lot)</td><td>0.65</td><td>.65 - .6</td></tr>
<tr><td>Institutional (e.g. school, religious centre)</td><td>0.55</td><td>.59 - .75</td></tr>
<tr><td>Industrial</td><td>0.80</td><td>.75 - .90</td></tr>
<tr><td>Commercial/ Business</td><td>0.90</td><td>.84 - .90</td></tr>
<tr><td>Park</td><td>0.01</td><td>.21 - .2</td></tr>
</table>
STANDHYD command shall only be used for catchments with a T_{imp}>20%. In case where T_{imp} is <20% and there is a sizeable development area, split the catchment into two using both NASHYD and STANDHYD.</td>
</tr>
<tr>
<td></td>
<td>LOSS</td>
<td>VO2 uses Horton's, SCS Modified Curve Number, or Proportional Loss Coefficient Method. The preferred method is SCS Modified Curve Number Method to calculate pervious area losses due to the following reasons:

Horton is not recommended for storm durations ≥ 12 hours as predicted flows are often erroneous (may under estimate runoff if rainfall intensity is < sol infiltration capacity rate);
Horton's not recommended if there is significant soil variability;
Horton's typically used for urban conditions with short duration, high intensity storms (e.g. Chicago distribution) and not much soil variability; and
SCS Modified CN Method is generally more suitable for subwatershed studies and master drainage plans.

</td>
</tr>
</table>

PERCENT IMPERVIOUS AREA CALCULATIONS PR1

Project Name: East Communication Road **Designed By:** LM

Project No: 25096 **Date:** 2025-11-10

Landuse Type	Impervious Area (m^2)	Grass Area (m^2)	Runoff Coeff	TIMP	XIMP	Total Area (m^2)
Road ROW	14216	12090	0.58	0.54	0.45	26306
Single Family Lots (Low Density)	18720	62671	0.36	0.23	0.15	81391
Park and Other Area	990	6987	0.29	0.12	0.00	7977
SWM Block	6203	4460	0.61	0.58	0.58	10663
Subtotal Impervious						40129
Subtotal Direct Impervious						30231
Subtotal Pervious						86208
Drainage Area Total						126337

% Impervious	32%
% Directly Connected	24%

Road surface area increased by 20% to account for driveways and sidewalks
Pond area includes 6m wide access road @ 230m long

PERCENT IMPERVIOUS AREA CALCULATIONS PR2

Project Name: East Communication Road **Designed By:** LM

Project No: 25096 **Date:** 2025-11-10

Landuse Type	Impervious Area (m^2)	Grass Area (m^2)	Runoff Coeff	TIMP	XIMP	Total Area (m^2)
Road ROW	1850	3734	0.43	0.33	0.33	5584
Subtotal Impervious						1850
Subtotal Direct Impervious						1850
Subtotal Pervious						3734
Drainage Area Total						5584
% Impervious	33%					
% Directly Connected	33%					

Road surface area increased by 20% to account for driveways and sidewalks

PERCENT IMPERVIOUS AREA CALCULATIONS PR3

Project Name: East Communication Road **Designed By:** LM

Project No: 25096 **Date:** 2025-11-10

Landuse Type	Impervious Area (m^2)	Grass Area (m^2)	Runoff Coeff	TIMP	XIMP	Total Area (m^2)
Single Family Lots (Low Density)	2659	8901	0.36	0.23	0.15	11560
Subtotal Impervious						2659
Subtotal Direct Impervious						1734
Subtotal Pervious						8901
Drainage Area Total						11560
% Impervious	23%					
% Directly Connected	15%					

PERCENT IMPERVIOUS AREA CALCULATIONS PR4

Project Name: East Communication Road **Designed By:** LM

Project No: 25096 **Date:** 2025-11-10

Landuse Type	Impervious Area (m^2)	Grass Area (m^2)	Runoff Coeff	TIMP	XIMP	Total Area (m^2)
Single Family Lots (Low Density)	2802	9379	0.36	0.23	0.15	12181
Subtotal Impervious						2802
Subtotal Direct Impervious						1827
Subtotal Pervious						9379
Drainage Area Total						12181
% Impervious	23%					
% Directly Connected	15%					

Hydrologic Model and Catchment Summary

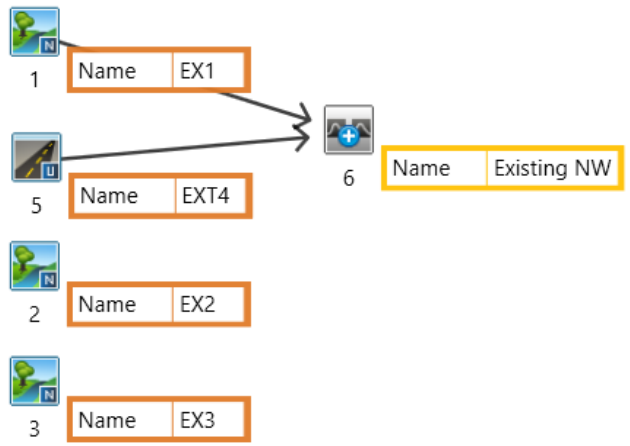
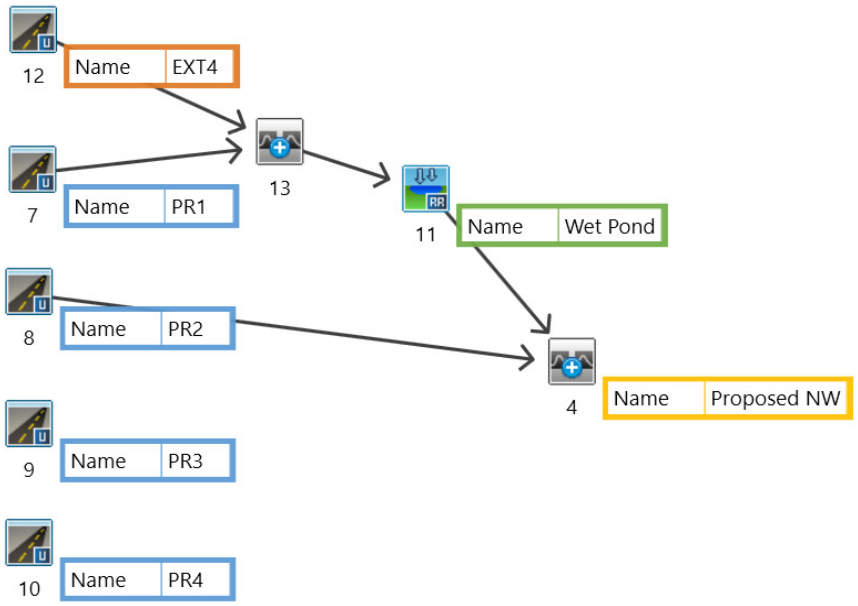
Project Name: East Communication Road **Designed By:** LM
Project No: 25096 **Date:** 2025-11-06

Catchment Name		Land Use and Areas (ha)								Hydrologic Calculations										
Name	Description	Wetland CN = 86	Grass CN = 61	Gravel CN = 85	Crop & Other Improved Land CN = 74	Pasture & Other Unimproved Land CN = 65	Woodlands and Forests CN = 58	Impervious CN = 98	Total	CN Weighted	CN Weighted | Pervious Areas	Percent Impervious	Directly Connected Impervious	Soils Group	Total Length (m)	Average Slope: Overall (%)	Time of Concentration (Minimum 10 Minutes)	Time to Peak (Hours)	Recession Period (k)	Composite Runoff Coefficient
EX1			0.120		7.940		3.279		11.339	69	69	0.0%	0%	B	474	5.7%	27.9	0.31	1.77	0.40
EX2					2.415		0.219		2.634	73	73	0.0%	0%	B	340	4.3%	28.3	0.31	1.59	0.34
EX3					1.531		0.062		1.593	73	73	0%	0%	B	144	7.5%	10.0	0.11	0.87	0.44
EXT4			0.649					0.256	0.905	71	61	28%	28%	B	50	3.0%	11.8	0.13	1.65	0.36
PR1			8.621					4.013	12.634	73	61	32%	24%	B	300	5.0%	23.6	0.26	2.02	0.39
PR2			0.373					0.185	0.558	73	61	33%	33%	B	90	3.0%	15.1	0.17	1.47	0.40
PR3			0.890					0.266	1.156	70	61	23%	15%	B	50	7.0%	10.0	0.11	0.86	0.36
PR4			0.938					0.280	1.218	70	61	23%	15%	B	64	7.0%	10.1	0.11	0.87	0.36

Appendix C: VO Inputs

Visual OTTHYMO Model

Project Name: East Communication Road
Project No: 25096
Designed By: LM
Date: 2025-11-07

PRE-DEVELOPMENT MODEL	POST-DEVELOPMENT MODEL
	

Visual OTTHYMO Input Parameters

Project Name: East Communication Roa **Designed By:** LM

Project No: 25096 **Date:** 2025-11-07

Parameter	Description	EX1	EX2	EX3	EXT4
COMMAND	STANDHYD or NASHYD	NASHYD	NASHYD	NASHYD	STANDHYD
AREA	Catchment Area (ha)	11.339	2.634	1.593	0.905
DT	Time Step Increment (min)	5	5	5	5
TIMP	Total Impervious Area (%)	0.0%	0.0%	0.0%	28%
XIMP	Directly Connected Impervious Area (%)				15%
DWF	Dry Weather Flow (m^3/s)	0	0	0	0
CN	Pervious Weighted Curve Number	69	73	73	61
LOSS[1]	Modified CN*	67	72	72	59
IA	Initial Abstraction (Pervious)	5.0	5.0	5.0	5.0
TP	Unit Hydrograph Time to Peak (Hr)	0.31	0.31	0.11	0.13
K	Williams Recession Period (Hr)	1.77	1.59	0.87	1.65
SLPP	Average Slope Pervious Area (%)	5.7%	4.3%	7.5%	3.0%
LGP	Overland Flow Length Pervious Area (m)	474	340	144	50
MNP	Manning's Roughness Coefficient (Pervious)	-	-	-	0.25
SCP	Storage Coefficient Pervious Area	-	-	-	0
DPSI	Depression Storage Impervious Area (mm/hr)	-	-	-	1
SLPI	Average Slope Impervious Area (%)				1.0%
LGI	Impervious Overland Flow Length √(A/1.5) x 100 (m)	-	-	-	77.67
MNI	Manning's Roughness Coefficient (Impervious)	-	-	-	0.013
SCI	Storage Coefficient Impervious Area	-	-	-	0
RAIN	Optional Rainfall Intensity (mm/hr)	-	-	-	0

Notes:

1. CN values based on Design Chart 1.09 in MTO Drainage Manual
2. Modified CN derived from IA and CN using functionality in Visual OTTHYMO v6
3. Initial abstraction values derived from UNESCO Manual on Drainage in Urban Areas, 1987.
4. TC calculated using Airport Equation for C<0.4 and Bransby Williams for C>0.4.
5. Time to Peak estimated at 0.67Tc.

Visual OTTHYMO Input Parameters

Project Name: East Communication Roa **Designed By:** LM

Project No: 25096 **Date:** 2025-11-07

Parameter	Description	PR1	PR2	PR3	PR4
COMMAND	STANDHYD or NASHYD	STANDHYD	STANDHYD	STANDHYD	STANDHYD
AREA	Catchment Area (ha)	12.634	0.558	1.156	1.218
DT	Time Step Increment (min)	5	5	5	5
TIMP	Total Impervious Area (%)	32%	33%	23%	23%
XIMP	Directly Connected Impervious Area (%)	24%	33%	15%	15%
DWF	Dry Weather Flow (m^3/s)	0	0	0	0
CN	Pervious Weighted Curve Number	61	61	61	61
LOSS[1]	Modified CN*	59	59	59	59
IA	Initial Abstraction (Pervious)	5.0	5.0	5.0	5.0
TP	Unit Hydrograph Time to Peak (Hr)	0.26	0.17	0.11	0.11
K	Williams Recession Period (Hr)	2.02	1.47	0.86	0.87
SLPP	Average Slope Pervious Area (%)	5.0%	2.0%	7.0%	7.0%
LGP	Overland Flow Length Pervious Area (m)	40	50	50	64
MNP	Manning's Roughness Coefficient (Pervious)	0.25	0.25	0.25	0.25
SCP	Storage Coefficient Pervious Area	0	0	0	0
DPSI	Depression Storage Impervious Area (mm/hr)	1	1	1	1
SLPI	Average Slope Impervious Area (%)	2.0%	2.0%	2.0%	2.0%
LGI	Impervious Overland Flow Length √(A/1.5) x 100 (m)	290.22	60.99	87.79	90.11
MNI	Manning's Roughness Coefficient (Impervious)	0.013	0.013	0.013	0.013
SCI	Storage Coefficient Impervious Area	0	0	0	0
RAIN	Optional Rainfall Intensity (mm/hr)	0	0	0	0

Notes:

1. CN values based on Design Chart 1.09 in MTO Drainage Manual
2. Modified CN derived from IA and CN using functionality in Visual OTTHYMO v6
3. Initial abstraction values derived from UNESCO Manual on Drainage in Urban Areas, 198
4. TC calculated using Airport Equation for C<0.4 and Bransby Williams for C>0.4.
5. Time to Peak estimated at 0.67Tc.

Stormwater Management Facility Outlet Sizing

Project Name: East Communication Road
Project Number: 25096
Designed By: LM
Date: 2025-11-07

Number of Stages (Max 5): 2

Outlet Configuration						
		Stage Number:	Stage 1	Stage 2	Total	Notes
		Control Type:	Orifice Tube	Rectangular Weir		
		Orifice Diameter / Weir Width (m):	0.125	1.500		
		Invert Elevations (m):	261.00	261.25		
		Top of Catch Basin (m) / Included Angle (°):	0.00	0.00		
Discharge Table:	**Elevation (m)**	**Active Storage (m^3)**	**Controlled Discharge Rate (m^3/s)**			
	261.00	0	0.000	0.000	0.000	
	261.05	192	0.002	0.000	0.002	
	261.10	388	0.008	0.000	0.008	
	261.15	586	0.013	0.000	0.013	
	261.20	789	0.016	0.000	0.016	
25 mm	**261.25**	**994**	**0.019**	**0.000**	**0.019**	**Req. 829 m^3 (261.22m)**
	261.30	1204	0.021	0.029	0.050	
2 Year	**261.35**	**1416**	**0.023**	**0.081**	**0.104**	**Req. 1349 m^3 (261.33m)**
	261.40	1633	0.025	0.149	0.174	
5 Year	**261.45**	**1852**	**0.027**	**0.229**	**0.256**	**Req. 1760 m^3 (261.44m)**
10 Year	**261.50**	**2076**	**0.029**	**0.320**	**0.348**	**Req. 2045 m^3 (261.50m)**
	261.55	2302	0.030	0.420	0.451	
25 Year	**261.60**	**2533**	**0.032**	**0.530**	**0.561**	**Req. 2418 m^3 (261.57m)**
50 Year	**261.65**	**2767**	**0.033**	**0.647**	**0.680**	**Req. 2721 m^3 (261.65m)**
	261.70	3005	0.035	0.772	0.807	
100 Year	**261.75**	**3246**	**0.036**	**0.904**	**0.940**	**Req. 3026 m^3 (261.71m)**
	261.80	3491	0.037	1.043	1.081	
	261.85	3739	0.039	1.189	1.227	
	261.90	3992	0.040	1.340	1.380	
	261.95	4248	0.041	1.498	1.539	
	262.00	4508	0.042	1.661	1.703	
	262.05	4771	0.043	1.830	1.873	
Top of Pond	**262.10**	**5021**	**0.044**	**2.004**	**2.048**	

1. Orifice tube discharge calculated according to Q=0.8A(2gh)1/2
2. Weir discharge calculated according to Q=1.705LH1.5

Appendix D: VO Results

Pre Development Model Results

```
*********************************************
** SIMULATION:01 2yr 12hr 10min SCS Type II **
*********************************************

--------------------
|    READ STORM    |    Filename: C:\Users\lmattern\AppD
|                  |              ata\Local\Temp\
|                  |              4b969ce0-78e0-472d-8f7f-60bce18f7b82\c1a22978
| Ptotal= 44.40 mm |    Comments: 2yr 12hr 10min SCS Type II
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	1.69	6.33	7.60	9.50	1.43
0.17	0.96	3.33	1.69	6.50	5.68	9.67	1.37
0.33	0.98	3.50	1.69	6.67	4.35	9.83	1.31
0.50	0.99	3.67	1.77	6.83	3.91	10.00	1.25
0.67	1.01	3.83	1.90	7.00	3.47	10.17	1.20
0.83	1.03	4.00	2.04	7.17	3.09	10.33	1.18
1.00	1.05	4.17	2.23	7.33	2.85	10.50	1.16
1.17	1.07	4.33	2.43	7.50	2.61	10.67	1.14
1.33	1.08	4.50	2.63	7.67	2.39	10.83	1.12
1.50	1.10	4.67	2.94	7.83	2.22	11.00	1.09
1.67	1.12	4.83	3.27	8.00	2.05	11.17	1.07
1.83	1.14	5.00	3.61	8.17	1.92	11.33	1.05
2.00	1.15	5.17	4.26	8.33	1.86	11.50	1.03
2.17	1.21	5.33	5.07	8.50	1.80	11.67	1.00
2.33	1.29	5.50	5.88	8.67	1.73	11.83	0.98
2.50	1.38	5.67	17.59	8.83	1.68	12.00	0.96
2.67	1.47	5.83	43.70	9.00	1.62		
2.83	1.56	6.00	59.08	9.17	1.55		
3.00	1.64	6.17	9.53	9.33	1.49		

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=  11.34   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

```
     Unit Hyd Qpeak  (cms)=   1.397

     PEAK FLOW       (cms)=   0.223 (i)
     TIME TO PEAK    (hrs)=   6.333
     RUNOFF VOLUME    (mm)=   9.433
     TOTAL RAINFALL   (mm)=  44.400
     RUNOFF COEFFICIENT   =   0.212

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0005)|   Area    (ha)=   0.91
|ID= 1 DT= 5.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  15.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

				TOTALS
Max.Eff.Inten.(mm/hr)=	59.08	12.20		
over (min)	5.00	20.00		
Storage Coeff. (min)=	2.71 (ii)	19.29 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.29	0.06		
PEAK FLOW (cms)=	0.02	0.01		0.031 (iii)
TIME TO PEAK (hrs)=	6.17	6.42		6.17
RUNOFF VOLUME (mm)=	43.40	8.50		13.73
TOTAL RAINFALL (mm)=	44.40	44.40		44.40
RUNOFF COEFFICIENT =	0.98	0.19		0.31

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0001):	11.34	0.223	6.33	9.43
	+ ID2= 2 (0005):	0.91	0.031	6.17	13.73
	ID = 3 (0006):	12.24	0.240	6.33	9.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0003)	Area (ha)=	1.59	Curve Number (CN)=	72.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.11			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49

0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.070 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 11.028
TOTAL RAINFALL (mm)= 44.400
RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0002)	Area (ha)= 2.63 Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.062 (i)

TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 11.230
TOTAL RAINFALL (mm)= 44.400
RUNOFF COEFFICIENT = 0.253

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:02 5yr 12hr 10min SCS Type II **
****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\31726ea2
Ptotal= 58.80 mm	Comments: 5yr 12hr 10min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	2.24	6.33	10.07	9.50	1.90
0.17	1.27	3.33	2.24	6.50	7.52	9.67	1.81
0.33	1.29	3.50	2.24	6.67	5.76	9.83	1.73
0.50	1.32	3.67	2.34	6.83	5.17	10.00	1.65
0.67	1.34	3.83	2.52	7.00	4.59	10.17	1.59
0.83	1.36	4.00	2.70	7.17	4.09	10.33	1.56
1.00	1.39	4.17	2.95	7.33	3.78	10.50	1.54
1.17	1.41	4.33	3.22	7.50	3.46	10.67	1.50
1.33	1.43	4.50	3.48	7.67	3.16	10.83	1.48
1.50	1.46	4.67	3.89	7.83	2.94	11.00	1.45
1.67	1.48	4.83	4.33	8.00	2.71	11.17	1.42
1.83	1.50	5.00	4.78	8.17	2.54	11.33	1.39
2.00	1.53	5.17	5.64	8.33	2.47	11.50	1.36
2.17	1.60	5.33	6.71	8.50	2.39	11.67	1.33
2.33	1.71	5.50	7.79	8.67	2.30	11.83	1.30
2.50	1.82	5.67	23.29	8.83	2.22	12.00	1.27
2.67	1.95	5.83	57.87	9.00	2.14		
2.83	2.06	6.00	78.25	9.17	2.05		
3.00	2.17	6.17	12.62	9.33	1.98		

CALIB		
NASHYD (0001)	Area (ha)= 11.34	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.390 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 16.173
TOTAL RAINFALL (mm)= 58.800
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0005)	Area (ha)= 0.91		
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00	Dir. Conn.(%)= 15.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

				TOTALS
Max.Eff.Inten.(mm/hr)=		78.25	24.09	
over (min)		5.00	20.00	
Storage Coeff. (min)=		2.42 (ii)	15.05 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.30	0.07	
PEAK FLOW	(cms)=	0.03	0.03	0.048 (iii)
TIME TO PEAK	(hrs)=	6.17	6.33	6.17
RUNOFF VOLUME	(mm)=	57.80	14.59	21.06
TOTAL RAINFALL	(mm)=	58.80	58.80	58.80
RUNOFF COEFFICIENT	=	0.98	0.25	0.36

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	11.34	0.390	6.33	16.17
+ ID2= 2 (0005):	0.91	0.048	6.17	21.06
ID = 3 (0006):	12.24	0.422	6.33	16.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0003)	Area (ha)= 1.59	Curve Number (CN)= 72.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.11		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.119 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 18.621
TOTAL RAINFALL (mm)= 58.800

RUNOFF COEFFICIENT = 0.317

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0002)	Area (ha)=	2.63	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30

2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.108 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 18.964
TOTAL RAINFALL (mm)= 58.800
RUNOFF COEFFICIENT = 0.323

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:03 10yr 12hr 10min SCS Type II **
****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\8409aab2
Ptotal= 68.40 mm	Comments: 10yr 12hr 10min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	2.60	6.33	11.71	9.50	2.21
0.17	1.48	3.33	2.60	6.50	8.74	9.67	2.10
0.33	1.50	3.50	2.60	6.67	6.70	9.83	2.01
0.50	1.53	3.67	2.72	6.83	6.02	10.00	1.92
0.67	1.56	3.83	2.93	7.00	5.34	10.17	1.85
0.83	1.59	4.00	3.14	7.17	4.76	10.33	1.82
1.00	1.61	4.17	3.43	7.33	4.39	10.50	1.79
1.17	1.64	4.33	3.74	7.50	4.03	10.67	1.75
1.33	1.67	4.50	4.05	7.67	3.68	10.83	1.72
1.50	1.69	4.67	4.52	7.83	3.42	11.00	1.69
1.67	1.72	4.83	5.04	8.00	3.16	11.17	1.65
1.83	1.75	5.00	5.56	8.17	2.96	11.33	1.62
2.00	1.77	5.17	6.56	8.33	2.87	11.50	1.58
2.17	1.86	5.33	7.81	8.50	2.78	11.67	1.55
2.33	1.99	5.50	9.06	8.67	2.67	11.83	1.51
2.50	2.12	5.67	27.09	8.83	2.58	12.00	1.48
2.67	2.27	5.83	67.32	9.00	2.49		
2.83	2.40	6.00	91.02	9.17	2.39		
3.00	2.53	6.17	14.68	9.33	2.30		

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 11.34	Curve Number (CN)= 67.0
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.519 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 21.316
TOTAL RAINFALL (mm)= 68.400
RUNOFF COEFFICIENT = 0.312

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0005)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Max.Eff.Inten.(mm/hr)=	91.02	31.91	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.28 (ii)	13.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.08	
			TOTALS
PEAK FLOW (cms)=	0.03	0.04	0.066 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	67.40	19.27	26.48
TOTAL RAINFALL (mm)=	68.40	68.40	68.40
RUNOFF COEFFICIENT =	0.99	0.28	0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	11.34	0.519	6.33	21.32
+ ID2= 2 (0005):	0.91	0.066	6.17	26.48
ID = 3 (0006):	12.24	0.563	6.33	21.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	NASHYD (0003)	ID= 1 DT= 5.0 min	Area (ha)= 1.59	Ia (mm)= 5.00	U.H. Tp(hrs)= 0.11	Curve Number (CN)= 72.0	# of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 24.329
TOTAL RAINFALL (mm)= 68.400
RUNOFF COEFFICIENT = 0.356

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	NASHYD (0002)	ID= 1 DT= 5.0 min	Area (ha)= 2.63	Ia (mm)= 5.00	U.H. Tp(hrs)= 0.31	Curve Number (CN)= 72.0	# of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65

2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.142 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 24.776
TOTAL RAINFALL (mm)= 68.400
RUNOFF COEFFICIENT = 0.362

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:04 25yr 12hr 10min SCS Type II **
****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\b980bf77
Ptotal= 80.40 mm	Comments: 25yr 12hr 10min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	3.06	6.33	13.77	9.50	2.59
0.17	1.74	3.33	3.06	6.50	10.28	9.67	2.47
0.33	1.77	3.50	3.06	6.67	7.87	9.83	2.37
0.50	1.80	3.67	3.20	6.83	7.07	10.00	2.26
0.67	1.83	3.83	3.44	7.00	6.28	10.17	2.18
0.83	1.86	4.00	3.69	7.17	5.59	10.33	2.14
1.00	1.89	4.17	4.03	7.33	5.16	10.50	2.10
1.17	1.93	4.33	4.40	7.50	4.73	10.67	2.06
1.33	1.96	4.50	4.76	7.67	4.32	10.83	2.02
1.50	1.99	4.67	5.32	7.83	4.02	11.00	1.98
1.67	2.02	4.83	5.93	8.00	3.71	11.17	1.94
1.83	2.06	5.00	6.54	8.17	3.48	11.33	1.90
2.00	2.09	5.17	7.71	8.33	3.37	11.50	1.86
2.17	2.19	5.33	9.18	8.50	3.26	11.67	1.82
2.33	2.34	5.50	10.65	8.67	3.14	11.83	1.78
2.50	2.50	5.67	31.85	8.83	3.03	12.00	1.74
2.67	2.67	5.83	79.13	9.00	2.93		
2.83	2.82	6.00	106.99	9.17	2.81		
3.00	2.97	6.17	17.25	9.33	2.70		

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 11.34 Curve Number (CN)= 67.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82

2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.696 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 28.345
TOTAL RAINFALL (mm)= 80.400
RUNOFF COEFFICIENT = 0.353

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 0.91
Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

				TOTALS
Max.Eff.Inten.(mm/hr)=		106.99	49.63	
over (min)		5.00	15.00	
Storage Coeff. (min)=		2.14 (ii)	11.59 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.31	0.09	
PEAK FLOW	(cms)=	0.04	0.06	0.087 (iii)
TIME TO PEAK	(hrs)=	6.17	6.25	6.17
RUNOFF VOLUME	(mm)=	79.40	25.71	33.75
TOTAL RAINFALL	(mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT	=	0.99	0.32	0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0006)|
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
---|---|---|---|---
| | (ha) (cms) (hrs) (mm)
ID1= 1 (0001): | 11.34 0.696 6.33 28.34
+ ID2= 2 (0005): | 0.91 0.087 6.17 33.75
ID = 3 (0006): | 12.24 0.756 6.33 28.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD (0003)	Area (ha)= 1.59 Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.11

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.205 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 32.039
TOTAL RAINFALL (mm)= 80.400
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
NASHYD (0002)	Area (ha)= 2.63 Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10

1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.189 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 32.629
TOTAL RAINFALL (mm)= 80.400
RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:05 50yr 12hr 10min SCS Type II **
****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\6da74e3c
Ptotal= 90.00 mm	Comments: 50yr 12hr 10min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	3.42	6.33	15.41	9.50	2.90
0.17	1.95	3.33	3.42	6.50	11.51	9.67	2.77
0.33	1.98	3.50	3.42	6.67	8.81	9.83	2.65
0.50	2.01	3.67	3.58	6.83	7.92	10.00	2.53
0.67	2.05	3.83	3.85	7.00	7.03	10.17	2.44
0.83	2.09	4.00	4.13	7.17	6.26	10.33	2.40
1.00	2.12	4.17	4.51	7.33	5.78	10.50	2.35
1.17	2.16	4.33	4.92	7.50	5.30	10.67	2.30
1.33	2.19	4.50	5.33	7.67	4.84	10.83	2.26
1.50	2.23	4.67	5.95	7.83	4.49	11.00	2.22
1.67	2.27	4.83	6.63	8.00	4.15	11.17	2.17
1.83	2.30	5.00	7.32	8.17	3.89	11.33	2.13
2.00	2.34	5.17	8.63	8.33	3.77	11.50	2.08
2.17	2.45	5.33	10.27	8.50	3.65	11.67	2.04
2.33	2.62	5.50	11.92	8.67	3.52	11.83	1.99
2.50	2.79	5.67	35.65	8.83	3.40	12.00	1.95
2.67	2.99	5.83	88.58	9.00	3.28		
2.83	3.16	6.00	119.76	9.17	3.14		
3.00	3.33	6.17	19.31	9.33	3.02		

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 11.34 Curve Number (CN)= 67.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22

1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.849 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 34.376
TOTAL RAINFALL (mm)= 90.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0005)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Max.Eff.Inten.(mm/hr)=	119.76	60.31		
over (min)	5.00	15.00		
Storage Coeff. (min)=	2.04 (ii)	10.79 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.31	0.09		
				TOTALS
PEAK FLOW (cms)=	0.05	0.07		0.104 (iii)
TIME TO PEAK (hrs)=	6.17	6.25		6.17
RUNOFF VOLUME (mm)=	89.00	31.26		39.92
TOTAL RAINFALL (mm)=	90.00	90.00		90.00
RUNOFF COEFFICIENT =	0.99	0.35		0.44

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	11.34	0.849	6.33	34.38
+ ID2= 2 (0005):	0.91	0.104	6.17	39.92
ID = 3 (0006):	12.24	0.923	6.33	34.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003) ID= 1 DT= 5.0 min				
	Area (ha)=	1.59	Curve Number (CN)=	72.0
	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.11		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.247 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 38.590
TOTAL RAINFALL (mm)= 90.000
RUNOFF COEFFICIENT = 0.429

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0002) ID= 1 DT= 5.0 min				
	Area (ha)=	2.63	Curve Number (CN)=	72.0
	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65

0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.228 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 39.300
TOTAL RAINFALL (mm)= 90.000
RUNOFF COEFFICIENT = 0.437

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:06 100yr 12hr 10min SCS Type II **
****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\25f34a4c
Ptotal= 98.40 mm	Comments: 100yr 12hr 10min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.17	3.74	6.33	16.85	9.50	3.18
0.17	2.13	3.33	3.74	6.50	12.58	9.67	3.03
0.33	2.16	3.50	3.74	6.67	9.63	9.83	2.89
0.50	2.20	3.67	3.91	6.83	8.66	10.00	2.76
0.67	2.24	3.83	4.21	7.00	7.68	10.17	2.67
0.83	2.28	4.00	4.51	7.17	6.84	10.33	2.62
1.00	2.32	4.17	4.93	7.33	6.32	10.50	2.57
1.17	2.36	4.33	5.38	7.50	5.79	10.67	2.52
1.33	2.40	4.50	5.83	7.67	5.29	10.83	2.47
1.50	2.44	4.67	6.51	7.83	4.91	11.00	2.42
1.67	2.48	4.83	7.25	8.00	4.54	11.17	2.37
1.83	2.52	5.00	8.00	8.17	4.26	11.33	2.33
2.00	2.55	5.17	9.44	8.33	4.13	11.50	2.28
2.17	2.68	5.33	11.23	8.50	3.99	11.67	2.23
2.33	2.87	5.50	13.03	8.67	3.84	11.83	2.18
2.50	3.05	5.67	38.98	8.83	3.71	12.00	2.13
2.67	3.26	5.83	96.85	9.00	3.58		
2.83	3.45	6.00	130.94	9.17	3.44		
3.00	3.64	6.17	21.12	9.33	3.31		

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 11.34 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.31	Curve Number (CN)= 67.0 # of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62

1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.990 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 39.910
TOTAL RAINFALL (mm)= 98.400
RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0005)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Max.Eff.Inten.(mm/hr)=		130.94	70.13	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.97 (ii)	10.21 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.31	0.09	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.08	0.120 (iii)
TIME TO PEAK	(hrs)=	6.17	6.25	6.17
RUNOFF VOLUME	(mm)=	97.40	36.39	45.53

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     TOTAL RAINFALL   (mm)=      98.40        98.40          98.40
     RUNOFF COEFFICIENT   =       0.99         0.37           0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):    11.34   0.990     6.33    39.91
      + ID2= 2 (  0005):     0.91   0.120     6.17    45.53
        ================================================
        ID = 3 (  0006):    12.24   1.076     6.33    40.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   1.59   Curve Number   (CN)= 72.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 3.167    3.64 | 6.250   21.12 |  9.33    3.44
 0.167    0.00 | 3.250    3.74 | 6.333   21.12 |  9.42    3.31
 0.250    2.13 | 3.333    3.74 | 6.417   16.85 |  9.50    3.31
 0.333    2.13 | 3.417    3.74 | 6.500   16.85 |  9.58    3.18
 0.417    2.16 | 3.500    3.74 | 6.583   12.58 |  9.67    3.18
 0.500    2.16 | 3.583    3.74 | 6.667   12.58 |  9.75    3.03
 0.583    2.20 | 3.667    3.74 | 6.750    9.63 |  9.83    3.03
 0.667    2.20 | 3.750    3.91 | 6.833    9.63 |  9.92    2.89
 0.750    2.24 | 3.833    3.91 | 6.917    8.66 | 10.00    2.89
 0.833    2.24 | 3.917    4.21 | 7.000    8.66 | 10.08    2.76
 0.917    2.28 | 4.000    4.21 | 7.083    7.68 | 10.17    2.76
 1.000    2.28 | 4.083    4.51 | 7.167    7.68 | 10.25    2.67
 1.083    2.32 | 4.167    4.51 | 7.250    6.84 | 10.33    2.67
 1.167    2.32 | 4.250    4.93 | 7.333    6.84 | 10.42    2.62
 1.250    2.36 | 4.333    4.93 | 7.417    6.32 | 10.50    2.62
 1.333    2.36 | 4.417    5.38 | 7.500    6.32 | 10.58    2.57
 1.417    2.40 | 4.500    5.38 | 7.583    5.79 | 10.67    2.57
 1.500    2.40 | 4.583    5.83 | 7.667    5.79 | 10.75    2.52
 1.583    2.44 | 4.667    5.83 | 7.750    5.29 | 10.83    2.52
 1.667    2.44 | 4.750    6.51 | 7.833    5.29 | 10.92    2.47
 1.750    2.48 | 4.833    6.51 | 7.917    4.91 | 11.00    2.47
 1.833    2.48 | 4.917    7.25 | 8.000    4.91 | 11.08    2.42
 1.917    2.52 | 5.000    7.25 | 8.083    4.54 | 11.17    2.42
 2.000    2.52 | 5.083    8.00 | 8.167    4.54 | 11.25    2.37
 2.083    2.55 | 5.167    8.00 | 8.250    4.26 | 11.33    2.37
 2.167    2.55 | 5.250    9.44 | 8.333    4.26 | 11.42    2.33
 2.250    2.68 | 5.333    9.44 | 8.417    4.13 | 11.50    2.33
 2.333    2.68 | 5.417   11.23 | 8.500    4.13 | 11.58    2.28
 2.417    2.87 | 5.500   11.23 | 8.583    3.99 | 11.67    2.28
 2.500    2.87 | 5.583   13.03 | 8.667    3.99 | 11.75    2.23
 2.583    3.05 | 5.667   13.03 | 8.750    3.84 | 11.83    2.23
 2.667    3.05 | 5.750   38.98 | 8.833    3.84 | 11.92    2.18
 2.750    3.26 | 5.833   38.98 | 8.917    3.71 | 12.00    2.18
 2.833    3.26 | 5.917   96.85 | 9.000    3.71 | 12.08    2.13
 2.917    3.45 | 6.000   96.85 | 9.083    3.58 | 12.17    2.13
 3.000    3.45 | 6.083  130.94 | 9.167    3.58 |
 3.083    3.64 | 6.167  130.94 | 9.250    3.44 |

     Unit Hyd Qpeak  (cms)=   0.553

     PEAK FLOW       (cms)=   0.285 (i)
     TIME TO PEAK    (hrs)=   6.167
     RUNOFF VOLUME    (mm)=  44.558
     TOTAL RAINFALL   (mm)=  98.400
     RUNOFF COEFFICIENT   =   0.453

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   2.63   Curve Number   (CN)= 72.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 3.167    3.64 | 6.250   21.12 |  9.33    3.44
```

0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.265 (i)
TIME TO PEAK (hrs)= 6.333
RUNOFF VOLUME (mm)= 45.377
TOTAL RAINFALL (mm)= 98.400
RUNOFF COEFFICIENT = 0.461

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****

** SIMULATION:07 25mm CHI **

****

READ STORM	Filename: C:\Users\lmattern\AppData\Local\Temp\4b969ce0-78e0-472d-8f7f-60bce18f7b82\4fbd61d8
Ptotal= 24.91 mm	Comments: 25mm CHI

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.76	1.00	11.75	2.00	3.88	3.00	2.07
0.17	2.00	1.17	57.66	2.17	3.35	3.17	1.93
0.33	2.32	1.33	15.20	2.33	2.96	3.33	1.81
0.50	2.81	1.50	8.31	2.50	2.66	3.50	1.71
0.67	3.61	1.67	5.91	2.67	2.42	3.67	1.62
0.83	5.28	1.83	4.66	2.83	2.23	3.83	1.54

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 11.34 Curve Number (CN)= 67.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Unit Hyd Qpeak (cms)= 1.397

PEAK FLOW (cms)= 0.060 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 2.732
TOTAL RAINFALL (mm)= 24.906

RUNOFF COEFFICIENT = 0.110

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0005)	Area (ha)=	0.91	
ID= 1 DT= 5.0 min	Total Imp(%)=	28.00	Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	2.91		
over (min)	5.00	35.00		
Storage Coeff. (min)=	2.74 (ii)	32.16 (ii)		
Unit Hyd. Tpeak (min)=	5.00	35.00		
Unit Hyd. peak (cms)=	0.29	0.03		
				TOTALS
PEAK FLOW (cms)=	0.02	0.00		0.022 (iii)
TIME TO PEAK (hrs)=	1.33	1.92		1.33
RUNOFF VOLUME (mm)=	23.91	2.51		5.70
TOTAL RAINFALL (mm)=	24.91	24.91		24.91
RUNOFF COEFFICIENT =	0.96	0.10		0.23

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0001):	11.34	0.060	1.75	2.73
	+ ID2= 2 (0005):	0.91	0.022	1.33	5.70
	ID = 3 (0006):	12.24	0.065	1.67	2.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0003)	Area (ha)=	1.59	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.11	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.018 (i)
TIME TO PEAK (hrs)= 1.417

RUNOFF VOLUME (mm)= 3.277
TOTAL RAINFALL (mm)= 24.906
RUNOFF COEFFICIENT = 0.132

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0002)	Area (ha)=	2.63	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Unit Hyd Qpeak (cms)= 0.325

PEAK FLOW (cms)= 0.017 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 3.337
TOTAL RAINFALL (mm)= 24.906
RUNOFF COEFFICIENT = 0.134

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post Development Model Results

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*********************************************
** SIMULATION:01 2yr 12hr 10min SCS Type II **
*********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.27         0.89
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      87.79        50.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 3.167    1.64 | 6.250    9.53 |  9.33    1.55
 0.167    0.00 | 3.250    1.69 | 6.333    9.53 |  9.42    1.49
 0.250    0.96 | 3.333    1.69 | 6.417    7.60 |  9.50    1.49
 0.333    0.96 | 3.417    1.69 | 6.500    7.60 |  9.58    1.43
 0.417    0.98 | 3.500    1.69 | 6.583    5.68 |  9.67    1.43
 0.500    0.98 | 3.583    1.69 | 6.667    5.68 |  9.75    1.37
 0.583    0.99 | 3.667    1.69 | 6.750    4.35 |  9.83    1.37
 0.667    0.99 | 3.750    1.77 | 6.833    4.35 |  9.92    1.31
 0.750    1.01 | 3.833    1.77 | 6.917    3.91 | 10.00    1.31
 0.833    1.01 | 3.917    1.90 | 7.000    3.91 | 10.08    1.25
 0.917    1.03 | 4.000    1.90 | 7.083    3.47 | 10.17    1.25
 1.000    1.03 | 4.083    2.04 | 7.167    3.47 | 10.25    1.20
 1.083    1.05 | 4.167    2.04 | 7.250    3.09 | 10.33    1.20
 1.167    1.05 | 4.250    2.23 | 7.333    3.09 | 10.42    1.18
 1.250    1.07 | 4.333    2.23 | 7.417    2.85 | 10.50    1.18
 1.333    1.07 | 4.417    2.43 | 7.500    2.85 | 10.58    1.16
 1.417    1.08 | 4.500    2.43 | 7.583    2.61 | 10.67    1.16
 1.500    1.08 | 4.583    2.63 | 7.667    2.61 | 10.75    1.14
 1.583    1.10 | 4.667    2.63 | 7.750    2.39 | 10.83    1.14
 1.667    1.10 | 4.750    2.94 | 7.833    2.39 | 10.92    1.12
 1.750    1.12 | 4.833    2.94 | 7.917    2.22 | 11.00    1.12
 1.833    1.12 | 4.917    3.27 | 8.000    2.22 | 11.08    1.09
 1.917    1.14 | 5.000    3.27 | 8.083    2.05 | 11.17    1.09
 2.000    1.14 | 5.083    3.61 | 8.167    2.05 | 11.25    1.07
 2.083    1.15 | 5.167    3.61 | 8.250    1.92 | 11.33    1.07
 2.167    1.15 | 5.250    4.26 | 8.333    1.92 | 11.42    1.05
 2.250    1.21 | 5.333    4.26 | 8.417    1.86 | 11.50    1.05
 2.333    1.21 | 5.417    5.07 | 8.500    1.86 | 11.58    1.03
 2.417    1.29 | 5.500    5.07 | 8.583    1.80 | 11.67    1.03
 2.500    1.29 | 5.583    5.88 | 8.667    1.80 | 11.75    1.00
 2.583    1.38 | 5.667    5.88 | 8.750    1.73 | 11.83    1.00
 2.667    1.38 | 5.750   17.59 | 8.833    1.73 | 11.92    0.98
 2.750    1.47 | 5.833   17.59 | 8.917    1.68 | 12.00    0.98
 2.833    1.47 | 5.917   43.70 | 9.000    1.68 | 12.08    0.96
 2.917    1.56 | 6.000   43.70 | 9.083    1.62 | 12.17    0.96
 3.000    1.56 | 6.083   59.08 | 9.167    1.62 |
 3.083    1.64 | 6.167   59.08 | 9.250    1.55 |

     Max.Eff.Inten.(mm/hr)=      59.08        12.18
               over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.37 (ii)   15.23 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.30         0.07
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.02          0.040 (iii)
     TIME TO PEAK    (hrs)=       6.17         6.33           6.17
     RUNOFF VOLUME    (mm)=      43.40         7.96          13.27
     TOTAL RAINFALL   (mm)=      44.40        44.40          44.40
     RUNOFF COEFFICIENT   =       0.98         0.18           0.30

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0010)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.29         0.99
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      92.38        64.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
```

0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Max.Eff.Inten.(mm/hr)=	59.08	12.18	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.44 (ii)	17.36 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.06	
			TOTALS
PEAK FLOW (cms)=	0.03	0.02	0.044 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	43.40	7.96	13.27
TOTAL RAINFALL (mm)=	44.40	44.40	44.40
RUNOFF COEFFICIENT =	0.98	0.18	0.30

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0008)	Area (ha)= 0.56
ID= 1 DT= 5.0 min	Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12

1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Max.Eff.Inten.(mm/hr)=	59.08	7.38	
over (min)	5.00	25.00	
Storage Coeff. (min)=	1.90 (ii)	24.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.32	0.05	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.033 (iii)
TIME TO PEAK (hrs)=	6.17	6.50	6.17
RUNOFF VOLUME (mm)=	43.40	7.19	19.11
TOTAL RAINFALL (mm)=	44.40	44.40	44.40
RUNOFF COEFFICIENT =	0.98	0.16	0.43

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0007)	Area (ha)= 12.63		
ID= 1 DT= 5.0 min	Total Imp(%)= 32.00	Dir. Conn.(%)= 24.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	4.04	8.59	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	2.00	5.00	
Length (m)=	290.22	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Max.Eff.Inten.(mm/hr)=	59.08	12.49	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.85 (ii)	17.17 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS

PEAK FLOW (cms)=	0.48	0.17	0.590 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	43.40	8.06	16.54
TOTAL RAINFALL (mm)=	44.40	44.40	44.40
RUNOFF COEFFICIENT =	0.98	0.18	0.37

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.64	6.250	9.53	9.33	1.55
0.167	0.00	3.250	1.69	6.333	9.53	9.42	1.49
0.250	0.96	3.333	1.69	6.417	7.60	9.50	1.49
0.333	0.96	3.417	1.69	6.500	7.60	9.58	1.43
0.417	0.98	3.500	1.69	6.583	5.68	9.67	1.43
0.500	0.98	3.583	1.69	6.667	5.68	9.75	1.37
0.583	0.99	3.667	1.69	6.750	4.35	9.83	1.37
0.667	0.99	3.750	1.77	6.833	4.35	9.92	1.31
0.750	1.01	3.833	1.77	6.917	3.91	10.00	1.31
0.833	1.01	3.917	1.90	7.000	3.91	10.08	1.25
0.917	1.03	4.000	1.90	7.083	3.47	10.17	1.25
1.000	1.03	4.083	2.04	7.167	3.47	10.25	1.20
1.083	1.05	4.167	2.04	7.250	3.09	10.33	1.20
1.167	1.05	4.250	2.23	7.333	3.09	10.42	1.18
1.250	1.07	4.333	2.23	7.417	2.85	10.50	1.18
1.333	1.07	4.417	2.43	7.500	2.85	10.58	1.16
1.417	1.08	4.500	2.43	7.583	2.61	10.67	1.16
1.500	1.08	4.583	2.63	7.667	2.61	10.75	1.14
1.583	1.10	4.667	2.63	7.750	2.39	10.83	1.14
1.667	1.10	4.750	2.94	7.833	2.39	10.92	1.12
1.750	1.12	4.833	2.94	7.917	2.22	11.00	1.12
1.833	1.12	4.917	3.27	8.000	2.22	11.08	1.09
1.917	1.14	5.000	3.27	8.083	2.05	11.17	1.09
2.000	1.14	5.083	3.61	8.167	2.05	11.25	1.07
2.083	1.15	5.167	3.61	8.250	1.92	11.33	1.07
2.167	1.15	5.250	4.26	8.333	1.92	11.42	1.05
2.250	1.21	5.333	4.26	8.417	1.86	11.50	1.05
2.333	1.21	5.417	5.07	8.500	1.86	11.58	1.03
2.417	1.29	5.500	5.07	8.583	1.80	11.67	1.03
2.500	1.29	5.583	5.88	8.667	1.80	11.75	1.00
2.583	1.38	5.667	5.88	8.750	1.73	11.83	1.00
2.667	1.38	5.750	17.59	8.833	1.73	11.92	0.98
2.750	1.47	5.833	17.59	8.917	1.68	12.00	0.98
2.833	1.47	5.917	43.70	9.000	1.68	12.08	0.96
2.917	1.56	6.000	43.70	9.083	1.62	12.17	0.96
3.000	1.56	6.083	59.08	9.167	1.62		
3.083	1.64	6.167	59.08	9.250	1.55		

Max.Eff.Inten.(mm/hr)=	59.08	12.20	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.71 (ii)	19.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.29	0.06	
			TOTALS
PEAK FLOW (cms)=	0.02	0.01	0.031 (iii)
TIME TO PEAK (hrs)=	6.17	6.42	6.17
RUNOFF VOLUME (mm)=	43.40	8.50	13.73
TOTAL RAINFALL (mm)=	44.40	44.40	44.40
RUNOFF COEFFICIENT =	0.98	0.19	0.31

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):		0.91	0.031	6.17	13.73

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      + ID2= 2 (  0007):    12.63   0.590     6.17    16.54
        ================================================
        ID = 3 (  0013):    13.54   0.621     6.17    16.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000      0.0000   |    0.1740      0.1633
                          0.0020      0.0192   |    0.2560      0.1852
                          0.0080      0.0388   |    0.3480      0.2076
                          0.0130      0.0586   |    0.4510      0.2302
                          0.0160      0.0789   |    0.5610      0.2533
                          0.0190      0.0994   |    0.6800      0.2767
                          0.0500      0.1204   |    0.8070      0.3005
                          0.1040      0.1416   |    0.9400      0.3240

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)     13.540      0.621      6.17      16.35
   OUTFLOW: ID= 1 (  0011)     13.540      0.087      7.08      16.17

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.99
                  TIME SHIFT OF PEAK FLOW         (min)= 55.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1349

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):    13.54   0.087     7.08    16.17
     + ID2= 2 (  0008):     0.56   0.033     6.17    19.11
       ================================================
       ID = 3 (  0004):    14.10   0.091     7.08    16.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
**********************************************
** SIMULATION:02 5yr 12hr 10min SCS Type II **
**********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
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                        IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.27         0.89
Dep. Storage     (mm)=       1.00         5.00
Average Slope     (%)=       2.00         7.00
Length            (m)=      87.79        50.00
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                    ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 3.167    2.17 | 6.250   12.62 |  9.33    2.05
 0.167    0.00 | 3.250    2.24 | 6.333   12.62 |  9.42    1.98
 0.250    1.27 | 3.333    2.24 | 6.417   10.07 |  9.50    1.98
 0.333    1.27 | 3.417    2.24 | 6.500   10.07 |  9.58    1.90
 0.417    1.29 | 3.500    2.24 | 6.583    7.52 |  9.67    1.90
 0.500    1.29 | 3.583    2.24 | 6.667    7.52 |  9.75    1.81
 0.583    1.32 | 3.667    2.24 | 6.750    5.76 |  9.83    1.81
 0.667    1.32 | 3.750    2.34 | 6.833    5.76 |  9.92    1.73
 0.750    1.34 | 3.833    2.34 | 6.917    5.17 | 10.00    1.73
 0.833    1.34 | 3.917    2.52 | 7.000    5.17 | 10.08    1.65
 0.917    1.36 | 4.000    2.52 | 7.083    4.59 | 10.17    1.65
 1.000    1.36 | 4.083    2.70 | 7.167    4.59 | 10.25    1.59
 1.083    1.39 | 4.167    2.70 | 7.250    4.09 | 10.33    1.59
 1.167    1.39 | 4.250    2.95 | 7.333    4.09 | 10.42    1.56
 1.250    1.41 | 4.333    2.95 | 7.417    3.78 | 10.50    1.56
 1.333    1.41 | 4.417    3.22 | 7.500    3.78 | 10.58    1.54
 1.417    1.43 | 4.500    3.22 | 7.583    3.46 | 10.67    1.54
 1.500    1.43 | 4.583    3.48 | 7.667    3.46 | 10.75    1.50
 1.583    1.46 | 4.667    3.48 | 7.750    3.16 | 10.83    1.50
 1.667    1.46 | 4.750    3.89 | 7.833    3.16 | 10.92    1.48
 1.750    1.48 | 4.833    3.89 | 7.917    2.94 | 11.00    1.48
 1.833    1.48 | 4.917    4.33 | 8.000    2.94 | 11.08    1.45
 1.917    1.50 | 5.000    4.33 | 8.083    2.71 | 11.17    1.45
 2.000    1.50 | 5.083    4.78 | 8.167    2.71 | 11.25    1.42
 2.083    1.53 | 5.167    4.78 | 8.250    2.54 | 11.33    1.42
 2.167    1.53 | 5.250    5.64 | 8.333    2.54 | 11.42    1.39
 2.250    1.60 | 5.333    5.64 | 8.417    2.47 | 11.50    1.39
 2.333    1.60 | 5.417    6.71 | 8.500    2.47 | 11.58    1.36
 2.417    1.71 | 5.500    6.71 | 8.583    2.39 | 11.67    1.36
 2.500    1.71 | 5.583    7.79 | 8.667    2.39 | 11.75    1.33
 2.583    1.82 | 5.667    7.79 | 8.750    2.30 | 11.83    1.33
 2.667    1.82 | 5.750   23.29 | 8.833    2.30 | 11.92    1.30
 2.750    1.95 | 5.833   23.29 | 8.917    2.22 | 12.00    1.30
 2.833    1.95 | 5.917   57.87 | 9.000    2.22 | 12.08    1.27
 2.917    2.06 | 6.000   57.87 | 9.083    2.14 | 12.17    1.27
 3.000    2.06 | 6.083   78.25 | 9.167    2.14 |
 3.083    2.17 | 6.167   78.24 | 9.250    2.05 |
```

Max.Eff.Inten.(mm/hr)=	78.25	24.88	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.12 (ii)	11.78 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
			TOTALS
PEAK FLOW (cms)=	0.04	0.04	0.068 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	57.80	13.75	20.35
TOTAL RAINFALL (mm)=	58.80	58.80	58.80
RUNOFF COEFFICIENT =	0.98	0.23	0.35

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0010)	Area (ha)=	1.28	
ID= 1 DT= 5.0 min	Total Imp(%)=	23.00	Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

Max.Eff.Inten.(mm/hr)=	78.25	21.20	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.18 (ii)	14.13 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.08	
			TOTALS
PEAK FLOW (cms)=	0.04	0.04	0.073 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	57.80	13.75	20.35
TOTAL RAINFALL (mm)=	58.80	58.80	58.80
RUNOFF COEFFICIENT =	0.98	0.23	0.35

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0008)	Area (ha)= 0.56
ID= 1 DT= 5.0 min	Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

				TOTALS
Max.Eff.Inten.(mm/hr)=		78.25	15.37	
over (min)		5.00	20.00	
Storage Coeff. (min)=		1.70 (ii)	18.77 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.32	0.06	
PEAK FLOW	(cms)=	0.04	0.01	0.047 (iii)
TIME TO PEAK	(hrs)=	6.17	6.42	6.17
RUNOFF VOLUME	(mm)=	57.80	12.57	27.48
TOTAL RAINFALL	(mm)=	58.80	58.80	58.80
RUNOFF COEFFICIENT	=	0.98	0.21	0.47

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0007)	Area (ha)= 12.63
ID= 1 DT= 5.0 min	Total Imp(%)= 32.00 Dir. Conn.(%)= 24.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98

0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42
2.167	1.53	5.250	5.64	8.333	2.54	11.42	1.39
2.250	1.60	5.333	5.64	8.417	2.47	11.50	1.39
2.333	1.60	5.417	6.71	8.500	2.47	11.58	1.36
2.417	1.71	5.500	6.71	8.583	2.39	11.67	1.36
2.500	1.71	5.583	7.79	8.667	2.39	11.75	1.33
2.583	1.82	5.667	7.79	8.750	2.30	11.83	1.33
2.667	1.82	5.750	23.29	8.833	2.30	11.92	1.30
2.750	1.95	5.833	23.29	8.917	2.22	12.00	1.30
2.833	1.95	5.917	57.87	9.000	2.22	12.08	1.27
2.917	2.06	6.000	57.87	9.083	2.14	12.17	1.27
3.000	2.06	6.083	78.25	9.167	2.14		
3.083	2.17	6.167	78.24	9.250	2.05		

Max.Eff.Inten.(mm/hr)=	78.25	25.46	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.34 (ii)	13.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.23	0.08	
			TOTALS
PEAK FLOW (cms)=	0.64	0.34	0.921 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	57.80	13.90	24.44
TOTAL RAINFALL (mm)=	58.80	58.80	58.80
RUNOFF COEFFICIENT =	0.98	0.24	0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.17	6.250	12.62	9.33	2.05
0.167	0.00	3.250	2.24	6.333	12.62	9.42	1.98
0.250	1.27	3.333	2.24	6.417	10.07	9.50	1.98
0.333	1.27	3.417	2.24	6.500	10.07	9.58	1.90
0.417	1.29	3.500	2.24	6.583	7.52	9.67	1.90
0.500	1.29	3.583	2.24	6.667	7.52	9.75	1.81
0.583	1.32	3.667	2.24	6.750	5.76	9.83	1.81
0.667	1.32	3.750	2.34	6.833	5.76	9.92	1.73
0.750	1.34	3.833	2.34	6.917	5.17	10.00	1.73
0.833	1.34	3.917	2.52	7.000	5.17	10.08	1.65
0.917	1.36	4.000	2.52	7.083	4.59	10.17	1.65
1.000	1.36	4.083	2.70	7.167	4.59	10.25	1.59
1.083	1.39	4.167	2.70	7.250	4.09	10.33	1.59
1.167	1.39	4.250	2.95	7.333	4.09	10.42	1.56
1.250	1.41	4.333	2.95	7.417	3.78	10.50	1.56
1.333	1.41	4.417	3.22	7.500	3.78	10.58	1.54
1.417	1.43	4.500	3.22	7.583	3.46	10.67	1.54
1.500	1.43	4.583	3.48	7.667	3.46	10.75	1.50
1.583	1.46	4.667	3.48	7.750	3.16	10.83	1.50
1.667	1.46	4.750	3.89	7.833	3.16	10.92	1.48
1.750	1.48	4.833	3.89	7.917	2.94	11.00	1.48
1.833	1.48	4.917	4.33	8.000	2.94	11.08	1.45
1.917	1.50	5.000	4.33	8.083	2.71	11.17	1.45
2.000	1.50	5.083	4.78	8.167	2.71	11.25	1.42
2.083	1.53	5.167	4.78	8.250	2.54	11.33	1.42

```
              2.167    1.53 | 5.250    5.64 | 8.333    2.54 | 11.42    1.39
              2.250    1.60 | 5.333    5.64 | 8.417    2.47 | 11.50    1.39
              2.333    1.60 | 5.417    6.71 | 8.500    2.47 | 11.58    1.36
              2.417    1.71 | 5.500    6.71 | 8.583    2.39 | 11.67    1.36
              2.500    1.71 | 5.583    7.79 | 8.667    2.39 | 11.75    1.33
              2.583    1.82 | 5.667    7.79 | 8.750    2.30 | 11.83    1.33
              2.667    1.82 | 5.750   23.29 | 8.833    2.30 | 11.92    1.30
              2.750    1.95 | 5.833   23.29 | 8.917    2.22 | 12.00    1.30
              2.833    1.95 | 5.917   57.87 | 9.000    2.22 | 12.08    1.27
              2.917    2.06 | 6.000   57.87 | 9.083    2.14 | 12.17    1.27
              3.000    2.06 | 6.083   78.25 | 9.167    2.14 |
              3.083    2.17 | 6.167   78.24 | 9.250    2.05 |

     Max.Eff.Inten.(mm/hr)=      78.25        24.09
               over (min)        5.00        20.00
     Storage Coeff.  (min)=      2.42 (ii)   15.05 (ii)
     Unit Hyd. Tpeak (min)=      5.00        20.00
     Unit Hyd. peak  (cms)=      0.30         0.07
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.03         0.03          0.048 (iii)
     TIME TO PEAK    (hrs)=      6.17         6.33           6.17
     RUNOFF VOLUME    (mm)=     57.80        14.59          21.06
     TOTAL RAINFALL   (mm)=     58.80        58.80          58.80
     RUNOFF COEFFICIENT   =      0.98         0.25           0.36

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
             YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     0.91   0.048     6.17    21.06
      + ID2= 2 (  0007):    12.63   0.921     6.17    24.44
        ========================================================
        ID = 3 (  0013):    13.54   0.968     6.17    24.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF

| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.1740      0.1633
                           0.0020      0.0192   |    0.2560      0.1852
                           0.0080      0.0388   |    0.3480      0.2076
                           0.0130      0.0586   |    0.4510      0.2302
                           0.0160      0.0789   |    0.5610      0.2533
                           0.0190      0.0994   |    0.6800      0.2767
                           0.0500      0.1204   |    0.8070      0.3005
                           0.1040      0.1416   |    0.9400      0.3240

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)     13.540      0.968      6.17      24.21
   OUTFLOW: ID= 1 (  0011)     13.540      0.221      6.67      24.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 22.80
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1760

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0011):    13.54   0.221     6.67    24.03
      + ID2= 2 (  0008):     0.56   0.047     6.17    27.48
        ========================================================
        ID = 3 (  0004):    14.10   0.231     6.67    24.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
**********************************************
** SIMULATION:03 10yr 12hr 10min SCS Type II **
**********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.27         0.89
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      87.79        50.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Max.Eff.Inten.(mm/hr)=	91.02	32.95	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.99 (ii)	10.63 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
			TOTALS
PEAK FLOW (cms)=	0.04	0.05	0.087 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	67.40	18.23	25.60
TOTAL RAINFALL (mm)=	68.40	68.40	68.40
RUNOFF COEFFICIENT =	0.99	0.27	0.37

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0010)	Area (ha)= 1.28
ID= 1 DT= 5.0 min	Total Imp(%)= 23.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79

1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

				TOTALS
Max.Eff.Inten.(mm/hr)=		91.02	28.19	
over (min)		5.00	15.00	
Storage Coeff. (min)=		2.05 (ii)	12.72 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.31	0.08	
PEAK FLOW	(cms)=	0.05	0.05	0.092 (iii)
TIME TO PEAK	(hrs)=	6.17	6.25	6.17
RUNOFF VOLUME	(mm)=	67.40	18.23	25.60
TOTAL RAINFALL	(mm)=	68.40	68.40	68.40
RUNOFF COEFFICIENT	=	0.99	0.27	0.37

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0008)	Area (ha)= 0.56
ID= 1 DT= 5.0 min	Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Max.Eff.Inten.(mm/hr)=	91.02	23.42	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.60 (ii)	16.02 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			TOTALS
PEAK FLOW (cms)=	0.05	0.01	0.056 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	67.40	16.75	33.45
TOTAL RAINFALL (mm)=	68.40	68.40	68.40
RUNOFF COEFFICIENT =	0.99	0.24	0.49

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0007)	Area (ha)= 12.63		
ID= 1 DT= 5.0 min	Total Imp(%)= 32.00	Dir. Conn.(%)= 24.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

Max.Eff.Inten.(mm/hr)=	91.02	33.71	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.08 (ii)	12.37 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.24	0.08	
			TOTALS
PEAK FLOW (cms)=	0.75	0.48	1.143 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	67.40	18.42	30.17
TOTAL RAINFALL (mm)=	68.40	68.40	68.40
RUNOFF COEFFICIENT =	0.99	0.27	0.44

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0012)|   Area    (ha)=   0.91
|ID= 1 DT= 5.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  15.00
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                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.25         0.65
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         3.00
     Length            (m)=      77.72        50.00
     Mannings n             =     0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.53	6.250	14.68	9.33	2.39
0.167	0.00	3.250	2.60	6.333	14.68	9.42	2.30
0.250	1.48	3.333	2.60	6.417	11.71	9.50	2.30
0.333	1.48	3.417	2.60	6.500	11.71	9.58	2.21
0.417	1.50	3.500	2.60	6.583	8.74	9.67	2.21
0.500	1.50	3.583	2.60	6.667	8.74	9.75	2.10
0.583	1.53	3.667	2.60	6.750	6.70	9.83	2.10
0.667	1.53	3.750	2.72	6.833	6.70	9.92	2.01
0.750	1.56	3.833	2.72	6.917	6.02	10.00	2.01
0.833	1.56	3.917	2.93	7.000	6.02	10.08	1.92
0.917	1.59	4.000	2.93	7.083	5.34	10.17	1.92
1.000	1.59	4.083	3.14	7.167	5.34	10.25	1.85
1.083	1.61	4.167	3.14	7.250	4.76	10.33	1.85
1.167	1.61	4.250	3.43	7.333	4.76	10.42	1.82
1.250	1.64	4.333	3.43	7.417	4.39	10.50	1.82
1.333	1.64	4.417	3.74	7.500	4.39	10.58	1.79
1.417	1.67	4.500	3.74	7.583	4.03	10.67	1.79
1.500	1.67	4.583	4.05	7.667	4.03	10.75	1.75
1.583	1.69	4.667	4.05	7.750	3.68	10.83	1.75
1.667	1.69	4.750	4.52	7.833	3.68	10.92	1.72
1.750	1.72	4.833	4.52	7.917	3.42	11.00	1.72
1.833	1.72	4.917	5.04	8.000	3.42	11.08	1.69
1.917	1.75	5.000	5.04	8.083	3.16	11.17	1.69
2.000	1.75	5.083	5.56	8.167	3.16	11.25	1.65
2.083	1.77	5.167	5.56	8.250	2.96	11.33	1.65
2.167	1.77	5.250	6.56	8.333	2.96	11.42	1.62
2.250	1.86	5.333	6.56	8.417	2.87	11.50	1.62
2.333	1.86	5.417	7.81	8.500	2.87	11.58	1.58
2.417	1.99	5.500	7.81	8.583	2.78	11.67	1.58
2.500	1.99	5.583	9.06	8.667	2.78	11.75	1.55
2.583	2.12	5.667	9.06	8.750	2.67	11.83	1.55
2.667	2.12	5.750	27.09	8.833	2.67	11.92	1.51
2.750	2.27	5.833	27.09	8.917	2.58	12.00	1.51
2.833	2.27	5.917	67.32	9.000	2.58	12.08	1.48
2.917	2.40	6.000	67.32	9.083	2.49	12.17	1.48
3.000	2.40	6.083	91.02	9.167	2.49		
3.083	2.53	6.167	91.02	9.250	2.39		

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     Max.Eff.Inten.(mm/hr)=      91.02        31.91
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       2.28 (ii)   13.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.04          0.066 (iii)
     TIME TO PEAK    (hrs)=       6.17         6.25           6.17
     RUNOFF VOLUME    (mm)=      67.40        19.27          26.48
     TOTAL RAINFALL   (mm)=      68.40        68.40          68.40
     RUNOFF COEFFICIENT   =       0.99         0.28           0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     0.91   0.066     6.17    26.48
     + ID2= 2 (  0007):    12.63   1.143     6.17    30.17
       ================================================
       ID = 3 (  0013):    13.54   1.210     6.17    29.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000      0.0000   |    0.1740      0.1633
                          0.0020      0.0192   |    0.2560      0.1852
                          0.0080      0.0388   |    0.3480      0.2076
                          0.0130      0.0586   |    0.4510      0.2302
                          0.0160      0.0789   |    0.5610      0.2533
```

```
                        0.0190      0.0994   |    0.6800      0.2767
                        0.0500      0.1204   |    0.8070      0.3005
                        0.1040      0.1416   |    0.9400      0.3240

                             AREA     QPEAK     TPEAK       R.V.
                             (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)     13.540      1.210      6.17      29.93
   OUTFLOW: ID= 1 (  0011)     13.540      0.335      6.58      29.75

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 27.72
                  TIME SHIFT OF PEAK FLOW         (min)= 25.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.2045

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0011):    13.54   0.335     6.58    29.75
      + ID2= 2 (  0008):     0.56   0.056     6.17    33.45
        ================================================
        ID = 3 (  0004):    14.10   0.350     6.58    29.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
**********************************************
** SIMULATION:04 25yr 12hr 10min SCS Type II **
**********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.27         0.89
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      87.79        50.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 3.167    2.97 | 6.250   17.25 |  9.33    2.81
              0.167    0.00 | 3.250    3.06 | 6.333   17.25 |  9.42    2.70
              0.250    1.74 | 3.333    3.06 | 6.417   13.77 |  9.50    2.70
              0.333    1.74 | 3.417    3.06 | 6.500   13.77 |  9.58    2.59
              0.417    1.77 | 3.500    3.06 | 6.583   10.28 |  9.67    2.59
              0.500    1.77 | 3.583    3.06 | 6.667   10.28 |  9.75    2.47
              0.583    1.80 | 3.667    3.06 | 6.750    7.87 |  9.83    2.47
              0.667    1.80 | 3.750    3.20 | 6.833    7.87 |  9.92    2.37
              0.750    1.83 | 3.833    3.20 | 6.917    7.07 | 10.00    2.37
              0.833    1.83 | 3.917    3.44 | 7.000    7.07 | 10.08    2.26
              0.917    1.86 | 4.000    3.44 | 7.083    6.28 | 10.17    2.26
              1.000    1.86 | 4.083    3.69 | 7.167    6.28 | 10.25    2.18
              1.083    1.89 | 4.167    3.69 | 7.250    5.59 | 10.33    2.18
              1.167    1.89 | 4.250    4.03 | 7.333    5.59 | 10.42    2.14
              1.250    1.93 | 4.333    4.03 | 7.417    5.16 | 10.50    2.14
              1.333    1.93 | 4.417    4.40 | 7.500    5.16 | 10.58    2.10
              1.417    1.96 | 4.500    4.40 | 7.583    4.73 | 10.67    2.10
              1.500    1.96 | 4.583    4.76 | 7.667    4.73 | 10.75    2.06
              1.583    1.99 | 4.667    4.76 | 7.750    4.32 | 10.83    2.06
              1.667    1.99 | 4.750    5.32 | 7.833    4.32 | 10.92    2.02
              1.750    2.02 | 4.833    5.32 | 7.917    4.02 | 11.00    2.02
              1.833    2.02 | 4.917    5.93 | 8.000    4.02 | 11.08    1.98
              1.917    2.06 | 5.000    5.93 | 8.083    3.71 | 11.17    1.98
              2.000    2.06 | 5.083    6.54 | 8.167    3.71 | 11.25    1.94
              2.083    2.09 | 5.167    6.54 | 8.250    3.48 | 11.33    1.94
              2.167    2.09 | 5.250    7.71 | 8.333    3.48 | 11.42    1.90
              2.250    2.19 | 5.333    7.71 | 8.417    3.37 | 11.50    1.90
              2.333    2.19 | 5.417    9.18 | 8.500    3.37 | 11.58    1.86
              2.417    2.34 | 5.500    9.18 | 8.583    3.26 | 11.67    1.86
              2.500    2.34 | 5.583   10.65 | 8.667    3.26 | 11.75    1.82
              2.583    2.50 | 5.667   10.65 | 8.750    3.14 | 11.83    1.82
              2.667    2.50 | 5.750   31.85 | 8.833    3.14 | 11.92    1.78
              2.750    2.67 | 5.833   31.85 | 8.917    3.03 | 12.00    1.78
              2.833    2.67 | 5.917   79.13 | 9.000    3.03 | 12.08    1.74
              2.917    2.82 | 6.000   79.14 | 9.083    2.93 | 12.17    1.74
              3.000    2.82 | 6.083  106.99 | 9.167    2.93 |
              3.083    2.97 | 6.167  106.99 | 9.250    2.81 |

     Max.Eff.Inten.(mm/hr)=     106.99        44.09
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.87 (ii)    9.56 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.32         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.05         0.08          0.126 (iii)
     TIME TO PEAK    (hrs)=      6.17         6.25           6.17
     RUNOFF VOLUME    (mm)=     79.40        24.42          32.66
     TOTAL RAINFALL   (mm)=     80.40        80.40          80.40
     RUNOFF COEFFICIENT   =      0.99         0.30           0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
             YOU SHOULD CONSIDER SPLITTING THE AREA.
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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0010)	Area (ha)=	1.28	
ID= 1 DT= 5.0 min	Total Imp(%)=	23.00	Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	106.99	44.09		
over (min)	5.00	15.00		
Storage Coeff. (min)=	1.93 (ii)	10.84 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.31	0.09		
			TOTALS	
PEAK FLOW (cms)=	0.06	0.08	0.121 (iii)	
TIME TO PEAK (hrs)=	6.17	6.25	6.17	
RUNOFF VOLUME (mm)=	79.40	24.42	32.66	
TOTAL RAINFALL (mm)=	80.40	80.40	80.40	
RUNOFF COEFFICIENT =	0.99	0.30	0.41	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0008)	Area (ha)=	0.56	
ID= 1 DT= 5.0 min	Total Imp(%)=	33.00	Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	106.99	31.66	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.50 (ii)	14.28 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			TOTALS
PEAK FLOW (cms)=	0.05	0.02	0.072 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	79.40	22.57	41.31
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.28	0.51

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0007)	Area (ha)=	12.63	
ID= 1 DT= 5.0 min	Total Imp(%)=	32.00	Dir. Conn.(%)= 24.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06

1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	106.99	45.07	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.83 (ii)	11.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.25	0.09	
			TOTALS
PEAK FLOW (cms)=	0.88	0.67	1.445 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	79.40	24.65	37.79
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.31	0.47

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 0.91
Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.25	0.65
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	3.00
Length (m)=	77.72	50.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.97	6.250	17.25	9.33	2.81
0.167	0.00	3.250	3.06	6.333	17.25	9.42	2.70
0.250	1.74	3.333	3.06	6.417	13.77	9.50	2.70
0.333	1.74	3.417	3.06	6.500	13.77	9.58	2.59
0.417	1.77	3.500	3.06	6.583	10.28	9.67	2.59
0.500	1.77	3.583	3.06	6.667	10.28	9.75	2.47
0.583	1.80	3.667	3.06	6.750	7.87	9.83	2.47
0.667	1.80	3.750	3.20	6.833	7.87	9.92	2.37
0.750	1.83	3.833	3.20	6.917	7.07	10.00	2.37
0.833	1.83	3.917	3.44	7.000	7.07	10.08	2.26
0.917	1.86	4.000	3.44	7.083	6.28	10.17	2.26
1.000	1.86	4.083	3.69	7.167	6.28	10.25	2.18
1.083	1.89	4.167	3.69	7.250	5.59	10.33	2.18
1.167	1.89	4.250	4.03	7.333	5.59	10.42	2.14
1.250	1.93	4.333	4.03	7.417	5.16	10.50	2.14
1.333	1.93	4.417	4.40	7.500	5.16	10.58	2.10
1.417	1.96	4.500	4.40	7.583	4.73	10.67	2.10
1.500	1.96	4.583	4.76	7.667	4.73	10.75	2.06
1.583	1.99	4.667	4.76	7.750	4.32	10.83	2.06
1.667	1.99	4.750	5.32	7.833	4.32	10.92	2.02
1.750	2.02	4.833	5.32	7.917	4.02	11.00	2.02
1.833	2.02	4.917	5.93	8.000	4.02	11.08	1.98
1.917	2.06	5.000	5.93	8.083	3.71	11.17	1.98
2.000	2.06	5.083	6.54	8.167	3.71	11.25	1.94
2.083	2.09	5.167	6.54	8.250	3.48	11.33	1.94
2.167	2.09	5.250	7.71	8.333	3.48	11.42	1.90
2.250	2.19	5.333	7.71	8.417	3.37	11.50	1.90
2.333	2.19	5.417	9.18	8.500	3.37	11.58	1.86
2.417	2.34	5.500	9.18	8.583	3.26	11.67	1.86
2.500	2.34	5.583	10.65	8.667	3.26	11.75	1.82
2.583	2.50	5.667	10.65	8.750	3.14	11.83	1.82
2.667	2.50	5.750	31.85	8.833	3.14	11.92	1.78
2.750	2.67	5.833	31.85	8.917	3.03	12.00	1.78
2.833	2.67	5.917	79.13	9.000	3.03	12.08	1.74
2.917	2.82	6.000	79.14	9.083	2.93	12.17	1.74
3.000	2.82	6.083	106.99	9.167	2.93		
3.083	2.97	6.167	106.99	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	106.99	49.63
over (min)	5.00	15.00
Storage Coeff. (min)=	2.14 (ii)	11.59 (ii)

```
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.06          0.087 (iii)
     TIME TO PEAK    (hrs)=       6.17         6.25           6.17
     RUNOFF VOLUME    (mm)=      79.40        25.71          33.75
     TOTAL RAINFALL   (mm)=      80.40        80.40          80.40
     RUNOFF COEFFICIENT   =       0.99         0.32           0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     0.91   0.087     6.17    33.75
     + ID2= 2 (  0007):    12.63   1.445     6.17    37.79
       ================================================
       ID = 3 (  0013):    13.54   1.531     6.17    37.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000      0.0000   |    0.1740      0.1633
                          0.0020      0.0192   |    0.2560      0.1852
                          0.0080      0.0388   |    0.3480      0.2076
                          0.0130      0.0586   |    0.4510      0.2302
                          0.0160      0.0789   |    0.5610      0.2533
                          0.0190      0.0994   |    0.6800      0.2767
                          0.0500      0.1204   |    0.8070      0.3005
                          0.1040      0.1416   |    0.9400      0.3240

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)     13.540      1.531      6.17      37.52
   OUTFLOW: ID= 1 (  0011)     13.540      0.504      6.50      37.34

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 32.91
                    TIME SHIFT OF PEAK FLOW         (min)= 20.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.2418

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):    13.54   0.504     6.50    37.34
     + ID2= 2 (  0008):     0.56   0.072     6.17    41.31
       ================================================
       ID = 3 (  0004):    14.10   0.525     6.50    37.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
**********************************************
** SIMULATION:05 50yr 12hr 10min SCS Type II **
**********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.27         0.89
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      87.79        50.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 3.167    3.33 | 6.250   19.31 |  9.33    3.14
     0.167    0.00 | 3.250    3.42 | 6.333   19.31 |  9.42    3.02
     0.250    1.95 | 3.333    3.42 | 6.417   15.41 |  9.50    3.02
     0.333    1.95 | 3.417    3.42 | 6.500   15.41 |  9.58    2.90
     0.417    1.98 | 3.500    3.42 | 6.583   11.51 |  9.67    2.90
     0.500    1.98 | 3.583    3.42 | 6.667   11.51 |  9.75    2.77
     0.583    2.01 | 3.667    3.42 | 6.750    8.81 |  9.83    2.77
     0.667    2.01 | 3.750    3.58 | 6.833    8.81 |  9.92    2.65
     0.750    2.05 | 3.833    3.58 | 6.917    7.92 | 10.00    2.65
     0.833    2.05 | 3.917    3.85 | 7.000    7.92 | 10.08    2.53
     0.917    2.09 | 4.000    3.85 | 7.083    7.03 | 10.17    2.53
```

1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Max.Eff.Inten.(mm/hr)=	119.76	53.73	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.79 (ii)	8.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.12	
			TOTALS
PEAK FLOW (cms)=	0.06	0.09	0.152 (iii)
TIME TO PEAK (hrs)=	6.17	6.17	6.17
RUNOFF VOLUME (mm)=	89.00	29.77	38.65
TOTAL RAINFALL (mm)=	90.00	90.00	90.00
RUNOFF COEFFICIENT =	0.99	0.33	0.43

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0010)	Area (ha)= 1.28
ID= 1 DT= 5.0 min	Total Imp(%)= 23.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99

2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Max.Eff.Inten.(mm/hr)=	119.76	53.73	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.84 (ii)	10.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.10	
			TOTALS
PEAK FLOW (cms)=	0.06	0.10	0.145 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	89.00	29.77	38.65
TOTAL RAINFALL (mm)=	90.00	90.00	90.00
RUNOFF COEFFICIENT =	0.99	0.33	0.43

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008) | Area (ha)= 0.56
ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Max.Eff.Inten.(mm/hr)=	119.76	38.84	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.44 (ii)	13.21 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			TOTALS
PEAK FLOW (cms)=	0.06	0.03	0.084 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	89.00	27.63	47.87
TOTAL RAINFALL (mm)=	90.00	90.00	90.00
RUNOFF COEFFICIENT =	0.99	0.31	0.53

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0007)	Area (ha)= 12.63
ID= 1 DT= 5.0 min	Total Imp(%)= 32.00 Dir. Conn.(%)= 24.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

				TOTALS
Max.Eff.Inten.(mm/hr)=		119.76	54.89	
over (min)		5.00	15.00	
Storage Coeff. (min)=		3.66 (ii)	10.47 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.25	0.09	
PEAK FLOW	(cms)=	0.99	0.84	1.702 (iii)
TIME TO PEAK	(hrs)=	6.17	6.25	6.17
RUNOFF VOLUME	(mm)=	89.00	30.05	44.19
TOTAL RAINFALL	(mm)=	90.00	90.00	90.00
RUNOFF COEFFICIENT	=	0.99	0.33	0.49

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 0.91
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.33	6.250	19.31	9.33	3.14
0.167	0.00	3.250	3.42	6.333	19.31	9.42	3.02
0.250	1.95	3.333	3.42	6.417	15.41	9.50	3.02
0.333	1.95	3.417	3.42	6.500	15.41	9.58	2.90
0.417	1.98	3.500	3.42	6.583	11.51	9.67	2.90
0.500	1.98	3.583	3.42	6.667	11.51	9.75	2.77
0.583	2.01	3.667	3.42	6.750	8.81	9.83	2.77
0.667	2.01	3.750	3.58	6.833	8.81	9.92	2.65
0.750	2.05	3.833	3.58	6.917	7.92	10.00	2.65
0.833	2.05	3.917	3.85	7.000	7.92	10.08	2.53
0.917	2.09	4.000	3.85	7.083	7.03	10.17	2.53
1.000	2.09	4.083	4.13	7.167	7.03	10.25	2.44
1.083	2.12	4.167	4.13	7.250	6.26	10.33	2.44
1.167	2.12	4.250	4.51	7.333	6.26	10.42	2.39
1.250	2.16	4.333	4.51	7.417	5.78	10.50	2.40
1.333	2.16	4.417	4.92	7.500	5.78	10.58	2.35
1.417	2.19	4.500	4.92	7.583	5.30	10.67	2.35
1.500	2.19	4.583	5.33	7.667	5.30	10.75	2.30
1.583	2.23	4.667	5.33	7.750	4.84	10.83	2.30
1.667	2.23	4.750	5.95	7.833	4.84	10.92	2.26
1.750	2.27	4.833	5.95	7.917	4.49	11.00	2.26
1.833	2.27	4.917	6.63	8.000	4.49	11.08	2.22
1.917	2.30	5.000	6.63	8.083	4.15	11.17	2.22
2.000	2.30	5.083	7.32	8.167	4.15	11.25	2.17
2.083	2.34	5.167	7.32	8.250	3.89	11.33	2.17
2.167	2.34	5.250	8.63	8.333	3.89	11.42	2.13
2.250	2.45	5.333	8.63	8.417	3.77	11.50	2.13
2.333	2.45	5.417	10.27	8.500	3.77	11.58	2.08
2.417	2.62	5.500	10.27	8.583	3.65	11.67	2.08
2.500	2.62	5.583	11.92	8.667	3.65	11.75	2.04
2.583	2.79	5.667	11.92	8.750	3.52	11.83	2.04
2.667	2.79	5.750	35.65	8.833	3.52	11.92	1.99
2.750	2.99	5.833	35.65	8.917	3.40	12.00	1.99
2.833	2.99	5.917	88.58	9.000	3.40	12.08	1.95
2.917	3.16	6.000	88.58	9.083	3.28	12.17	1.95
3.000	3.16	6.083	119.76	9.167	3.28		
3.083	3.33	6.167	119.76	9.250	3.14		

Max.Eff.Inten.(mm/hr)=	119.76	60.31	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.04 (ii)	10.79 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
			TOTALS
PEAK FLOW (cms)=	0.05	0.07	0.104 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	89.00	31.26	39.92
TOTAL RAINFALL (mm)=	90.00	90.00	90.00
RUNOFF COEFFICIENT =	0.99	0.35	0.44

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):		0.91	0.104	6.17	39.92
+ ID2= 2 (0007):		12.63	1.702	6.17	44.19
ID = 3 (0013):		13.54	1.806	6.17	43.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1740	0.1633
	0.0020	0.0192	0.2560	0.1852
	0.0080	0.0388	0.3480	0.2076
	0.0130	0.0586	0.4510	0.2302
	0.0160	0.0789	0.5610	0.2533
	0.0190	0.0994	0.6800	0.2767
	0.0500	0.1204	0.8070	0.3005
	0.1040	0.1416	0.9400	0.3240

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	13.540	1.806	6.17	43.91
OUTFLOW: ID= 1 (0011)	13.540	0.655	6.50	43.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 36.24
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.2721

```
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):    13.54   0.655     6.50    43.73
     + ID2= 2 (  0008):     0.56   0.084     6.17    47.87
       ================================================
       ID = 3 (  0004):    14.10   0.679     6.50    43.89

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
**********************************************
** SIMULATION:06 100yr 12hr 10min SCS Type II **
**********************************************
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   1.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.27         0.89
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         7.00
     Length            (m)=      87.79        50.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                      ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 3.167    3.64 | 6.250   21.12 |  9.33    3.44
 0.167    0.00 | 3.250    3.74 | 6.333   21.12 |  9.42    3.31
 0.250    2.13 | 3.333    3.74 | 6.417   16.85 |  9.50    3.31
 0.333    2.13 | 3.417    3.74 | 6.500   16.85 |  9.58    3.18
 0.417    2.16 | 3.500    3.74 | 6.583   12.58 |  9.67    3.18
 0.500    2.16 | 3.583    3.74 | 6.667   12.58 |  9.75    3.03
 0.583    2.20 | 3.667    3.74 | 6.750    9.63 |  9.83    3.03
 0.667    2.20 | 3.750    3.91 | 6.833    9.63 |  9.92    2.89
 0.750    2.24 | 3.833    3.91 | 6.917    8.66 | 10.00    2.89
 0.833    2.24 | 3.917    4.21 | 7.000    8.66 | 10.08    2.76
 0.917    2.28 | 4.000    4.21 | 7.083    7.68 | 10.17    2.76
 1.000    2.28 | 4.083    4.51 | 7.167    7.68 | 10.25    2.67
 1.083    2.32 | 4.167    4.51 | 7.250    6.84 | 10.33    2.67
 1.167    2.32 | 4.250    4.93 | 7.333    6.84 | 10.42    2.62
 1.250    2.36 | 4.333    4.93 | 7.417    6.32 | 10.50    2.62
 1.333    2.36 | 4.417    5.38 | 7.500    6.32 | 10.58    2.57
 1.417    2.40 | 4.500    5.38 | 7.583    5.79 | 10.67    2.57
 1.500    2.40 | 4.583    5.83 | 7.667    5.79 | 10.75    2.52
 1.583    2.44 | 4.667    5.83 | 7.750    5.29 | 10.83    2.52
 1.667    2.44 | 4.750    6.51 | 7.833    5.29 | 10.92    2.47
 1.750    2.48 | 4.833    6.51 | 7.917    4.91 | 11.00    2.47
 1.833    2.48 | 4.917    7.25 | 8.000    4.91 | 11.08    2.42
 1.917    2.52 | 5.000    7.25 | 8.083    4.54 | 11.17    2.42
 2.000    2.52 | 5.083    8.00 | 8.167    4.54 | 11.25    2.37
 2.083    2.55 | 5.167    8.00 | 8.250    4.26 | 11.33    2.37
 2.167    2.55 | 5.250    9.44 | 8.333    4.26 | 11.42    2.33
 2.250    2.68 | 5.333    9.44 | 8.417    4.13 | 11.50    2.33
 2.333    2.68 | 5.417   11.23 | 8.500    4.13 | 11.58    2.28
 2.417    2.87 | 5.500   11.23 | 8.583    3.99 | 11.67    2.28
 2.500    2.87 | 5.583   13.03 | 8.667    3.99 | 11.75    2.23
 2.583    3.05 | 5.667   13.03 | 8.750    3.84 | 11.83    2.23
 2.667    3.05 | 5.750   38.98 | 8.833    3.84 | 11.92    2.18
 2.750    3.26 | 5.833   38.98 | 8.917    3.71 | 12.00    2.18
 2.833    3.26 | 5.917   96.85 | 9.000    3.71 | 12.08    2.13
 2.917    3.45 | 6.000   96.85 | 9.083    3.58 | 12.17    2.13
 3.000    3.45 | 6.083  130.94 | 9.167    3.58 |
 3.083    3.64 | 6.167  130.94 | 9.250    3.44 |

     Max.Eff.Inten.(mm/hr)=     130.94        62.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.72 (ii)    8.40 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.11          0.176 (iii)
     TIME TO PEAK    (hrs)=       6.17         6.17           6.17
     RUNOFF VOLUME    (mm)=      97.40        34.72          44.12
     TOTAL RAINFALL   (mm)=      98.40        98.40          98.40
     RUNOFF COEFFICIENT   =       0.99         0.35           0.45

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 --------------------------------------------------------------------------------
 --------------------
 | CALIB            |
 | STANDHYD (  0010)|   Area    (ha)=   1.28
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  23.00   Dir. Conn.(%)=  15.00
 --------------------
                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.29         0.99
      Dep. Storage     (mm)=       1.00         5.00
```

Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Max.Eff.Inten.(mm/hr)=		130.94	62.62
over (min)		5.00	10.00
Storage Coeff. (min)=		1.78 (ii)	9.53 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00
Unit Hyd. peak (cms)=		0.32	0.12

				TOTALS
PEAK FLOW	(cms)=	0.07	0.12	0.189 (iii)
TIME TO PEAK	(hrs)=	6.17	6.25	6.17
RUNOFF VOLUME	(mm)=	97.40	34.72	44.12
TOTAL RAINFALL	(mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT	=	0.99	0.35	0.45

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0008)	Area (ha)=	0.56	
ID= 1 DT= 5.0 min	Total Imp(%)=	33.00	Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76

1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Max.Eff.Inten.(mm/hr)=	130.94	45.51	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.38 (ii)	12.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			TOTALS
PEAK FLOW (cms)=	0.07	0.03	0.095 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	97.40	32.32	53.78
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.33	0.55

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

| STANDHYD (0007)| Area (ha)= 12.63
|ID= 1 DT= 5.0 min | Total Imp(%)= 32.00 Dir. Conn.(%)= 24.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13

2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Max.Eff.Inten.(mm/hr)=	130.94	63.95	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.53 (ii)	9.94 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.11	
			TOTALS
PEAK FLOW (cms)=	1.08	1.05	2.127 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	97.40	35.03	50.00
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.36	0.51

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)=	0.91	
ID= 1 DT= 5.0 min	Total Imp(%)=	28.00	Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.64	6.250	21.12	9.33	3.44
0.167	0.00	3.250	3.74	6.333	21.12	9.42	3.31
0.250	2.13	3.333	3.74	6.417	16.85	9.50	3.31
0.333	2.13	3.417	3.74	6.500	16.85	9.58	3.18
0.417	2.16	3.500	3.74	6.583	12.58	9.67	3.18
0.500	2.16	3.583	3.74	6.667	12.58	9.75	3.03
0.583	2.20	3.667	3.74	6.750	9.63	9.83	3.03
0.667	2.20	3.750	3.91	6.833	9.63	9.92	2.89
0.750	2.24	3.833	3.91	6.917	8.66	10.00	2.89
0.833	2.24	3.917	4.21	7.000	8.66	10.08	2.76
0.917	2.28	4.000	4.21	7.083	7.68	10.17	2.76
1.000	2.28	4.083	4.51	7.167	7.68	10.25	2.67
1.083	2.32	4.167	4.51	7.250	6.84	10.33	2.67
1.167	2.32	4.250	4.93	7.333	6.84	10.42	2.62
1.250	2.36	4.333	4.93	7.417	6.32	10.50	2.62
1.333	2.36	4.417	5.38	7.500	6.32	10.58	2.57
1.417	2.40	4.500	5.38	7.583	5.79	10.67	2.57
1.500	2.40	4.583	5.83	7.667	5.79	10.75	2.52
1.583	2.44	4.667	5.83	7.750	5.29	10.83	2.52
1.667	2.44	4.750	6.51	7.833	5.29	10.92	2.47
1.750	2.48	4.833	6.51	7.917	4.91	11.00	2.47
1.833	2.48	4.917	7.25	8.000	4.91	11.08	2.42
1.917	2.52	5.000	7.25	8.083	4.54	11.17	2.42
2.000	2.52	5.083	8.00	8.167	4.54	11.25	2.37
2.083	2.55	5.167	8.00	8.250	4.26	11.33	2.37
2.167	2.55	5.250	9.44	8.333	4.26	11.42	2.33
2.250	2.68	5.333	9.44	8.417	4.13	11.50	2.33
2.333	2.68	5.417	11.23	8.500	4.13	11.58	2.28
2.417	2.87	5.500	11.23	8.583	3.99	11.67	2.28
2.500	2.87	5.583	13.03	8.667	3.99	11.75	2.23
2.583	3.05	5.667	13.03	8.750	3.84	11.83	2.23
2.667	3.05	5.750	38.98	8.833	3.84	11.92	2.18
2.750	3.26	5.833	38.98	8.917	3.71	12.00	2.18
2.833	3.26	5.917	96.85	9.000	3.71	12.08	2.13
2.917	3.45	6.000	96.85	9.083	3.58	12.17	2.13
3.000	3.45	6.083	130.94	9.167	3.58		
3.083	3.64	6.167	130.94	9.250	3.44		

Max.Eff.Inten.(mm/hr)=	130.94	70.13	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.97 (ii)	10.21 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
			TOTALS
PEAK FLOW (cms)=	0.05	0.08	0.120 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	97.40	36.39	45.53
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.37	0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):		0.91	0.120	6.17	45.53
+ ID2= 2 (0007):		12.63	2.127	6.17	50.00
ID = 3 (0013):		13.54	2.247	6.17	49.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1740	0.1633
	0.0020	0.0192	0.2560	0.1852
	0.0080	0.0388	0.3480	0.2076
	0.0130	0.0586	0.4510	0.2302
	0.0160	0.0789	0.5610	0.2533
	0.0190	0.0994	0.6800	0.2767
	0.0500	0.1204	0.8070	0.3005
	0.1040	0.1416	0.9400	0.3240

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	13.540	2.247	6.17	49.70
OUTFLOW: ID= 1 (0011)	13.540	0.816	6.42	49.52

PEAK FLOW REDUCTION [Qout/Qin](%)= 36.32
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.3026

ADD HYD (0004)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):		13.54	0.816	6.42	49.52
+ ID2= 2 (0008):		0.56	0.095	6.17	53.78
ID = 3 (0004):		14.10	0.849	6.42	49.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:07 25mm CHI **
****

CALIB / STANDHYD (0009) / ID= 1 DT= 5.0 min	Area (ha)= 1.16	Total Imp(%)= 23.00	Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.27	0.89
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	87.79	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	2.67		
over (min)	5.00	30.00		
Storage Coeff. (min)=	2.39 (ii)	25.98 (ii)		
Unit Hyd. Tpeak (min)=	5.00	30.00		
Unit Hyd. peak (cms)=	0.30	0.04		
				TOTALS
PEAK FLOW (cms)=	0.03	0.00		0.028 (iii)
TIME TO PEAK (hrs)=	1.33	1.83		1.33
RUNOFF VOLUME (mm)=	23.91	2.30		5.53
TOTAL RAINFALL (mm)=	24.91	24.91		24.91
RUNOFF COEFFICIENT =	0.96	0.09		0.22

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%

YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0010)	Area (ha)= 1.28
ID= 1 DT= 5.0 min	Total Imp(%)= 23.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	7.00
Length	(m)=	92.38	64.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	2.46		
over (min)	5.00	35.00		
Storage Coeff. (min)=	2.47 (ii)	30.76 (ii)		
Unit Hyd. Tpeak (min)=	5.00	35.00		
Unit Hyd. peak (cms)=	0.30	0.04		
			TOTALS	
PEAK FLOW (cms)=	0.03	0.00	0.031 (iii)	
TIME TO PEAK (hrs)=	1.33	1.92	1.33	
RUNOFF VOLUME (mm)=	23.91	2.30	5.53	
TOTAL RAINFALL (mm)=	24.91	24.91	24.91	
RUNOFF COEFFICIENT =	0.96	0.09	0.22	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0008)	Area (ha)= 0.56
ID= 1 DT= 5.0 min	Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	60.99	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	1.53	
over (min)	5.00	45.00	
Storage Coeff. (min)=	1.92 (ii)	44.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	45.00	
Unit Hyd. peak (cms)=	0.31	0.03	
			TOTALS

PEAK FLOW (cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK (hrs)=	1.33	2.17	1.33
RUNOFF VOLUME (mm)=	23.91	2.02	9.19
TOTAL RAINFALL (mm)=	24.91	24.91	24.91
RUNOFF COEFFICIENT =	0.96	0.08	0.37

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0007) | Area (ha)= 12.63
ID= 1 DT= 5.0 min | Total Imp(%)= 32.00 Dir. Conn.(%)= 24.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.04	8.59
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	290.22	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	2.76	
over (min)	5.00	30.00	
Storage Coeff. (min)=	4.90 (ii)	27.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.22	0.04	
			TOTALS
PEAK FLOW (cms)=	0.43	0.04	0.439 (iii)
TIME TO PEAK (hrs)=	1.33	1.83	1.33
RUNOFF VOLUME (mm)=	23.91	2.34	7.52
TOTAL RAINFALL (mm)=	24.91	24.91	24.91
RUNOFF COEFFICIENT =	0.96	0.09	0.30

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 59.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0012) | Area (ha)= 0.91
ID= 1 DT= 5.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.25	0.65
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	3.00
Length	(m)=	77.72	50.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.76	1.083	11.75	2.083	3.88	3.08	2.07
0.167	1.76	1.167	11.75	2.167	3.88	3.17	2.07
0.250	2.00	1.250	57.66	2.250	3.35	3.25	1.93
0.333	2.00	1.333	57.66	2.333	3.35	3.33	1.93
0.417	2.32	1.417	15.20	2.417	2.96	3.42	1.81
0.500	2.32	1.500	15.20	2.500	2.96	3.50	1.81
0.583	2.81	1.583	8.31	2.583	2.66	3.58	1.71
0.667	2.81	1.667	8.31	2.667	2.66	3.67	1.71
0.750	3.61	1.750	5.91	2.750	2.42	3.75	1.62
0.833	3.61	1.833	5.90	2.833	2.42	3.83	1.62
0.917	5.27	1.917	4.66	2.917	2.23	3.92	1.54
1.000	5.28	2.000	4.66	3.000	2.23	4.00	1.54

Max.Eff.Inten.(mm/hr)=	57.66	2.91
over (min)	5.00	35.00

```
     Storage Coeff.  (min)=       2.74 (ii)   32.16 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.29         0.03
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.022 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.92           1.33
     RUNOFF VOLUME    (mm)=      23.91         2.51           5.70
     TOTAL RAINFALL   (mm)=      24.91        24.91          24.91
     RUNOFF COEFFICIENT   =       0.96         0.10           0.23

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     0.91   0.022     1.33     5.70
     + ID2= 2 (  0007):    12.63   0.439     1.33     7.52
       ================================================
       ID = 3 (  0013):    13.54   0.461     1.33     7.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000      0.0000   |    0.1740      0.1633
                          0.0020      0.0192   |    0.2560      0.1852
                          0.0080      0.0388   |    0.3480      0.2076
                          0.0130      0.0586   |    0.4510      0.2302
                          0.0160      0.0789   |    0.5610      0.2533
                          0.0190      0.0994   |    0.6800      0.2767
                          0.0500      0.1204   |    0.8070      0.3005
                          0.1040      0.1416   |    0.9400      0.3240

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)    13.540     0.461      1.33       7.39
```

```
   OUTFLOW: ID= 1 (  0011)     13.540      0.017      4.08       7.21

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.60
                  TIME SHIFT OF PEAK FLOW         (min)=165.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0829

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):    13.54   0.017     4.08     7.21
     + ID2= 2 (  0008):     0.56   0.029     1.33     9.19
       ================================================
       ID = 3 (  0004):    14.10   0.034     1.33     7.29

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
```

Appendix E: Water Quality

Water Quality Requirements

Project Name: East Communication Roa **Designed By:** LM
Project No: 25096 **Date:** 2025-11-07

Site Data				
Protection Level:		Enhanced		
Facility Type:		Wet Pond		
Area	=	13.539	ha	
% Impervious Calculated	=	32%	%	
Impervious Area	=	4.26	ha	
Required Extended Detention Volume (Ved)**				
Ved	=	40	m^3/ha	
	=	542	m^3	
Ved_{25mm}	=	829	m^3	
Total Required Storage Volume (Vs)*				
Vs	=	140	m^3/ha	*Min for Wet ponds used
	=	1895	m^3	
Required Permanent Pool Volume (Vpp = Vs - Ved)				
Vpp	=	100	m^3/ha	
	=	1354	m^3	
Permanent Pool Volume Provided	≈	3200	m^3	
Provided Volumes vs. Required Volumes				
Quantity Control Volume Required	=	3026.0	m^3	
Quantity Control Volume Provided	=	3246.0	m^3	
Total Pond Volume Required	=	1895	m^3	
Total Pond Volume Provided	=	6446	m^3	

*Required volumes calculated utilizing quadratic regression (y=Ax^2+Bx+C) including an A value of -120.57 , B value of of 366.31 and C value of 26.24 based on the below table.

**Extended Detention is required only for wet facilities and based on the MOE reqirement of 40m^3/ha

Notes:

Table 3.2: Water Quality Storage Requirements based on Receiving Waters (MOE SWMPD Manual)

		Storage Volume (m^3/ha) for Impervious Level				
Protection Level	SWMP Type	0%	35%	55%	70%	85%
Enhanced 80% long-term S.S. removal	Infiltration	16.25	25	30	35	40
	Wetlands	36.25	80	105	120	140
	Hybrid Wet Pond/Wetland	40	110	150	175	195
	Wet Pond	52.5	140	190	225	250
Normal 70% long-term S.S. removal	Infiltration	20	20	20	25	30
	Wetlands	42.5	60	70	80	90
	Hybrid Wet Pond/Wetland	48.75	75	90	105	120
	Wet Pond	55	90	110	130	150
Basic 60% long-term S.S. removal	Infiltration	20	20	20	20	20
	Wetlands	60	60	60	60	60
	Hybrid Wet Pond/Wetland	42.5	60	70	75	80
	Wet Pond	33.75	60	75	85	95
	Dry Pond (Continuous Flow)	0	90	150	200	240

Drawdown Time Calculations Design Sheet

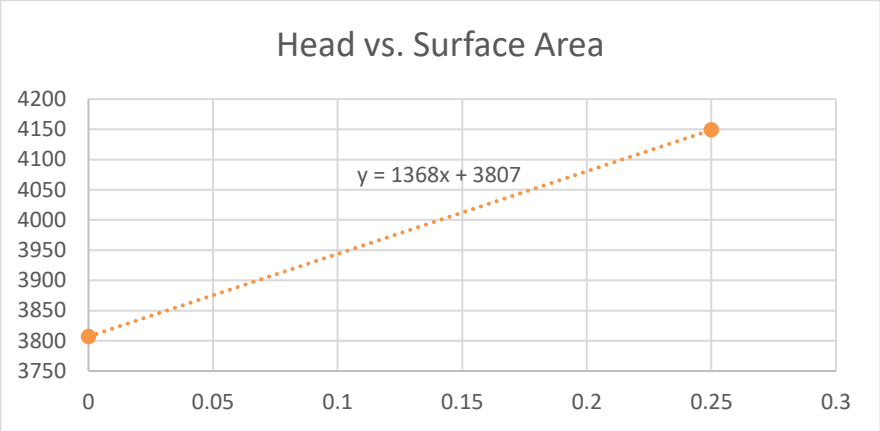
Project Name: East Communication Road
Project No: 25096
Designed By: LM
Date: 2025-11-10

Design Criteria			Design Storms	
Quality Volume:[1]	40	m^3/ha	Volume:	Chicago 25 mm
Disturbed Area:	13.539	ha	Conveyance:	100-Year
Volume Required:	542	m^3		

Peak Flow Calculations		
Chicago 25 mm:	0.621	m^3/s
100-Year:	2.247	m^3/s

Storage Volume					
Req'd Quality Volume:	542	m^3	Pond Bottom:	261.00	m
Req'd Volume (Chicago 25 mm):	829	m^3	Top of Storage:	261.25	m
Volume Provided:	994	m^3	Top of Pond:	262.10	m

Drawdown Time Calculation



Outlet Configuration		
Outlet Type:	Orifice	
Diameter:	125	mm
Invert:	261.00	mm
Peak Dischage:[3]	0.019	m^3/s

Drawdown Time[2]

$t = (0.66C_1h^{1.5} + 2C_2h^{0.5})/2.75A$

where

C_1 =	1368	slope coefficient (from regression)
C_2 =	3804	intercept (from regression)
h =	0.250	maximum water elevation (m)
A =	0.012	cross sect. area orifice (m^2)
t =	116063.5	seconds
=	**32.240**	**hours**

Notes:

1. From ESC Design Guidelines for Urban Construction, GGHCA
2. From MOE SWMPDM Section 4.6.
3. Orifice plate discharge calculated according to Q=0.61A(2gh)1/2

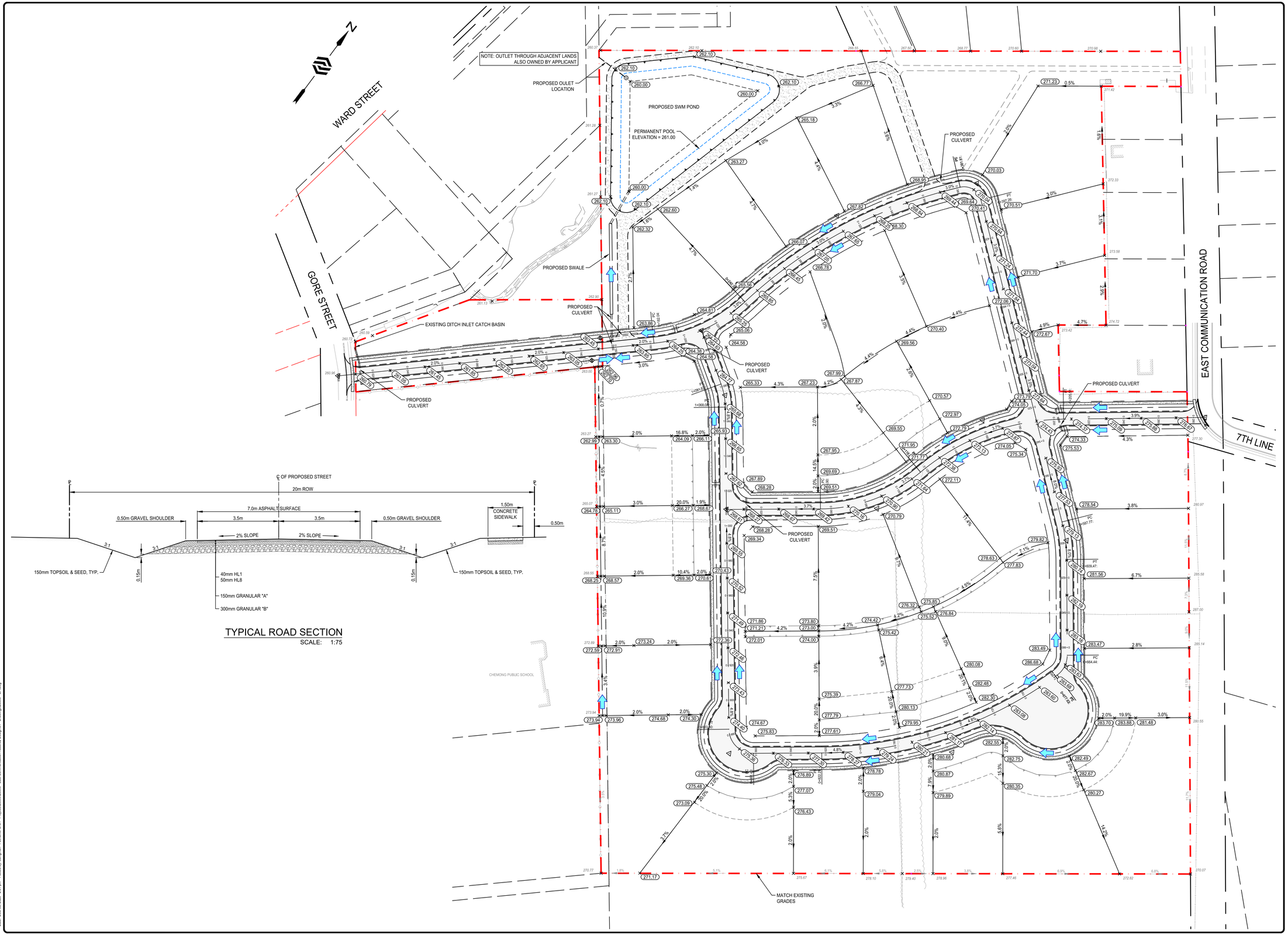
Appendix F: Conveyance

Channel Design Sheet

Project Name: East Communication Road **Designed By:** LM
Project No: 25096 **Date:** 2025-12-05

Channel Description	Peak Flows (m^3/s)	Bed Slope (%)	Side Slope (X : 1)	Bottom Width (m)	Depth (m)	Bottom Elevation (m)	Lining Material	Manning's Number	Cross Sectional Area	Channel Capacity	% Capacity	Flow Depth	Velocity
100 Yr to SWM Pond	2.25	2.00%	3.00	1.50	1.0	100.0	Earth, Grass	0.030	4.50 m^2	14.68 m^3/s	15.3%	0.41 m	1.99 m/s
WQ to SWM Pond	0.46	2.00%	3.00	1.50	1.0	100.0	Earth, Grass	0.030	4.50 m^2	14.68 m^3/s	3.1%	0.18 m	1.26 m/s
Typical Roadside Swale	1.13	2.00%	3.00	0.0	0.7	100.0	Earth, Grass	0.030	1.47 m^2	3.33 m^3/s	33.8%	0.47 m	1.73 m/s

Appendix G: Preliminary Grading Plan



TYPICAL ROAD SECTION

SCALE: 1:75

SURVEY

TOPOGRAPHIC SURVEY PROVIDED BY ELLIOT & PARR LTD.

BENCHMARK

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM CGVD28:78 (HTv2.0) AND ARE REFERRED TO COSINE BENCHMARK No. 0081982147 HAVING A PUBLISHED ELEVATION OF 270.68 METRES.

ELEV: 270.68m

NOTES:

No.	REVISION	BY	DATE
1.	ISSUED FOR REVIEW	SD	2025-12-05

ENGAGE ENGINEERING
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EAST COMMUNICATION ROAD DEVELOPMENT

Base-Land Developments Inc.

PRELIMINARY GRADING PLAN

SELWYN TOWNSHIP

DRAWN BY: S.DINGMAN	STAMP:
DESIGNED BY: S.DINGMAN	
APPROVED BY: L.PARSONS	
DATE: 2025-10-23	
SCALE: 1:1000	

PROJECT NUMBER:	SHEET NAME:	SHEET:
25096	GP	1 of 1

25096 - GP

Date: Dec. 05, 2025 - 2:51 pm Plotted by: sdingman File name: S:\01 - Projects\25000\25096 - East Communication Road\02 Design\01 - Drawings\25096 - GP.dwg

Appendix H: Hydrogeological and Geotechnical Investigation Report

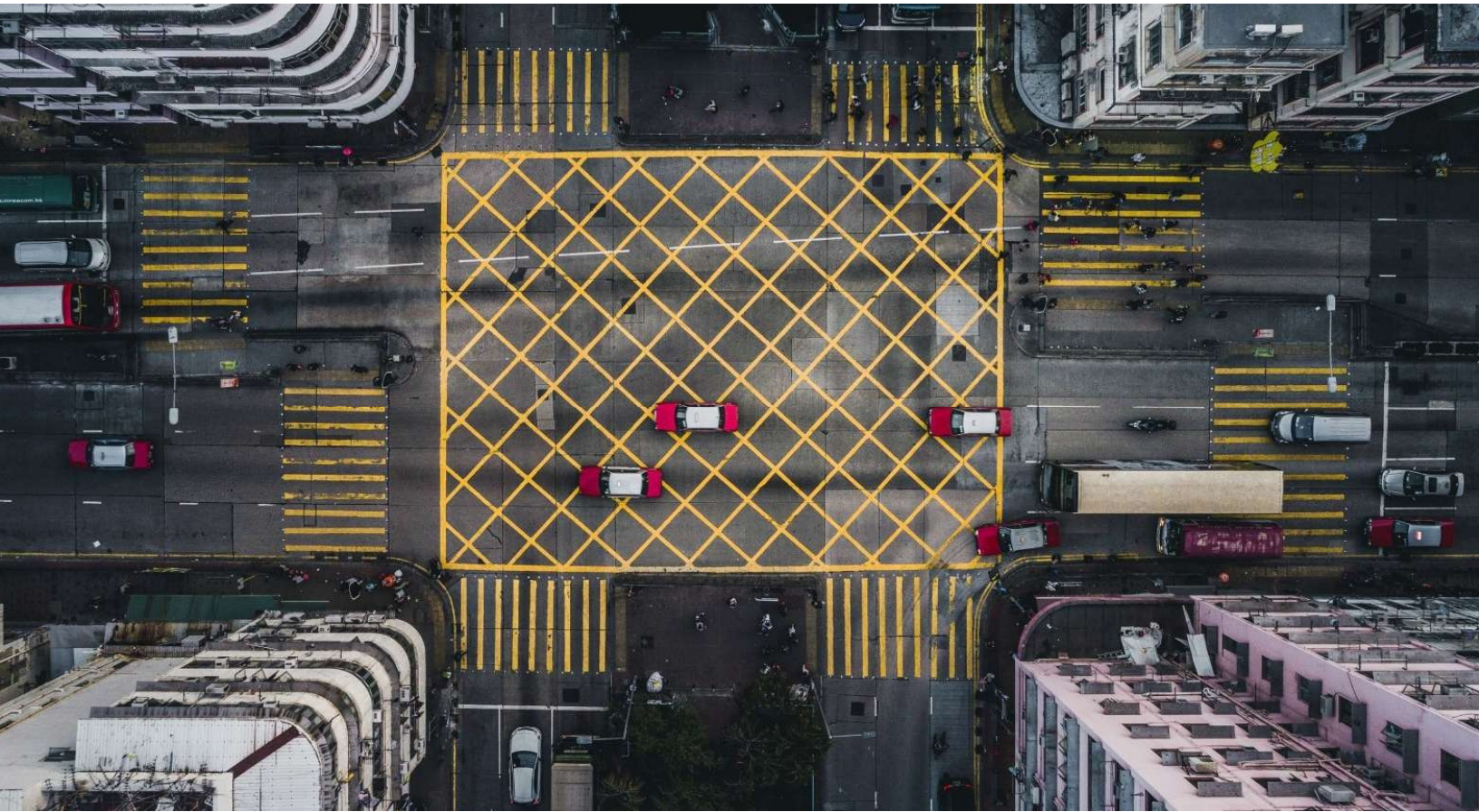
Hydrogeological and Geotechnical Investigation

Proposed Residential Development, Bridgenorth, Ontario

Base-Land Developments Inc.

18 November 2025

→ The Power of Commitment



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1. Introduction

GHD Limited (GHD) was retained by Base-Land Developments Inc. (Client) to conduct a hydrogeological assessment and geotechnical investigation of a proposed residential development to be located within in Bridgenorth, Ontario (herein referred to as "the Site"). Geographically, the Site is located within Part of Lot 12, East Side of Communication Road in Selwyn Township within the County of Peterborough. The location of the Site is provided on the **Site Location Plan, Figure 1**.

The Site encompasses an area of 15.6 hectares (ha) (38.5 acres). The development will include residential homes, a stormwater management block and internal streets. The Site area does not include the identified conveyance lands or other lands owned by the Client (i.e. these areas will not be discussed further in this report). The future residential lots are proposed to range in area from about 0.20 ha to 0.49 ha. There is a block in the northwest corner where the stormwater management pond is to be constructed and a block in the northeast area of the Site planned for a community park. The residential lots will be serviced on individual wells and septic systems. The concept plan[1] is illustrated on **Figure 2**.

The purpose of the hydrogeological and geotechnical investigation was to obtain subsurface information regarding the soil and groundwater conditions at the test hole locations and prepare a report summarizing the conditions encountered. The hydrogeological portion of this report provides information regarding the groundwater depth and flow direction as well as preliminary water balance calculations and a nitrate impact assessment based upon the provided concept plan. The geotechnical portion of this report provides engineering recommendations regarding earthwork construction, backfilling, groundwater control during construction, bearing capacity and foundations design, slab-on-grade design, construction of stormwater management facilities, service installation (bedding and backfill), pavement structure for roadways, and preliminary recommendations regarding potential excess soils handling options.

The scope of work included a desktop review of available geological and groundwater mapping and the Source Protection Information Atlas; a review of the Ministry of the Environment, Conservation and Parks (MECP) well records; a well survey of homes within approximately 250 m of the development lands; the drilling of boreholes and excavation of test pits to investigate the subsurface conditions; installation of monitoring wells to facilitate water level measurements, aquifer testing of two (2) local wells; and, percolation rate (T-time) testing of the shallow vadose zone soils for septic design. In addition, a generic water balance evaluation was completed (i.e. pre- and post-development runoff / infiltration conditions) in support of potential stormwater mitigative options of excess runoff using Low Impact Development strategies or "LIDs". GHD notes that the water balance evaluation does not include tasks associated with the required storm water study and / or related design work.

As the work at this stage is investigative, this report does not include any applications for Permits to Take Water (PTTW), Environmental Activity and Sector Registry (EASR) permits for construction dewatering, sewer use by-law testing etc. GHD also notes that the excess soil testing is preliminary and can be used to develop a soils management program as required but does not include an Assessment of Past Uses, Sampling Analysis Plan, Soil Characterization Report or Excess Soil Destination Assessment. These additional planning documents can be completed as necessary.

This report is organized into the following sections:

Section 1.0 – Introduction: Outlines the purpose, objectives and scope of work, and presents the report organization.

Section 2.0 – Background: Provides a description of the existing Site conditions, background information and surrounding land uses. The regional environmental setting including the physiography, topography, surface water features and the surficial geology is presented. This section of the report also considers a review of the Source Protection Information Atlas. The source protection information for the Site is based upon information current as of

[1] Skelton Brumwell & Associates Inc. "Base-Land Developments Inc. Bridgenorth County of Peterborough Draft Plan", Project No. 11-2588, Drawing No. 2588-DP, dated August 2024.

December 12, 2024. Highly vulnerable aquifers, significant groundwater recharge areas and wellhead protection areas are protected under the Clean Water Act (2006).

Section 3.0 – Methodology: Describes the field activities and methodologies used to assess the hydrogeological and geotechnical conditions and to evaluate potential impacts associated with the undertaking.

Section 4.0 – Field Investigation Results: Provides a detailed description of the Site geology, hydrogeology and hydraulic properties of the underlying stratigraphy and aquifer. Also discusses the analytical results from the testing completed.

Section 5.0 – Discussion and Recommendations: This section of the report provides hydrogeological and geotechnical discussion and recommendations. The discussion includes a potable water supply assessment, septic waste assessment including predictive nitrate impact calculations, a water balance evaluation of the expected pre- and post-development infiltration values, and geotechnical recommendations for the proposed development based on the soil and groundwater conditions encountered at the test hole locations.

Section 6.0 – Conclusions and Closure: Provides the overall conclusions of the report based upon the assessment findings and closure of the document. This section is followed by a Statement of Limitations.

1.1 Limitations

This report has been prepared by GHD for Base-Land Developments Inc. and may only be used and relied on by Base-Land Developments Inc. for the purpose agreed between GHD and Base-Land Developments Inc. as set out in Section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Base-Land Developments Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD and described throughout this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Background

2.1 Site Description

The Site is accessed from East Communication Road, in Bridgenorth, Ontario and encompasses an area of 15.6 ha (38.4 acres). Geographically, the Site is located within Part of Lot 12, East Side of Communication Road in Selwyn Township within the County of Peterborough (the former Township of Smith).

At the time of GHD's field investigation, the Site consisted of agricultural land, treed hedgerows, and a forested area located in the west-central area of the Site.

The surrounding land usage was observed as follows:

– North: Commercial businesses and existing residential;
– East: Residential lots;
– South: Agricultural lands; and,
– West: Public school, commercial businesses and forested land.

The surrounding lands are privately serviced for water and septic. It is understood by GHD that the future lots at the Site will be serviced on individual wells and septic systems.

GHD was provided with a preliminary draft plan, and it is our understanding that the planned development will include the construction of thirty-eight (38) residential lots, a stormwater management pond, a community park, and an internal road network.

2.2 Regional Setting

The area topography is generally considered to be rolling. Relief change within the Site is on the order of 20 to 25 m with a topographical divide from a ridge in the eastern area (elevation 285 m). The existing grade in the northwest corner of the Site is about 260 m, and about 270 m in the northeast, southeast and southwest corners of the Site. Excess surface water will flow in accordance with local topography towards the northeast and southeast areas of the Site. At this time, GHD is unaware of final grading for the proposed development. The regional topography is provided on **Figure 3** with a drumlin area depicted on the north side of the Site.

The Site is situated within the physiographic region known as the Peterborough Drumlin Field. Surfical geology is presented on **Figure 4**. The soils are typical of drumlinized till plains Based on the topography mapping of the Site, and our site observations, there is a drumlin located in the southeast corner of the Site and not in the north portion of the site as depicted on Figure 3..

The surficial geology in the area of the Site is illustrated on **Figure 5**. The surficial geology of the Site itself consists of stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain. The Quaternary geology (**Figure 6**) indicates that the Site is comprised of glaciofluvial ice-contact deposits described as gravel and sand minor till including esker, kame, end moraine, ice-marginal delta and subaqueous fan deposits.

The bedrock of the area consists of limestone of the Upper Ordovician era. Bedrock mapping is provided as **Figure 7**. Based upon the well records where bedrock was encountered in this area, the depth to bedrock ranged from 5 to 28 metres below ground surface (mbgs) with an average depth of 16 mbgs. Bedrock was not encountered in any of the boreholes or test pits advanced at the Site.

2.3 Source Water Protection

The Site is located with the Otonabee-Peterborough Source Water Protection Area. Based on the information reviewed from the “Source Water Protection Atlas” for the Site, there are no Significant Groundwater Recharge Areas (SGRAs), Highly Vulnerable Aquifers (HVAs) or a wellhead protection areas (WHPAs) including WHPA Q1/Q2 also. Source Water Protection features in the area of the Site are depicted on **Figure 8**.

2.4 Previous Investigations

No previous hydrogeological or geotechnical investigation reports were provided to GHD.

3. Field Investigation

3.1 Methodology

To achieve the purpose and objectives of this hydrogeological and geotechnical investigation, the following field activities and tasks were undertaken:

– Preparation of a Site-specific health and safety plan and completed underground utility locate clearances including public and private locates.

- Conducted a walkover inspection of the Site.
- Reviewed MECP well records. Completed a well survey by hand delivering letters to local residents to supplement the MECP well records.
- Advanced boreholes and test pits for obtaining hydrogeological and geotechnical parameters.
- Installed monitoring wells within select boreholes to facilitate groundwater monitoring and testing.
- Obtained groundwater levels from the drilled monitoring wells to evaluate depth to groundwater and flow direction.
- Surveyed ground elevations of the monitoring wells, boreholes, and test pit locations.
- Conducted percolation rate testing (T-time) of select areas to evaluate the percolation rate of the unsaturated surficial soils.
- Commenced long-term well monitoring of the installed wells.
- Completed geotechnical laboratory testing in accordance with the latest editions of the ASTM Standards.
- Performed chemical laboratory testing of selected soil samples as a preliminary assessment of potential excess soil options.
- Conducted aquifer performance testing on two (2) water wells located in close proximity of the Site. The test wells are existing drilled water supply wells that are currently in use located at 1032 East Communication Road and 966 Burnside Road.

3.2 Health and Safety

For projects that incorporate field activities, GHD conducts Health and Safety planning. For this project, a site-specific Health and Safety Plan (HASP) was prepared and implemented during the field activities. The HASP presents the visually observed Site conditions to identify potential physical hazards to field personnel. Required personal protective equipment was also listed in the HASP.

3.3 Utility Clearance

GHD completed a pre-drilling Site visit to review the Site conditions and access restrictions. Based on the limits of approach, the boreholes and test pits were positioned appropriately to avoid potential obstructions. The test holes were placed in the field based on our understanding of the proposed development.

Prior to initiating the subsurface investigation activities, the applicable utility companies (e.g. gas, hydro, network cables, water, wastewater, etc.) were contacted, to demarcate the location of their respective underground utilities to ensure that service lines would not be damaged during the investigative works.

GHD also retained a specialist private services locator (Utility Marx) to locate any underground private utilities that could potentially be present at the Site within the areas of intrusive work. The proposed boreholes and test pits were positioned at appropriate locations to avoid existing service lines.

3.4 Test Pit and Borehole Advancement

The scope of work consisted of advancing ten (10) test pits on April 10, 2024, and ten (10) boreholes between April 2 and April 3, 2024. Several of the test pits and boreholes were also placed within the additional lands owned by the Client. Eight (8) of the boreholes were equipped as groundwater monitoring wells. Nested monitoring wells were installed at each location (i.e. 8 monitoring wells at 4 locations). The nested monitoring wells are installed as shallow and deep monitoring wells at each location. The deeper monitoring wells are denoted with an “A” in the identifier (i.e. BH1A-24) and the shallow monitoring wells are labelled with a “B” (i.e. BH1B-24). The test pit and borehole locations are shown on **Figure 2**.

Following their installation, the monitoring wells were documented with the MECP and became the property of the site's owner. Test pit and borehole information is provided in **Table 1** and the monitoring well completion details are presented in **Table 5**. The logs of the test pits and boreholes / monitoring well details are presented in **Appendix B.**

The ten (10) test pits (TP1-24 through TP10-24) were each excavated to depths ranging from 1.8 to 2.1 mbgs by an excavator retained by the Client. The drilling work was carried out by a track-mounted drilling rig, supplied and operated by GET Drilling (GET) under the full-time supervision of a GHD technical representative. The boreholes were advanced to termination depths ranging between 3.0 to 6.7 mbgs. The monitoring wells were installed by GET consistent with the requirements of Ontario Regulation (O. Reg.) 903 – Wells (R.R.O 1990). Installed monitoring wells will need to be abandoned in accordance with O. Reg. 903 once no longer required.

The boreholes were advanced using continuous solid stem augers and soil samples were collected using a 50 millimetre (mm) outside diameter split spoon sampler in general accordance with the specifications of the Standard Penetration Test Method (ASTM D1586). The relative density or consistency of the subsurface soil layers were measured using the Standard Penetration Test (SPT) method, by counting the number of blows ('N') required to drive a conventional split barrel soil sampler 300 mm in depth. Groundwater level observations and measurements were made in the boreholes as drilling proceeded and upon completion of drilling.

Monitoring wells were constructed with 50 mm (2-inch) Schedule 40 PVC screen and casing. The well screens are 1.5 m (5 feet) or 3.05 m (10 feet) in length and pre-slotted (No. 10 slot). Silica sand pack was placed at the bottom of the monitoring well screen and typically extended 0.3 m above the screen. The remaining annular space was sealed with bentonite, and the wells were completed with monument-style steel protective casings. The installation details for each monitoring well are provided in the respective borehole logs.

The boreholes, monitoring wells and test pit locations were surveyed with an EOS Arrow Gold Plus that streams to the Real Time Kinetic (RTK) Network connected to the NAD 83 datum. The ground elevations are provided for engineering analysis purposes only, are not for construction and should be confirmed by a licensed surveyor.

3.5 Physical Laboratory Testing

The physical laboratory testing was completed in accordance with the latest editions of the ASTM standards. A GHD technical representative logged the soil samples encountered in the test holes and examined the samples as they were obtained. The recovered samples were transferred to the GHD laboratory, where they were reviewed by GHD. The detailed results of the examination are recorded on the test hole logs.

Soil samples retrieved during the test pit and drilling programs were submitted for physical testing. Moisture content testing was completed on all of the recovered soil samples. Grain size analyses, consisting of sieve and hydrometer testing, were carried out on four (4) selected samples collected from the test pits and six (6) selected samples collected from the boreholes. The results of the moisture content and grain size distribution analysis are recorded at their corresponding depths on the individual logs in **Appendix B**. The laboratory grain size distribution analyses are summarized in **Table 2** and **Table 3** and the data is graphically provided in **Appendix C**.

3.6 Chemical Laboratory Testing

3.6.1 Preliminary Excess Soil Testing

The chemical laboratory testing that was completed for the preliminary assessment of potential excess soil options was submitted to Caduceon Laboratories (Caduceon), an accredited laboratory with the Canadian Association for Laboratory Accreditation (CALA) for the parameters tested during this investigation. Representative samples of the soil were collected by GHD personnel directly from the sampling equipment during the excavation of the test pits and submitted for chemical analyses.

The samples submitted for analyses were placed into clean laboratory prepared sample bottles. Fresh nitrile gloves were worn when collecting the samples. The soil samples selected for chemical analyses were kept in a cooler on ice for shipment to Caduceon. The following four (4) soil samples were submitted for chemical analyses of petroleum hydrocarbons (PHC), volatile organic compounds (VOCs), and metals and inorganics to evaluate the soil quality for characterization and handling purposes:

– TP1-24, GS1;
– TP4-24, GS2;
– TP8-24, GS2; and
– TP10-24, GS3.

The soil analytical data was compared to Table 1: Full Depth Background Site Condition Standards for Agricultural or Other Property Use (to be referred to as "Table 1 SCS"). The results are summarized in **Table 4** and Laboratory Certificates of Analysis are provided in **Appendix D**.

3.6.2 Test Well Water Quality

The test well water quality was assessed through chemical and bacteriological analyses of samples collected at the end of each pumping test. One (1) sample was collected from each test well after pumping for about 120 minutes. The sample from the test well at 1032 East Communication Road was filtered in the field with a 0.45-micron filter. The sample from 966 Burnside Road was collected and analysed as a raw water sample. The samples were submitted to SGS Canada Inc. (SGS) in Lakefield, Ontario, an accredited laboratory with CALA.

The samples submitted for analyses were placed into clean laboratory prepared sample bottles for a range of parameters including general chemistry, metals and inorganics parameters. Fresh nitrile gloves were worn when collecting the samples. The water samples were kept in a cooler on ice and delivered to SGS. The results of the chemical analyses are summarized in **Table 10** and the laboratory certificates of analysis are provided in **Appendix H**.

3.7 Groundwater Level Monitoring

Manual groundwater levels were collected using a Solinst water level meter. Groundwater levels were collected from the boreholes after completion of drilling as well as from the monitoring wells on April 22, 2024 and May 17, 2024. The water levels from the monitoring wells are summarized in **Table 6**.

3.8 Percolation Rate Testing

In-situ percolation rate (T-time) testing was conducted using an ETC Pask Constant Head Well permeameter to assess preliminary T-time values for future septic systems.

The testing was performed on April 10th and 22nd, 2024 at seven (7) locations:

– INF-01 in the east area of the Site;
– INF-02 adjacent to TP2-24;
– INF-03 adjacent to TP9-24;
– INF-04 in the northeast area of the Site;
– INF-05 in the northwest area of the Site;
– INF-06 in the southeast area of the Site; and,
– INF-07 in the southwest area of the Site.

The percolation testing locations are shown on **Figure 2**. One (1) T-time test was completed at each location. The results are summarized in **Table 8**. The results of the testing are presented in **Appendix E**.

3.9 Aquifer Performance Testing

Two (2) local residents were contacted and authorized GHD to perform short duration pumping tests on their existing drilled, overburden wells located off-site at 966 Burnside Road and 1032 East Communication Road. The well located at 966 Burnside Road is a drilled well with the casing above grade with depth of 11.2 m (37 feet). The well at 1032 East Communication Road is also a drilled well that had recently been upgraded with a pit-less adapter and the well casing extended above the surrounding ground surface. The well record for 1032 East Communication Road indicates a well depth of 22 m (72 feet) and completed within an overburden gravel seam. The well record is provided in **Appendix A**. There was no well record found for 966 Burnside Road.

The aquifer performance testing consisted of a constant rate pumping test performed for two (2) hours at each of the supply wells in order to assess the underlying aquifer. The tests were performed using the existing pumping equipment. Graphical representation of the data collected from the pumping tests is presented in **Appendix G**. Water samples were collected from each well at the end of the pumping tests. The certificates of analysis are provided in **Appendix H**.

3.10 Water Balance Assessment

To understand the pre- and post-infiltration components, a water budget analysis was undertaken for the Site to evaluate the amount of water surplus generated for the existing and proposed Site conditions and assess the potential impacts that may occur in the recharge / discharge characteristics related to the proposed development. It is our opinion that groundwater infiltration should be maintained as there are existing well users and other natural features in the general area of the proposed development.

This evaluation is based upon the preliminary conceptual plan provided to GHD that includes the planned development of 38 residential lots and an internal road network. There will be a park 0.72 ha in area and a stormwater management area 1.06 ha in area. The internal roads will cover an area of 2.91 ha.

The objective of the water balance is to illustrate that post-development infiltration within the developable area can meet or be close to pre-development values. The computations have used detailed parameters such as precipitation (Peterborough Trent U weather station using data from 1981 to 2010 was used), regional evapotranspiration, infiltration and runoff. Weather data from Peterborough Trent U was selected as it was the closest weather station to the Site (~6.6 km away). The detailed calculations are provided in **Appendix F**.

4. Field Investigation Results

The following sections provide a detailed description of the data collected from the field activities including further information on the geology and hydrogeology of the Site based on the results of the investigation completed and on the available background information.

4.1 Summary of Test Hole Information

UTM coordinates and ground surface elevations for each borehole, monitoring well and test pit location were obtained by GHD during the subsurface exploration program in the approximate locations illustrated on **Figure 2**. The location of each test hole is referenced to UTM Zone 17 and ground elevations are based upon measurements obtained using EOS Arrow Gold Plus connected to the RTK network. The following table presents a summary of investigated depths, surface elevations, and UTM coordinates for the test hole locations:

Table 1 Borehole and Test Pit Information

Test Hole ID	Location – UTM Coordinates System		Test Hole Depth (mbgs)	Ground Elevation (m)
	Northing	Easting		
BH1A-24	4917454	709094	6.4	262.9
BH1B-24	4917452	709095	3.0	263.0
BH2A-24	4917335	708794	6.7	271.1
BH2B-24	4917333	708795	3.0	271.2
BH3A-24	4917607	708764	6.5	274.3
BH3B-24	4917606	708762	3.0	274.1
BH4A-24	4917751	708507	6.3	261.5
BH4B-24	4917752	708509	3.0	261.5
BH5-24	4917892	708692	6.3	270.4
BH6-24	4917776	708849	5.6	276.4
TP1-24	4917784	708632	1.8	267.2
TP2-24	4917662	708556	1.2	263.1
TP3-24	4917688	708699	1.8	268.7
TP4-24	4917676	708931	1.8	286.8
TP5-24	4917551	709021	2.0	269.3
TP6-24	4917428	709056	2.0	263.6
TP7-24	4917522	708868	1.8	280.1
TP8-24	4917311	708881	2.1	274.9
TP9-24	4917415	708733	1.8	273.1
TP10-24	4917506	708670	2.1	270.4

It should be noted that the provided coordinates and elevations are approximate and should not be used for construction purposes. The ground elevations are provided for the purpose of this report only and, if needed, should be confirmed by a licensed surveyor.

4.2 Local Geology and Subsurface Conditions

Based upon information obtained from this investigation, the following surficial materials and geologic deposits underlie the Site. Bedrock was not encountered within the investigation conducted by GHD.

– Surficial Soil – Topsoil
– Native Deposit – Silty Sand / Sandy Silt
– Native Deposit – Sandy Silt / Silty Sand Till

It should be noted that the subsurface conditions are only confirmed at the test hole locations and may vary between and beyond the test hole locations. The boundaries between the various strata, as shown on the test hole logs are based on non-continuous sampling and drilling resistance noted and observed at the time of drilling. These boundaries represent an inferred transition between the various strata, rather than precise planes of geological change.

Surficial Soils – Topsoil

Topsoil – A layer of surficial topsoil was encountered in all the boreholes and test pits. The topsoil layer in the test holes ranged from about 150 to 610 mm in thickness and averaged about 325 mm in thickness. This soil was observed to be in a damp, loose state, with a silty, highly organic content. As such, it is expected to be devoid of any structural engineering properties.

Native – Sandy Silt / Silty Sand

Below the topsoil within all the test holes was a native sandy silt / silty sand deposit. The sandy silt / silty sand material was comprised of sand and silt with varying amounts of gravel and clay. This layer was observed to extend to about 0.8 to 3.1 mbgs. Within borehole BH1B-24, the sandy silt / silty sand was observed to the termination depth at this location. The material was generally described as brown / light brown, moist to wet, and occasionally mottled.

The SPT N-values obtained from within this native layer ranged from 1 blow / 300 mm to over 100 blows / 300 mm indicating a very loose to very dense in-situ relative density. The average SPT N-value for this soil deposit was approximately 22 blows / 300 mm indicating a compact in-situ relative density.

Based on grain size distribution analyses of seven (7) selected samples, the native sandy silt / silty sand had compositional ranges of 0 to 25 percent gravel, 35 to 69 percent sand, 31 to 65 percent fine-sized particles with a range of 8 to 14 percent clay-sized particles. The measured moisture content of this till deposit ranged 9 to 23 per cent by weight.

Table 2 Physical Laboratory Testing Results – Sandy Silt / Silty Sand

Test Hole ID	Sample Depth (mbgs)	Grain Size (%)				Soil Description (USCS Symbol)
		Gravel	Sand	Fines		
				Silt	Clay-size (1)	
TP3-24	0.3 – 0.6	5	45	50*	-	Silty Sand (SM)
TP4-24	0.3 – 0.6	25	39	36*	-	Silty Sand with Gravel (SM)
TP5-24	0.3 – 0.6	0	69	23	8	Silty Sand (SM)
TP8-24	0.3 – 0.6	21	42	37*	-	Silty Sand with Gravel (SM)
BH3A-24	0.8 – 1.4	15	38	47*	-	Silty Sand (SM)
BH4A-24	0.3 – 0.6	0	35	65*	-	Sandy Silt (ML)
BH5-24	0.6 – 1.2	17	40	29	14	Silty Sand (SM)

Soil particles <2 µm
* denotes percentage of fines (silt and clay) where a hydrometer was not completed to determine % of clay size particles

Native – Sandy Silt / Silty Sand TILL

Below the native sandy silt / silty sand within all the test holes, with the exception of borehole BH1B-24, was a native glacial till deposit. The till was comprised of sand and silt with varying amounts of gravel and clay. Auger grinding was observed during drilling due to occasional cobbles and/or boulders within the till layer. Borehole BH6-24 was terminated at 5.6 mbgs due to auger refusal on cobbles and/or boulders. The till layer was observed to the bottom of all test holes with the exception of BH1B-24. The material was generally described as brown to grey and moist.

The SPT N-values obtained from within the till layer ranged from 26 blows / 300 mm to over 100 blows / 300 mm indicating a compact to very dense in-situ relative density. The average SPT N-value for this soil deposit was approximately 61 blows / 300 mm indicating a very dense in-situ relative density.

Based on grain size distribution analyses of three (3) selected samples, the till had compositional ranges of 13 to 21 percent gravel, 33 to 40 percent sand, 39 to 54 percent fine-sized particles with a range of 17 to 18 percent clay-sized particles. The measured moisture content of this till deposit ranged 5 to 25 percent by weight.

Table 3 Physical Laboratory Testing Results – Sandy Silt / Silty Sand Till

Test Hole ID	Sample Depth (mbgs)	Grain Size (%)				Soil Description (USCS Symbol)
		Gravel	Sand	Fines		
				Silt	Clay-size (1)	
BH1A-24	3.1 – 3.3	16	38	29	17	Till – Silty Sand (SM)
BH3A-24	1.5 – 2.1	13	33	36	18	Till – Sand and Silt (SM)
BH5-24	4.6 – 5.2	21	40	39*	-	Till – Sand and Silt (SM)

Soil particles <2 µm
* denotes percentage of fines (silt and clay) where a hydrometer was not completed to determine % of clay size particles

4.3 Chemical Laboratory Testing Results

The results of the chemical testing are summarized in **Table 4.** The chemical data meets Table 1 SCS. Copies of the Certificates of Analysis are provided in **Appendix D** of this report.

Table 4 Summary of Preliminary Soil Sampling Analytical Results

Parameter	Sample Identification				Table 1 SCS
	TP1-24 GS1	TP4-24 GS2	TP8-24 GS2	TP10-24 GS3	
	Sample Date: April 10, 2024				
Antimony	< 0.5	< 0.5	< 0.5	< 0.5	1
Arsenic	1.9	1.5	1.4	1.4	11
Barium	63	49	63	54	210
Beryllium	0.4	0.3	0.3	0.3	2.5
Boron	2.8	4.2	3.9	4.3	36
Boron (HWS)	0.02	< 0.02	< 0.02	< 0.02	1.5*
Cadmium	< 0.5	< 0.5	< 0.5	< 0.5	1
Chromium	13	10	9	12	67
Chromium (VI)	< 0.2	< 0.2	< 0.2	< 0.2	0.66
Cobalt	5	4	4	4	19
Copper	8	9	10	8	62
Lead	5	< 5	< 5	< 5	45
Molybdenum	< 1	< 1	< 1	< 1	2
Nickel	8	8	7	8	37
Mercury	0.03	< 0.01	< 0.01	< 0.01	0.16
Selenium	< 0.5	< 0.5	< 0.5	< 0.5	1.2
Silver	< 0.2	< 0.2	< 0.2	< 0.2	0.5
Thallium	0.1	< 0.1	< 0.1	< 0.1	1
Uranium	0.5	0.5	0.6	0.5	1.9
Vanadium	25	20	22	18	86
Zinc	24	20	22	18	290
Sodium Adsorption Ratio	0.1	0.07	0.05	0.07	1

Parameter	Sample Identification				Table 1 SCS
	TP1-24 GS1	TP4-24 GS2	TP8-24 GS2	TP10-24 GS3	
	Sample Date: April 10, 2024				
Electrical Conductivity	0.138	0.124	0.123	0.112	0.47
pH	7.47	7.66	7.64	7.71	5 – 9 for surface soil**
Acetone	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Benzene	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Bromodichloromethane	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Bromoform	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Bromomethane	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Carbon Tetrachloride	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Chlorobenzene	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Chloroform	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dibromochloromethane	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Ethylene Dibromide	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichlorobenzene, 1,2-	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Dichlorobenzene, 1,3-	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Dichlorobenzene, 1,4-	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Dichlorodifluoromethane	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Dichloroethane, 1,1-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloroethane, 1,2-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloroethylene, 1,1-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloroethylene, 1,1-cis-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloroethylene, 1,2-trans-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloropropane, 1.2-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Dichloropropene, 1,3-cis-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Ethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Hexane	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Methylene Chloride	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Methyl Ethyl Ketone	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Methyl Isobutyl Ketone	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Methyl tert-Butyl Ether	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Styrene	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Tetrachloroethane, 1,1,1,2-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Tetrachloroethane, 1,1,2,2-	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Tetrachloroethylene	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Toluene	< 0.2	< 0.2	< 0.2	< 0.2	0.2
Trichloroethane, 1,1,1-	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Trichloroethane, 1,1,2-	< 0.02	< 0.02	< 0.02	< 0.02	0.05

Parameter	Sample Identification				Table 1 SCS
	TP1-24 GS1	TP4-24 GS2	TP8-24 GS2	TP10-24 GS3	
	Sample Date: April 10, 2024				
Trichloroethylene	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Trichlorofluoromethane	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Vinyl Chloride	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Xylene, m,p,o-	< 0.03	< 0.03	< 0.03	< 0.03	0.05
PHC F1	< 10	< 10	< 10	< 10	17
PHC F2	< 5	< 5	< 5	< 5	10
PHC F3	< 10	< 10	< 10	< 10	240
PHC F4	< 10	< 10	< 10	< 10	120

Notes: *HWS refers to Hot Water Soluble. No standard for Boron (HWS) in Table 1. Standard provided for Table 2 Agricultural or Other Property Use. Boron (HWS) for surface soils only.
**Surface soil is denoted as soil at a depth of less than 1.5 m

4.4 Groundwater Observations and Measurements

Groundwater observations and measurements were collected from the open test holes during and upon completion of drilling or excavating. Groundwater seepage was encountered within eight (8) of the ten (10) boreholes during the drilling process. Slow groundwater seepage of minimal volume (i.e. no significant accumulation) was observed during the test pit process within seven (7) of the test pits. The volume of groundwater from within the underlying deposits is generally expected to be minor; however, pockets of more permeable material may be encountered.

Groundwater seepage was not observed within boreholes BH3A-24 and BH3B-24 or test pits TP4-24, TP8-24, and TP9-24. Monitoring wells were installed within eight (8) of the boreholes. A summary of the monitoring well details are provided as follows:

Table 5 Monitoring Well Information

Location	Ground Elevation (m)*	Well Pipe Stick Up (m)	Screened Interval		Sandpack Interval (effective screen)		Screened Material
			Depth (mbgs)	Elevation (m)	Depth (mbgs)	Elevation (m)	
BH1A-24	262.9	1.02	3.1 – 6.1	259.8 – 256.8	2.7 – 6.1	260.2 – 256.8	Till
BH1B-24	263.0	0.79	1.5 – 3.1	261.5 – 259.9	1.2 – 3.1	261.8 – 259.9	Silty Sand
BH2A-24	271.1	0.83	3.1 – 6.1	268.0 – 265.0	2.3 – 6.1	268.8 – 265.0	Silty Sand
BH2B-24	271.2	0.90	1.5 – 3.1	269.7 – 268.1	1.2 – 3.1	270.0 – 268.1	Silty Sand & Till
BH3A-24	274.3	0.92	3.1 – 6.1	271.2 – 268.2	2.7 – 6.1	271.6 – 268.2	Till
BH3B-24	274.1	1.00	1.5 – 3.1	272.6 – 271.0	1.2 – 3.1	272.9 – 271.0	Till
BH4A-24	261.5	0.95	3.1 – 6.1	258.4 – 255.4	2.4 – 6.1	259.1 – 255.4	Till
BH4B-24	261.5	0.95	1.5 – 3.1	260.0 – 258.4	1.2 – 3.1	260.3 – 258.4	Till

Notes:
(*) Ground elevations were measured using an EOS Arrow Gold Plus GPS system and, are for the purposes of evaluating groundwater elevation and flow direction and should not be relied upon for construction purposes, or as a legal survey, or as a topographic elevation survey. “A” denotes a deep monitoring well and “B” denotes a shallow monitoring well

GHD collected groundwater levels from the monitoring wells on April 22, 2024 and May 17, 2024. The water level data is summarized as follows:

Table 6 Groundwater Levels and Elevations

Monitoring Well ID	Groundwater Accumulation*		Water Levels			
			Date: April 22, 2024		Date: May 17, 2024	
	Depth (mbgs)	Elevation (masl)	Water Level (mbgs)	Groundwater Elevation (masl)	Water Level (mbgs)	Groundwater Elevation (masl)
BH1A-24	2.3	260.6	0.25	262.6	0.26	262.6
BH1B-24	2.7	260.3	0.40	262.6	0.43	262.6
BH2A-24	6.6	264.5	0.44	270.7	0.54	270.6
BH2B-24	2.5	268.7	0.48	270.7	0.59	270.6
BH3A-24	Dry borehole to 268.8 masl		0.85	273.4	1.06	273.2
BH3B-24	Dry borehole to 271.1 masl		0.82	273.3	0.97	273.2
BH4A-24	4.3	257.2	0.44	261.0	0.57	260.9
BH4B-24	2.9	258.6	0.53	261.0	0.54	261.0

Notes:
(*) Groundwater accumulation noted in open borehole upon completion of drilling.

Groundwater levels ranged from 0.25 mbgs to 1.06 mbgs. Based upon the data, the groundwater elevations ranged from 261.0 masl at borehole BH4-24 to 273.4 masl at BH3A-24. Groundwater elevations from April 22, 2024 are provided on **Figure 9** (showing the deep monitoring well groundwater elevations) and **Figure 10** (showing the shallow monitoring well groundwater elevations). Long-term groundwater monitoring is currently on-going within BH2B-24, BH3B-24 and BH4B-24 for one (1) year of groundwater data collection.

4.5 Percolation Rate Testing Results

The preliminary T-time data is summarized below and provided in **Appendix E:**

Table 7 Preliminary Percolation Rate Testing Results

Infiltration Test ID	Depth Tested (mbgs)	Soil Tested	Kfs (m/s)	Test Duration (min)	Estimated Infiltration Rate (mm/hr)	Estimated Percolation Rate (min/cm)
INF-1	0.3	Sandy Silt / Silty Sand above the till	1.6×10^{-7}	~27	~25	~24
INF-2 at TP2-24	0.4		1.35×10^{-7}	~28	~23	~26
INF-3 at TP9-24	0.4		1.18×10^{-6}	10	~41	~15
INF-4	0.4		2.7×10^{-7}	95	~28	~21
INF-5	0.4		9.8×10^{-7}	10	~41	~15
INF-6	0.4		4.3×10^{-7}	70	~32	~19
INF-7	0.4		8.6×10^{-7}	96	~38	~16

The T-times at these locations tested range from approximately 15 to 26 min/cm.

5. Potable Water Supply Assessment

5.1 Existing Local Water Supplies

The Site and areas surrounding the Site are privately serviced by water wells. The locations of water wells and their corresponding data recorded by the MECP within 250 m of the Site are shown in **Appendix A.** The MECP well locations are shown on **Figure 9**. The well record information indicates that there are:

– One hundred fifteen (115) drilled overburden well records;
– Thirty-four (34) bedrock well records; and
– Thirteen (13) abandonment, well alteration, monitoring well and unknown records.

Based upon the well records, there are zero (0) dug well records within 250 m of the Site. However, nine (9) records were indicated to have had previously dug wells that were deepened by drilling. Six (6) drilled overburden well were also identified to be flowing artesian wells and five (5) other wells were recorded as having a static water level of zero (i.e. at ground surface) indicating artesian conditions.

Table 8 MECP Well Record Data

Well Use	Well Type/Unit	No. of Wells	Well Depth Min – Max (Avg) (m)	Water Encountered Depth Min – Max (Avg) (m)	Static WL Min – Max (m)	Yield Min – Max (Avg) (L/min)
Water Supply	Overburden – Drilled	115 (77%)	8.2 – 42.7 (16.8)	7.6 – 30.2 (15.8)	Flowing – 15.2 (5.1)	3.8 – 151.2 (25.1)
Water Supply	Bedrock – Drilled	34 (23%)	7.3 – 44.2 (20.5)	5.5 – 18.3 (29.1)	0 – 10.7 (4.3)	3.8 – 48.5 (18.5)
	Total:	**149**				
Abandonment	Unknown	7	5.2 – 21.0 (16.2)	9.8 – 14.3 (12.1)	5.5 – 4.6 (5.1)	3.8 – 22.7 (13.2)
Well Alteration	Unknown	3	11.0 – 18.3 (14.2)	11.0	0.6 – 6.7 (3.7)	NA
Monitoring Well	Drilled	2	9.1	7.9	NA	NA
Unknown	Unknown	1	NA	NA	NA	NA

Notes:
Data based on MECP well record information (refer to **Appendix A** for well information).

5.2 Well Survey Results

To supplement the MECP well records, well survey letters were delivered to twelve (12) homes adjacent to the Site that included residences on the 7th Line and Brumwell Street. GHD did not receive any responses from residents to the survey letters.

5.3 Aquifer Performance Testing Results

The results of the two (2) pumping tests are graphically presented in **Appendix G**. Both wells were pumped using the existing equipment with a garden hose connected to an outside tap. There is noise in the water level data collected due to the pressure tank and pressure switch turning the pump on and off; however, the flow from the hose was observed to be relatively consistent.

The aquifer testing completed at 966 Burnside Road consisted of pumping the well at approximately 14.0 L/min for two (2) hours. The pump setting at this well was unknown. The maximum drawdown was 0.79 m (2.6 feet) after pumping ceased with 100% recovery after about six (6) hours and 20 minutes. Based upon a flow rate of 14 L/min, approximately 1,680 litres of water was pumped.

The aquifer testing completed at 1032 East Communication Road consisted of pumping the well at approximately 15.0 L/min for two (2) hours and five (5) minutes with the pump set at 12.2 m (40 feet). The maximum drawdown was 1.85 m (6.1 feet) with 100% recovery in 7.5 minutes. Based upon a flow rate of 15 L/min, approximately 1,87 litres of water was pumped.

The computed coefficients from the pumping tests are summarized below in **Table 9**.

Table 9 Aquifer Performance Testing Summary

Well No.	Step No.	Yield		Test Type	Time	Maximum Drawdown		Available Drawdown*		Specific Capacity		Estimated Transmissivity	
		gpm	L/min		minutes	feet	metres	feet	metres	gpm/ft	L/min/m	gpd/ft	m^2/day
966 Burnside Road	1	0	0	Static	0	0	0	23.6	7.2	---	---	---	---
	2	3.7	14.0	Const.	120	2.6	0.8	21.0	6.4	1.41	17.5	827.0	12.3
	3	0	0	Recvy.	379	100% recovery at 379 minutes						1654.0	24.6
1032 East Communication Road	1	0	0	Static	0	0	0	14.2	4.3	---	---	---	---
	2	4.0	15.0	Const.	125	6.1	1.85	8.1	2.5	1.02	12.7	252.9	3.8
	3	0	0	Recvy	7.5	100% recovery in 7.5 minutes						318.7	4.7

Notes:
gpm = US gallons per minute; gpd/ft = gallons per day per foot
"Recvy" refers to Recovery measurements; "Const" refers to the Constant Rate test conducted for 360 minutes.
*Available Drawdown refers to the height of water in the well above the bottom of the well at 966 Burnside Road and above the pump at 1032 East Communication Road.

The results indicate that the tapped overburden aquifer complex exhibits good transmissivity characteristics. The testing data and the supporting MECP well data indicates that the drilled wells can sustain a long-term operational yield that can support residential lots. It is noted that the pumping tests were affected by the plumbing equipment (i.e., pressure tank volumes) illustrated by the cycling that occurred during the testing. However, based on the limited drawdown and moderate to quick recovery times, it is our opinion that the aquifer can likely support the proposed development and a supplemental evaluation of the aquifer as a suitable water source should be completed to confirm this.

Based on the short-term aquifer performance testing, the two (2) overburden wells tested each are capable of supplying a minimum of 14 L/min (3.7 gpm) with the aquifer indicating acceptable recovery capabilities. The volumes pumped are more than sufficient for a single-family dwelling that typically uses on the order of 1,000 L/day. Representative number of test wells as per the MECP document D-5-5 would need to be installed across the Site and more detailed testing completed to confirm the groundwater resource availability and to assess potential interference impacts to existing users.

5.4 Test Well Water Quality

Water quality was monitored in the field during the pumping test. This included measurement of pH, temperature, conductivity, turbidity and chlorine residual. The water at 966 Burnside Road was observed to have relatively consistent water quality with respect to all parameters and turbidity around 1 NTU or lower. The well at 1032 East Communication Road was also relatively consistent except for elevated turbidity. The water was observed to have red colouration suggesting the presence of iron. This may have been related to the recent work completed on the well and the well redeveloping. The owner did indicate that they have a treatment system that included iron filtration. The field reading data are provided on the Constant Rate graphs provided in **Appendix G**.

Water samples were collected from each test well at the end of each pumping test. The analytical data is summarized and compared with the Ontario Drinking Water Standards (ODWS) in the following table. The certificates of analyses are provided in **Appendix H**.

Table 10 Test Well Water Quality Summary

Parameter	Test Well Locations		ODWS	
	966 Burnside Road	1032 East Communication Road		
	Sample Date: September 23, 2024			
	Sample Time: 120 minutes into the test		MAC	AO/OG
UV Transmittance	87.6	92.2	--	--
Alkalinity (as $CaCO_3$)	376	267	--	30 to 500
Colour (TCU)	< 3	< 3	--	--
Conductivity (µS/cm)	1410	996	--	--
pH (units)	7.48	7.68	--	6.5 to 8.5
Total Suspended Solids	7	62	--	--
Total Dissolved Solids	**874**	**577**	--	500
Turbidity (NTU)	**33**	**45**	--	5
Organic Nitrogen	< 0.05	< 0.05	--	0.15
Total Kjeldahl Nitrogen	0.09	0.05	--	--
Ammonia + Ammonium as N	0.07	< 0.04	--	--
Total Organic Carbon	1	< 1	--	--
Dissolved Organic Carbon	2	1	--	--
Chloride	**260**	140	--	250
Fluoride	0.17	0.11	1.5	--
Nitrite as N	< 0.03	< 0.03	1.0	--
Nitrate as N	< 0.06	0.13	10	--
Sulphate	50	36	--	500
Phosphorus	< 0.03	< 0.03	--	--
Mercury	< 0.00001	< 0.00001	0.001	--
Hardness (as $CaCO_3$)	**556**	**337**	--	80 to 100
Aluminium	< 0.001	0.001	--	--
Antimony	< 0.0009	< 0.0009	0.006	--
Arsenic	0.0011	< 0.0002	0.01	--
Barium	0.197	0.0866	1.0	--
Boron	0.032	0.015	5.0	--
Cadmium	0.000005	< 0.000003	0.005	--
Calcium	161	103	--	--
Chromium	0.00017	< 0.00008	0.05	--
Copper	0.003	0.001	--	--
Iron	**2.60**	< 0.007	--	0.3
Lead	< 0.00009	< 0.00009	0.010	--
Magnesium	37.3	19.5	--	--
Manganese	**0.0737**	0.00639	--	0.05

Parameter	Test Well Locations		ODWS	
	966 Burnside Road	1032 East Communication Road		
	Sample Date: September 23, 2024			
	Sample Time: 120 minutes into the test		MAC	AO/OG
Potassium	3.60	2.17	--	--
Sodium	71.2	63.9	--	(20) 200
Selenium	0.00009	0.00006	0.05	--
Uranium	0.00382	0.00220	0.02	--
Zinc	< 0.002	0.005	--	5.0

Notes:
Units are mg/L unless otherwise stated; "<" indicates concentrations are less than laboratory reporting limits
MAC = maximum acceptable concentration
AO / OG = aesthetic objective / operational guideline
Bolded and Highlighted indicates the concentration exceeds the ODWS AO / OG.

In general, the majority of the parameters are within the ODWS. The exceptions are the aesthetic parameters of hardness, turbidity and total dissolved solids (TDS) in both wells. Elevated hardness is a common trait of groundwater supplies in Southern Ontario due to the presence of limestone bedrock and calcareous glacial tills. Elevated hardness can lead to a buildup on plumbing fixtures and, if desired, can be reduced by the use of a water softener. There was slightly elevated chloride in the water at 966 Burnside Road that can be reduced through reverse osmosis if desired. There is also elevated iron and manganese in this well.

As indicated above, the water sample from the well at 1032 East Communication Road was field filtered and would likely have had elevated iron as well. The low concentration of iron in the filtered sample indicates that commercially available iron reduction treatment equipment would adequately reduce the iron concentration. The elevated turbidity and TDS are likely related to the elevated iron, manganese and hardness in the groundwater. Treatment for these parameters would likely reduce the TDS value.

Both samples had sodium above 20 mg/L. At levels above 20 mg/L, it is recommended that users be notified in the event they are on a sodium reduced diet. Sodium is below the aesthetic objective of 200 mg/L where users might notice an objectional taste. No other health related parameters approached or exceeded the Maximum Acceptable Concentration (MAC).

6. Septic Waste Disposal

6.1 General

Based on the results of this assessment, it is our professional opinion that the Site is suitable for the construction of septic waste disposal systems; however, will require the use of tertiary treatment. The primary impact of the proposed land use is related to the potential increase in nitrate concentration due to septic effluent loading. A detailed review of the expected waste disposal impacts and recommendations are presented in the following sections.

6.2 Septic Impact Evaluation – Nitrate

For the purposes of calculating the potential impact of the planned residential development, 1,000 litres per day per household is considered to be an acceptable septic effluent loading rate. Therefore, the proposed development is expected to generate about 38,000 L/day (38 m^3/day) of septic effluent based on thirty-eight (38) lots.

While most constituents in septic effluent are usually removed within a short distance of movement within soil, mobile constituents such as nitrates will require sustained dilution to meet the drinking water standards of 10 mg/L N for nitrate. The MECP normally considers sewage from a Class 4 waste disposal system will contain 40 mg/L of nitrate. For the purpose of assessing the untreated impact of projected nitrate loading, the dilution requirement of 4:1 was utilized in the impact computations.

A summary of the applicable parameters that were considered in the waste disposal evaluation and the computation of the projected nitrate concentration are presented below. The calculations used an estimated recharge rate of 175 mm/year based on the exploratory test pits. Using dilution only, the nitrate concentration generated from sewage for the development based upon a conventional septic system is calculated to be 13.7 mg/L. Using a conventional septic system, the projected nitrate concentration using dilution only for the proposed development would exceed 10 mg/L. Therefore, a tertiary treatment system (e.g. Enviro-Septic System) can reduce the nitrate concentrations by 30 percent. Based on this reduction, the nitrate concentration generated for the proposed development is now calculated to be 9.6 mg/L, meeting the 10 mg/L drinking water standard for nitrate. The predictive nitrate assessment calculations for the proposed development using conventional systems or tertiary systems are provided in **Appendix I**. **Table 11** provides a summary of the septic impact parameters for the proposed development:

Table 11 Septic Impact Parameters

Parameter	Value	
	Conventional System	Tertiary System
Nitrate Concentration	40 mg/L	28 mg/L
Recharge Available for Dilution	175 mm/year	
Area Available for Dilution	15.2 ha	
Total Available Dilution	26,600 m^3/year	
Background Nitrate (site conditions)	0.08 mg/L	
Nitrate Loading (40 mg/L or 28 mg/L x 38,000 L/day)	1,520,000 mg/day	1,064,000 mg/day
Predicted Nitrate Concentration	13.79 mg/L	9.68 mg/L

Based on conventional septic system, the projected nitrate concentrations using dilution only would be 13.79 mg/L for the 38-lot development. However, the use of tertiary treatment systems with a 30 percent reduction would result in a predictive nitrate concentration of 9.68 mg/L for the 38 lots, which is below the ODWS of 10 mg/L for nitrate. The locations of future wells and septic systems is essential to prevent cross-contamination.

6.2.1 Waste Disposal Requirements

Based on the results of this assessment, it is our professional opinion that the Site is suitable for a private septic waste disposal system using tertiary treatment units. Fill will be required, and drainage patterns and storm drainage will be re-directed and controlled as part of the grading plan. Based upon the lot sizes, there is sufficient space to locate the homes and septic systems. As indicated, this development will be serviced by individual potable water wells and appropriate setback distances from the wells will be required.

The waste disposal systems should meet Ontario Regulation 350/06 made under the Building Code Act, 1992 and incorporate the following design features:

1. Organics should be stripped from the area of the septic system.
2. The waste disposal systems should be kept clear of surface drainage swales, roof leader drains, and other sources of surface water.
3. The tile beds should be kept away from shade trees and a healthy cover of vegetation should be developed and maintained over the beds to promote evapotranspiration.
4. Minimum set back distances from septic tank (plus 2 times height raised):

a. Building – 1.5 m
b. Property line – 3 m
c. Drilled Well – 15 m
d. Open water course – 15 m

5. Minimum set back distances from septic tile bed (plus 2 times height raised):
   a. Building – 5 m
   b. Property line – 3 m
   c. Drilled well, properly sealed – 15 m
   d. Shallow well – 30 m
   e. Open water course – 15 m
6. The layout, design and construction of the waste disposal bed should be subject to inspection by experienced hydrogeologic personnel.

Currently the client is proposing the EnviroSeptic System or similar system that is approved by the Ontario Building Code and is to be constructed in accordance with the specifications and manufacturing requirements of the system.

GHD can provide a conceptual figure that outlines the proposed locations of the septic system and house envelope once more information becomes available. It is our opinion that there is sufficient area within the proposed lots to support the tile bed and /or tertiary system and house.

7. Discussion and Recommendations

7.1 Hydrogeology

7.1.1 Hydrostratigraphic Units

The primary hydrostratigraphic units (i.e. aquifer / aquitard units) underlying the Site include the following:

– **Topsoil** – unsaturated
– **Native Silty Sand**
– **Sand and Silt Till** – unsaturated – saturated (aquitard)

Based on the test hole investigation, the shallow sand and silt till is generally expected to be unsaturated across the Site. In our opinion, the Site is hydraulically discontinuous and there is not a shallow permanent groundwater table across the Site. Seasonally or during significant storm events, surface water may infiltrate the topsoil and be perched upon the underlying till deposit.

The till deposit is generally expected to act as an aquitard underlying the Site. There may also be thin sand seams throughout the unit providing a higher permeability conduit for potential groundwater flow; however, the volume of groundwater from these seams is generally expected to be minimal.

7.1.2 Flow Direction

Based upon the groundwater level data collected, there appears to be a flow divide at the Site centred around the monitoring wells at BH3-24 and as depicted on the **Groundwater Elevations, Figures 9** and **10**. The groundwater flow direction is indicated to be toward the northwest and southwest from this approximate area near the centre of the Site for both the shallow and deep monitoring wells. Groundwater flow through the till deposit is expected to be relatively slow. It should be noted that groundwater levels are transient and tend to fluctuate with the seasons, periods of precipitation and temperature.

7.2 Water Balance Results

7.2.1 Pre-Development Water Balance

The pre-development water balance incorporated the existing soils, slope and agricultural areas. The infiltration factor for the area was calculated from the table of values presented in the "Land Development Guidelines"[2]. It is based on three sub-factors which are:

– Topography sub-factor;
– Soil sub-factor; and
– Cover sub-factor.

A topography factor of 0.15 (intermediate value between hilly and rolling) was utilized for the Site. A soil factor of 0.25 was used to represent a sandy silt / silty sand material understood to be the predominant soil type at the Site. The existing vegetation factor for the pre-development Site ranged from agricultural to treed areas. There were no structures included in the pre-development calculations (see **Appendix F.2** for a breakdown of the areas). **Table 12** summarizes the expected pre-development water balance values for the Site:

Table 12 Pre-Development Summary

Description / Parameter	Value
Total Precipitation (Peterborough Trent U)	**882.2 mm/yr**
Regional Evapotranspiration	584.4 mm/yr
Recharge Available	297.8 mm/yr
Site Area	155,600 m^2
Pervious Areas	155,600 m^2 (100%)
Impervious Areas	0 m^2 (0%)
Total Water Surplus - Percent of Precipitation – 33.8%	46,336 m^3/yr
Evapotranspiration - Percent of Precipitation – 66.2%	90,934 m^3/yr
Total Estimated Infiltration - Percent of Precipitation – 19.8%	27,248 m^3/yr
Total Estimated Runoff - Percent of Precipitation – 13.9%	19,088 m^3/yr

Based upon our calculations, the pre-development Site is 100% pervious. Based upon the pre-development values, the overall Site infiltrates on the order of about 27,248 m^3 per year or about 175 mm/year. The infiltration rate appears to be suitable for the Site given that the soils below the topsoil were generally observed to be silty sand / sandy silt material.

7.2.2 Post-Development Water Balance (No Infiltration Enhancements)

The computation of the water budget was repeated for the proposed development assuming no infiltration enhancements, that is, runoff from impervious surfaces is unrecoverable and not infiltrated into the ground. The anticipated impact of the development is related to increased runoff from imperious surfaces such as roof tops and asphalt surfaces. These are assumed to be impervious surfaces with zero infiltration capacity in this model. A

[2] MOEE Hydrogeological Technical Information Requirements for Land Development Applications. April 1995.

summary of the computations is based upon the conceptual plan provided to GHD. The post-development summary without infiltration enhancements is provided in **Table 13** with detailed calculations provided in **Appendix F.3**:

Table 13 Post-Development Summary (No Infiltration Enhancements)

Description / Parameter	Value
Site Area	155,600 m^2
Pervious Areas - Lawn / Grass - Open Space / Park	125,011 m^2 (80.3% of the Site area) -117,811 m^2 -7,200 m^2
Impervious Areas - Rooftops - Asphalt roadways and driveways - Stormwater pond	30,589 m^2 (19.7% of the Site area) -8839 m^2 -16,450 m^2 -5,300 m^2
Total Water Surplus - Percent of Precipitation – 42.8%	58,815 m^3/yr
Evapotranspiration - Percent of Precipitation – 57.2%	78,455 m^3/yr
Total Estimated Infiltration - Percent of Precipitation – 16.4% Infiltration % Difference (pre- vs post-)	22,523 m^3/yr (-17%) (decrease)
Total Estimated Runoff - Percent of Precipitation – 26.4% Runoff % Difference (pre- vs post-)	36,292 m^3/yr (90%) (increase)

Assumptions that were made in order to compute the post-development water budget in **Table 13** included evaporation from impervious surfaces and the impermeable surface areas of asphalt surfaces and building roof tops with zero (0) infiltration capability. Under this scenario, impervious surfaces increased by about 20%; the total infiltration volume decreased by about 17% and runoff volume increased by approximately 90%.

Based upon these water balance calculations, the infiltration has reduced and the runoff increased versus the pre-development values. Groundwater base flow would be expected to decrease over time in this scenario and additional stormwater may need to be managed. Based upon this scenario, mitigative strategies would be required to maintain infiltration. The following section discusses the water balance after considering the mitigation strategy of conveying rooftop stormwater to Low Impact Development (LID) features for infiltration.

7.2.3 Post-Development Water Balance (With Enhanced Infiltration)

The post-construction water budget computations were repeated considering enhanced infiltration options which are also known as LID technologies. The water balance provides generic infiltration and runoff values that was completed solely for demonstration purposes to illustrate that pre-development conditions can be maintained. Specific LID design criteria and selection of actual LID technologies will be the responsibility of the stormwater engineer for the development. These technologies include and are not restricted to rainwater harvesting, downspout disconnection, infiltration trenches, vegetated filter strips, bioretention, permeable pavement, enhanced grass swales, dry swales and perforated pipe systems in order to balance the water budget.

The post-development water balance was modelled to show that stormwater from building roof tops can be directed via downspouts (disconnected from storm sewers in this example) to sodded areas or undeveloped areas (open spaces, parks etc.) for infiltration. Downspout disconnection, for example, can reduce runoff by 25% to 50% based on LID documentation developed by the Credit Valley Conservation and Toronto and Region Conservation Authority. In this model, based upon the size of the residential lots, it is assumed that 50% of the rooftop runoff will infiltrate into the

ground. This water balance model also includes the use of enhanced grass swales to supplement infiltration from roof tops only. Stormwater runoff from road surface and driveways is expected to be conveyed to swales / ditches adjacent to the roadways. Enhanced grass swales can reduce runoff by 10% to 20%. For this model, it is assumed that 20% will be infiltrated. As noted above, this is a generic water balance to illustrate that there is sufficient surplus water to be infiltrated to match pre-development values; the actual LIDs selected will be at the discretion of the stormwater design team.

A summary of the post-construction water budget with mitigation measures for infiltration is presented in **Table 14**.

Table 14 Post-Development Summary with Enhanced Infiltration – Downspout Disconnection and Enhanced Grass Swales

Description / Parameter	Value
Site Area	155,600 m^2
Rooftop Stormwater Surplus Available	6,238 m^3/yr
Infiltration via Pervious Surfaces	21,303 m^3/yr
Rooftop Infiltration	3,119 m^3/yr
Asphalt Roads Stormwater Surplus Available	10,269 m^3/yr
Enhanced Swale Infiltration	2,054 m^3/yr
Post-Development Infiltration with Enhanced Infiltration Measures Infiltration % Difference (pre- vs post-)	27,696 m^3/yr (1.6%) (increase)
Total Estimated Runoff Runoff % Difference (pre- vs post-)	31,119 m^3/yr (63%) (increase)

In this scenario illustrated and based on the information provided, the infiltration values have been modelled to show that pre-development infiltration can be maintained utilizing LID strategies. Provided the pre-development infiltration is maintained, no impacts to the local water wells, or surface water features is expected.

As per the water balance, runoff has increased as compared with the pre-development conditions and will need to be managed as per a storm water management plan.

7.3 Aquifer Quality and Performance

Water quality generally meets the ODWS with the exception of hardness, which is common in groundwater supplies in Southern Ontario. Iron, manganese, and chloride were elevated in one (1) of the test wells. Total Dissolved Solids and turbidity were elevated in both wells. These parameters are considered aesthetic or operational parameters that may result in a build-up or staining of plumbing fixtures; however, commercially available treatment systems can reduce these parameters if desired.

The proposed residential development can be serviced by drilled wells tapping the deeper confined overburden aquifer or the underlying bedrock aquifer. The use of properly constructed drilled wells that are certified and adequately sealed, should be sufficient to provide ample quantities of potable groundwater while preserving the long-term water quality of the aquifer complex. Representative number of test wells as per Ministry document D-5-5 would need to be installed at the Site and more detailed testing completed to confirm groundwater resource availability and to assess potential interference impacts with existing users.

7.4 Septic Disposal

Based on the MECP dilution model, the projected post-development nitrate concentration meets the drinking water standard of 10 mg/L for nitrate using tertiary treatment systems. The calculated projected post-development nitrate concentration was 9.68 mg/L for 38 proposed lots. The Site is generally characterized by sandy silt / silty sand over a

glacial deposit of sandy silt / silty sand till that will have minimal vertical infiltration through the till with drainage through the shallow surficial soil. The underlying bedrock of the area is limestone.

Groundwater levels on the Site ranged from 0.25 mbgs to 1.1 mbgs. Groundwater contouring indicates that there is a flow divide on the Site with groundwater migrating towards the northwest and southeast. It is recommended that the development be serviced by constructing partially to fully raised tile beds. Due to the underlying subsurface conditions, the tile bed design will have to be evaluated on a lot-by-lot basis. Provided that the waste disposal systems are properly constructed, no impact is anticipated on downgradient baseline water quality functions. The proposed development is expected to have a negligible impact on the existing base flow conditions and on the water quality of the shallow and deeper aquifer systems.

7.5 Geotechnical

Based on the draft concept plan provided by Biglieri, the Site encompasses an area of 15.6 ha (38.5 acres) with 38 residential lots. The residential development will include residential homes, a stormwater management block, a park block, and internal streets. The future lots will be serviced on individual wells and septic systems..

Based upon the above comments and the borehole and test pit information, and assuming them to be representative of the subsoil conditions across the Site, the following comments and recommendations are offered.

7.5.1 Site Preparation, Grading and Backfill

Based on the subsurface conditions encountered in the test pits and boreholes, the Site is generally underlain by a surficial layer of topsoil underlain by native soils of very loose to very dense native sandy silt / silty sand to sand and silt till.

Any topsoil, vegetation, disturbed earth, organic and organic-bearing material should be removed from the footprint of the proposed building areas and from within pavement areas prior to site grading activities. If fill materials are encountered and contains topsoil / organics or rootlets, the material should not be used as structural backfill.

Prior to Site grading activity, the subgrade soils exposed after the removal of topsoil within proposed building areas should be visually inspected, compacted if required, and proof rolled using large axially loaded equipment. Any loose, organic, or unacceptable areas should be sub excavated and removed as directed by the Engineer and replaced with suitable fill materials compacted to a minimum of 98 percent Standard Proctor Maximum Dry Density (SPMDD). Clean earth fill used to raise grades in the proposed buildings should be placed in thin layers (200 mm thick or less) and compacted by a heavy appropriate roller to 98 percent SPMDD. Installation of engineered fill used to support foundations must be continuously monitored on a full-time basis by qualified geotechnical personnel.

The native soils encountered at the Site are generally suitable for reuse as backfill to raise site grades, as trench backfill during installation of buried services, or as pavement subgrade provided they are free of organic material, and are within the optimum moisture content. Control of moisture content during placement and compaction will be essential for maintaining adequate compaction. A final review and approval to reuse any soils should be made at the time of construction. If site soils cannot be reused as backfill, then an OPSS Granular “B” Type I material is recommended for general backfilling.

Backfill to basement foundation walls, should be accomplished using well graded Granular “B” Type I material complying with Ontario Provincial Standard Specifications (OPSS) 1010 or employ the use of a drainage geotextile on the foundation wall.

Installation of engineered fill, where required, must be continuously monitored on a full-time basis by qualified geotechnical personnel.

7.5.2 Service Installation

The materials encountered during this investigation at the anticipated storm service invert elevations consist of native till soils. As such, normal compacted bedding material, placed in the Class “B” or Class “C” arrangement, is

recommended for all underground services used under roadways. The recommended bedding material is Granular “A” or 19 mm crusher run (angular) stone, as per Ontario Provincial Standard Specifications (OPSS). The minimum recommended bedding thickness for the underground services is 150 mm. All bedding materials should be compacted to 100% of their Standard Proctor Maximum Dry Density (SPMDD). If trenching encounters overly wet or loose bedding subgrade, bedding material should consist of a graded clear stone product, such as HL-8 stone or High-Performance Bedding (HPB), wrapped in non-woven geotextile fabric approximately equivalent to Terrafix 270R and placed in accordance with manufacture’s specifications.

Prior to placement of bedding, the exposed subgrade should be inspected by an experienced geotechnical engineer and any identified soft or loose areas should be sub excavated and replaced with suitably compacted fill. If the subgrade warrants, a woven geotextile (Terrafix 200W or approximate equivalent) may be required on the subgrade prior to bedding material, to protect soft and/or sensitive areas.

It is recommended that cover backfilling of the underground services be accomplished using Granular “A”, sand, or other suitable material as allowed by the Municipality’s standards, to a minimum of 300 mm above the pipe. Compaction of this material should attain 100 percent SPMDD. It is expected that the excavated, inorganic soils may be suitable for reuse as trench and road subgrade backfill, conditional upon suitable moisture content (within 2 % of optimum) and final review and approval by an experienced geotechnical engineer, at the beginning, and throughout the duration of construction. Compaction of any native soil in service trenches is recommended to be a minimum of 98 percent of its SPMDD.

It is recommended that the storm service bedding subgrade be inspected and approved by an experienced geotechnical engineer prior to placing the bedding fill, to ensure its suitability and consistency with conditions encountered during this investigation. Bedding and backfill materials, and compaction, should also be inspected and tested during placement.

7.5.3 Road Construction

Based on the results of this investigation, we would recommend the following procedures be implemented to prepare the proposed new roadways for its construction:

1. Remove any saturated or frozen earth, and boulders larger than 150 mm in diameter encountered at subgrade elevation for the full width of roadway construction. It is expected that some of the excavated soils may be suitable for reuse as trench backfill, conditional upon suitable moisture content (within 2 % of optimum) and final review and approval by an experienced geotechnical engineer or representative at the time of construction.
2. Proof roll the subgrade for the purpose of detecting possible zones of overly wet or soft subgrade. Any unstable areas thus delineated should be reinforced with woven geotextile approximately equivalent to Terrafix 200W, or replaced with acceptable granular material compacted to a minimum of 98 percent of its SPMDD and frost tapered.
3. Contour the subgrade surface to prevent ponding of water during the construction and to promote rapid drainage of the sub-base and base course materials.
4. To maximize drainage potential, and ensure satisfactory pavement performance, 150 mm diameter perforated pipe subdrains should be installed along any curb lines. The pipe should be encased in filter fabric and surrounded by clear stone aggregate or another suitable free-draining material. It is recommended that the subdrains outlet to the storm sewer system. In the case where ditches are employed the base and subbase layers should extend beyond the asphalted section of the road to provide an outlet for water directly onto the slope of the ditch.
5. Construct transitions between varying depths of granular subbase materials with a frost taper of 1:10 minimum.

It is expected that the proposed new roads will experience relatively low traffic volumes consisting of passenger vehicles and occasional heavy service trucks. In this regard, based on the subgrade soils encountered in our test holes the following minimum flexible pavement structure is recommended for roadway construction.

Table 15 Pavement Structure for Local Roadway

Profile	Material	Minimum Thickness (mm)	In Conformance with Form
Asphalt Surface	H.L.3	40	OPSS 1150
Asphalt Base	H.L.8	50	
Granular Base	Granular “A”	150	OPSS 1010
Granular Subbase	Granular “B”	300	

The following steps are recommended for optimum construction of paved areas:

1. The Granular “A” and “B” courses should be compacted to a minimum 100 percent of their respective SPMDD’s.
2. All asphaltic concrete courses should be placed, spread and compacted conforming to OPSS 310 or equivalent. All asphaltic concrete should be compacted to a minimum 92.0 percent of their respective laboratory Maximum Relative Density (MRD).
3. Adequate drainage should be provided to ensure satisfactory pavement performance.

It is recommended that all fill material be placed in uniform lifts not exceeding 200 mm in thickness before compaction. It is suggested that all granular material used as fill should have an in-situ moisture content within 2 percent of their optimum moisture content. All granular materials should be compacted to 100 percent SPMDD. Granular materials should consist of Granular “A” and Granular “B” conforming to the requirements of OPSS.MUNI 1010 or equivalent.

The performance of the pavement structure is highly dependent upon the subgrade support conditions. Stringent construction control procedures should be maintained to ensure that uniform subgrade moisture and density conditions are achieved as much as practically possible. It is noted that the above recommended pavement structures are for the end use of the project. The most severe loading conditions on pavement areas and the subgrade may occur during construction. As such, during construction of the project, the recommended granular depths may not be sufficient to support loadings encountered. Consequently, special provisions such as restricted lanes, half-loads during paving, etc. may be required, especially if construction is carried out during unfavourable weather.

7.5.4 Depth of Frost Penetration

It is recommended that all exterior foundations or footings in unheated areas have a minimum soil cover of at least 1.6 m in according to OPSD 3090.101 (2010), or equivalent insulation. Footings for heated structures, such as perimeter foundation for the proposed building structure, must be provided with a minimum of 1.4 m of earth cover or equivalent insulation.

During winter construction exposed surfaces to support foundations must be protected against freezing by means of loose straw and tarpaulins, heating, etc.

7.5.5 Seismic Site Classification

For buildings constructed outside of Section 9 of the latest Ontario Building Code (OBC), there is a requirement that a Seismic Site Class be assigned for calculations of earthquake design forces and the structural design based on a two percent probability of exceedance in 50 years. According to the latest OBC, the Seismic Site Class is a function of soil profile and is based on the average properties of the subsoil strata to a depth of 30 m below the ground surface. The OBC provides the following three methods to obtain the average properties for the top 30 m of the subsoil strata:

– Average shear wave velocity.
– Average Standard Penetration Test (SPT) values (uncorrected for overburden).
– Average undrained shear strength.

For design purposes, based on the criteria listed in Table 4.1.8.4.A. of the OBC and the results obtained from standard penetration resistance of the underlying subsurface conditions and our knowledge of the regional geology, a Seismic Site Class ‘D’ can be used for the design of the proposed buildings.

7.5.6 Foundation Design

The common practice for the Serviceability Limit State (SLS) design of most structures and building foundations is to limit the total and differential foundation settlements to 25 mm and 19 mm, respectively. However, other serviceability criteria for the proposed building may be determined by the structural engineer considering tolerable settlement that would not restrict the use or operation of the facility.

Based on the available geotechnical data, it is expected that structural loading for the proposed residential structures may be supported on spread and continuous strip footings founded on the approved compact to dense native soils or on engineered fill constructed on the approved compact to dense native soils. Depths at which the compact to dense native soils were encountered at each borehole is summarized in **Table 16** below.

Table 16 Minimum Depth (mbgs) / Elevation for Footings

Borehole ID	Minimum Founding Depth (mbgs)	Minimum Founding Elevation (m)
BH1A-24	2.2	260.7
BH1B-24	2.2	260.8
BH2A-24	2.3	268.8
BH2B-24	2.3	268.9
BH3A-24	1.5	272.7
BH3B-24	1.5	272.6
BH4A-24	1.8	259.7
BH4B-24	1.8	259.7
BH5-24	1.5	268.9
BH6-24	1.5	274.9

For design purposes, it is recommended that footings constructed on the compact to very dense native soils or on engineered fill placed directly on such soils be proportioned using the following bearing capacities:

Table 17 Preliminary Bearing Pressure for Foundation Design

Parameter	Bearing Pressure		
	Compact to Dense Undisturbed Native Soils	Engineered Fill	
		Granular Fill (2)	Site Earth Borrow Fill (2)
Factored Bearing Capacity at ULS (1)	180 kPa	225 kPa	180 kPa
Bearing Capacity at SLS	120 kPa	150 kPa	120 kPa

Notes:
(1) Resistance factor Φ =0.5 applied to the ULS bearing pressure for design purposes.
(2) At least 0.3 m of Granular or Earth Borrow fill. Quality of material is to be approved prior to use as engineered fill.

Any engineered fill upon which footings are placed must be a minimum thickness corresponding to the notes that accompany the above table. Footings (and foundation walls) placed on engineered fill must be suitably reinforced; as a minimum, and where not already specified in the design drawings, this reinforcing should use 2 continuous runs of 15M rebar throughout the footings, and 2 runs of 15M rebar throughout near the top and bottom of the foundation walls.

The following is recommended for the construction of any engineered fill for the footings:

1. Remove any and all existing vegetation, topsoil, fill, organics, and organic-bearing soils to the competent, undisturbed native soil from within the area of the proposed engineered fill.
2. The area of the engineered fill should extend horizontally 1m beyond the outside edge of the building foundations and then extend downward at a 1:1 slope to the competent native soil.
3. The base of the engineered fill area must be approved by a member of GHD prior to placement of any fill, to ensure that all unsuitable materials have been removed, that the materials encountered are similar to those observed, and that the subgrade is suitable for the engineered fill.
4. All engineered fill material is to be approved by GHD at the time of construction.
5. Place approved engineered fill, in maximum 200 mm lifts, compacted to 100 percent of its SPMDD. Any fill material placed under wet conditions should consist of an approved, rock-based fill, with the inclusion of appropriate geotextile fabric around the rock-based fill should the rock fill contain enough voids to warrant. Rock-based fill material should be compacted by a plate tamper and visually inspected by a geotechnical engineer to confirm appropriate compaction.
6. Full time testing and inspection of the engineered fill will be required, to ensure compliance with material and compaction specifications.

Under no circumstances should the foundations be placed above organic materials, loose, frozen subgrade, construction debris, or within ponded water. Prior to forming, all foundation excavations must be inspected and approved by a member of GHD's geotechnical group. This will ensure that the foundation bearing material has been prepared properly at the foundation subgrade level and that the soils exposed are similar to those encountered during this investigation.

Should basement or otherwise subgrade areas be incorporated into any of the buildings' designs, it is recommended that for drainage purposes, perimeter drains be installed about the structure in accordance with the Ontario Building Code (OBC). The subdrains would serve to drain seepage water that infiltrates the backfill, intersect any groundwater that may be present, and help relieve hydrostatic pressures due to any seasonally high groundwater levels. The drains should consist of a perforated pipe, at least 100 mm in diameter, surrounded by clear, crushed stone and suitable filter protection. The drain should discharge to a positive sump or other permanent frost-free outlet. It is also strongly recommended that the building's foundation walls be sealed and damp proofed.

7.5.7 Slab-On-Grade Construction

Floors may generally be constructed as normal slabs-on-grade, on granular or 19 mm clear stone over native, inorganic subsoils. The floor slab should be formed over a base course consisting of at least 150 mm of Granular "A" backfill as per OPSS compacted to a minimum of 100 percent of its SPMDD or 150 mm of 19 mm angular clear stone material underneath basement areas, compacted by a plate tamper as per OBC requirements. All grade increases or infilling below the granular "A" or clearstone should be constructed in accordance with the engineered fill steps provided in **Section 7.5.6** of this report.

If the groundwater table is intersected by any basement excavations, the floor slabs should incorporate under slab drains, and a vapour barrier should be installed beneath the slab to prevent migration of moisture vapour. The drain should discharge to a positive sump or other permanent frost-free outlet.

All fill placed as engineered fill must be inspected, approved and compaction verified by personnel from GHD.

7.5.8 Basement and Retaining Walls

It is recommended that free draining backfill consisting of Granular "B" Type I material complying with Ontario Provincial Standard Specifications (OPSS) 1010, to basement and retaining walls be provided. Walls may be designed for lateral earth pressures using the following equation:

p = k (w h + q), where:

- p = the lateral earth pressure in kPa acting on the subsurface wall at depth h;
- ka= the coefficient of active earth pressure;

  (= 0.3 for walls restrained from the bottom only);

  (= 0.5 for walls restrained at the top and bottom*);
- kp= the coefficient of passive earth pressure, (= 3.0);
- w = the granular or native soil bulk density in kN/m^3;

  (= 21.0 kN/m^3 for well compacted, OPSS-approved Granular "B" or native soils);
- h = the depth (in metres) below the exterior grade at which the earth pressure is being calculated; and
- q = the equivalent value of any surcharge (in kN/m3) acting on the ground surface adjacent to the walls.

(*) This value is recommended for rigid walls retaining compacted backfill.

The recommended value for the coefficient for sliding friction between the soil and the concrete is 0.4. Also, any additional surcharge loading that will influence the wall must be taken into account in its design.

7.5.9 Excavation and Temporary Shoring

The Occupational Health and Safety Act (OHSA) regulations require that if works must enter an excavation deeper than 1.2 m, the excavation must be suitably sloped and/or braced in accordance with the OHSA requirements. OHSA specifies maximum slope of the excavations for four broad soil types as summarized in the following table:

Table 18 Soil Types and Slope Information

Soil Type	Base of Slope	Maximum Slope Inclination
1	Within 1.2 metres of bottom	1 horizontal to 1 vertical
2	Within 1.2 metres of bottom of trench	1 horizontal to 1 vertical
3	From bottom of excavation	1 horizontal to 1 vertical
4	From bottom of excavation	3 horizontal to 1 vertical

The native soils underlying the Site are considered Type 2 soils above the groundwater level, and Type 4 if affected by surface water or groundwater seepage. If the above recommended excavation side slopes cannot be maintained due to lack of space or any other reason, the excavation side slopes must be supported by an engineered shoring system. The shoring system should be designed in accordance with Canadian Engineering Foundation Manual (4th Edition) and the OHSA Regulations for Construction Projects.

It is anticipated that excavation for foundation can be made with conventional equipment. The presence of cobbles and boulders should be expected with the native soils.

An examination of the slopes should be carried out by qualified soils personnel before any worker enters the excavation. The exposed fill material and native soil should be protected against erosion from water run-off or rain.

7.6 Storm Water Management Pond

It is GHD's understanding that a Storm Water Management Pond (SWMP) is proposed in the northwest corner of the site and is to be located within the area of test holes BH4A-24 / BH4B-24 and TP2-24 as shown on the Test Hole Plan. The proposed base elevation of the SWMP is not known at the time of writing this report, however it is expected that the bottom of the SWMP will consist of compact to dense sand and silt glacial till native soils. The hydraulic

conductivity of the sand and silt till is expected to be on the order of about 10^{-5} to 10^{-6} cm/sec. It is noted, however, that slight variations in the soil stratigraphy may cause variations in the permeability of the soil in both vertical and horizontal orientations.

Based on the soils observed, and the assumed base elevations, it appears that construction of the SWMP in this area is feasible. In general, excavation of the soils for the SWMP is expected to be straightforward, provided that appropriate measures are taken during construction to minimize any overland or near-surficial flow of water into the area. Perched groundwater and surficial water inflow into the open SWMP excavation may be encountered depending on the time of the year in which construction is conducted, however this is expected to be controlled by pumping from within the excavation, along with further measures if required including up-gradient cutoff trenching with appropriate drainage outletting.

It is recommended that the SWMP subgrade surfaces be proof rolled, and a representative of GHD approve the subgrade prior to construction of the berms. Construction of the berms may utilize excavated soils, such as the sand and silt till native soils. Such operations should place soils in lifts no thicker than 150 mm prior to compaction and compacted to at least 95 percent SPMDD. Free draining native sand soils should not be used in the berm to avoid a piping failure of the berm.

The native, undisturbed compact to dense sand and silt native soils are expected to have a sufficiently low permeability where they could substitute for a liner. An inspection of the excavated and exposed SWMP surface should be performed at the time of construction, to assess whether any discrete or localized areas of increased hydraulic conductivity (such as sand and/or gravelly seams typically encountered within till soils) are present within the exposed soils, in which case such areas may be lined with a more suitable (i.e. less hydraulically conductive) material or an impermeable geosynthetic membrane.

For the purpose of the proposed SWMP, the soils observed should be stable from slip circle failure if sloped at 3 horizontal to 1 vertical (3H:1V) or flatter in the long term both above and below the water table. Between the stable water level and the expected high-water level, it is recommended that the slopes be lessened to 4H:1V (or flatter) to guard against erosion by wavelet action. The native material will require vegetative root mass (or otherwise suitable erosion protection) to minimize erosional forces on exposed slopes.

Slopes and berms of the SWMP should be constructed to reduce or eliminate the effects of surficial erosion. Features to do so may include slope vegetation, installation of erosion or gabion mats, rip rap, and/or other acceptable stabilizing features.

7.6.1 Construction Monitoring

The foundation installations and any Engineered Fill placement must be closely monitored and inspected by qualified personnel to ensure consistency with the design bearing. The on-site review of the condition of the foundation soil as the foundations are constructed is an integral part of the geotechnical design function and is required by Section 6.2.2 of the Ontario Building Code 2012.

Qualified Geotechnical personnel should inspect and test all stages of the proposed development. Specifically, they should ensure that the materials and conditions comply with this geotechnical assessment report. In addition, qualified geotechnical personnel should provide material testing services prior to and during backfilling and/or grade raising operation. Should soil conditions be encountered that vary from those described in this report, our office should be informed immediately such that the proper measures are undertaken.

8. Conclusions and Closure

Supporting data upon which our recommendations are based have been presented in the foregoing sections of this report and are governed by the physical properties of the subsurface materials that were encountered at the Site and assume that they are representative of the overall site conditions.

It is our opinion that the results of this hydrogeological and geotechnical investigation support the proposed residential development to be constructed upon a 15.6 ha (38.5 acre) area with single-detached homes, a stormwater management block and internal streets. A preliminary draft plan was provided showing a total of 38 residential lots for the development and GHD understands that the future individual lots will be serviced on individual wells and septic systems.

We trust his report meets your immediate needs. Should any questions arise regarding any aspect of our report, please contact our office.

All of Which is Respectfully Submitted,

GHD



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9. Statement of Limitations

This report is intended solely for Base-Land Developments Inc. and their designers and is prohibited for use by others without GHD's prior written consent. This report is considered GHD's professional work product and shall remain the sole property of GHD. Any unauthorized reuse, redistribution of or reliance on the report shall be at the Client and recipient's sole risk, without liability to GHD. No portion of this report may be used as a separate entity; it is to be read in its entirety and shall include all supporting drawings and appendices.

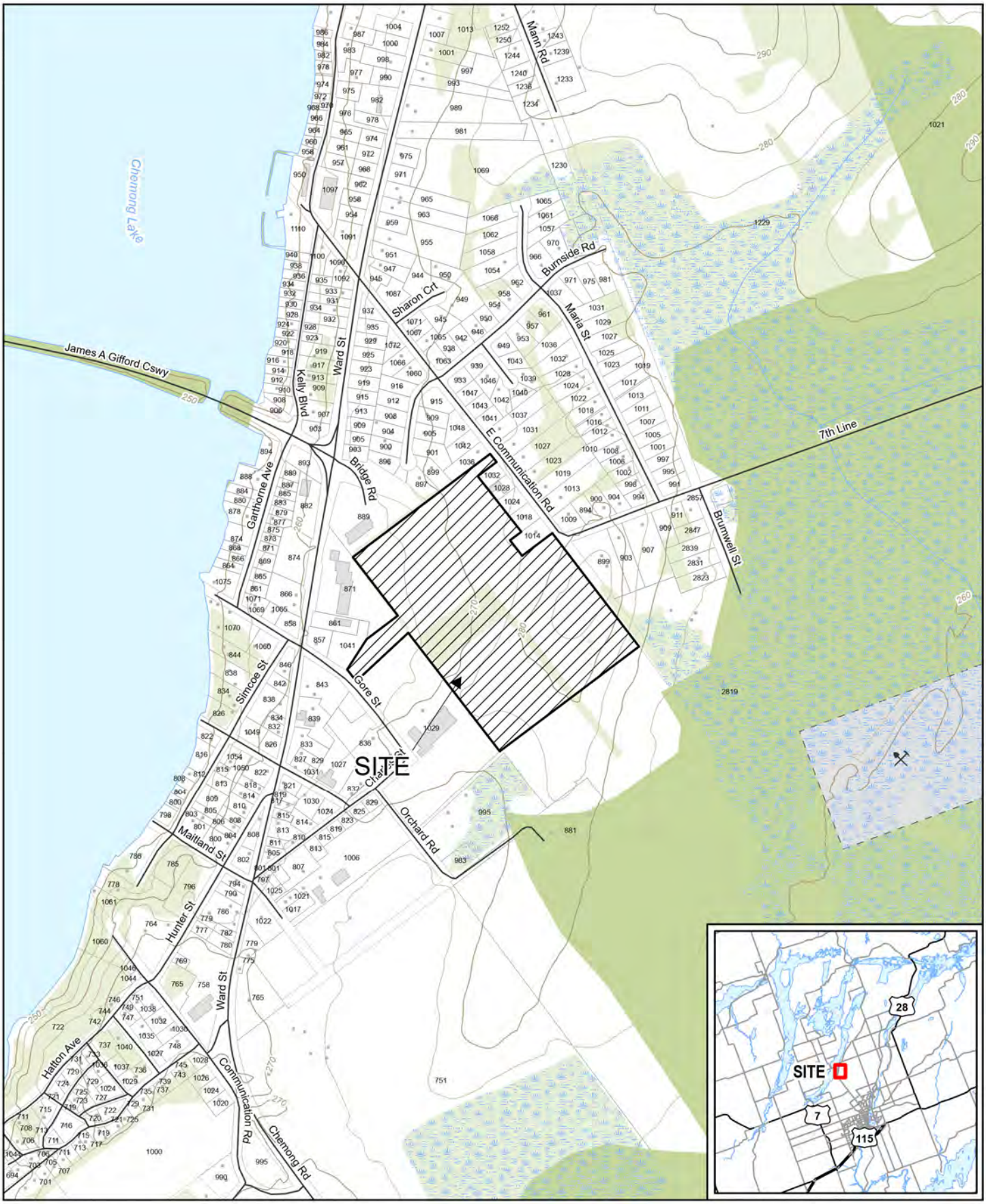
The recommendations made in this report are in accordance with our present understanding of the project, the current site use, ground surface elevation and conditions, and are based on the work scope approved by the Client and described in the report. The services were performed in a manner consistent with that level of care and skill ordinarily exercised by members of geotechnical engineering professions currently practicing under similar conditions in the same locality. No other representations, and no warranties or representations of any kind, either expressed or implied, are made. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.

All details of design and construction are rarely known at the time of completion of a geotechnical or hydrogeological assessment. The recommendations and comments made in the study report are based on our subsurface investigation and resulting understanding of the project, as defined at the time of the study. We should be retained to review our recommendations when the drawings and specifications are complete. Without this review, GHD will not be liable for any misunderstanding of our recommendations or their application and adaptation into the final design.

By issuing this report, GHD is the geotechnical engineer of record. It is recommended that GHD be retained during construction of all foundations and during earthwork operations to confirm the conditions of the subsoil are actually similar to those observed during our study. The intent of this requirement is to verify that conditions encountered during construction are consistent with the findings in the report and that inherent knowledge developed as part of our study is correctly carried forward to the construction phases.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments included in this report are based on the results obtained at the test locations only. The subsurface conditions confirmed at the test locations may vary at other locations. The subsurface conditions can also be significantly modified by the construction activities on site (e.g., excavation, dewatering and drainage, blasting, pile driving, etc.). These conditions can also be modified by exposure of soils or bedrock to humidity, dry periods or frost. Soil and groundwater conditions between and beyond the test locations may differ both horizontally and vertically from those encountered at the test locations and conditions may become apparent during construction which could not be detected or anticipated at the time of our investigation. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations. If changed conditions are identified during construction, no matter how minor, the recommendations in this report shall be considered invalid until sufficient review and written assessment of said conditions by GHD is completed.

Figures



Paper Size ANSI A

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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GHD

Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

Project No. 12637390
Revision No. -
Date Jan 8, 2025

Site Location Map

Figure 1

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Print date: 08 Jan 2025 - 12:38

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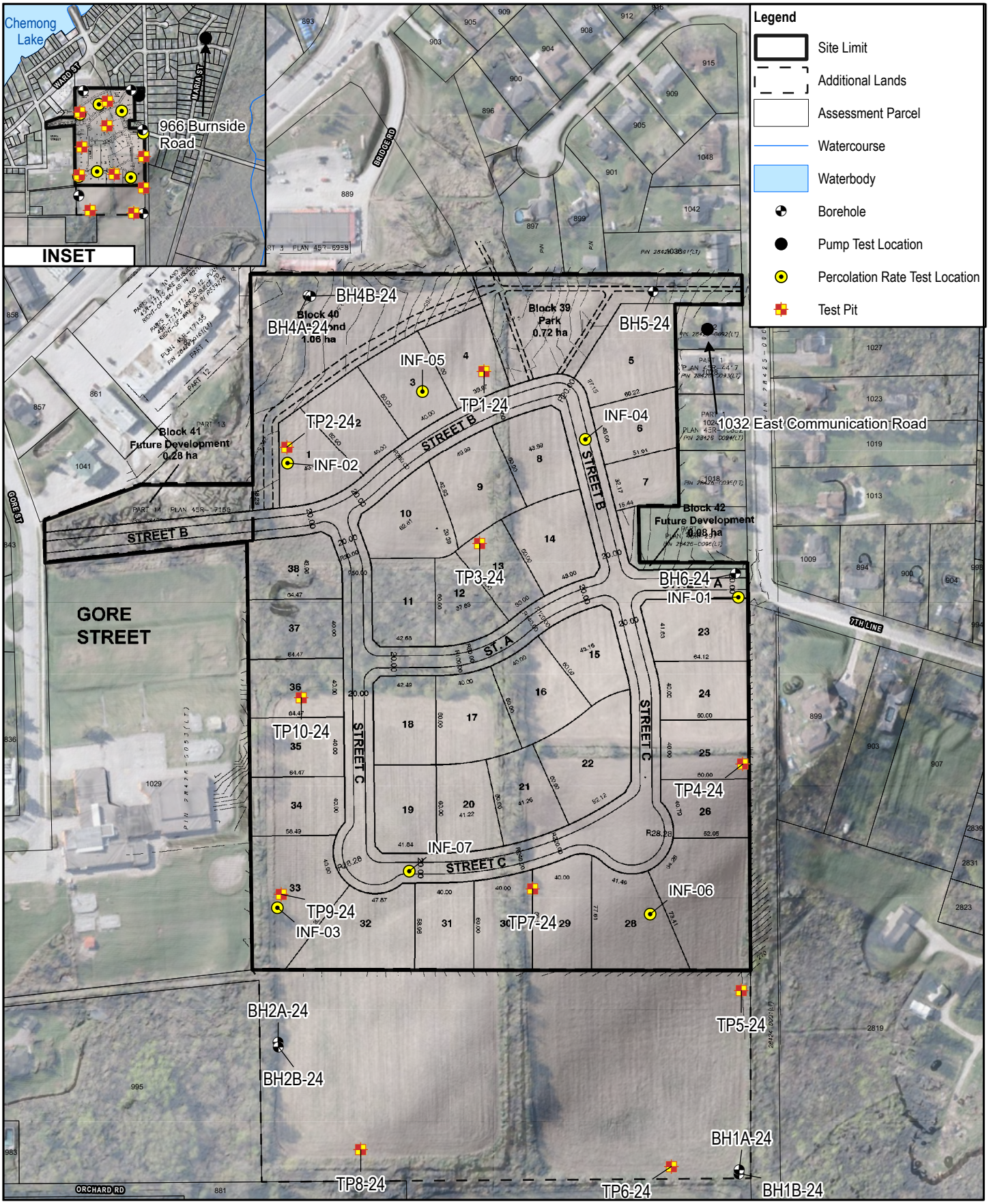


1 cm = 40 meters

0 40 80 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

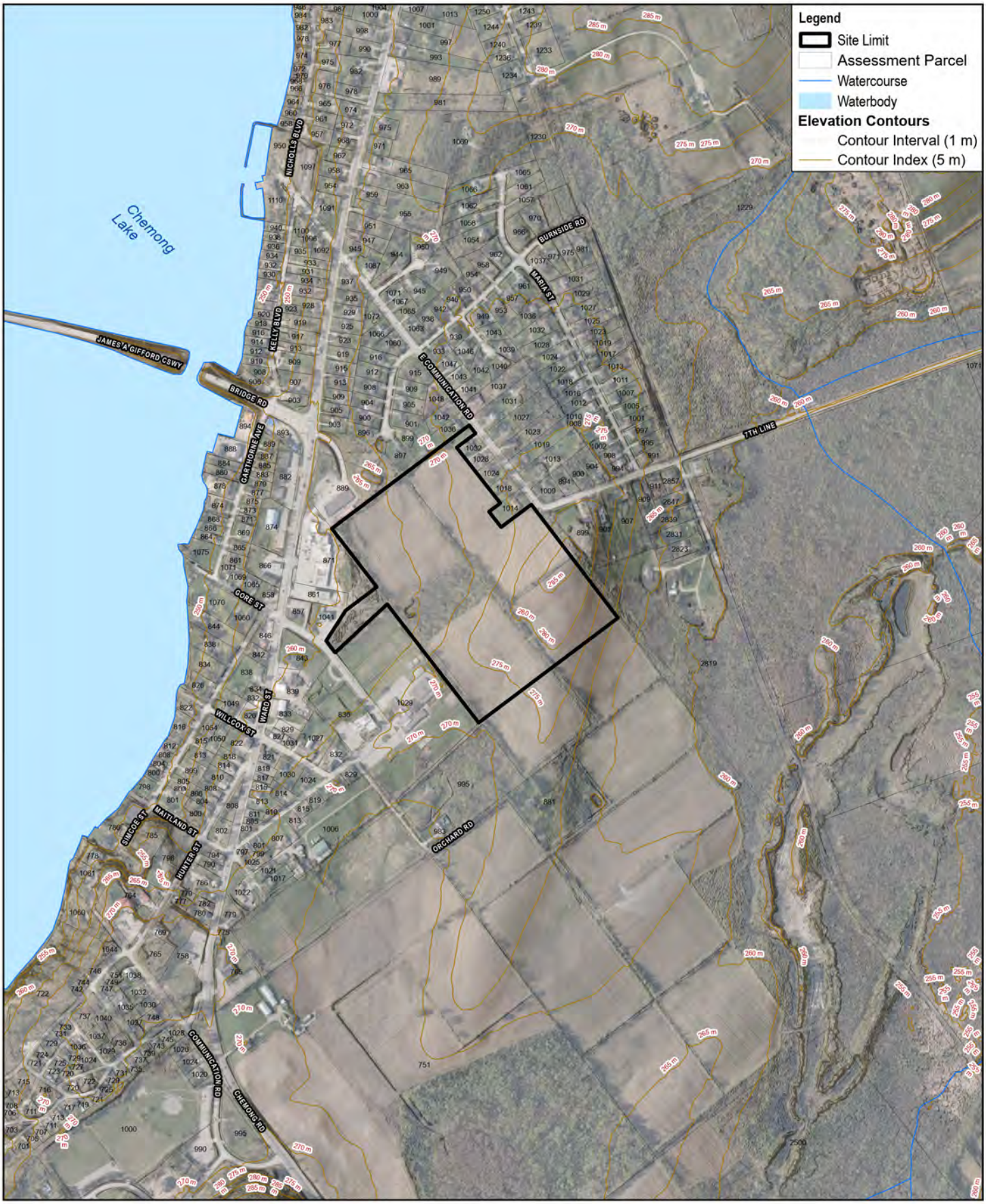
Project No. 12637390
Revision No.
Date Nov 7, 2025

Borehole and Test Pit Plan

Figure 2

O:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_BoreholeAndTestPitPlan_ArcPro\12637390_BoreholeAndTestPitPlan_ArcPro.aprx
Print date: 07 Nov 2025 - 15:45

Attribution: Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery @ County of Elgin, 2020.



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0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

N

GHD

Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

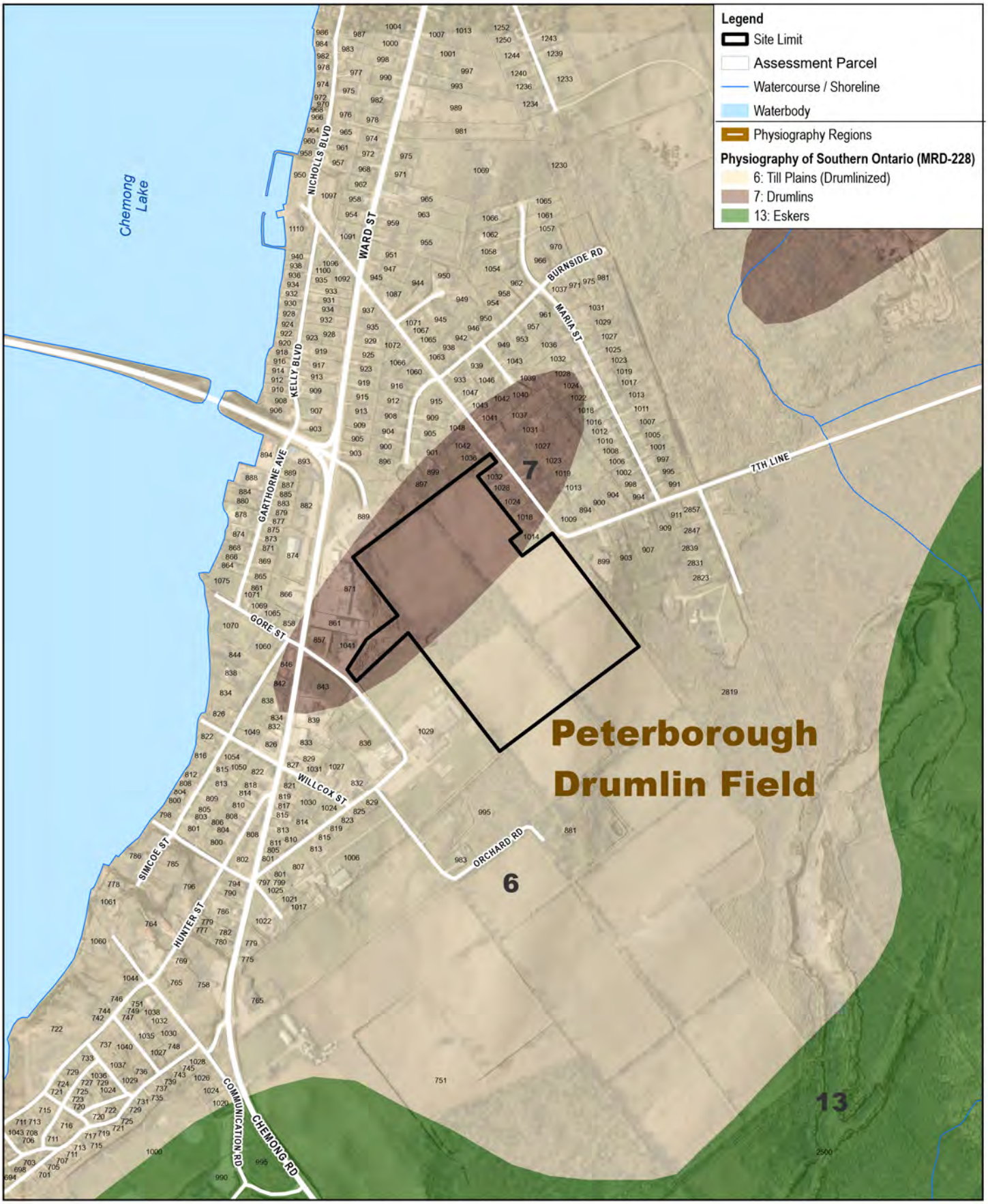
Regional Topography

Project No. 12637390
Revision No. -
Date Jan 8, 2025

Figure 3

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo aprx
Print date: 08 Jan 2025 - 12:42

Data source: © City of Kawartha Lakes, 2018



1:10,000

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

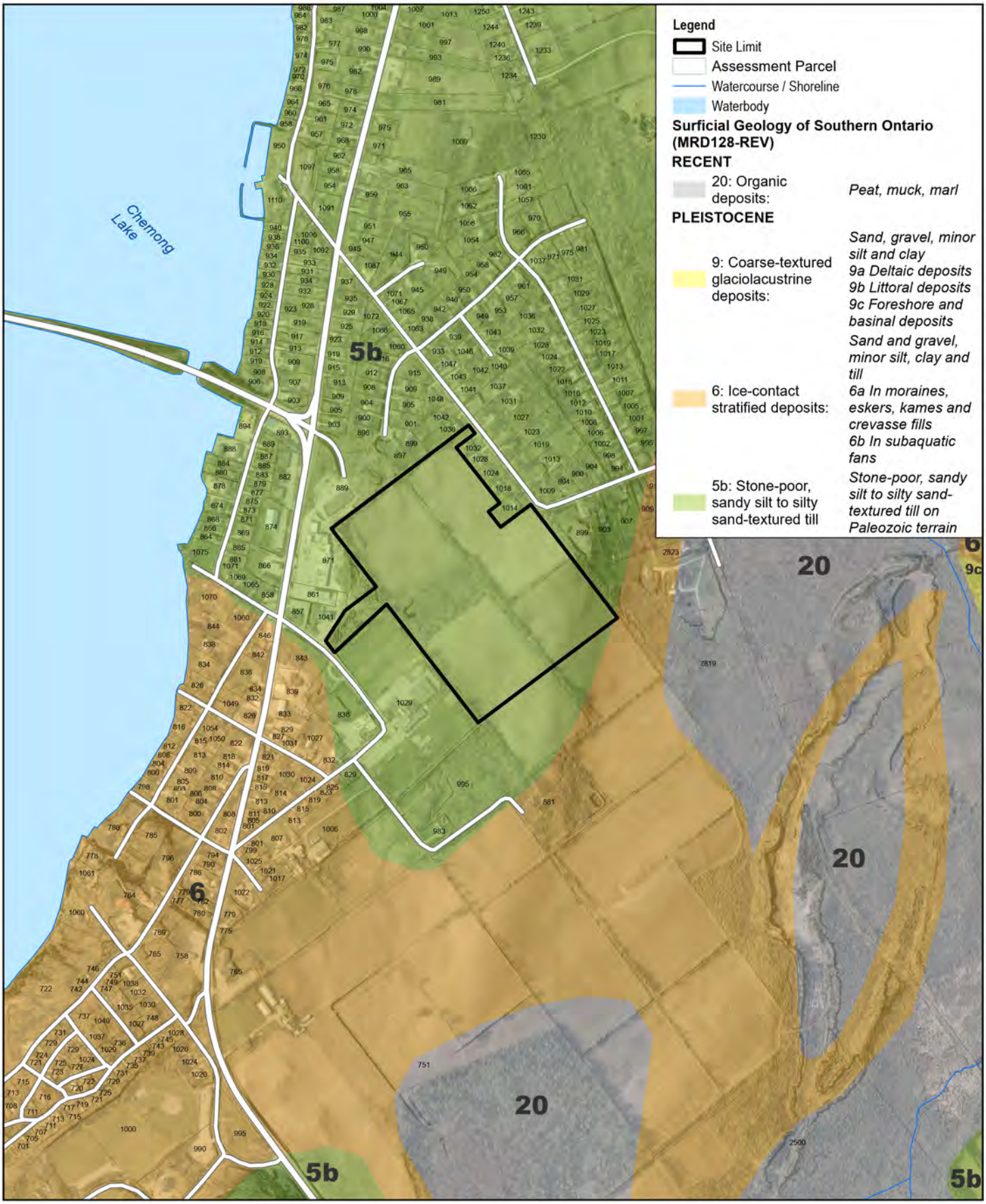
Project No. 12637390
Revision No. -
Date Jan 8, 2025

Physiography

Figure 4

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo.aprx
Print date: 08 Jan 2025 - 12:42

Attribution: Chapman, L.J. and Putnam, D.F. 2007. Physiography of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 228 ISBN 978-1-4249-5158-1.; Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery @ County of Elgin, 2020.



1:10,000

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Bridgenorth, Ontario

Project No. 12637390
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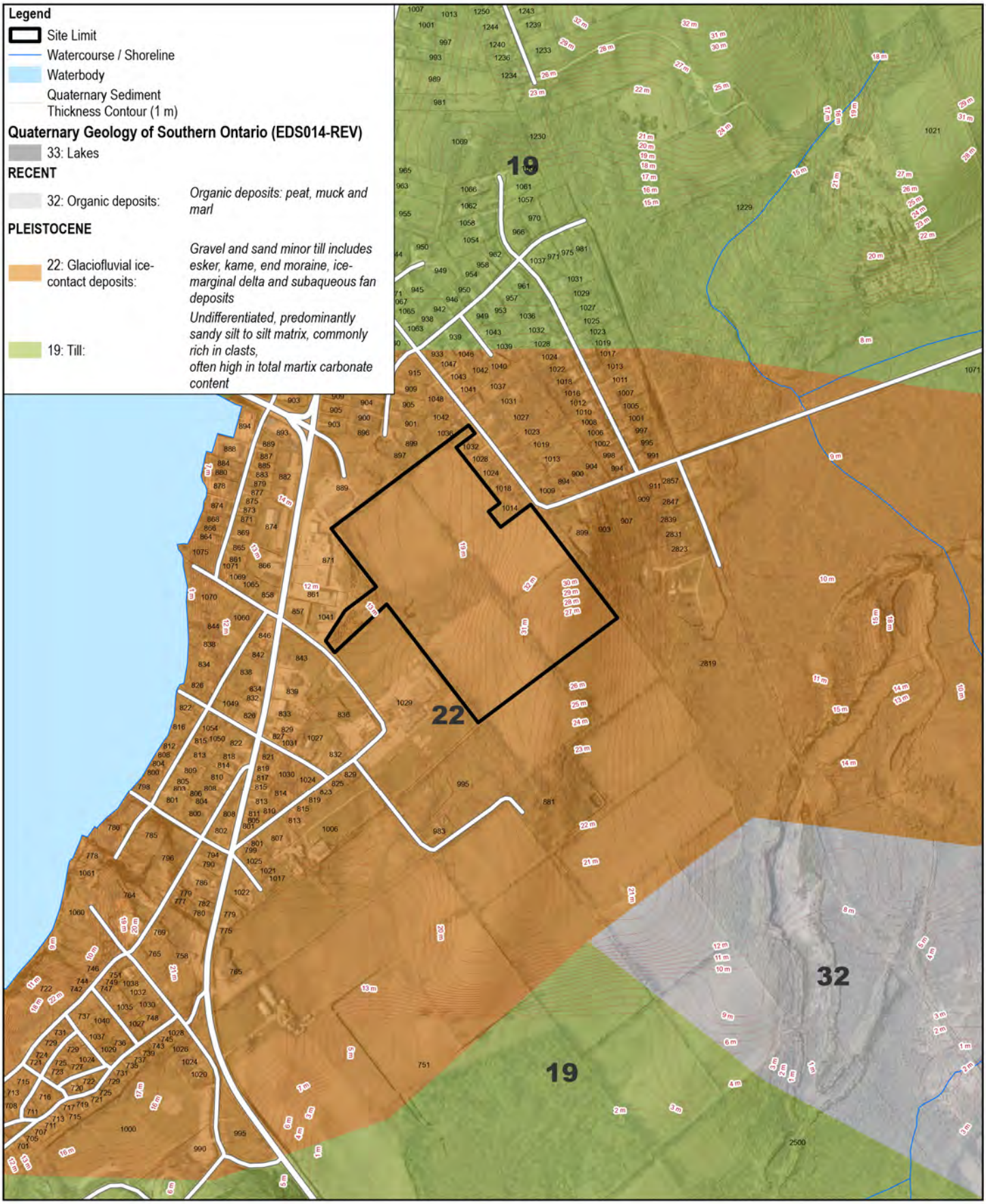
Surficial Geology

Figure 5

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo aprx
Print date: 08 Jan 2025 - 12:41

Attribution: MRD128-REV: Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.; Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery @ County of Elgin, 2020.



1:10,000

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Bridgenorth, Ontario

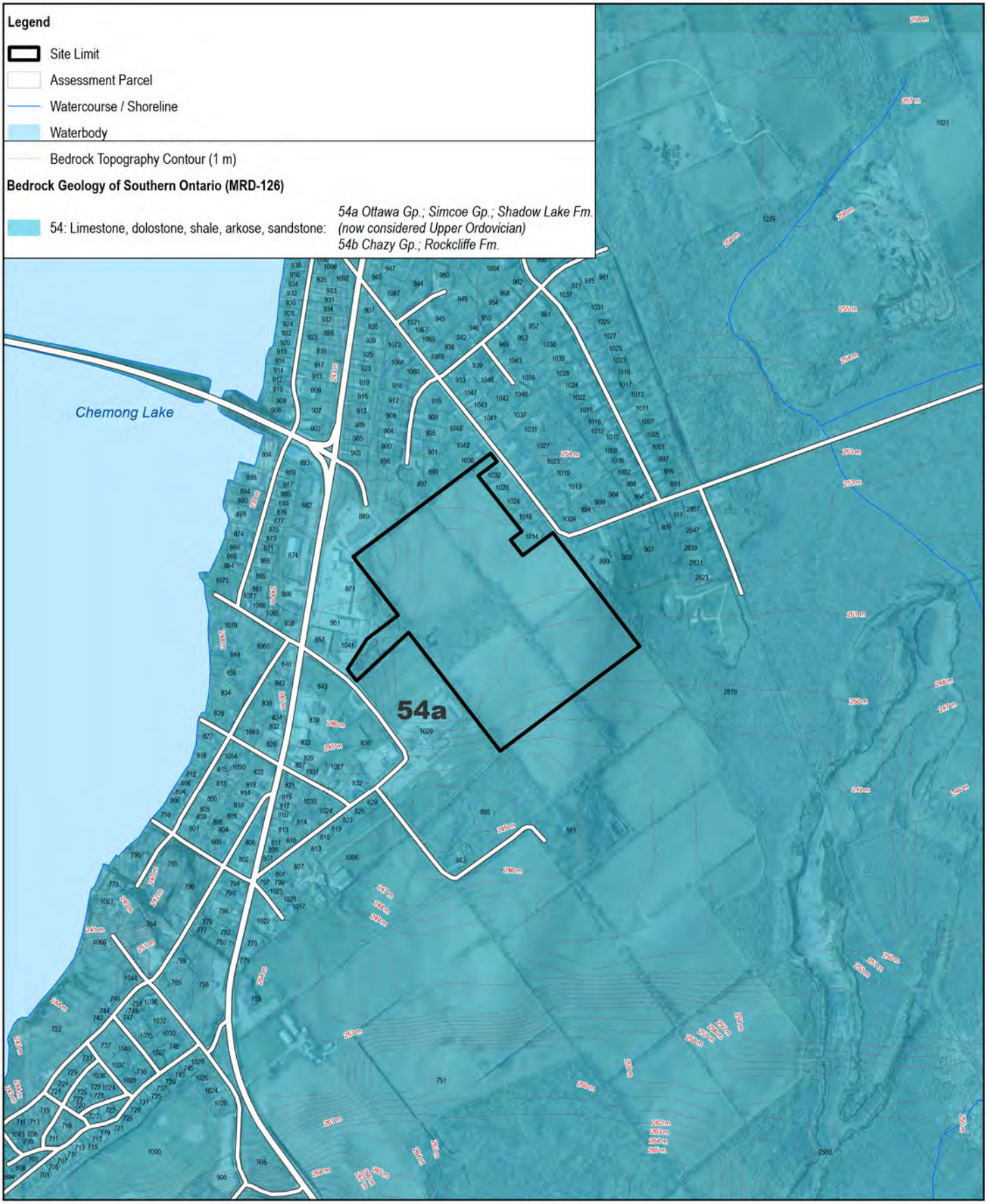
Project No. 12637390
Revision No.
Date Jan 8, 2025

Quaternary Geology

Figure 6

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo aprx
Print date: 08 Jan 2025 - 12:37

Attribution: EDS014-REV Ontario Geological Survey, 1997. Quaternary geology, seamless coverage of the province of Ontario: Ontario Geological Survey, Data Set 14.; Quaternary Sediment Thickness Contour, ORMGP, 2022.; Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery @ County of Elgin, 2020.



1:10,000

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

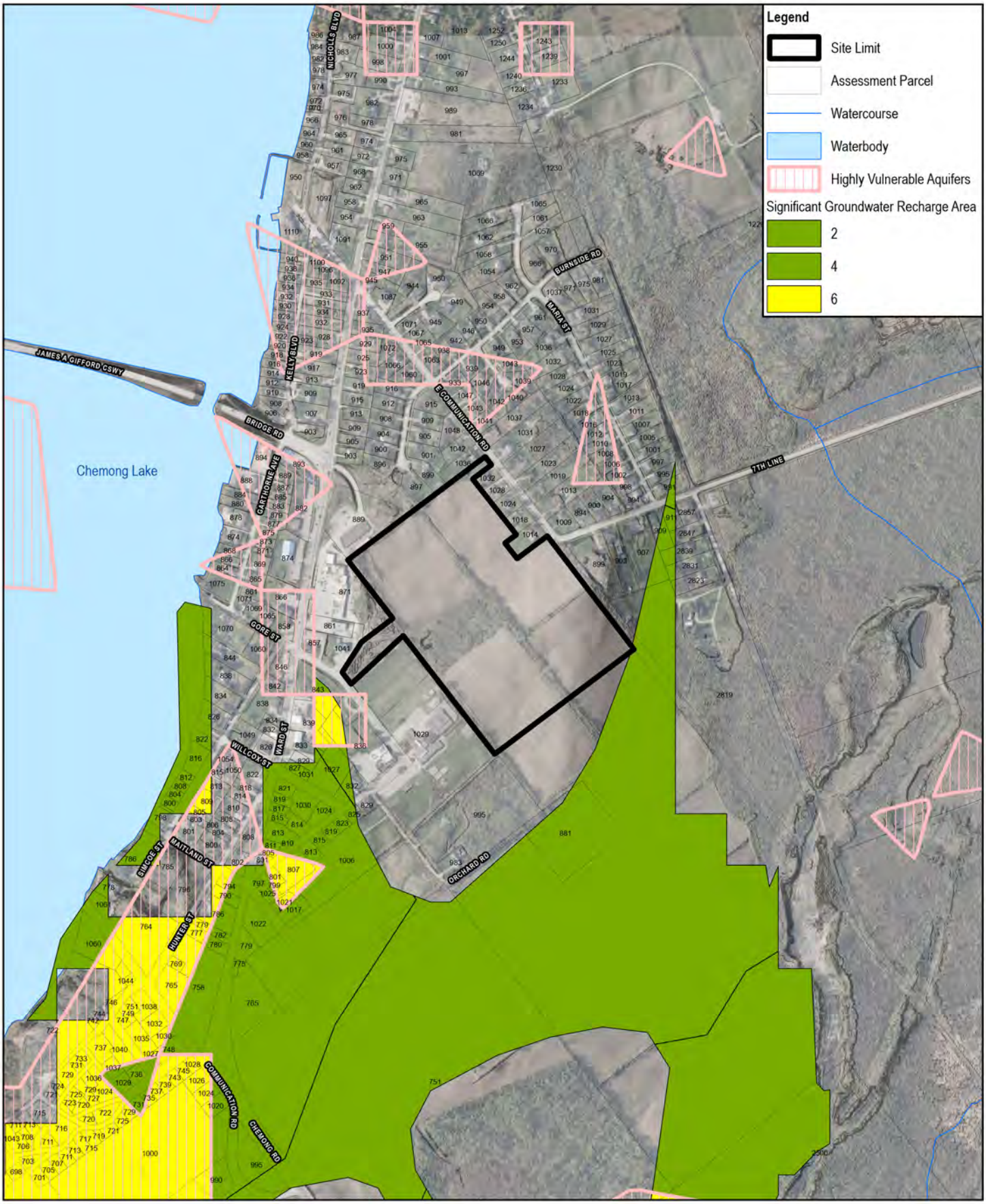
Bedrock Geology

Project No. 12637390
Revision No. -
Date Jan 8, 2025

Figure 7

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo aprx
Print date: 08 Jan 2025 - 12:37

Attribution: MRD126-REV. Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release---Data 126-Revision 1.; Bedrock Topography Contours, ORMGP, 2022, Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery @ County of Elgin, 2020.



1 cm = 40 meters

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

N

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Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

Project No. 12637390
Revision No.
Date Jan 9, 2025

Source Protection

Figure 8

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_SourceProtection.aprx
Print date: 09 Jan 2025 - 14:15

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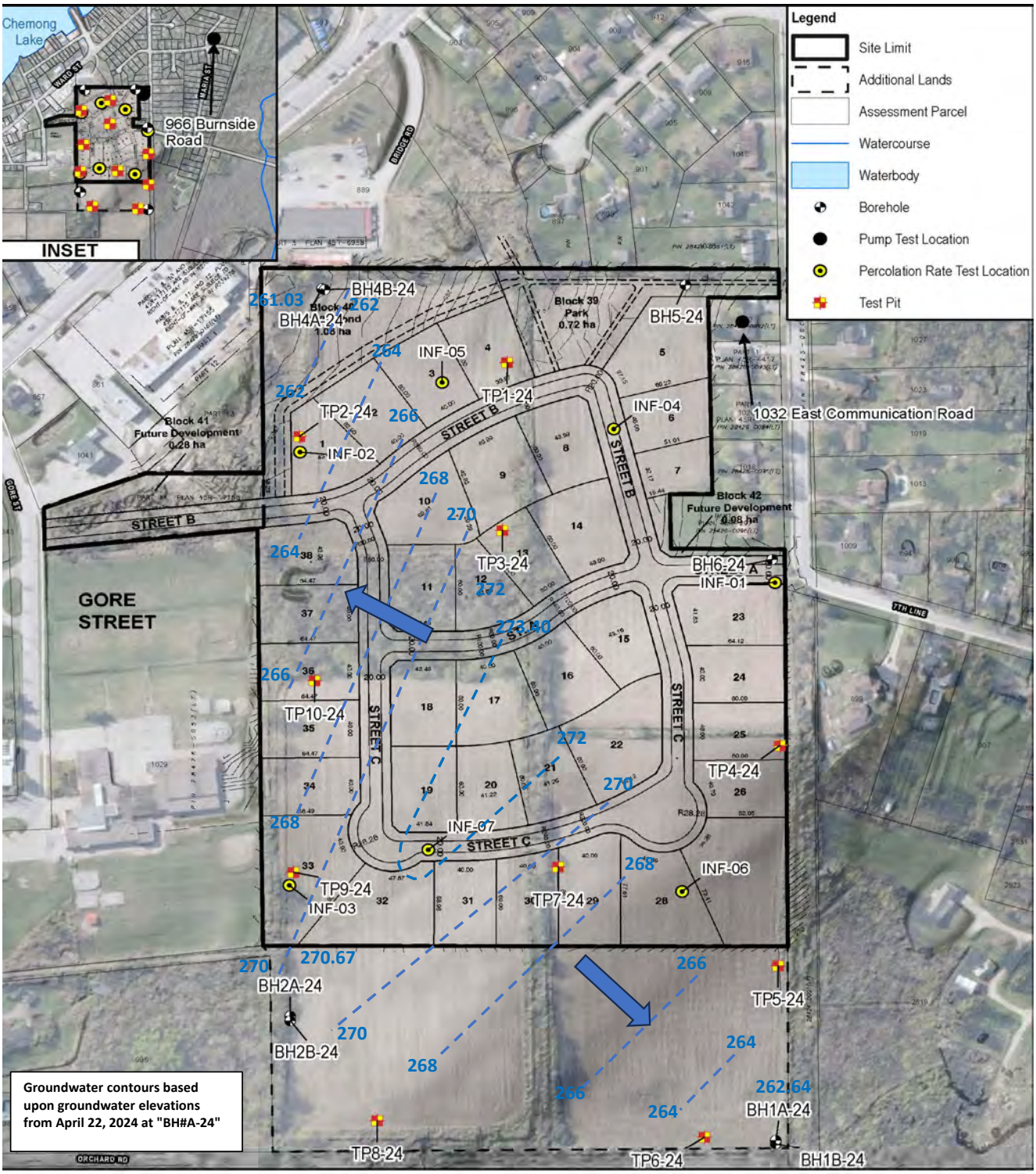
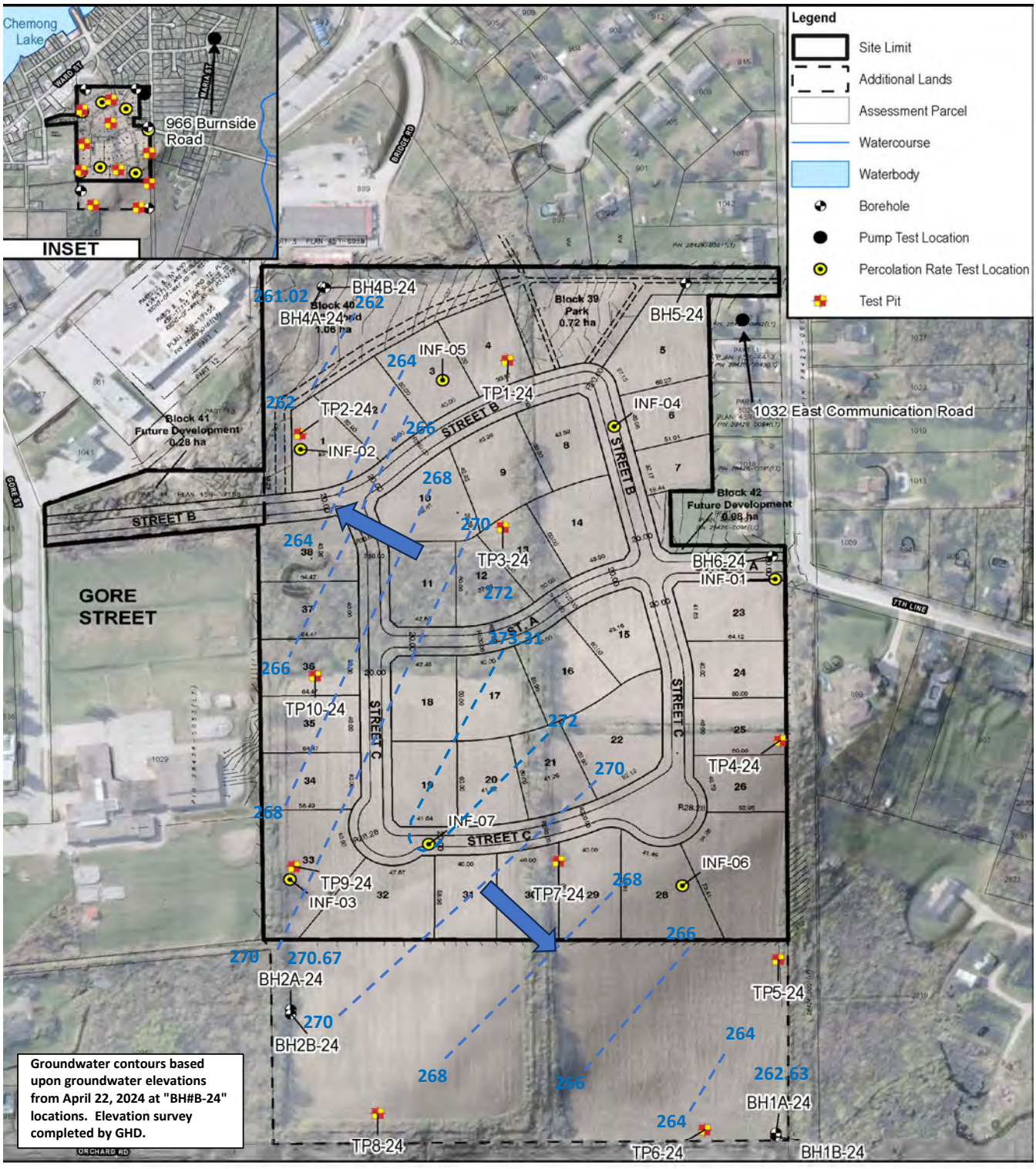


Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

Borehole and Test Pit Plan

Project No. 12637390
Revision No.
Date Nov 7, 2025

Figure 9



1 cm = 40 meters

0 40 80 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

Project No. 1263739
Revision No.
Date Nov 7, 2025

Borehole and Test Pit Plan

Figure 10

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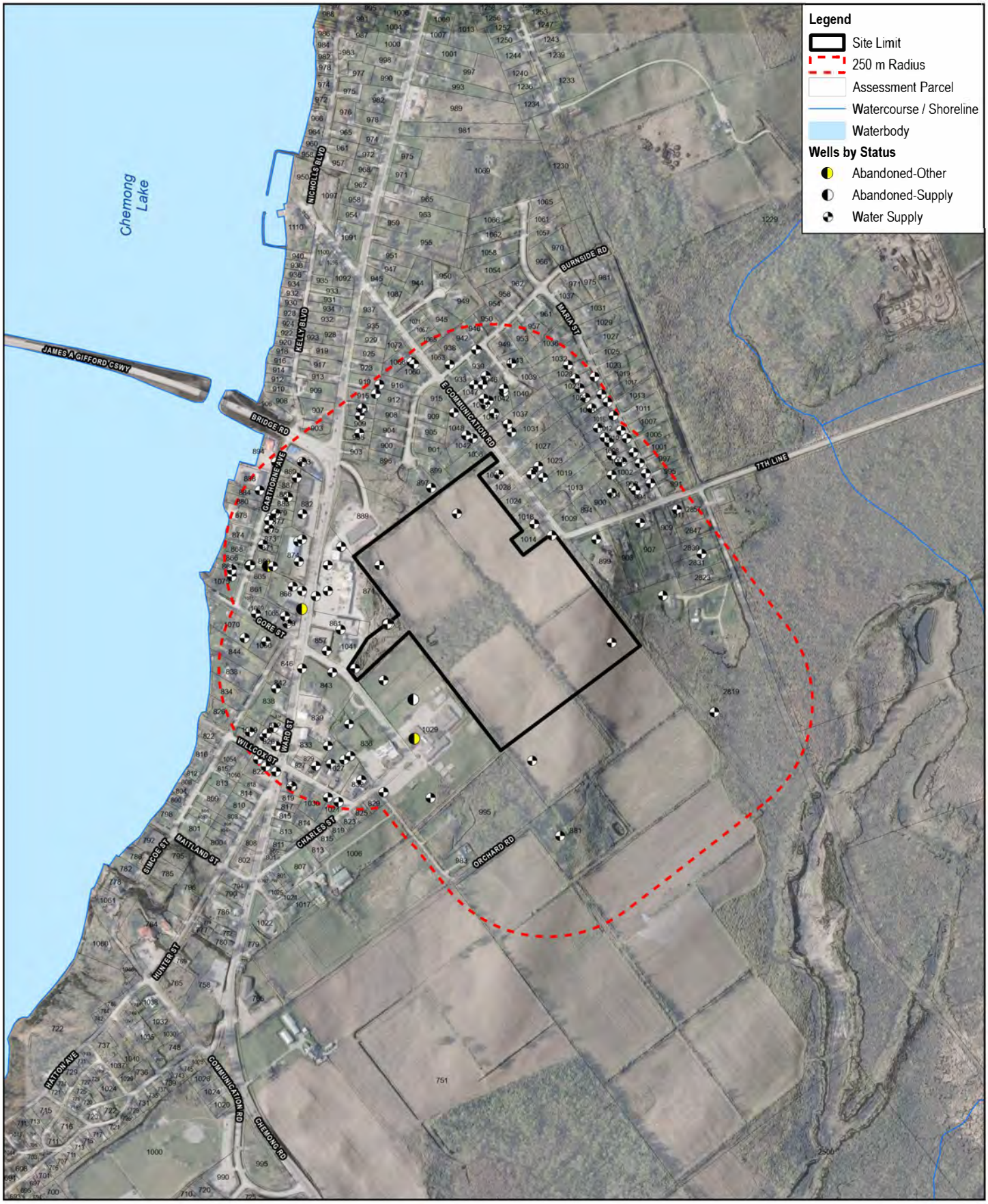
Appendices

Appendix A

MECP Well Records



1:10,000

0 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

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Base-Land Developments
Hydrogeological and Geotechnical Investigation for Proposed Residential Development
Bridgenorth, Ontario

Project No. 12637390
Revision No. -
Date Jan 9, 2025

MECP Well Location Plan

Appendix A

Q:\GIS\PROJECTS\12637000s\12637390\GIS\Maps\Deliverables\12637390_Hydrogeo.aprx
Print date: 09 Jan 2025 - 14:14

Attribution: Water Well Information System (WWIS), Ministry of the Environment, Conservation and Parks, 2021., Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2024; Imagery © County of Elgin, 2020.

MECP WELL RECORD LISTINGS

Ministry of the Environment, Conservation & Parks (MECP)

© Water Well Information System (WWIS). Ministry of the Environment, Conservation, and Parks. 2021.
Powered by Location Intelligence

DISCLAIMER: All effort has been taken to ensure the accuracy of the data is the same as the source. There are instances where the original PDF document is different and in those cases, the PDF should be used instead.

17

Easting:	704765.10
Northing:	4915428.00
Elev (masl):	272.78

Latitude: 44.377971
Longitude: -78.378176

Well ID: 5103351

LOCATION

Lot:	011	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	11/04/1958
Street:		**Received Date:**	11/17/1958
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	29.2608
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880190
Pump Set (m):	n/a	**Pump Test ID**	995103351
SWL (ft)	26	**Flowing:**	N
Final Level:	85 ft	**Pump Duration (hr):**	1
Pump Rate:	6 GPM	**Pump Duration (m):**	0
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549098	n/a	inch	<null>	n/a	20 ft
2	930549099	6	inch	STEEL	n/a	96 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	24 ft
2	CLAY	n/a	n/a	BLUE	24	94 ft
3	GRAVEL	n/a	n/a	n/a	94	96 ft

End of Record

17

Easting:	705412.10
Northing:	4915113.00
Elev (masl):	245.43

Latitude: 44.384828
Longitude: -78.385502

Well ID: 5103353

LOCATION

Lot:	011	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	2113
Township:	SMITH TOWNSHIP	**Well Completion Date:**	09/11/1962
Street:		**Received Date:**	01/08/1963
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	19.5072
Prim. Use:	n/a	**Depth to Bedrock (m):**	43
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880192
Pump Set (m):	n/a	**Pump Test ID**	995103353
SWL (ft)	10	**Flowing:**	N
Final Level:	61 ft	**Pump Duration (hr):**	3
Pump Rate:	1 GPM	**Pump Duration (m):**	0
Recom. Rate:	1 GPM		

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549101	6	inch	STEEL	n/a	43 ft
2	930549102	6	inch	OPEN HOLE	n/a	64 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	n/a	n/a	n/a	0	3 ft
2	CLAY	n/a	n/a	GREY	3	25 ft
3	CLAY	MEDIUM SAND	STONES	GREY	25	43 ft
4	LIMESTONE	n/a	n/a	GREY	43	64 ft

End of Record

17

Easting:	705622.10
Northing:	4915374.00
Elev (masl):	255.01

Latitude: 44.3836
Longitude: -78.384967

Well ID: 5103354

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 01/04/1951
Received Date: 03/19/1951

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 20 ft
Pump Rate: 20 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880193
Pump Test ID 995103354
Flowing: Y
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549103	5	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	MEDIUM SAND	STONES	GREY	2	38 ft

End of Record

17

Easting:	705600.10
Northing:	4915334.00
Elev (masl):	263.56

Latitude: 44.378771
Longitude: -78.385207

Well ID: 5103355

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 03/10/1950
Received Date: 06/05/1951

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

EST

Test Method: CLEAR
Pump Set (m):

Pipe ID: 10880194
Pump Test ID 995103355

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PUMP TI

SWL (ft)	22	**Flowing:**	N
Final Level:	30 ft	**Pump Duration (hr):**	1
Pump Rate:	3 GPM	**Pump Duration (m):**	30
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549104	5	inch	STEEL	n/a	40 ft
2	930549105	5	inch	OPEN HOLE	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	MEDIUM SAND	n/a	n/a	0	2 ft
2	SILT	n/a	n/a	n/a	2	12 ft
3	CLAY	MEDIUM SAND	STONES	n/a	12	40 ft
4	LIMESTONE	n/a	n/a	n/a	40	43 ft

End of Record

17

Easting:	705589.10
Northing:	4915324.00
Elev (masl):	269.97

Latitude: 44.378427
Longitude: -78.383151

Well ID: 5103356

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	07/15/1950
Street:		**Received Date:**	01/24/1951
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	17.9832
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880195
Pump Set (m):	n/a	**Pump Test ID**	995103356
SWL (ft)	22	**Flowing:**	N
Final Level:	42 ft	**Pump Duration (hr):**	2
Pump Rate:	5 GPM	**Pump Duration (m):**	0
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549106	5	inch	STEEL	n/a	59 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	58 ft
3	GRAVEL	n/a	n/a	n/a	58	59 ft

End of Record

17

Easting:	705603.10
Northing:	4915351.00
Elev (masl):	265.55

Latitude: 44.379422
Longitude: -78.383358

Well ID: 5103357

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	03/23/1950
Street:		**Received Date:**	01/24/1951
City:	n/a		

ELL

Well Status:	Water Supply	**Well Depth (m):**	23.1648
Prim. Use:		**Depth to Bedrock (m):**	52

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WE

Sec. Use: n/a
Boring Method: Cable Tool

Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 65 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880196
Pump Test ID 995103357
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549107	5	inch	STEEL	n/a	52 ft
2	930549108	5	inch	OPEN HOLE	n/a	76 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	HARDPAN	n/a	n/a	n/a	2	52 ft
3	LIMESTONE	n/a	n/a	n/a	52	76 ft

End of Record

17

Easting:	705365.10
Northing:	4915094.00
Elev (masl):	250.77

Latitude: 44.382677
Longitude: -78.385949

Well ID: 5103360

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 02/21/1951
Received Date: 03/19/1951

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): 50
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 9
Final Level: 30 ft
Pump Rate: 3 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880199
Pump Test ID 995103360
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549112	6	inch	STEEL	n/a	50 ft
2	930549113	6	inch	OPEN HOLE	n/a	54 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	MEDIUM SAND	STONES	n/a	2	50 ft
3	LIMESTONE	n/a	n/a	n/a	50	54 ft

End of Record

17

Easting:	705632.10
Northing:	4915383.00
Elev (masl):	254.78

Latitude: 44.383493
Longitude: -78.385009

Well ID: 5103361

OCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:

Tag:
Audit No:
Contractor License: 2327
Well Completion Date: 08/29/1952
Received Date:

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LOCATION

City: n/a 01/21/1953

WELL

Well Status: Water Supply **Well Depth (m):** 13.4112
Prim. Use: n/a **Depth to Bedrock (m):** 42
Sec. Use: n/a **Depth to Water:** ft
Boring Method: Cable Tool **Water Kind:** FRESH

PUMP TEST

Test Method: CLEAR **Pipe ID:** 10880200
Pump Set (m): n/a **Pump Test ID** 995103361
SWL (ft) 7 **Flowing:** N
Final Level: 30 ft **Pump Duration (hr):** n/a
Pump Rate: 2 GPM **Pump Duration (m):** n/a
Recom. Rate: n/a GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549114	n/a	inch	<null>	n/a	2 ft
2	930549115	4	inch	STEEL	n/a	44 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	8 ft
2	CLAY	n/a	n/a	GREY	8	42 ft
3	SHALE	n/a	n/a	n/a	42	44 ft

End of Record

17

Easting:	705486.10
Northing:	4915265.00
Elev (masl):	258.95

Latitude: 44.382901
Longitude: -78.384307

Well ID: **5103362**

LOCATION

Lot: 012 **Tag:**
Con: n/a **Audit No:**
Municipality: PETERBOROUGH **Contractor License:** 2327
Township: SMITH TOWNSHIP **Well Completion Date:** 09/08/1952
Street: **Received Date:** 01/21/1953
City: n/a

WELL

Well Status: Water Supply **Well Depth (m):** 12.8016
Prim. Use: n/a **Depth to Bedrock (m):** 39
Sec. Use: n/a **Depth to Water:** ft
Boring Method: Cable Tool **Water Kind:** FRESH

PUMP TEST

Test Method: CLEAR **Pipe ID:** 10880201
Pump Set (m): n/a **Pump Test ID** 995103362
SWL (ft) 12 **Flowing:** N
Final Level: 36 ft **Pump Duration (hr):** n/a
Pump Rate: 2 GPM **Pump Duration (m):** n/a
Recom. Rate: n/a GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549116	5	inch	STEEL	n/a	42 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	GRAVEL	FILL	n/a	n/a	0	3 ft
2	CLAY	n/a	n/a	BROWN	3	18 ft
3	CLAY	n/a	n/a	GREY	18	39 ft
4	SHALE	n/a	n/a	n/a	39	42 ft

End of Record

17

Easting:	705217.10
Northing:	4915048.00
Elev (masl):	248.46

Latitude: 44.378954
Longitude: -78.387283

Well ID: **5103363**

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LOCATION

Lot:
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 10/20/1952
Received Date: 01/29/1953

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 7.0104
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 1
Final Level: 10 ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880202
Pump Test ID 995103363
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549117	6	inch	STEEL	n/a	23 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM SAND	STONES	n/a	0	20 ft
2	GRAVEL	n/a	n/a	n/a	20	23 ft

End of Record

17

Easting:	705687.10
Northing:	4915652.00
Elev (masl):	266.66

Latitude: 44.378355
Longitude: -78.384322

Well ID: **5103364**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/04/1953
Received Date: 07/23/1953

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 30 ft
Pump Rate: 4 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880203
Pump Test ID 995103364
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549118	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	MEDIUM SAND	STONES	BLUE	2	46 ft
3	GRAVEL	n/a	n/a	n/a	46	47 ft

End of Record

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17		
	Easting:	705423.10
	Northing:	4915133.00
	Elev (masl):	259.70

Latitude: 44.387796
Longitude: -78.383035

Well ID: 5103365

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 09/03/1953
Received Date: 02/09/1954

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.86
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 30 ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880204
Pump Test ID 995103365
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549119	6	inch	STEEL	n/a	75 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM SAND	STONES	n/a	0	70 ft
2	GRAVEL	n/a	n/a	n/a	70	75 ft

End of Record

17		
	Easting:	705592.10
	Northing:	4915409.00
	Elev (masl):	260.39

Latitude: 44.378202
Longitude: -78.386324

Well ID: 5103367

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/07/1953
Received Date: 02/22/1954

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.716
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 22
Final Level: 35 ft
Pump Rate: 3 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880206
Pump Test ID 995103367
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549121	n/a	inch	<null>	n/a	25 ft
2	930549122	6	inch	STEEL	n/a	40 ft
3	930549123	6	inch	OPEN HOLE	n/a	45 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	25 ft

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2	CLAY	MEDIUM SAND	STONES	BLUE	25	40	ft
3	LIMESTONE	n/a	n/a	GREY	40	45	ft

End of Record

17

Easting:	705455.10
Northing:	4915231.00
Elev (masl):	264.28

Latitude: 44.386273
Longitude: -78.382563

Well ID: 5103368

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 11/18/1953
Received Date: 02/09/1954

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 3
Final Level: 36 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880207
Pump Test ID 995103368
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549124	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM SAND	STONES	n/a	0	10 ft
2	CLAY	n/a	n/a	n/a	10	45 ft
3	GRAVEL	n/a	n/a	n/a	45	48 ft

End of Record

17

Easting:	705642.10
Northing:	4915500.00
Elev (masl):	265.10

Latitude: 44.385106
Longitude: -78.38274

Well ID: 5103369

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 09/30/1954
Received Date: 11/02/1954

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.0208
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 35 ft
Pump Rate: 6 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880208
Pump Test ID 995103369
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549125	6	inch	STEEL	n/a	46 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	n/a	0	10 ft
2	CLAY	STONES	n/a	GREY	10	40 ft
3	GRAVEL	n/a	n/a	n/a	40	46 ft

End of Record

17

Easting:	705255.10
Northing:	4915108.00
Elev (masl):	265.06

Latitude: 44.385412
Longitude: -78.382714

Well ID: 5103370

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 01/17/1955
Received Date: 08/04/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: n/a ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880209
Pump Test ID 995103370
Flowing: Y
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549126	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	47 ft

End of Record

17

Easting:	705777.10
Northing:	4916496.00
Elev (masl):	254.92

Latitude: 44.383681
Longitude: -78.384963

Well ID: 5103371

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/02/1955
Received Date: 11/21/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.3632
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 22 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880210
Pump Test ID 995103371
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549127	6	inch	STEEL	n/a	34 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	15 ft
2	CLAY	STONES	n/a	BLUE	15	30 ft
3	GRAVEL	n/a	n/a	n/a	30	34 ft

End of Record

17

Easting:	705791.10
Northing:	4916624.00
Elev (masl):	265.09

Latitude: 44.385537
Longitude: -78.382658

Well ID: 5103372

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/17/1955
Received Date: 11/21/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.9728
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 0
Final Level: n/a ft
Pump Rate: n/a GPM
Recom. Rate: n/a GPM

Pipe ID: 10880211
Pump Test ID 995103372
Flowing: Y
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549128	6	inch	STEEL	n/a	36 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	15 ft
3	CLAY	STONES	n/a	BLUE	15	33 ft
4	GRAVEL	n/a	n/a	n/a	33	36 ft

End of Record

17

Easting:	705721.10
Northing:	4916239.00
Elev (masl):	254.77

Latitude: 44.383637
Longitude: -78.385003

Well ID: 5103373

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/10/1955
Received Date: 11/21/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 20 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880212
Pump Test ID 995103373
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549129	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	20 ft
3	CLAY	n/a	n/a	BLUE	20	31 ft
4	GRAVEL	n/a	n/a	n/a	31	33 ft

End of Record

17

Easting:	705437.10
Northing:	4916503.00
Elev (masl):	258.65

Latitude: 44.383252
Longitude: -78.384304

Well ID: 5103375

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 01/18/1957
Received Date: 02/28/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: Domestic
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 35 ft
Pump Rate: 15 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880214
Pump Test ID 995103375
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549132	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	20 ft
3	CLAY	STONES	n/a	BLUE	20	40 ft
4	GRAVEL	n/a	n/a	n/a	40	43 ft

End of Record

17

Easting:	705470.10
Northing:	4916494.00
Elev (masl):	254.85

Latitude: 44.377917
Longitude: -78.387228

Well ID: 5103377

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/01/1957
Received Date: 07/08/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.9728
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10880216
Pump Test ID 995103377
Flowing: N

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PUMP

Final Level: 10 ft
Pump Rate: 40 GPM
Recom. Rate: n/a GPM

Pump Duration (hr): 1
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549135	6	inch	STEEL	n/a	36 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	3 ft
2	CLAY	STONES	n/a	BROWN	3	30 ft
3	GRAVEL	n/a	n/a	n/a	30	36 ft

End of Record

17

Easting:	705710.10
Northing:	4915971.00
Elev (masl):	260.02

Latitude: 44.379871
Longitude: -78.385284

Well ID: **5103378**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/25/1957
Received Date: 07/08/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.9832
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 5
Final Level: 39 ft
Pump Rate: 12 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880217
Pump Test ID 995103378
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549136	6	inch	STEEL	n/a	41 ft
2	930549137	6	inch	OPEN HOLE	n/a	59 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	3 ft
2	CLAY	STONES	n/a	BROWN	3	28 ft
3	CLAY	STONES	n/a	BLUE	28	38 ft
4	CLAY	GRAVEL	n/a	n/a	38	40 ft
5	LIMESTONE	n/a	n/a	n/a	40	59 ft

End of Record

17

Easting:	706070.10
Northing:	4916690.00
Elev (masl):	259.79

Latitude: 44.379479
Longitude: -78.385452

Well ID: **5103379**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/30/1957
Received Date: 07/08/1957

ELL

Well Status: Water Supply
Prim. Use:

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a

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WE

Sec. Use: n/a
Boring Method: Cable Tool

Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 0
Final Level: 22 ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880218
Pump Test ID 995103379
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549138	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	27 ft
3	CLAY	GRAVEL	n/a	n/a	27	30 ft
4	GRAVEL	n/a	n/a	n/a	30	33 ft

End of Record

17

Easting:	705748.10
Northing:	4915896.00
Elev (masl):	260.84

Latitude: 44.379349
Longitude: -78.385269

Well ID: **5103380**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/03/1957
Received Date: 07/08/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.0208
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 40 ft
Pump Rate: 4 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880219
Pump Test ID 995103380
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549139	6	inch	STEEL	n/a	40 ft
2	930549140	6	inch	OPEN HOLE	n/a	46 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	MEDIUM SAND	n/a	n/a	n/a	0	30 ft
2	CLAY	STONES	n/a	BROWN	30	40 ft
3	LIMESTONE	n/a	n/a	n/a	40	46 ft

End of Record

17

Easting:	705787.10
Northing:	4916040.00
Elev (masl):	269.33

Latitude: 44.379062
Longitude: -78.38296

Well ID: **5103381**

OCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/06/1957
Received Date:

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L

City: n/a 07/08/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): 48
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 19
Final Level: 47 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880220
Pump Test ID 995103381
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549141	6	inch	STEEL	n/a	48 ft
2	930549142	6	inch	OPEN HOLE	n/a	54 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	3 ft
2	COARSE SAND	n/a	n/a	n/a	3	15 ft
3	CLAY	STONES	n/a	BROWN	15	32 ft
4	CLAY	n/a	n/a	BLUE	32	48 ft
5	LIMESTONE	n/a	n/a	n/a	48	54 ft

End of Record

17

Easting:	705791.10
Northing:	4916062.00
Elev (masl):	265.42

Latitude: 44.387313
Longitude: -78.382391

Well ID: **5103382**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/21/1957
Received Date: 10/15/1957

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) -3
Final Level: 15 ft
Pump Rate: n/a GPM
Recom. Rate: n/a GPM

Pipe ID: 10880221
Pump Test ID 995103382
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549143	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	14 ft
3	CLAY	n/a	n/a	BLUE	14	31 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	31	33 ft

End of Record

17

Easting:	705862.10
Northing:	4916205.00
Elev (masl):	

Latitude: 44.38638
Longitude: -78.382545

Well ID: **5103383**

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264.42

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	06/26/1957
Street:		**Received Date:**	10/15/1957
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	19.2024
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880222
Pump Set (m):	n/a	**Pump Test ID**	995103383
SWL (ft)	12	**Flowing:**	N
Final Level:	50 ft	**Pump Duration (hr):**	2
Pump Rate:	4 GPM	**Pump Duration (m):**	0
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549144	6	inch	STEEL	n/a	63 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	60 ft
4	GRAVEL	n/a	n/a	n/a	60	63 ft

End of Record

17

Easting:	705620.10
Northing:	4915411.00
Elev (masl):	260.90

Latitude: 44.38169
Longitude: -78.383345

Well ID: **5103384**

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	07/10/1957
Street:		**Received Date:**	01/14/1958
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	15.8496
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880223
Pump Set (m):	n/a	**Pump Test ID**	995103384
SWL (ft)	6	**Flowing:**	N
Final Level:	40 ft	**Pump Duration (hr):**	2
Pump Rate:	7 GPM	**Pump Duration (m):**	0
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549145	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	n/a	n/a	BROWN	0	20 ft
2	CLAY	n/a	n/a	BLUE	20	49 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	49	52 ft

End of Record

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17		
	Easting:	705755.10
	Northing:	4915963.00
	Elev (masl):	247.26

Latitude: 44.384194
Longitude: -78.385731

Well ID: 5103385

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/08/1957
Received Date: 01/14/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.3736
Depth to Bedrock (m): 52
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 46 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880224
Pump Test ID 995103385
Flowing: Y
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549146	6	inch	STEEL	n/a	52 ft
2	930549147	6	inch	OPEN HOLE	n/a	57 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	3 ft
2	CLAY	STONES	n/a	BROWN	3	27 ft
3	CLAY	STONES	n/a	BLUE	27	52 ft
4	LIMESTONE	n/a	n/a	GREY	52	57 ft

End of Record

17		
	Easting:	705632.10
	Northing:	4915472.00
	Elev (masl):	263.91

Latitude: 44.378993
Longitude: -78.384657

Well ID: 5103387

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/14/1957
Received Date: 01/14/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 23.1648
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 22
Final Level: 65 ft
Pump Rate: 12 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880226
Pump Test ID 995103387
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549149	8	inch	STEEL	n/a	40 ft
2	930549150	8	inch	OPEN HOLE	n/a	76 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	PREVIOUSLY DUG	n/a	n/a	n/a	0	40	ft
2	LIMESTONE	n/a	n/a	GREY	40	76	ft

End of Record

17

Easting:	705545.10
Northing:	4915349.00
Elev (masl):	269.26

Latitude: 44.386318
Longitude: -78.381418

Well ID: 5103388

LOCATION

Lot: 006
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 11/05/1960
Received Date: 02/14/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 27.432
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 70 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880227
Pump Test ID 995103388
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549151	6	inch	STEEL	n/a	90	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	BROWN	2	20	ft
3	CLAY	STONES	n/a	GREY	20	89	ft
4	GRAVEL	n/a	n/a	n/a	89	90	ft

End of Record

17

Easting:	705727.10
Northing:	4915902.00
Elev (masl):	269.38

Latitude: 44.386281
Longitude: -78.381357

Well ID: 5103389

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/12/1957
Received Date: 01/14/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 38 ft
Pump Rate: 20 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880228
Pump Test ID 995103389
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549152	6	inch	STEEL	n/a	52	ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	50 ft
4	GRAVEL	n/a	n/a	n/a	50	52 ft

End of Record

17

Easting:	705976.10
Northing:	4916397.00
Elev (masl):	262.49

Latitude: 44.381008
Longitude: -78.383024

Well ID: 5103390

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/27/1957
Received Date: 01/14/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 20 ft
Pump Rate: 20 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880229
Pump Test ID 995103390
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549153	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	n/a	n/a	BROWN	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	33 ft
4	GRAVEL	n/a	n/a	n/a	33	35 ft

End of Record

17

Easting:	706029.10
Northing:	4916629.00
Elev (masl):	253.87

Latitude: 44.3816
Longitude: -78.385684

Well ID: 5103391

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/27/1958
Received Date: 11/17/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.4112
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 17
Final Level: 34 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880230
Pump Test ID 995103391
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549154	n/a	inch	<null>	n/a	9 ft
2	930549155	6	inch	STEEL	n/a	44 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	12 ft
2	CLAY	n/a	n/a	BLUE	12	42 ft
3	GRAVEL	n/a	n/a	n/a	42	44 ft

End of Record

17

Easting:	706092.10
Northing:	4916741.00
Elev (masl):	251.04

Latitude: 44.379646
Longitude: -78.386461

Well ID: **5103392**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/29/1958
Received Date: 11/17/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 17
Final Level: 36 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880231
Pump Test ID 995103392
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549156	n/a	inch	<null>	n/a	14 ft
2	930549157	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	17 ft
2	CLAY	n/a	n/a	BLUE	17	42 ft
3	GRAVEL	n/a	n/a	n/a	42	43 ft

End of Record

17

Easting:	704455.10
Northing:	4916225.00
Elev (masl):	253.31

Latitude: 44.379614
Longitude: -78.386224

Well ID: **5103393**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/30/1958
Received Date: 11/17/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10880232
Pump Test ID 995103393
Flowing: N

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PUMP

Final Level: 28 ft
Pump Rate: 15 GPM
Recom. Rate: n/a GPM

Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549158	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	12 ft
3	CLAY	n/a	n/a	BLUE	12	34 ft
4	GRAVEL	n/a	n/a	n/a	34	35 ft

End of Record

17

Easting:	704069.10
Northing:	4917080.00
Elev (masl):	253.69

Latitude: 44.379427
Longitude: -78.386333

Well ID: **5103394**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/31/1958
Received Date: 11/17/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 30 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880233
Pump Test ID 995103394
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549159	n/a	inch	<null>	n/a	16 ft
2	930549160	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	18 ft
2	CLAY	n/a	n/a	BLUE	18	36 ft
3	GRAVEL	n/a	n/a	n/a	36	38 ft

End of Record

17

Easting:	704295.10
Northing:	4917161.00
Elev (masl):	264.32

Latitude: 44.385897
Longitude: -78.382655

Well ID: **5103395**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/27/1958
Received Date: 01/12/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 6 ft
Pump Rate: 40 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880234
Pump Test ID 995103395
Flowing: Y
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549161	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	36 ft
4	GRAVEL	n/a	n/a	n/a	36	38 ft

End of Record

17

Easting:	704077.10
Northing:	4917073.00
Elev (masl):	258.56

Latitude: 44.380701
Longitude: -78.384958

Well ID: **5103396**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/27/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.3632
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 20 ft
Pump Rate: 40 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880235
Pump Test ID 995103396
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549162	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	32 ft
3	GRAVEL	n/a	n/a	n/a	32	34 ft

End of Record

17

Easting:	704164.10
Northing:	4917105.00
Elev (masl):	253.40

Latitude: 44.379702
Longitude: -78.386157

Well ID: **5103397**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/23/1959
Received Date: 08/10/1959

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.8016
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 30 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880236
Pump Test ID 995103397
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549163	n/a	inch	<null>	n/a	18 ft
2	930549164	6	inch	STEEL	n/a	42 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	15 ft
2	CLAY	n/a	n/a	BLUE	15	40 ft
3	GRAVEL	n/a	n/a	n/a	40	42 ft

End of Record

17

Easting:	705290.10
Northing:	4917433.00
Elev (masl):	260.24

Latitude: 44.379924
Longitude: -78.385218

Well ID: **5103398**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/20/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 15 ft
Pump Rate: 30 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880237
Pump Test ID 995103398
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549165	n/a	inch	<null>	n/a	7 ft
2	930549166	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	17 ft
2	CLAY	STONES	n/a	n/a	17	32 ft
3	GRAVEL	n/a	n/a	n/a	32	33 ft

End of Record

17

Easting:	706318.10
Northing:	4916931.00
Elev (masl):	263.24

Latitude: 44.378595
Longitude: -78.385378

Well ID: **5103399**

TION

Lot: 012
Con: n/a
Municipality:

Tag:
Audit No:
Contractor License: 4713

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LOCA

Township: SMITH TOWNSHIP
Street:
City: n/a

Well Completion Date: 09/03/1959
Received Date: 01/04/1960

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 22 ft
Pump Rate: 30 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880238
Pump Test ID 995103399
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549167	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	30 ft
3	GRAVEL	n/a	n/a	n/a	30	32 ft

End of Record

17

Easting:	706248.10
Northing:	4916885.00
Elev (masl):	264.43

Latitude: 44.378629
Longitude: -78.384912

Well ID: **5103400**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/03/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.716
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 30 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880239
Pump Test ID 995103400
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549168	6	inch	STEEL	n/a	45 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	43 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	43	45 ft

End of Record

17

Easting:	706137.10
Northing:	4916812.00
Elev (masl):	270.75

Latitude: 44.378833
Longitude: -78.38243

Well ID: **5103401**

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LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	10/07/1959
Street:		**Received Date:**	11/16/1959
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	27.432
Prim. Use:	n/a	**Depth to Bedrock (m):**	82
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880240
Pump Set (m):	n/a	**Pump Test ID**	995103401
SWL (ft)	20	**Flowing:**	N
Final Level:	70 ft	**Pump Duration (hr):**	2
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	3 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549169	6	inch	STEEL	n/a	82 ft
2	930549170	6	inch	OPEN HOLE	n/a	90 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	45 ft
3	MEDIUM SAND	n/a	n/a	n/a	45	55 ft
4	CLAY	n/a	n/a	n/a	55	82 ft
5	LIMESTONE	n/a	n/a	n/a	82	90 ft

End of Record

17

Easting:	706087.10
Northing:	4916814.00
Elev (masl):	260.05

Latitude: 44.378763
Longitude: -78.386023

Well ID: **5103402**

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	01/08/1960
Street:		**Received Date:**	04/25/1960
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	11.8872
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880241
Pump Set (m):	n/a	**Pump Test ID**	995103402
SWL (ft)	6	**Flowing:**	N
Final Level:	20 ft	**Pump Duration (hr):**	3
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	3 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549171	n/a	inch	<null>	n/a	6 ft
2	930549172	6	inch	STEEL	n/a	39 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	6 ft
2	CLAY	n/a	n/a	n/a	6	37 ft
3	GRAVEL	n/a	n/a	n/a	37	39 ft

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End of Record

17

Easting:	706378.10
Northing:	4916939.00
Elev (masl):	278.61

Latitude: 44.383218
Longitude: -78.378142

Well ID: 5103404

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/21/1960
Received Date: 02/14/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.0688
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 40 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880243
Pump Test ID 995103404
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549175	6	inch	STEEL	n/a	56 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	20 ft
3	CLAY	STONES	n/a	BLUE	20	52 ft
4	GRAVEL	n/a	n/a	n/a	52	56 ft

End of Record

17

Easting:	706478.10
Northing:	4916954.00
Elev (masl):	262.29

Latitude: 44.38004
Longitude: -78.383217

Well ID: 5103406

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/16/1960
Received Date: 02/14/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.6888
Depth to Bedrock (m): 66
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 70 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880245
Pump Test ID 995103406
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549178	6	inch	STEEL	n/a	66 ft
2	930549179	6	inch	OPEN HOLE	n/a	81 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	n/a	2	66	ft
3	LIMESTONE	n/a	n/a	n/a	66	81	ft

End of Record

17

Easting:	706521.10
Northing:	4916992.00
Elev (masl):	258.85

Latitude: 44.383726
Longitude: -78.384183

Well ID: 5103407

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/24/1960
Received Date: 02/14/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.7264
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 55 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880246
Pump Test ID 995103407
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549180	n/a	inch	<null>	n/a	6	ft
2	930549181	6	inch	STEEL	n/a	68	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	24	ft
2	CLAY	STONES	n/a	n/a	24	66	ft
3	GRAVEL	n/a	n/a	n/a	66	68	ft

End of Record

17

Easting:	706555.10
Northing:	4917041.00
Elev (masl):	264.82

Latitude: 44.379357
Longitude: -78.383687

Well ID: 5103408

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/12/1960
Received Date: 05/08/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 35.6616
Depth to Bedrock (m): 73
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 27
Final Level: 100 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880247
Pump Test ID 995103408
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549182	6	inch	STEEL	n/a	73	ft
2	930549183	6	inch	OPEN HOLE	n/a	117	ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	73 ft
3	LIMESTONE	n/a	n/a	GREY	73	117 ft

End of Record

17

Easting:	706495.10
Northing:	4916960.00
Elev (masl):	268.91

Latitude: 44.378708
Longitude: -78.381293

Well ID: 5103409

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 02/15/1961
Received Date: 05/08/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 28.6512
Depth to Bedrock (m): 84
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: n/a
Pump Set (m): n/a
SWL (ft) 6
Final Level: 70 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880248
Pump Test ID 995103409
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549184	6	inch	STEEL	n/a	84 ft
2	930549185	6	inch	OPEN HOLE	n/a	94 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	n/a	0	84 ft
2	LIMESTONE	n/a	n/a	GREY	84	94 ft

End of Record

17

Easting:	706546.10
Northing:	4917020.00
Elev (masl):	259.60

Latitude: 44.377628
Longitude: -78.386814

Well ID: 5103410

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 5454
Well Completion Date: 05/18/1961
Received Date: 09/25/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 11
Final Level: 35 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880249
Pump Test ID 995103410
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549186	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	MEDIUM SAND	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	GREY	2	25 ft
3	CLAY	GRAVEL	MEDIUM SAND	BLUE	25	36 ft
4	MEDIUM SAND	GRAVEL	n/a	n/a	36	38 ft

End of Record

17

Easting:	706539.10
Northing:	4917317.00
Elev (masl):	260.48

Latitude: 44.377531
Longitude: -78.386869

Well ID: 5103411

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 5454
Well Completion Date: 05/20/1961
Received Date: 09/25/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.8872
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 25 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880250
Pump Test ID 995103411
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549187	6	inch	STEEL	n/a	39 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	MEDIUM SAND	n/a	BLACK	0	3 ft
2	CLAY	BOULDERS	n/a	GREY	3	25 ft
3	CLAY	GRAVEL	n/a	BLACK	25	37 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	37	39 ft

End of Record

17

Easting:	706460.10
Northing:	4917273.00
Elev (masl):	249.89

Latitude: 44.386944
Longitude: -78.384378

Well ID: 5103412

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 11/09/1961
Received Date: 01/25/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

UMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 20 ft
Pump Rate: 10

Pipe ID: 10880251
Pump Test ID 995103412
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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PI

Recom. Rate: 10 GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549188	6	inch	STEEL	n/a	30 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	3 ft
2	CLAY	n/a	n/a	GREY	3	28 ft
3	GRAVEL	n/a	n/a	n/a	28	30 ft

End of Record

17

Easting:	701919.10
Northing:	4917316.00
Elev (masl):	260.39

Latitude: 44.387848
Longitude: -78.382945

Well ID: **5103413**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 11/15/1961
Received Date: 01/25/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 40 ft
Pump Rate: 6 GPM
Recom. Rate: 6 GPM

Pipe ID: 10880252
Pump Test ID 995103413
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549189	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	MEDIUM SAND	BOULDERS	BROWN	2	20 ft
3	CLAY	GRAVEL	n/a	GREY	20	46 ft
4	GRAVEL	n/a	n/a	n/a	46	48 ft

End of Record

17

Easting:	703294.10
Northing:	4917313.00
Elev (masl):	256.26

Latitude: 44.388145
Longitude: -78.383358

Well ID: **5103414**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 11/18/1961
Received Date: 01/25/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method:
Pump Set (m): n/a
SWL (ft) 30
Final Level: 40 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID:
Pump Test ID 995103414
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549190	n/a	inch	<null>	n/a	8 ft
2	930549191	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	14 ft
2	CLAY	GRAVEL	n/a	GREY	14	37 ft
3	GRAVEL	n/a	n/a	n/a	37	48 ft

End of Record

17

Easting:	704412.10
Northing:	4917258.00
Elev (masl):	260.72

Latitude: 44.380019
Longitude: -78.385051

Well ID: **5103415**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/24/1961
Received Date: 04/02/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 22 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880254
Pump Test ID 995103415
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549192	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	20 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	20	28 ft
4	CLAY	n/a	n/a	n/a	28	32 ft
5	GRAVEL	n/a	n/a	n/a	32	35 ft

End of Record

17

Easting:	705960.10
Northing:	4918003.00
Elev (masl):	266.77

Latitude: 44.37716
Longitude: -78.385216

Well ID: **5103416**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/13/1961
Received Date: 04/02/1962

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.6784
Depth to Bedrock (m): 42
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 26
Final Level: 45 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880255
Pump Test ID 995103416
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549193	n/a	inch	<null>	n/a	6 ft
2	930549194	6	inch	STEEL	n/a	42 ft
3	930549195	6	inch	OPEN HOLE	n/a	58 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	23 ft
2	CLAY	STONES	n/a	n/a	23	42 ft
3	LIMESTONE	n/a	n/a	GREY	42	58 ft

End of Record

17

Easting:	705969.10
Northing:	4917974.00
Elev (masl):	264.29

Latitude: 44.37785
Longitude: -78.385072

Well ID: **5103417**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 03/08/1962
Received Date: 07/04/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): 43
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 40 ft
Pump Rate: 3 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880256
Pump Test ID 995103417
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549196	6	inch	STEEL	n/a	43 ft
2	930549197	6	inch	OPEN HOLE	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	43 ft
3	LIMESTONE	n/a	n/a	GREY	43	47 ft

End of Record

17

Easting:	706075.10
Northing:	4919670.00
Elev (masl):	267.32

Latitude: 44.386662
Longitude: -78.381868

Well ID: **5103418**

ON

Lot: 012
Con:

Tag:
Audit No:

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LOCATION

Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Contractor License: 4713
Well Completion Date: 08/11/1962
Received Date: 10/02/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 20 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880257
Pump Test ID 995103418
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549198	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	30 ft
3	GRAVEL	n/a	n/a	n/a	30	32 ft

End of Record

17

Easting:	706717.10
Northing:	4919019.00
Elev (masl):	260.97

Latitude: 44.386172
Longitude: -78.383295

Well ID: **5103419**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/13/1962
Received Date: 10/02/1962

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 0
Final Level: 20 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880258
Pump Test ID 995103419
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549199	n/a	inch	<null>	n/a	3 ft
2	930549200	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	17 ft
2	CLAY	STONES	n/a	n/a	17	30 ft
3	GRAVEL	n/a	n/a	n/a	30	32 ft

End of Record

17

Easting:	706769.10
Northing:	4919059.00
Elev (masl):	

Latitude: 44.382794
Longitude: -78.385944

Well ID: **5103421**

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Elev (masl): 250.46

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	2113
Township:	SMITH TOWNSHIP	**Well Completion Date:**	10/29/1962
Street:		**Received Date:**	01/08/1963
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	11.5824
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880260
Pump Set (m):	n/a	**Pump Test ID**	995103421
SWL (ft)	n/a	**Flowing:**	Y
Final Level:	34 ft	**Pump Duration (hr):**	5
Pump Rate:	2 GPM	**Pump Duration (m):**	0
Recom. Rate:	2 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549202	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	7 ft
3	MEDIUM SAND	n/a	n/a	BROWN	7	12 ft
4	CLAY	BOULDERS	n/a	GREY	12	28 ft
5	CLAY	STONES	n/a	GREY	28	34 ft
6	GRAVEL	n/a	n/a	n/a	34	38 ft

End of Record

17

Easting:	706393.10
Northing:	4919291.00
Elev (masl):	244.41

Latitude: 44.384867
Longitude: -78.386053

Well ID: **5103422**

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	11/15/1962
Street:		**Received Date:**	01/09/1963
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	13.4112
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880261
Pump Set (m):	n/a	**Pump Test ID**	995103422
SWL (ft)	33	**Flowing:**	N
Final Level:	34 ft	**Pump Duration (hr):**	2
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	5 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549203	6	inch	STEEL	n/a	44 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	33 ft
2	CLAY	STONES	n/a	n/a	33	42 ft
3	GRAVEL	n/a	n/a	n/a	42	44 ft

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End of Record

17

Easting:	706374.10
Northing:	4919289.00
Elev (masl):	271.51

Latitude: 44.385413
Longitude: -78.380429

Well ID: 5103423

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/19/1962
Received Date: 01/09/1963

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.8976
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 45 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880262
Pump Test ID 995103423
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549204	6	inch	STEEL	n/a	62 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	60 ft
3	GRAVEL	n/a	n/a	n/a	60	62 ft

End of Record

17

Easting:	706990.10
Northing:	4918675.00
Elev (masl):	257.09

Latitude: 44.37996
Longitude: -78.385631

Well ID: 5103424

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/25/1962
Received Date: 01/09/1963

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 22 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880263
Pump Test ID 995103424
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549205	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	n/a	2	30	ft
3	GRAVEL	n/a	n/a	n/a	30	32	ft

End of Record

17

Easting:	706557.10
Northing:	4919061.00
Elev (masl):	264.26

Latitude: 44.377868
Longitude: -78.385084

Well ID: 5103425

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/20/1963
Received Date: 10/07/1963

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 25 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880264
Pump Test ID 995103425
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549206	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	31 ft
3	GRAVEL	n/a	n/a	n/a	31	33 ft

End of Record

17

Easting:	706556.10
Northing:	4919063.00
Elev (masl):	251.39

Latitude: 44.379547
Longitude: -78.386478

Well ID: 5103426

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/18/1963
Received Date: 01/28/1964

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 25 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880265
Pump Test ID 995103426
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549207	6	inch	STEEL	n/a	35 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	10 ft
2	CLAY	n/a	n/a	BLUE	10	34 ft
3	GRAVEL	n/a	n/a	n/a	34	35 ft

End of Record

17

Easting:	707108.10
Northing:	4918514.00
Elev (masl):	264.69

Latitude: 44.377891
Longitude: -78.384932

Well ID: 5103427

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/05/1963
Received Date: 01/28/1964

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 48 ft
Pump Rate: 3 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880266
Pump Test ID 995103427
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549208	6	inch	STEEL	n/a	40 ft
2	930549209	6	inch	OPEN HOLE	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	40 ft
4	LIMESTONE	n/a	n/a	GREY	40	51 ft

End of Record

17

Easting:	707065.10
Northing:	4918667.00
Elev (masl):	259.00

Latitude: 44.382472
Longitude: -78.384477

Well ID: 5103428

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 10/14/1963
Received Date: 01/28/1964

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): 47
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 40 ft
Pump Rate: 5 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880267
Pump Test ID 995103428
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549210	6	inch	STEEL	n/a	47 ft
2	930549211	6	inch	OPEN HOLE	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	n/a	n/a	n/a	0	4 ft
2	CLAY	STONES	n/a	BROWN	4	45 ft
3	CLAY	GRAVEL	n/a	BROWN	45	47 ft
4	LIMESTONE	n/a	n/a	GREY	47	51 ft

End of Record

17

Easting:	706595.10
Northing:	4919056.00
Elev (masl):	274.37

Latitude: 44.384309
Longitude: -78.379386

Well ID: **5103429**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 02/22/1964
Received Date: 05/04/1964

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.9456
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 60 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880268
Pump Test ID 995103429
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549212	6	inch	STEEL	n/a	72 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	70 ft
4	GRAVEL	n/a	n/a	n/a	70	72 ft

End of Record

17

Easting:	706790.10
Northing:	4918997.00
Elev (masl):	261.62

Latitude: 44.380948
Longitude: -78.383579

Well ID: **5103430**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/12/1964
Received Date: 08/05/1964

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.288
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method:
Pump Set (m): n/a
SWL (ft) 20
Final Level: 50 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID:
Pump Test ID 995103430
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549213	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	45 ft
3	CLAY	n/a	n/a	BLUE	45	58 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	58	60 ft

End of Record

17

Easting:	706789.10
Northing:	4918999.00
Elev (masl):	258.75

Latitude: 44.381828
Longitude: -78.384631

Well ID: **5103431**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 04/16/1965
Received Date: 06/22/1965

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: Domestic
Boring Method: Cable Tool

Well Depth (m): 12.8016
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 22 ft
Pump Rate: 10 GPM
Recom. Rate: 4 GPM

Pipe ID: 10880270
Pump Test ID 995103431
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549214	6	inch	STEEL	n/a	42 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	38 ft
2	GRAVEL	n/a	n/a	n/a	38	42 ft

End of Record

17

Easting:	706938.10
Northing:	4919051.00
Elev (masl):	267.03

Latitude: 44.377431
Longitude: -78.384852

Well ID: **5103432**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/22/1965
Received Date: 06/22/1965

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.4216
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 23
Final Level: 50 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880271
Pump Test ID 995103432
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549215	6	inch	STEEL	n/a	67 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	23 ft
2	CLAY	n/a	n/a	BLUE	23	65 ft
3	GRAVEL	n/a	n/a	n/a	65	67 ft

End of Record

17

Easting:	707030.10
Northing:	4919242.00
Elev (masl):	266.27

Latitude: 44.385781
Longitude: -78.382309

Well ID: **5103435**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/26/1965
Received Date: 01/03/1966

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 8.5344
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 10
Final Level: 20 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880274
Pump Test ID 995103435
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549218	6	inch	STEEL	n/a	28 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BLUE	2	26 ft
3	GRAVEL	n/a	n/a	n/a	26	28 ft

End of Record

17

Easting:	707029.10
Northing:	4919164.00
Elev (masl):	254.82

Latitude: 44.387836
Longitude: -78.383598

Well ID: **5103436**

CATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township:

Tag:
Audit No:
Contractor License: 4713
Well Completion Date:

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LOC

Street: SMITH TOWNSHIP
City: n/a

Received Date: 09/08/1965

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 25 ft
Pump Rate: 5 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880275
Pump Test ID 995103436
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549219	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BLUE	2	30 ft
3	GRAVEL	n/a	n/a	n/a	30	32 ft

End of Record

17

Easting:	707492.10
Northing:	4919641.00
Elev (masl):	260.10

Latitude: 44.378566
Longitude: -78.38607

Well ID: **5103438**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/02/1965
Received Date: 01/03/1966

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.5928
Depth to Bedrock (m): 54
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 50 ft
Pump Rate: 6 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880277
Pump Test ID 995103438
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549222	6	inch	STEEL	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	25 ft
2	CLAY	n/a	n/a	BLUE	25	54 ft
3	LIMESTONE	n/a	n/a	GREY	54	61 ft

End of Record

17

Easting:	707847.10
Northing:	4920284.00
Elev (masl):	255.30

Latitude: 44.38616
Longitude: -78.383936

Well ID: **5103439**

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LOCATION

Lot:
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 03/14/1966
Received Date: 03/28/1966

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 36
Final Level: 39 ft
Pump Rate: 8 GPM
Recom. Rate: 8 GPM

Pipe ID: 10880278
Pump Test ID 995103439
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549223	6	inch	STEEL	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	n/a	n/a	0	28 ft
2	GRAVEL	n/a	n/a	n/a	28	30 ft
3	CLAY	GRAVEL	n/a	n/a	30	50 ft
4	GRAVEL	n/a	n/a	n/a	50	51 ft

End of Record

17

Easting:	707815.10
Northing:	4920269.00
Elev (masl):	256.28

Latitude: 44.384031
Longitude: -78.384521

Well ID: **5103440**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 08/19/1966
Received Date: 10/31/1966

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.0688
Depth to Bedrock (m): 45
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 14
Final Level: 53 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pipe ID: 10880279
Pump Test ID 995103440
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549224	6	inch	STEEL	n/a	45 ft
2	930549225	6	inch	OPEN HOLE	n/a	56 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	6 ft
2	CLAY	GRAVEL	n/a	BROWN	6	37 ft
3	GRAVEL	n/a	n/a	n/a	37	45 ft
4	LIMESTONE	n/a	n/a	GREY	45	56 ft

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End of Record

17		
	Easting:	707897.10
	Northing:	4920293.00
	Elev (masl):	254.10

Latitude: 44.383218
Longitude: -78.385172

Well ID: 5103441

LOCATION

Lot: 008
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4814
Well Completion Date: 11/12/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): 17
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 25 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880280
Pump Test ID 995103441
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549226	6	inch	STEEL	n/a	20 ft
2	930549227	6	inch	OPEN HOLE	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	14 ft
3	GRAVEL	STONES	n/a	n/a	14	17 ft
4	LIMESTONE	n/a	n/a	GREY	17	33 ft

End of Record

17		
	Easting:	707920.10
	Northing:	4920285.00
	Elev (masl):	256.77

Latitude: 44.381525
Longitude: -78.385172

Well ID: 5103442

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 08/30/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.4968
Depth to Bedrock (m): 39
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 16 ft
Pump Rate: 40 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880281
Pump Test ID 995103442
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549228	6	inch	STEEL	n/a	41 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	TOPSOIL	n/a	n/a	n/a	0	1	ft
2	CLAY	STONES	n/a	BROWN	1	20	ft
3	CLAY	n/a	n/a	GREY	20	39	ft
4	LIMESTONE	n/a	n/a	n/a	39	41	ft

End of Record

17

Easting:	707646.10
Northing:	4920077.00
Elev (masl):	265.97

Latitude: 44.388223
Longitude: -78.382036

Well ID: 5103443

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/12/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 35 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880282
Pump Test ID 995103443
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549229	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	25 ft
3	CLAY	GRAVEL	n/a	BLUE	25	41 ft
4	GRAVEL	n/a	n/a	n/a	41	43 ft

End of Record

17

Easting:	707628.10
Northing:	4919788.00
Elev (masl):	268.69

Latitude: 44.378006
Longitude: -78.383634

Well ID: 5103444

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 11/02/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 33.2232
Depth to Bedrock (m): 71
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 27
Final Level: 109 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pipe ID: 10880283
Pump Test ID 995103444
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549230	6	inch	STEEL	n/a	58 ft

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2	930549231	6	inch	OPEN HOLE	n/a	109	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	n/a	0	1	ft
2	MEDIUM SAND	n/a	n/a	BROWN	1	20	ft
3	MEDIUM SAND	BOULDERS	n/a	GREY	20	50	ft
4	GRAVEL	n/a	n/a	n/a	50	54	ft
5	CLAY	BOULDERS	n/a	GREY	54	71	ft
6	LIMESTONE	n/a	n/a	n/a	71	109	ft

End of Record

17

Easting:	707626.10
Northing:	4920005.00
Elev (masl):	277.51

Latitude: 44.381314
Longitude: -78.376771

Well ID: 5103445

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/23/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.5552
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 32
Final Level: 55 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880284
Pump Test ID 995103445
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549232	6	inch	STEEL	n/a	74	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	n/a	2	70	ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	70	74	ft

End of Record

17

Easting:	702810.10
Northing:	4919707.00
Elev (masl):	268.80

Latitude: 44.378688
Longitude: -78.383529

Well ID: 5103446

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/22/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.4216
Depth to Bedrock (m): 63
Depth to Water: ft
Water Kind: FRESH

MP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 60

Pipe ID: 10880285
Pump Test ID 995103446
Flowing: N
Pump Duration (hr): 2

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PUMP

Pump Rate: 5 GPM
Recom. Rate: 5 GPM
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549233	6	inch	STEEL	n/a	63 ft
2	930549234	6	inch	OPEN HOLE	n/a	67 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	63 ft
3	LIMESTONE	n/a	n/a	GREY	63	67 ft

End of Record

17

Easting:	704377.90
Northing:	4919890.00
Elev (masl):	261.89

Latitude: 44.37886
Longitude: -78.385567

Well ID: 5103447

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/21/1967
Received Date: 08/29/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 20 ft
Pump Rate: 30 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880286
Pump Test ID 995103447
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549235	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	22 ft
4	MEDIUM SAND	n/a	n/a	n/a	22	33 ft
5	GRAVEL	n/a	n/a	n/a	33	35 ft

End of Record

17

Easting:	704510.10
Northing:	4920622.00
Elev (masl):	251.37

Latitude: 44.384164
Longitude: -78.385205

Well ID: 5103448

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/25/1967
Received Date: 12/19/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 7.3152
Depth to Bedrock (m): 23
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 20 ft
Pump Rate: 15 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880287
Pump Test ID 995103448
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549236	6	inch	STEEL	n/a	23 ft
2	930549237	6	inch	OPEN HOLE	n/a	24 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	12 ft
3	CLAY	GRAVEL	n/a	BLUE	12	22 ft
4	GRAVEL	n/a	n/a	n/a	22	23 ft
5	LIMESTONE	n/a	n/a	n/a	23	24 ft

End of Record

17

Easting:	704331.90
Northing:	4938898.00
Elev (masl):	276.51

Latitude: 44.383385
Longitude: -78.375988

Well ID: 5103858

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/08/1960
Received Date: 02/14/1961

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.384
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 70 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880697
Pump Test ID 995103858
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549788	6	inch	STEEL	n/a	80 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	78 ft
3	GRAVEL	n/a	n/a	n/a	78	80 ft

End of Record

17

Easting:	705569.90
Northing:	4933987.00
Elev (masl):	273.37

Latitude: 44.379299
Longitude: -78.378794

Well ID: 5103859

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 08/26/1966
Received Date: 01/31/1967

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 42.672
Depth to Bedrock (m): 94
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 40
Final Level: 50 ft
Pump Rate: 3 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880698
Pump Test ID 995103859
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549789	6	inch	STEEL	n/a	94 ft
2	930549790	6	inch	OPEN HOLE	n/a	140 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	BOULDERS	n/a	WHITE	1	50 ft
3	CLAY	n/a	n/a	GREY	50	58 ft
4	CLAY	MEDIUM SAND	GRAVEL	GREY	58	81 ft
5	CLAY	STONES	n/a	GREY	81	94 ft
6	LIMESTONE	n/a	n/a	n/a	94	140 ft

End of Record

17

Easting:	706497.90
Northing:	4934866.00
Elev (masl):	264.22

Latitude: 44.380785
Longitude: -78.382343

Well ID: **5103860**

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/08/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): 42
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 27
Final Level: 46 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880699
Pump Test ID 995103860
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549791	6	inch	STEEL	n/a	40 ft
2	930549792	6	inch	OPEN HOLE	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	BOULDERS	n/a	BROWN	1	21 ft
3	CLAY	BOULDERS	n/a	GREY	21	38 ft
4	GRAVEL	n/a	n/a	n/a	38	42 ft
5	LIMESTONE	n/a	n/a	n/a	42	52 ft

End of Record

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17		
	Easting:	705503.90
	Northing:	4934376.00
	Elev (masl):	267.78

Latitude: 44.380436
Longitude: -78.381631

Well ID: 5103861

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/08/1966
Received Date: 01/31/1967

WELL

Well Status: Abandoned-Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.764
Depth to Bedrock (m): 49
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 45 ft
Pump Rate: 6 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880700
Pump Test ID 995103861
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549793	6	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	BOULDERS	n/a	BROWN	1	22 ft
3	CLAY	MEDIUM SAND	GRAVEL	GREY	22	49 ft
4	LIMESTONE	n/a	n/a	n/a	49	55 ft

End of Record

17		
	Easting:	704319.90
	Northing:	4934022.00
	Elev (masl):	269.94

Latitude: 44.383598
Longitude: -78.375087

Well ID: 5103862

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/03/1967
Received Date: 12/19/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.1168
Depth to Bedrock (m): 54
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 60 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880701
Pump Test ID 995103862
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549794	6	inch	STEEL	n/a	54 ft
2	930549795	6	inch	OPEN HOLE	n/a	66 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft

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3	CLAY	STONES	n/a	BLUE	18	54	ft
4	LIMESTONE	n/a	n/a	GREY	54	66	ft

End of Record

17

Easting:	701514.90
Northing:	4938297.00
Elev (masl):	257.17

Latitude: 44.385769
Longitude: -78.383778

Well ID: 5103909

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 05/10/1967
Received Date: 08/29/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 20 ft
Pump Rate: 40 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880748
Pump Test ID 995103909
Flowing: Y
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549876	6	inch	STEEL	n/a	30 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	n/a	n/a	BROWN	0	6 ft
2	CLAY	GRAVEL	n/a	GREY	6	27 ft
3	GRAVEL	n/a	n/a	n/a	27	30 ft

End of Record

17

Easting:	701895.90
Northing:	4938277.00
Elev (masl):	267.75

Latitude: 44.388385
Longitude: -78.381653

Well ID: 5103910

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 05/09/1967
Received Date: 08/29/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.3632
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 20 ft
Pump Rate: 30 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880749
Pump Test ID 995103910
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549877	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	15 ft
2	GRAVEL	n/a	n/a	n/a	15	23 ft
3	GRAVEL	CLAY	MEDIUM SAND	n/a	23	30 ft
4	GRAVEL	n/a	n/a	n/a	30	34 ft

End of Record

17

Easting:	701298.90
Northing:	4939194.00
Elev (masl):	274.82

Latitude: 44.385039
Longitude: -78.37904

Well ID: 5103911

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/26/1951
Received Date: 10/10/1951

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.3632
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 10
Final Level: 15 ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880750
Pump Test ID 995103911
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549878	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM SAND	STONES	n/a	0	30 ft
2	GRAVEL	n/a	n/a	n/a	30	34 ft

End of Record

17

Easting:	701166.90
Northing:	4939235.00
Elev (masl):	261.89

Latitude: 44.383138
Longitude: -78.383268

Well ID: 5103919

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/21/1954
Received Date: 03/23/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.5072
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: n/a ft
Pump Rate: n/a GPM
Recom. Rate: n/a GPM

Pipe ID: 10880758
Pump Test ID 995103919
Flowing: Y
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

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1	930549887	6	inch	STEEL	n/a	64	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	4	ft
2	CLAY	STONES	n/a	BROWN	4	20	ft
3	CLAY	STONES	n/a	BLUE	20	50	ft
4	GRAVEL	CLAY	n/a	n/a	50	63	ft
5	GRAVEL	n/a	n/a	n/a	63	64	ft

End of Record

17

Easting:	701246.90
Northing:	4939232.00
Elev (masl):	267.98

Latitude: 44.386533
Longitude: -78.381735

Well ID: 5103920

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/01/1954
Received Date: 03/23/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.0312
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 1
Final Level: 20 ft
Pump Rate: 18 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880759
Pump Test ID 995103920
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549888	6	inch	STEEL	n/a	69	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	FILL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	BROWN	2	20	ft
3	CLAY	BOULDERS	n/a	BLUE	20	68	ft
4	GRAVEL	n/a	n/a	n/a	68	69	ft

End of Record

17

Easting:	701306.90
Northing:	4939078.00
Elev (masl):	273.67

Latitude: 44.385601
Longitude: -78.379567

Well ID: 5103921

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/16/1954
Received Date: 03/23/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

JMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 15 ft
Pump Rate: 30

Pipe ID: 10880760
Pump Test ID 995103921
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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PUMP TEST

Recom. Rate: n/a GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549889	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	30 ft
3	CLAY	n/a	n/a	BLUE	30	51 ft
4	GRAVEL	n/a	n/a	n/a	51	52 ft

End of Record

17

Easting:	700730.90
Northing:	4938861.00
Elev (masl):	258.46

Latitude: 44.381955
Longitude: -78.384689

Well ID: **5103922**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 02/24/1955
Received Date: 07/26/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.0584
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 15 ft
Pump Rate: 30 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880761
Pump Test ID 995103922
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549890	n/a	inch	<null>	n/a	18 ft
2	930549891	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	18 ft
2	CLAY	n/a	n/a	BLUE	18	32 ft
3	GRAVEL	n/a	n/a	n/a	32	33 ft

End of Record

17

Easting:	701092.90
Northing:	4939183.00
Elev (masl):	273.05

Latitude: 44.384953
Longitude: -78.379985

Well ID: **5103923**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 03/22/1955
Received Date: 07/26/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method:
Pump Set (m): n/a
SWL (ft) 25
Final Level: 40 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID:
Pump Test ID 995103923
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549892	6	inch	STEEL	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	25 ft
3	CLAY	STONES	n/a	BLUE	25	52 ft
4	GRAVEL	n/a	n/a	n/a	52	53 ft

End of Record

17

Easting:	701075.90
Northing:	4939268.00
Elev (masl):	272.51

Latitude: 44.385011
Longitude: -78.380146

Well ID: **5103924**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 03/24/1955
Received Date: 07/26/1955

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.3736
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 16
Final Level: 40 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880763
Pump Test ID 995103924
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549893	6	inch	STEEL	n/a	57 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	n/a	n/a	BROWN	2	28 ft
3	CLAY	STONES	n/a	BLUE	28	55 ft
4	GRAVEL	n/a	n/a	n/a	55	57 ft

End of Record

17

Easting:	702772.90
Northing:	4933903.00
Elev (masl):	264.05

Latitude: 44.37933
Longitude: -78.384052

Well ID: **5103925**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2113
Well Completion Date: 10/21/1955
Received Date: 10/26/1955

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 17
Final Level: 19 ft
Pump Rate: 18 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880764
Pump Test ID 995103925
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549894	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	STONES	HARDPAN	GRAVEL	n/a	2	21 ft
3	HARDPAN	GRAVEL	n/a	GREY	21	32 ft

End of Record

17

Easting:	700246.90
Northing:	4938778.00
Elev (masl):	276.19

Latitude: 44.384431
Longitude: -78.378414

Well ID: 5103930

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 10/13/1957
Received Date: 01/14/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.384
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 72 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880769
Pump Test ID 995103930
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549900	n/a	inch	<null>	n/a	10 ft
2	930549901	6	inch	STEEL	n/a	80 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	10 ft
2	CLAY	STONES	n/a	BLUE	10	25 ft
3	CLAY	n/a	n/a	BLUE	25	70 ft
4	MEDIUM SAND	GRAVEL	n/a	n/a	70	77 ft
5	GRAVEL	n/a	n/a	n/a	77	80 ft

End of Record

17

Easting:	700694.90
Northing:	4938891.00
Elev (masl):	260.73

Latitude: 44.388312
Longitude: -78.382773

Well ID: 5103931

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LOCATION

Lot:
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 3515
Well Completion Date: 07/15/1958
Received Date: 09/15/1958

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 5
Final Level: 5 ft
Pump Rate: 5 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880770
Pump Test ID 995103931
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549902	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	n/a	n/a	n/a	0	3 ft
2	HARDPAN	n/a	n/a	n/a	3	47 ft

End of Record

17

Easting:	700425.90
Northing:	4938818.00
Elev (masl):	274.30

Latitude: 44.384428
Longitude: -78.375954

Well ID: **5103933**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/05/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.3736
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 50 ft
Pump Rate: 4 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880772
Pump Test ID 995103933
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549904	6	inch	STEEL	n/a	57 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	56 ft
4	GRAVEL	n/a	n/a	n/a	56	57 ft

End of Record

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17		
	Easting:	700949.90
	Northing:	4939088.00
	Elev (masl):	273.18

Latitude: 44.386302
Longitude: -78.377176

Well ID: 5103934

LOCATION

Lot:	012	**Tag:**	
Con:	07	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/05/1959
Street:		**Received Date:**	08/10/1959
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	15.8496
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880773
Pump Set (m):	n/a	**Pump Test ID**	995103934
SWL (ft)	20	**Flowing:**	N
Final Level:	40 ft	**Pump Duration (hr):**	2
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	3 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549905	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	n/a	n/a	BLUE	18	30 ft
4	BOULDERS	GRAVEL	n/a	n/a	30	52 ft

End of Record

17		
	Easting:	699925.90
	Northing:	4938783.00
	Elev (masl):	274.23

Latitude: 44.386177
Longitude: -78.377621

Well ID: 5103935

LOCATION

Lot:	012	**Tag:**	
Con:	07	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/05/1959
Street:		**Received Date:**	08/10/1959
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	17.9832
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880774
Pump Set (m):	n/a	**Pump Test ID**	995103935
SWL (ft)	20	**Flowing:**	N
Final Level:	53 ft	**Pump Duration (hr):**	2
Pump Rate:	12 GPM	**Pump Duration (m):**	0
Recom. Rate:	3 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549906	6	inch	STEEL	n/a	59 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	18 ft
3	CLAY	BOULDERS	n/a	BLUE	18	50 ft

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4	GRAVEL	MEDIUM SAND	n/a	n/a	50	57	ft
5	GRAVEL	n/a	n/a	n/a	57	59	ft

End of Record

17

Easting:	700983.90
Northing:	4939124.00
Elev (masl):	276.16

Latitude: 44.384579
Longitude: -78.376625

Well ID: 5103936

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/06/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.812
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 30
Final Level: 58 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880775
Pump Test ID 995103936
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549907	6	inch	STEEL	n/a	65	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	BROWN	2	19	ft
3	CLAY	STONES	n/a	BLUE	19	63	ft
4	GRAVEL	n/a	n/a	n/a	63	65	ft

End of Record

17

Easting:	699142.90
Northing:	4940216.00
Elev (masl):	274.03

Latitude: 44.385955
Longitude: -78.376978

Well ID: 5103937

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 05/07/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.24
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 40 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880776
Pump Test ID 995103937
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930549908	6	inch	STEEL	n/a	50	ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	19 ft
3	CLAY	STONES	n/a	BLUE	19	40 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	40	48 ft
5	GRAVEL	n/a	n/a	n/a	48	50 ft

End of Record

17

Easting:	699001.90
Northing:	4940588.00
Elev (masl):	274.85

Latitude: 44.385005
Longitude: -78.37638

Well ID: 5103938

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/15/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.5928
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 55 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880777
Pump Test ID 995103938
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549909	6	inch	STEEL	n/a	61 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	59 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	59	61 ft

End of Record

17

Easting:	703101.90
Northing:	4927724.00
Elev (masl):	274.13

Latitude: 44.385271
Longitude: -78.376556

Well ID: 5103939

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/15/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.288
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 50 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880778
Pump Test ID 995103939
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549910	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	58 ft
4	GRAVEL	n/a	n/a	n/a	58	60 ft

End of Record

17

Easting:	701878.90
Northing:	4928483.00
Elev (masl):	274.84

Latitude: 44.384621
Longitude: -78.376096

Well ID: 5103940

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/22/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.4216
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 60 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880779
Pump Test ID 995103940
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549911	6	inch	STEEL	n/a	67 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	18 ft
3	CLAY	BOULDERS	n/a	BLUE	18	65 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	65	67 ft

End of Record

17

Easting:	701664.90
Northing:	4930841.00
Elev (masl):	273.98

Latitude: 44.384245
Longitude: -78.375811

Well ID: 5103941

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/23/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.2504
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10880780
Pump Test ID 995103941
Flowing: N

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PUMP

Final Level: 42 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549912	6	inch	STEEL	n/a	73 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	70 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	70	73 ft

End of Record

17

Easting:	701357.90
Northing:	4931239.00
Elev (masl):	273.82

Latitude: 44.385646
Longitude: -78.376828

Well ID: 5103942

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/07/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.24
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 14
Final Level: 42 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880781
Pump Test ID 995103942
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549913	6	inch	STEEL	n/a	50 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	BOULDERS	n/a	BLUE	18	45 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	45	50 ft

End of Record

17

Easting:	700457.90
Northing:	4935939.00
Elev (masl):	275.78

Latitude: 44.384
Longitude: -78.376124

Well ID: 5103943

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/07/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.6888
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 70 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880782
Pump Test ID 995103943
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549914	6	inch	STEEL	n/a	81 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	20 ft
3	CLAY	BOULDERS	n/a	BLUE	20	60 ft
4	CLAY	MEDIUM SAND	n/a	n/a	60	80 ft
5	GRAVEL	n/a	n/a	n/a	80	81 ft

End of Record

17

Easting:	700453.90
Northing:	4936074.00
Elev (masl):	276.00

Latitude: 44.384805
Longitude: -78.376678

Well ID: **5103944**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/08/1959
Received Date: 08/10/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.5552
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 36
Final Level: 65 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880783
Pump Test ID 995103944
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549915	6	inch	STEEL	n/a	74 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	20 ft
3	CLAY	BOULDERS	n/a	BLUE	20	72 ft
4	GRAVEL	n/a	n/a	n/a	72	74 ft

End of Record

17

Easting:	699268.90
Northing:	4938228.00
Elev (masl):	275.80

Latitude: 44.384458
Longitude: -78.376442

Well ID: **5103945**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/09/1959
Received Date: 08/10/1959

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 23.4696
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 67 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880784
Pump Test ID 995103945
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549916	6	inch	STEEL	n/a	77 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	75 ft
4	GRAVEL	n/a	n/a	n/a	75	77 ft

End of Record

17

Easting:	698683.90
Northing:	4937640.00
Elev (masl):	274.99

Latitude: 44.385766
Longitude: -78.37735

Well ID: **5103946**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/14/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.24
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 24
Final Level: 40 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880785
Pump Test ID 995103946
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549917	6	inch	STEEL	n/a	50 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	45 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	45	50 ft

End of Record

17

Easting:	698592.90
Northing:	4937461.00
Elev (masl):	274.62

Latitude: 44.385601
Longitude: -78.37722

Well ID: **5103947**

TION

Lot: 012
Con: 07
Municipality:

Tag:
Audit No:
Contractor License: 4713

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LOCA

Township: SMITH TOWNSHIP
Street:
City: n/a

Well Completion Date: 07/15/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 45 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880786
Pump Test ID 995103947
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549918	6	inch	STEEL	n/a	54 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	50 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	50	54 ft

End of Record

17

Easting:	699492.90
Northing:	4938285.00
Elev (masl):	274.01

Latitude: 44.386057
Longitude: -78.377074

Well ID: **5103948**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/16/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 40 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880787
Pump Test ID 995103948
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549919	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	45 ft
3	GRAVEL	n/a	n/a	n/a	45	47 ft

End of Record

17

Easting:	699185.90
Northing:	4938161.00
Elev (masl):	275.88

Latitude: 44.384898
Longitude: -78.376787

Well ID: **5103949**

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LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/17/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.1168
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 24
Final Level: 58 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880788
Pump Test ID 995103949
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549920	6	inch	STEEL	n/a	66 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	50 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	50	66 ft

End of Record

17

Easting:	699210.90
Northing:	4937966.00
Elev (masl):	274.96

Latitude: 44.385939
Longitude: -78.377456

Well ID: **5103951**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 07/28/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.288
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 45 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880790
Pump Test ID 995103951
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549922	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	45 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	45	60 ft

End of Record

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17

Easting:	700137.90
Northing:	4938724.00
Elev (masl):	273.69

Latitude: 44.385508
Longitude: -78.376684

Well ID: 5103952

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/14/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 14
Final Level: 41 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880791
Pump Test ID 995103952
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549923	6	inch	STEEL	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	20 ft
3	CLAY	STONES	n/a	BLUE	20	45 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	45	51 ft

End of Record

17

Easting:	700422.90
Northing:	4935757.00
Elev (masl):	275.11

Latitude: 44.385063
Longitude: -78.376942

Well ID: 5103953

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/14/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.8976
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 24
Final Level: 52 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880792
Pump Test ID 995103953
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549924	6	inch	STEEL	n/a	62 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	58 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	58	62 ft

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End of Record

17

Easting:	698175.90
Northing:	4938723.00
Elev (masl):	274.39

Latitude: 44.385409
Longitude: -78.377078

Well ID: 5103954

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/15/1959
Received Date: 08/27/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.8976
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 22
Final Level: 52 ft
Pump Rate: 8 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880793
Pump Test ID 995103954
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549925	6	inch	STEEL	n/a	62 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	18 ft
3	CLAY	STONES	n/a	BLUE	18	60 ft
4	GRAVEL	n/a	n/a	n/a	60	62 ft

End of Record

17

Easting:	699266.90
Northing:	4939527.00
Elev (masl):	274.00

Latitude: 44.384072
Longitude: -78.375706

Well ID: 5103955

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/26/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.7264
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 60 ft
Pump Rate: 4 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880794
Pump Test ID 995103955
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549926	6	inch	STEEL	n/a	68 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	n/a	2	18	ft
3	BOULDERS	CLAY	n/a	n/a	18	65	ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	65	68	ft

End of Record

17

Easting:	698221.90
Northing:	4938850.00
Elev (masl):	276.18

Latitude: 44.384326
Longitude: -78.378557

Well ID: **5103956**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/14/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 40 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880795
Pump Test ID 995103956
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549927	6	inch	STEEL	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	49 ft
3	GRAVEL	n/a	n/a	n/a	49	51 ft

End of Record

17

Easting:	698168.90
Northing:	4938653.00
Elev (masl):	275.73

Latitude: 44.383954
Longitude: -78.376075

Well ID: **5103957**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/15/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 26.5176
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 35
Final Level: 75 ft
Pump Rate: 5 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880796
Pump Test ID 995103957
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549928	6	inch	STEEL	n/a	87 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	85 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	85	87 ft

End of Record

17

Easting:	698163.90
Northing:	4938643.00
Elev (masl):	274.83

Latitude: 44.384867
Longitude: -78.376248

Well ID: 5103958

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/18/1959
Received Date: 11/16/1959

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.7264
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 58 ft
Pump Rate: 5 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880797
Pump Test ID 995103958
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549929	6	inch	STEEL	n/a	68 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	65 ft
3	GRAVEL	MEDIUM SAND	n/a	n/a	65	68 ft

End of Record

17

Easting:	698366.90
Northing:	4939631.00
Elev (masl):	269.02

Latitude: 44.386928
Longitude: -78.381303

Well ID: 5103960

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/10/1959
Received Date: 01/04/1960

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 7.0104
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 10
Final Level: 15 ft
Pump Rate: 10 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880799
Pump Test ID 995103960
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549931	6	inch	STEEL	n/a	23 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	21 ft
3	GRAVEL	n/a	n/a	n/a	21	23 ft

End of Record

17

Easting:	697577.90
Northing:	4941239.00
Elev (masl):	273.50

Latitude: 44.385531
Longitude: -78.379658

Well ID: 5103971

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/18/1965
Received Date: 01/03/1966

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 45 ft
Pump Rate: 7 GPM
Recom. Rate: 3 GPM

Pipe ID: 10880810
Pump Test ID 995103971
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549942	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	35 ft
3	CLAY	n/a	n/a	BLUE	35	50 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	50	52 ft

End of Record

17

Easting:	700742.90
Northing:	4927963.00
Elev (masl):	266.81

Latitude: 44.38759
Longitude: -78.381927

Well ID: 5103973

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 12/03/1966
Received Date: 01/31/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10880812
Pump Test ID 995103973
Flowing: Y

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PUMP

Final Level: 20 ft
Pump Rate: 50 GPM
Recom. Rate: 4 GPM

Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549945	6	inch	STEEL	n/a	32 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	BOULDERS	n/a	0	30 ft
2	GRAVEL	n/a	n/a	n/a	30	32 ft

End of Record

17

Easting:	700361.90
Northing:	4928851.00
Elev (masl):	276.14

Latitude: 44.384291
Longitude: -78.378596

Well ID: **5103975**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 08/29/1966
Received Date: 02/14/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18.288
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 38
Final Level: 54 ft
Pump Rate: 30 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880814
Pump Test ID 995103975
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549947	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	BOULDERS	n/a	BROWN	1	14 ft
3	CLAY	BOULDERS	n/a	GREY	14	59 ft
4	GRAVEL	n/a	n/a	n/a	59	60 ft

End of Record

17

Easting:	700245.90
Northing:	4929340.00
Elev (masl):	276.60

Latitude: 44.384231
Longitude: -78.37831

Well ID: **5103976**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 05/04/1967
Received Date: 08/16/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880815
Pump Set (m):	n/a	**Pump Test ID**	995103976
SWL (ft)	27	**Flowing:**	N
Final Level:	32 ft	**Pump Duration (hr):**	3
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	5 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549948	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	BOULDERS	n/a	n/a	0	3 ft
2	GRAVEL	MEDIUM SAND	n/a	BROWN	3	20 ft
3	GRAVEL	MEDIUM SAND	STONES	GREY	20	50 ft
4	GRAVEL	COARSE SAND	n/a	n/a	50	52 ft

End of Record

17

Easting:	699501.90
Northing:	4931236.00
Elev (masl):	270.91

Latitude: 44.386252
Longitude: -78.380492

Well ID: 5103978

LOCATION

Lot:	012	**Tag:**	
Con:	07	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	2116
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/31/1967
Street:		**Received Date:**	12/12/1967
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	15.8496
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10880817
Pump Set (m):	n/a	**Pump Test ID**	995103978
SWL (ft)	20	**Flowing:**	N
Final Level:	37 ft	**Pump Duration (hr):**	3
Pump Rate:	15 GPM	**Pump Duration (m):**	0
Recom. Rate:	10 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549950	6	inch	STEEL	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	48 ft
3	GRAVEL	n/a	n/a	n/a	48	52 ft

End of Record

17

Easting:	699473.90
Northing:	4931341.00
Elev (masl):	272.23

Latitude: 44.385888
Longitude: -78.379918

Well ID: 5103979

LOCATION

Lot:	012	**Tag:**	
Con:	07	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	2116
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/22/1967
Street:		**Received Date:**	12/12/1967
City:	n/a		

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 14
Final Level: 20 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880818
Pump Test ID 995103979
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549951	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	35 ft
3	GRAVEL	n/a	n/a	n/a	35	38 ft

End of Record

17

Easting:	699412.90
Northing:	4931886.00
Elev (masl):	273.24

Latitude: 44.38564
Longitude: -78.379691

Well ID: **5103980**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 05/25/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 10
Final Level: 25 ft
Pump Rate: 40 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880819
Pump Test ID 995103980
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549952	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	28 ft
3	GRAVEL	n/a	n/a	n/a	28	35 ft

End of Record

17

Easting:	699406.90
Northing:	4932117.00
Elev (masl):	274.66

Latitude: 44.385186
Longitude: -78.379134

Well ID: **5103981**

CATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township:

Tag:
Audit No:
Contractor License: 2116
Well Completion Date:

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LOC

Street: SMITH TOWNSHIP
City: n/a

Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.9728
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 20 ft
Pump Rate: 40 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880820
Pump Test ID 995103981
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549953	6	inch	STEEL	n/a	36 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	26 ft
3	GRAVEL	n/a	n/a	n/a	26	36 ft

End of Record

17

Easting:	699389.90
Northing:	4932021.00
Elev (masl):	269.84

Latitude: 44.386809
Longitude: -78.380819

Well ID: **5103982**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 06/01/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 7.3152
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 9 ft
Pump Rate: 40 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880821
Pump Test ID 995103982
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549954	6	inch	STEEL	n/a	24 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	20 ft
3	GRAVEL	n/a	n/a	n/a	20	24 ft

End of Record

17

Easting:	699405.90
Northing:	4932162.00
Elev (masl):	273.22

Latitude: 44.386236
Longitude: -78.378987

Well ID: **5103983**

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LOCATION

Lot:
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/16/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 25 ft
Pump Rate: 30 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880822
Pump Test ID 995103983
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549955	6	inch	STEEL	n/a	33 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	20 ft
3	CLAY	STONES	n/a	GREY	20	32 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	32	35 ft

End of Record

17

Easting:	699706.90
Northing:	4932692.00
Elev (masl):	274.15

Latitude: 44.385382
Longitude: -78.379451

Well ID: **5103984**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/16/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 30 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880823
Pump Test ID 995103984
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549956	6	inch	STEEL	n/a	50 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	n/a	1	30 ft
3	CLAY	HARDPAN	STONES	GREY	30	49 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	49	52 ft

End of Record

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17		
	Easting:	699704.90
	Northing:	4932762.00
	Elev (masl):	271.64

Latitude: 44.386489
Longitude: -78.379816

Well ID: 5103985

LOCATION

Lot: 017
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/16/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.4488
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 10
Final Level: 20 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880824
Pump Test ID 995103985
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549957	6	inch	STEEL	n/a	31 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	25 ft
3	GRAVEL	n/a	n/a	n/a	25	31 ft

End of Record

17		
	Easting:	699630.90
	Northing:	4932529.00
	Elev (masl):	274.27

Latitude: 44.385745
Longitude: -78.379197

Well ID: 5103986

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/18/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.192
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 30 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880825
Pump Test ID 995103986
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549958	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	n/a	n/a	BROWN	1	15 ft
3	CLAY	STONES	n/a	GREY	15	38 ft

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4	GRAVEL	MEDIUM SAND	n/a	n/a	38	40	ft

End of Record

17

Easting:	699789.90
Northing:	4932940.00
Elev (masl):	272.60

Latitude: 44.386034
Longitude: -78.379623

Well ID: 5103987

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 09/19/1967
Received Date: 12/12/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.4968
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 35 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880826
Pump Test ID 995103987
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549959	6	inch	STEEL	n/a	39 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	20 ft
3	CLAY	STONES	n/a	GREY	20	39 ft
4	GRAVEL	MEDIUM SAND	n/a	n/a	39	41 ft

End of Record

17

Easting:	699576.90
Northing:	4932503.00
Elev (masl):	271.35

Latitude: 44.386882
Longitude: -78.37892

Well ID: 5103988

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 12/12/1967
Received Date: 12/18/1967

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.3632
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 32 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10880827
Pump Test ID 995103988
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549960	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	TOPSOIL	n/a	n/a	n/a	0	1	ft
2	CLAY	STONES	n/a	BROWN	1	10	ft
3	CLAY	n/a	n/a	GREY	10	32	ft
4	GRAVEL	n/a	n/a	n/a	32	34	ft

End of Record

17

Easting:	699623.90
Northing:	4932589.00
Elev (masl):	271.26

Latitude: 44.386952
Longitude: -78.379595

Well ID: **5103989**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 12/12/1967
Received Date: 12/18/1967

WELL

Well Status: Test Hole
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 33 ft
Pump Rate: 6 GPM
Recom. Rate: 6 GPM

Pipe ID: 10880828
Pump Test ID 995103989
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549961	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	10 ft
3	CLAY	n/a	n/a	GREY	10	33 ft
4	GRAVEL	n/a	n/a	n/a	33	35 ft

End of Record

17

Easting:	699763.90
Northing:	4932794.00
Elev (masl):	271.62

Latitude: 44.386498
Longitude: -78.379841

Well ID: **5103990**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2116
Well Completion Date: 12/13/1967
Received Date: 01/23/1968

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 8.2296
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 25 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10880829
Pump Test ID 995103990
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549962	6	inch	STEEL	n/a	27 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	10 ft
3	CLAY	n/a	n/a	GREY	10	25 ft
4	GRAVEL	n/a	n/a	n/a	25	27 ft

End of Record

17

Easting:	699594.90
Northing:	4932548.00
Elev (masl):	265.38

Latitude: 44.386628
Longitude: -78.382346

Well ID: 5103991

LOCATION

Lot: 013
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/26/1952
Received Date: 11/27/1952

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.812
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 30 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10880830
Pump Test ID 995103991
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930549963	6	inch	STEEL	n/a	65 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	MEDIUM SAND	STONES	n/a	2	63 ft
3	GRAVEL	n/a	n/a	n/a	63	65 ft

End of Record

17

Easting:	710992.20
Northing:	4908868.00
Elev (masl):	255.80

Latitude: 44.386428
Longitude: -78.383824

Well ID: 5104526

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 03/01/1968
Received Date: 09/12/1968

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.2776
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 27 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10881365
Pump Test ID 995104526
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930550885	6	inch	STEEL	n/a	37 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	n/a	2	35 ft
3	GRAVEL	n/a	n/a	n/a	35	37 ft

End of Record

17

Easting:	711040.20
Northing:	4909202.00
Elev (masl):	257.52

Latitude: 44.385885
Longitude: -78.383723

Well ID: 5104527

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/21/1968
Received Date: 01/21/1969

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 8.5344
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 20 ft
Pump Rate: 5 GPM
Recom. Rate: 3 GPM

Pipe ID: 10881366
Pump Test ID 995104527
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930550886	6	inch	STEEL	n/a	28 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	n/a	2	27 ft
3	GRAVEL	n/a	n/a	n/a	27	28 ft

End of Record

17

Easting:	711643.20
Northing:	4908399.00
Elev (masl):	277.16

Latitude: 44.383922
Longitude: -78.376654

Well ID: 5104534

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/25/1968
Received Date: 01/21/1969

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.9936
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10881373
Pump Test ID 995104534
Flowing: N

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PUMP

Final Level:	36 ft		**Pump Duration (hr):**	2
Pump Rate:	20 GPM		**Pump Duration (m):**	0
Recom. Rate:	5 GPM			

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930550894	6	inch	STEEL	n/a	79 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	BOULDERS	n/a	BROWN	2	40 ft
3	CLAY	BOULDERS	n/a	BLUE	40	60 ft
4	MEDIUM SAND	n/a	n/a	n/a	60	78 ft
5	GRAVEL	MEDIUM SAND	n/a	n/a	78	82 ft

End of Record

17

Easting:	711118.20
Northing:	4909315.00
Elev (masl):	275.66

Latitude: 44.384456
Longitude: -78.376379

Well ID: 5104535

LOCATION

Lot:	012	**Tag:**	
Con:	07	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	2104
Township:	SMITH TOWNSHIP	**Well Completion Date:**	09/03/1968
Street:		**Received Date:**	01/21/1969
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	23.1648
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10881374
Pump Set (m):	n/a	**Pump Test ID**	995104535
SWL (ft)	40	**Flowing:**	N
Final Level:	65 ft	**Pump Duration (hr):**	3
Pump Rate:	9 GPM	**Pump Duration (m):**	0
Recom. Rate:	6 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930550895	6	inch	STEEL	n/a	76 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	GREY	1	73 ft
3	CLAY	GRAVEL	n/a	BROWN	73	76 ft

End of Record

17

Easting:	726765.30
Northing:	4902052.00
Elev (masl):	267.17

Latitude: 44.378775
Longitude: -78.383788

Well ID: 5104605

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	4713
Township:	SMITH TOWNSHIP	**Well Completion Date:**	04/29/1968
Street:		**Received Date:**	01/21/1969
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	21.336
Prim. Use:	n/a	**Depth to Bedrock (m):**	54
Sec. Use:		**Depth to Water:**	ft

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V

Boring Method: Cable Tool

Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 35
Final Level: 65 ft
Pump Rate: 4 GPM
Recom. Rate: 3 GPM

Pipe ID: 10881430
Pump Test ID 995104605
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930550987	6	inch	STEEL	n/a	54 ft
2	930550988	6	inch	OPEN HOLE	n/a	70 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	COARSE SAND	GRAVEL	n/a	n/a	2	30 ft
3	CLAY	STONES	n/a	BLUE	30	54 ft
4	LIMESTONE	n/a	n/a	GREY	54	70 ft

End of Record

17

Easting:	714705.20
Northing:	4899048.00
Elev (masl):	266.36

Latitude: 44.385941
Longitude: -78.382214

Well ID: **5104627**

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/20/1965
Received Date: 01/21/1969

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.9832
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 20 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10881460
Pump Test ID 995104627
Flowing: Y
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930551018	6	inch	STEEL	n/a	59 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	STONES	n/a	BROWN	2	27 ft
3	CLAY	BOULDERS	n/a	BLUE	27	58 ft
4	GRAVEL	n/a	n/a	n/a	58	59 ft

End of Record

17

Easting:	716180.20
Northing:	4910420.00
Elev (masl):	271.11

Latitude: 44.387061
Longitude: -78.380029

Well ID: **5104899**

OCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 03/25/1969
Received Date:

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L

City: n/a 02/01/1970

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 24 ft
Pump Rate: 10 GPM
Recom. Rate: 10 GPM

Pipe ID: 10881732
Pump Test ID 995104899
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930551441	8	inch	STEEL	n/a	30 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	2 ft
2	CLAY	STONES	n/a	GREY	2	29 ft
3	GRAVEL	n/a	n/a	BROWN	29	30 ft

End of Record

17

Easting:	718829.30
Northing:	4902771.00
Elev (masl):	254.55

Latitude: 44.387774
Longitude: -78.383638

Well ID: **5104928**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 08/07/1969
Received Date: 02/02/1970

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 22
Final Level: 38 ft
Pump Rate: 20 GPM
Recom. Rate: 20 GPM

Pipe ID: 10881760
Pump Test ID 995104928
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930551483	6	inch	STEEL	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	GREY	1	22 ft
3	CLAY	GRAVEL	n/a	n/a	22	50 ft
4	GRAVEL	n/a	n/a	n/a	50	53 ft

End of Record

17

Easting:	715031.30
Northing:	4906342.00
Elev (masl):	265.56

Latitude: 44.383505
Longitude: -78.374162

Well ID: **5105237**

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LOCATION

Lot:
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 10/22/1970
Received Date: 10/30/1970

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 23.4696
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 65 ft
Pump Rate: 9 GPM
Recom. Rate: 5 GPM

Pipe ID: 10882055
Pump Test ID 995105237
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930551958	6	inch	STEEL	n/a	77 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	STONES	n/a	BROWN	0	10 ft
2	CLAY	GRAVEL	BOULDERS	GREY	10	76 ft
3	GRAVEL	n/a	n/a	n/a	76	77 ft

End of Record

17

Easting:	710382.10
Northing:	4914091.00
Elev (masl):	258.14

Latitude: 44.387315
Longitude: -78.383282

Well ID: **5105374**

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 09/16/1970
Received Date: 02/04/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.3256
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 40 ft
Pump Rate: 15 GPM
Recom. Rate: 15 GPM

Pipe ID: 10882191
Pump Test ID 995105374
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 14

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930552191	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	CLAY	GRAVEL	n/a	GREY	1	46 ft
3	GRAVEL	n/a	n/a	GREY	46	47 ft

End of Record

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17		
	Easting:	708301.10
	Northing:	4917794.00
	Elev (masl):	255.48

Latitude: 44.38375
Longitude: -78.384822

Well ID: 5105392

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/22/1970
Received Date: 02/04/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.1168
Depth to Bedrock (m): 65
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 60 ft
Pump Rate: 3 GPM
Recom. Rate: 3 GPM

Pipe ID: 10882209
Pump Test ID 995105392
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930552216	6	inch	STEEL	n/a	66 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	30 ft
2	CLAY	STONES	n/a	BLUE	30	65 ft
3	SHALE	GRAVEL	n/a	GREY	65	66 ft

End of Record

17		
	Easting:	708280.10
	Northing:	4917347.00
	Elev (masl):	277.22

Latitude: 44.383426
Longitude: -78.37856

Well ID: 5105410

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/04/1970
Received Date: 02/04/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: n/a
Pump Set (m): n/a
SWL (ft) 30
Final Level: 30 ft
Pump Rate: 8 GPM
Recom. Rate: 5 GPM

Pipe ID: 10882227
Pump Test ID 995105410
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930552238	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	30 ft
2	CLAY	STONES	n/a	BLUE	30	46 ft
3	GRAVEL	MEDIUM SAND	n/a	BLUE	46	48 ft

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End of Record

17		
	Easting:	708295.10
	Northing:	4917333.00
	Elev (masl):	256.80

Latitude: 44.379543
Longitude: -78.385888

Well ID: 5105411

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 06/02/1970
Received Date: 02/04/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.8016
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 32 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10882228
Pump Test ID 995105411
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930552239	6	inch	STEEL	n/a	42 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	14 ft
2	CLAY	STONES	n/a	BLUE	14	41 ft
3	GRAVEL	n/a	n/a	BLUE	41	42 ft

End of Record

17		
	Easting:	708218.10
	Northing:	4917360.00
	Elev (masl):	272.80

Latitude: 44.385883
Longitude: -78.379705

Well ID: 5105424

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 08/04/1970
Received Date: 02/04/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 20 ft
Pump Rate: 10 GPM
Recom. Rate: 7 GPM

Pipe ID: 10882241
Pump Test ID 995105424
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930552258	6	inch	STEEL	n/a	27 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

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1	CLAY	STONES	n/a	BROWN	0	26	ft
2	GRAVEL	MEDIUM SAND	n/a	BROWN	26	30	ft

End of Record

17

Easting:	710728.20
Northing:	4908803.00
Elev (masl):	252.99

Latitude: 44.386613
Longitude: -78.384067

Well ID: **5105509**

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 12/19/1968
Received Date: 01/21/1969

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.7536
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 0
Final Level: 25 ft
Pump Rate: 7 GPM
Recom. Rate: 3 GPM

Pipe ID: 10882290
Pump Test ID 995105509
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930552340	6	inch	STEEL	n/a	32	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	n/a	0	2	ft
2	CLAY	STONES	n/a	BROWN	2	16	ft
3	CLAY	STONES	n/a	BLUE	16	31	ft
4	GRAVEL	n/a	n/a	n/a	31	32	ft

End of Record

17

Easting:	713546.10
Northing:	4913473.00
Elev (masl):	256.95

Latitude: 44.387049
Longitude: -78.38342

Well ID: **5105709**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 5102
Well Completion Date: 11/09/1971
Received Date: 11/17/1971

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 7.62
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 9
Final Level: 15 ft
Pump Rate: 15 GPM
Recom. Rate: 10 GPM

Pipe ID: 10882469
Pump Test ID 995105709
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930552642	6	inch	STEEL	n/a	25	ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	GRAVEL	n/a	n/a	0	4 ft
2	CLAY	BOULDERS	n/a	BROWN	4	23 ft
3	GRAVEL	n/a	n/a	BROWN	23	25 ft

End of Record

17

Easting:	708556.10
Northing:	4918452.00
Elev (masl):	264.22

Latitude: 44.378796
Longitude: -78.384729

Well ID: 5106141

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1666
Well Completion Date: 09/04/1972
Received Date: 11/08/1972

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): 34
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 15 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10882897
Pump Test ID 995106141
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930553347	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	n/a	n/a	0	34 ft
2	LIMESTONE	n/a	n/a	n/a	34	35 ft

End of Record

17

Easting:	720141.10
Northing:	4929926.00
Elev (masl):	247.55

Latitude: 44.386448
Longitude: -78.384702

Well ID: 5106387

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 11/05/1972
Received Date: 04/09/1973

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 35 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10883141
Pump Test ID 995106387
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930553741	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	10 ft
2	CLAY	STONES	n/a	BLUE	10	46 ft
3	GRAVEL	n/a	n/a	BLUE	46	48 ft

End of Record

17

Easting:	709195.00
Northing:	4926103.00
Elev (masl):	252.02

Latitude: 44.387295
Longitude: -78.383974

Well ID: **5106628**

LOCATION

Lot: 013
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1921
Well Completion Date: 08/20/1973
Received Date: 11/12/1973

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): 38
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 10
Final Level: 47 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 10883381
Pump Test ID 995106628
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930554121	6	inch	STEEL	n/a	38 ft
2	930554122	6	inch	OPEN HOLE	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	YELLOW	0	36 ft
2	CLAY	GRAVEL	n/a	YELLOW	36	38 ft
3	LIMESTONE	n/a	n/a	GREY	38	48 ft

End of Record

17

Easting:	709065.00
Northing:	4925923.00
Elev (masl):	276.28

Latitude: 44.384237
Longitude: -78.37664

Well ID: **5106646**

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1666
Well Completion Date: 07/21/1972
Received Date: 08/16/1972

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10883399
Pump Test ID 995106646
Flowing: N

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PUMP

Final Level: 30 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930554150	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	n/a	n/a	GREY	0	40 ft
2	GRAVEL	n/a	n/a	n/a	40	43 ft

End of Record

17

Easting:	709005.00
Northing:	4926843.00
Elev (masl):	268.45

Latitude: 44.377005
Longitude: -78.385122

Well ID: 5106651

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1666
Well Completion Date: 07/16/1972
Received Date: 08/16/1972

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): 50
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 30 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10883404
Pump Test ID 995106651
Flowing: N
Pump Duration (hr): 6
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930554157	6	inch	STEEL	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	n/a	n/a	GREY	0	50 ft
2	LIMESTONE	n/a	n/a	n/a	50	53 ft

End of Record

17

Easting:	708965.10
Northing:	4917863.00
Elev (masl):	267.49

Latitude: 44.388828
Longitude: -78.381721

Well ID: 5106753

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 12/20/1973
Received Date: 01/23/1974

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.2776
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 30 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 10883506
Pump Test ID 995106753
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930554322	6	inch	STEEL	n/a	37 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	GRAVEL	CLAY	n/a	GREY	1	36 ft
3	GRAVEL	n/a	n/a	BROWN	36	37 ft

End of Record

17

Easting:	711525.20
Northing:	4898953.00
Elev (masl):	245.87

Latitude: 44.383778
Longitude: -78.386076

Well ID: **5107461**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 06/10/1975
Received Date: 06/23/1975

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.6408
Depth to Bedrock (m): 53
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 68 ft
Pump Rate: 2 GPM
Recom. Rate: 2 GPM

Pipe ID: 10884181
Pump Test ID 995107461
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930555455	6	inch	STEEL	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	SOFT	n/a	BROWN	0	1 ft
2	GRAVEL	CLAY	STONES	BROWN	1	12 ft
3	GRAVEL	CLAY	STONES	GREY	12	53 ft
4	LIMESTONE	HARD	n/a	GREY	53	71 ft

End of Record

17

Easting:	719285.30
Northing:	4909103.00
Elev (masl):	263.36

Latitude: 44.379674
Longitude: -78.383748

Well ID: **5107577**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 09/05/1975
Received Date: 09/23/1975

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.336
Depth to Bedrock (m): 59
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 17
Final Level: 60 ft
Pump Rate: 8 GPM
Recom. Rate: 8 GPM

Pipe ID: 10884291
Pump Test ID 995107577
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930555572	6	inch	STEEL	n/a	60 ft
2	930555573	6	inch	<null>	n/a	70 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	SOFT	n/a	BROWN	0	4 ft
2	CLAY	STONES	PACKED	GREY	4	47 ft
3	GRAVEL	CLAY	WATER-BEARING	GREY	47	59 ft
4	LIMESTONE	POROUS	HARD	GREY	59	70 ft

End of Record

17

Easting:	730645.10
Northing:	4959574.00
Elev (masl):	250.98

Latitude: 44.387782
Longitude: -78.384015

Well ID: **5107687**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1455
Well Completion Date: 09/27/1975
Received Date: 12/08/1975

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.24
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) n/a
Final Level: 40 ft
Pump Rate: n/a GPM
Recom. Rate: 5 GPM

Pipe ID: 10884400
Pump Test ID 995107687
Flowing: Y
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930555691	6	inch	STEEL	n/a	50 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	15 ft
3	CLAY	STONES	n/a	GREY	15	49 ft
4	SAND	GRAVEL	n/a	n/a	49	50 ft

End of Record

17

Easting:	705764.90
Northing:	4930474.00
Elev (masl):	261.01

Latitude: 44.382822
Longitude: -78.383608

Well ID: **5107699**

ON

Lot: 012
Con:

Tag:
Audit No:

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LOCATION

Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Contractor License: 2104
Well Completion Date: 11/10/1975
Received Date: 12/09/1975

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 5
Final Level: 38 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10884412
Pump Test ID 995107699
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930555707	6	inch	STEEL	n/a	40 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	GRAVEL	CLAY	STONES	BROWN	0	20 ft
2	GRAVEL	CLAY	BOULDERS	GREY	20	40 ft
3	LIMESTONE	HARD	n/a	GREY	40	48 ft

End of Record

17

Easting:	710680.10
Northing:	4911323.00
Elev (masl):	252.92

Latitude: 44.384649
Longitude: -78.384782

Well ID: **5107892**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1455
Well Completion Date: 03/30/1976
Received Date: 05/05/1976

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.7264
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 58 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10884602
Pump Test ID 995107892
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 10

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930555918	6	inch	STEEL	n/a	68 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	12 ft
3	CLAY	STONES	n/a	GREY	12	30 ft
4	CLAY	n/a	n/a	n/a	30	50 ft
5	CLAY	SANDY	n/a	n/a	50	66 ft
6	SAND	GRAVEL	n/a	n/a	66	68 ft

End of Record

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17

Easting:	719540.00
Northing:	4930973.00
Elev (masl):	258.25

Latitude: 44.384635
Longitude: -78.384155

Well ID: 5108035

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 07/16/1976
Received Date: 07/23/1976

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.3736
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 30
Final Level: 40 ft
Pump Rate: 20 GPM
Recom. Rate: 20 GPM

Pipe ID: 10884740
Pump Test ID 995108035
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556082	6	inch	STEEL	n/a	54 ft
2	930556083	6	inch	<null>	n/a	57 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREV. DRILLED	n/a	n/a	n/a	0	15 ft
2	SAND	CLAY	LOOSE	GREY	15	30 ft
3	CLAY	STONES	PACKED	GREY	30	54 ft
4	SAND	GRAVEL	WATER-BEARING	BROWN	54	57 ft

End of Record

17

Easting:	713035.10
Northing:	4913148.00
Elev (masl):	262.85

Latitude: 44.377918
Longitude: -78.385709

Well ID: 5108098

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 11/20/1975
Received Date: 09/16/1976

WELL

Well Status: Abandoned-Quality
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.24
Depth to Bedrock (m): n/a
Depth to Water:
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	SAND	n/a	BROWN	0	20 ft
2	CLAY	n/a	n/a	GREY	20	48 ft
3	BOULDERS	n/a	n/a	n/a	48	50 ft

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18

Easting:	263849.50
Northing:	4963042.00
Elev (masl):	264.28

Latitude: 44.377904
Longitude: -78.385082

Well ID: 5108126

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	1904
Township:	SMITH TOWNSHIP	**Well Completion Date:**	12/03/1975
Street:		**Received Date:**	09/16/1976
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	11.8872
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLOUDY	**Pipe ID:**	10884830
Pump Set (m):	n/a	**Pump Test ID**	995108126
SWL (ft)	27	**Flowing:**	N
Final Level:	30 ft	**Pump Duration (hr):**	6
Pump Rate:	10 GPM	**Pump Duration (m):**	0
Recom. Rate:	5 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556195	6	inch	STEEL	n/a	39 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	SAND	n/a	BROWN	0	20 ft
2	CLAY	STONES	n/a	GREY	20	37 ft
3	GRAVEL	CLAY	n/a	n/a	37	39 ft

17

Easting:	705265.10
Northing:	4914048.00
Elev (masl):	260.43

Latitude: 44.382372
Longitude: -78.383628

Well ID: 5108127

LOCATION

Lot:	012	**Tag:**	
Con:	n/a	**Audit No:**	
Municipality:	PETERBOROUGH	**Contractor License:**	1904
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/12/1975
Street:		**Received Date:**	09/16/1976
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	18.288
Prim. Use:	n/a	**Depth to Bedrock (m):**	40
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10884831
Pump Set (m):	n/a	**Pump Test ID**	995108127
SWL (ft)	0	**Flowing:**	N
Final Level:	22 ft	**Pump Duration (hr):**	30
Pump Rate:	5 GPM	**Pump Duration (m):**	0
Recom. Rate:	5 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556196	6	inch	STEEL	n/a	40 ft
2	930556197	n/a	inch	OPEN HOLE	n/a	60 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	16 ft
3	CLAY	STONES	n/a	GREY	16	35 ft
4	GRAVEL	CLAY	n/a	n/a	35	40 ft
5	LIMESTONE	n/a	n/a	GREY	40	60 ft

End of Record

17

Easting:	727715.10
Northing:	4951024.00
Elev (masl):	257.02

Latitude: 44.384368
Longitude: -78.384292

Well ID: 5108307

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1455
Well Completion Date: 10/04/1976
Received Date: 01/13/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.336
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: n/a ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10885011
Pump Test ID 995108307
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 10

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556411	6	inch	STEEL	n/a	65 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	n/a	n/a	BROWN	1	15 ft
3	CLAY	n/a	n/a	GREY	15	65 ft
4	SAND	GRAVEL	n/a	n/a	65	70 ft

End of Record

17

Easting:	709065.10
Northing:	4918948.00
Elev (masl):	281.33

Latitude: 44.383122
Longitude: -78.377067

Well ID: 5108381

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 05/02/1977
Received Date: 05/10/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 31.0896
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 50
Final Level: 99 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10885084
Pump Test ID 995108381
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556491	6	inch	STEEL	n/a	99 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	STONES	BROWN	0	25 ft
2	CLAY	GRAVEL	STONES	GREY	25	99 ft
3	MEDIUM SAND	n/a	n/a	BROWN	99	102 ft

End of Record

17

Easting:	701454.90
Northing:	4938524.00
Elev (masl):	259.07

Latitude: 44.383286
Longitude: -78.384215

Well ID: 5108409

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 04/13/1977
Received Date: 06/15/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.1064
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 30 ft
Pump Rate: 15 GPM
Recom. Rate: 5 GPM

Pipe ID: 10885111
Pump Test ID 995108409
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556518	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	HARD	BROWN	0	16 ft
2	CLAY	STONES	HARD	BLUE	16	42 ft
3	COARSE GRAVEL	n/a	n/a	GREY	42	43 ft

End of Record

17

Easting:	707965.20
Northing:	4900523.00
Elev (masl):	253.36

Latitude: 44.382865
Longitude: -78.385489

Well ID: 5108572

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 07/28/1976
Received Date: 08/31/1977

WELL

Well Status: Abandoned-Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.812
Depth to Bedrock (m): 47
Depth to Water: ft
Water Kind: FRESH

TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10885273
Pump Test ID 995108572
Flowing: N

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PUMP

Final Level: 63 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pump Duration (hr): 10
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556723	6	inch	STEEL	n/a	47 ft
2	930556724	n/a	inch	OPEN HOLE	n/a	65 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	GREY	0	15 ft
2	CLAY	GRAVEL	PACKED	GREY	15	40 ft
3	FINE SAND	CLAY	n/a	BROWN	40	46 ft
4	FINE SAND	FINE GRAVEL	n/a	n/a	46	47 ft
5	LIMESTONE	n/a	n/a	GREY	47	65 ft

End of Record

18

Easting:	272870.70
Northing:	4930690.00
Elev (masl):	255.50

Latitude: 44.379282
Longitude: -78.386276

Well ID: 5108586

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 09/17/1976
Received Date: 08/31/1977

WELL

Well Status: Abandoned-Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.4216
Depth to Bedrock (m): 53
Depth to Water:
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	n/a	GREY	0	53 ft
2	LIMESTONE	n/a	n/a	GREY	53	67 ft

End of Record

18

Easting:	265520.60
Northing:	4912144.00
Elev (masl):	253.36

Latitude: 44.382865
Longitude: -78.385489

Well ID: 5108587

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 09/22/1976
Received Date: 08/31/1977

ELL

Well Status: Water Supply
Prim. Use:

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a

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WE

Sec. Use: n/a
Boring Method: Cable Tool

Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 37 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID: 10885288
Pump Test ID 995108587
Flowing: N
Pump Duration (hr): 8
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556745	6	inch	STEEL	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	DARK-COLOURED	n/a	n/a	0	1 ft
2	CLAY	SAND	n/a	BROWN	1	10 ft
3	CLAY	GRAVEL	n/a	BROWN	10	47 ft
4	GRAVEL	n/a	n/a	n/a	47	48 ft

End of Record

17

Easting:	714784.10
Northing:	4915460.00
Elev (masl):	262.07

Latitude: 44.379253
Longitude: -78.385022

Well ID: **5108686**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 5102
Well Completion Date: 08/25/1977
Received Date: 09/19/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.8016
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: 20 ft
Pump Rate: 10 GPM
Recom. Rate: 8 GPM

Pipe ID: 10885385
Pump Test ID 995108686
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 40

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556853	6	inch	STEEL	n/a	42 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	BOULDERS	n/a	BROWN	0	18 ft
2	CLAY	GRAVEL	n/a	GREY	18	36 ft
3	GRAVEL	n/a	n/a	BROWN	36	42 ft

End of Record

17

Easting:	726628.30
Northing:	4902556.00
Elev (masl):	255.01

Latitude: 44.385099
Longitude: -78.384762

Well ID: **5108727**

OCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:

Tag:
Audit No:
Contractor License: 2517
Well Completion Date: 06/23/1977
Received Date:

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L

City: n/a 11/16/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 30.7848
Depth to Bedrock (m): 47
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 2
Final Level: 100 ft
Pump Rate: 2 GPM
Recom. Rate: 2 GPM

Pipe ID: 10885426
Pump Test ID 995108727
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556895	6	inch	STEEL	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLACK	0	2 ft
2	CLAY	GRAVEL	STONES	GREY	2	47 ft
3	LIMESTONE	n/a	n/a	GREY	47	101 ft

End of Record

17

Easting:	710026.90
Northing:	4932413.00
Elev (masl):	268.51

Latitude: 44.377875
Longitude: -78.383828

Well ID: **5108741**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 2104
Well Completion Date: 11/14/1977
Received Date: 11/30/1977

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 25.6032
Depth to Bedrock (m): 70
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 28
Final Level: 80 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pipe ID: 10885440
Pump Test ID 995108741
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930556909	6	inch	STEEL	n/a	70 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	SOFT	n/a	BROWN	0	1 ft
2	GRAVEL	CLAY	STONES	GREY	1	70 ft
3	LIMESTONE	HARD	n/a	GREY	70	84 ft

End of Record

17

Easting:	700388.90
Northing:	4935332.00
Elev (masl):	269.38

Latitude: 44.384113
Longitude: -78.38104

Well ID: **5109380**

ION

Lot: 012
Con:

Tag:
Audit No:

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LOCATION

Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Contractor License: 1904
Well Completion Date: 04/20/1978
Received Date: 02/07/1979

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.764
Depth to Bedrock (m): 52
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 5
Final Level: 48 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 10886072
Pump Test ID 995109380
Flowing: N
Pump Duration (hr): 24
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930557738	6	inch	STEEL	n/a	52 ft
2	930557739	n/a	inch	OPEN HOLE	n/a	55 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	GRAVEL	n/a	BROWN	2	15 ft
3	CLAY	GRAVEL	n/a	GREY	15	20 ft
4	SAND	GRAVEL	n/a	n/a	20	22 ft
5	CLAY	GRAVEL	n/a	GREY	22	41 ft
6	GRAVEL	CLAY	n/a	GREY	41	44 ft
7	SAND	CLAY	GRAVEL	GREY	44	50 ft
8	CLAY	SAND	GRAVEL	GREY	50	52 ft
9	LIMESTONE	n/a	n/a	GREY	52	55 ft

End of Record

18

Easting:	273079.70
Northing:	4930322.00
Elev (masl):	261.69

Latitude: 44.379703
Longitude: -78.385002

Well ID: **5109443**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4923
Well Completion Date: 10/16/1978
Received Date: 04/11/1979

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.6784
Depth to Bedrock (m): 54
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 2
Final Level: 30 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10886133
Pump Test ID 995109443
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930557829	6	inch	STEEL	n/a	56 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	UNKNOWN TYPE	n/a	n/a	n/a	0	48 ft
2	GRAVEL	FINE SAND	n/a	GREY	48	54 ft

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3	LIMESTONE	SHALE	n/a	GREY	54	56	ft
4	LIMESTONE	n/a	n/a	GREY	56	58	ft

End of Record

17

Easting:	711435.20
Northing:	4910772.00
Elev (masl):	270.73

Latitude: 44.383649
Longitude: -78.380433

Well ID: **5109448**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4814
Well Completion Date: 08/01/1978
Received Date: 04/10/1979

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.86
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 40
Final Level: 45 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10886138
Pump Test ID 995109448
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930557837	6	inch	STEEL	n/a	75 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	n/a	BROWN	0	20 ft
2	CLAY	STONES	n/a	GREY	20	40 ft
3	CLAY	STONES	SANDY	GREY	40	60 ft
4	FINE GRAVEL	COARSE GRAVEL	CLAY	GREY	60	70 ft
5	FINE GRAVEL	COARSE GRAVEL	SAND	n/a	70	75 ft

End of Record

17

Easting:	706965.10
Northing:	4919273.00
Elev (masl):	254.54

Latitude: 44.378397
Longitude: -78.386943

Well ID: **5109881**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 10/12/1979
Received Date: 06/02/1980

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 23.1648
Depth to Bedrock (m): 65
Depth to Water:
Water Kind:

PUMP TEST

Test Method: CLOUDY
Pump Set (m): n/a
SWL (ft) 8
Final Level: 62 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10886536
Pump Test ID 995109881
Flowing: N
Pump Duration (hr): 10
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930558269	n/a	inch	OPEN HOLE	n/a	76 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREV. DRILLED	n/a	n/a	n/a	0	65 ft
2	LIMESTONE	n/a	n/a	GREY	65	76 ft

End of Record

17

Easting:	706465.10
Northing:	4917073.00
Elev (masl):	260.08

Latitude: 44.382386
Longitude: -78.384255

Well ID: 5110146

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 06/19/1980
Received Date: 02/09/1981

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: Domestic
Boring Method: Cable Tool

Well Depth (m): 18.8976
Depth to Bedrock (m): 44
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 40 ft
Pump Rate: 20 GPM
Recom. Rate: 5 GPM

Pipe ID: 10886797
Pump Test ID 995110146
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930558595	6	inch	STEEL	n/a	44 ft
2	930558596	n/a	inch	OPEN HOLE	n/a	62 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREVIOUSLY DUG	n/a	n/a	n/a	0	20 ft
2	CLAY	GRAVEL	STONES	GREY	20	38 ft
3	GRAVEL	CLAY	n/a	GREY	38	44 ft
4	LIMESTONE	n/a	n/a	GREY	44	62 ft

End of Record

17

Easting:	706615.10
Northing:	4915073.00
Elev (masl):	256.91

Latitude: 44.387768
Longitude: -78.383388

Well ID: 5110147

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 05/21/1980
Received Date: 02/09/1981

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.8496
Depth to Bedrock (m): 47
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 10
Final Level: 42 ft
Pump Rate: 7 GPM
Recom. Rate: 5 GPM

Pipe ID: 10886798
Pump Test ID 995110147
Flowing: N
Pump Duration (hr): 6
Pump Duration (m): 0

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930558597	n/a	inch	STEEL	n/a	47 ft
2	930558598	n/a	inch	OPEN HOLE	n/a	52 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREV. DRILLED	n/a	n/a	n/a	0	47 ft
2	LIMESTONE	n/a	n/a	GREY	47	52 ft

End of Record

17

Easting:	706115.10
Northing:	4920773.00
Elev (masl):	256.05

Latitude: 44.388218
Longitude: -78.383367

Well ID: 5110244

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 4713
Well Completion Date: 09/28/1979
Received Date: 05/20/1981

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): 33
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 1
Final Level: 25 ft
Pump Rate: 10 GPM
Recom. Rate: n/a GPM

Pipe ID: 10886894
Pump Test ID 995110244
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930558705	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	STONES	HARD	BROWN	0	18 ft
2	CLAY	STONES	HARD	BLUE	18	33 ft
3	SHALE	GRAVEL	HARD	GREY	33	35 ft

End of Record

17

Easting:	712815.20
Northing:	4903923.00
Elev (masl):	263.23

Latitude: 44.382793
Longitude: -78.382354

Well ID: 5110795

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1921
Well Completion Date: 07/02/1982
Received Date: 05/12/1983

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.384
Depth to Bedrock (m): 55
Depth to Water: ft
Water Kind: SULPHUR

TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft)

Pipe ID: 10887421
Pump Test ID 995110795
Flowing: N

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PUMP

Final Level: 60 ft
Pump Rate: 10 GPM
Recom. Rate: 8 GPM

Pump Duration (hr): 6
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559311	6	inch	STEEL	n/a	56 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLACK	0	1 ft
2	CLAY	SANDY	n/a	BROWN	1	15 ft
3	SAND	CLAY	STONES	GREY	15	55 ft
4	LIMESTONE	n/a	n/a	GREY	55	80 ft

End of Record

17

Easting:	715615.00
Northing:	4940224.00
Elev (masl):	248.50

Latitude: 44.382879
Longitude: -78.386116

Well ID: 5111060

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 02/15/1983
Received Date: 04/26/1984

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.1168
Depth to Bedrock (m): 56
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 13
Final Level: 60 ft
Pump Rate: 2 GPM
Recom. Rate: 2 GPM

Pipe ID: 10887686
Pump Test ID 995111060
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559586	6	inch	STEEL	n/a	56 ft
2	930559587	n/a	inch	OPEN HOLE	n/a	66 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	DARK-COLOURED	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	10 ft
3	BOULDERS	n/a	n/a	n/a	10	12 ft
4	CLAY	GRAVEL	n/a	GREY	12	19 ft
5	BOULDERS	n/a	n/a	n/a	19	22 ft
6	CLAY	GRAVEL	n/a	GREY	22	56 ft
7	LIMESTONE	n/a	n/a	GREY	56	66 ft

End of Record

17

Easting:	700764.90
Northing:	4933824.00
Elev (masl):	246.04

Latitude: 44.387347
Longitude: -78.384662

Well ID: 5111064

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 03/09/1984
Received Date: 04/26/1984

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 17.3736
Depth to Bedrock (m): 39
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 37 ft
Pump Rate: 11 GPM
Recom. Rate: 5 GPM

Pipe ID: 10887690
Pump Test ID 995111064
Flowing: N
Pump Duration (hr): 10
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559594	6	inch	STEEL	n/a	20 ft
2	930559595	6	inch	OPEN HOLE	n/a	57 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	DARK-COLOURED	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	36 ft
3	CLAY	GRAVEL	n/a	GREY	36	39 ft
4	LIMESTONE	n/a	n/a	GREY	39	57 ft

End of Record

17

Easting:	706815.10
Northing:	4914873.00
Elev (masl):	262.16

Latitude: 44.378368
Longitude: -78.385689

Well ID: **5111079**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 10/05/1983
Received Date: 04/26/1984

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: Domestic
Boring Method: Cable Tool

Well Depth (m): 17.6784
Depth to Bedrock (m): 39
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 30 ft
Pump Rate: 30 GPM
Recom. Rate: 5 GPM

Pipe ID: 10887705
Pump Test ID 995111079
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 48

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559628	6	inch	STEEL	n/a	39 ft
2	930559629	n/a	inch	OPEN HOLE	n/a	58 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	DARK-COLOURED	n/a	n/a	0	1 ft
2	CLAY	STONES	PACKED	BROWN	1	39 ft
3	LIMESTONE	n/a	n/a	GREY	39	58 ft

End of Record

17

Easting:	726362.30
Northing:	4902724.00
Elev (masl):	260.58

Latitude: 44.381037
Longitude: -78.384315

Well ID: **5111080**

ON

Lot: 012
Con:

Tag:
Audit No:

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LOCATION

Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Contractor License: 1904
Well Completion Date: 12/02/1983
Received Date: 04/26/1984

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): 41
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 16
Final Level: 30 ft
Pump Rate: 36 GPM
Recom. Rate: 5 GPM

Pipe ID: 10887706
Pump Test ID 995111080
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559630	6	inch	STEEL	n/a	42 ft
2	930559631	6	inch	OPEN HOLE	n/a	53 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	GRAVEL	BROWN	1	20 ft
3	CLAY	GRAVEL	SILT	GREY	20	36 ft
4	FINE GRAVEL	n/a	n/a	n/a	36	41 ft
5	SHALE	LIMESTONE	n/a	n/a	41	42 ft
6	LIMESTONE	n/a	n/a	GREY	42	53 ft

End of Record

17

Easting:	697915.10
Northing:	4900133.00
Elev (masl):	248.65

Latitude: 44.385998
Longitude: -78.384722

Well ID: **5111199**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1921
Well Completion Date: 10/28/1983
Received Date: 09/05/1984

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 11.5824
Depth to Bedrock (m): 37
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 8 ft
Pump Rate: 20 GPM
Recom. Rate: 8 GPM

Pipe ID: 10887825
Pump Test ID 995111199
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559754	6	inch	STEEL	n/a	37 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLUE	0	2 ft
2	CLAY	SANDY	n/a	BROWN	2	12 ft
3	CLAY	STONES	SANDY	BROWN	12	22 ft
4	CLAY	STONES	SANDY	GREY	22	34 ft
5	CLAY	SANDY	n/a	BROWN	34	37 ft

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6	LIMESTONE	SHALE	n/a	GREY	37	38	ft

End of Record

17

Easting:	705725.20
Northing:	4887683.00
Elev (masl):	247.55

Latitude: 44.386448
Longitude: -78.384702

Well ID: **5111204**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1921
Well Completion Date: 06/12/1984
Received Date: 09/05/1984

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.8016
Depth to Bedrock (m): 30
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 27 ft
Pump Rate: 10 GPM
Recom. Rate: 6 GPM

Pipe ID: 10887830
Pump Test ID 995111204
Flowing: N
Pump Duration (hr): 8
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930559759	6	inch	STEEL	n/a	38 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLUE	0	1 ft
2	CLAY	STONES	SANDY	BROWN	1	8 ft
3	CLAY	STONES	SANDY	GREY	8	30 ft
4	SHALE	LIMESTONE	n/a	WHITE	30	31 ft
5	SHALE	CLAY	n/a	GREY	31	35 ft
6	GRAVEL	SHALE	CLAY	BROWN	35	37 ft
7	LIMESTONE	n/a	n/a	GREY	37	38 ft
8	SHALE	ROCK	n/a	GREY	38	42 ft

End of Record

17

Easting:	732565.10
Northing:	4952374.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: **5111347**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 10/19/1984
Received Date: 03/21/1985

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): 41
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 40 ft
Pump Rate: 22 GPM
Recom. Rate: 5 GPM

Pipe ID: 10887972
Pump Test ID 995111347
Flowing: N
Pump Duration (hr): 10
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

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1	930559947	6	inch	STEEL	n/a	46	ft
2	930559948	n/a	inch	OPEN HOLE	n/a	54	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	BOULDERS	STONES	BROWN	1	34 ft
3	CLAY	GRAVEL	n/a	GREY	34	41 ft
4	SHALE	CLAY	GRAVEL	GREY	41	46 ft
5	LIMESTONE	n/a	n/a	GREY	46	54 ft

End of Record

17

Easting:	715315.10
Northing:	4921373.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: **5111737**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No:
Contractor License: 1904
Well Completion Date: 09/13/1985
Received Date: 04/01/1986

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.192
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 17
Final Level: 27 ft
Pump Rate: 27 GPM
Recom. Rate: 5 GPM

Pipe ID: 10888362
Pump Test ID 995111737
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930560435	6	inch	STEEL	n/a	34 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	GRAVEL	n/a	BROWN	0	34 ft
2	FINE GRAVEL	n/a	n/a	n/a	34	40 ft

End of Record

17

Easting:	724615.30
Northing:	4907973.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: **5111843**

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 3367
Well Completion Date: 06/27/1986
Received Date: 07/15/1986

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 22.86
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

MP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 66

Pipe ID: 10888468
Pump Test ID 995111843
Flowing: N
Pump Duration (hr): 1

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PUMP

Pump Rate: 5 GPM
Recom. Rate: 4 GPM
Pump Duration (m): 45

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930560569	6	inch	STEEL	n/a	75 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	SAND	SOFT	n/a	BROWN	0	1 ft
2	TOPSOIL	SOFT	n/a	GREY	1	2 ft
3	CLAY	GRAVEL	STONES	BROWN	2	19 ft
4	CLAY	GRAVEL	STONES	GREY	19	33 ft
5	CLAY	GRAVEL	n/a	GREY	33	74 ft
6	GRAVEL	COARSE SAND	n/a	BROWN	74	75 ft

End of Record

17

Easting:	701014.90
Northing:	4925624.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: 5111973

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 1921
Well Completion Date: 03/15/1985
Received Date: 09/19/1986

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): 43
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 17 ft
Pump Rate: 10 GPM
Recom. Rate: 8 GPM

Pipe ID: 10888595
Pump Test ID 995111973
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930560702	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	2 ft
2	CLAY	SANDY	n/a	BROWN	2	18 ft
3	CLAY	SANDY	STONES	GREY	18	30 ft
4	CLAY	SANDY	n/a	BROWN	30	38 ft
5	COARSE GRAVEL	SANDY	CLAY	BROWN	38	43 ft
6	LIMESTONE	STONES	SHALE	GREY	43	44 ft
7	LIMESTONE	STONES	ROCK	GREY	44	53 ft

End of Record

17

Easting:	713714.00
Northing:	4938023.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5111988

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 2104
Well Completion Date: 08/26/1986
Received Date: 09/17/1986

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 12.4968
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 14
Final Level: 22 ft
Pump Rate: 8 GPM
Recom. Rate: n/a GPM

Pipe ID: 10888610
Pump Test ID 995111988
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 20

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930560725	6	inch	STEEL	n/a	41 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	MEDIUM-GRAINED	n/a	BROWN	0	1 ft
2	CLAY	MEDIUM-GRAINED	n/a	BROWN	1	5 ft
3	GRAVEL	CLAY	STONES	GREY	5	39 ft
4	COARSE GRAVEL	n/a	n/a	BROWN	39	41 ft

End of Record

17

Easting:	699013.90
Northing:	4940623.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: **5111990**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 4923
Well Completion Date: 08/09/1986
Received Date: 09/23/1986

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.812
Depth to Bedrock (m): 59
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 8
Final Level: 40 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10888612
Pump Test ID 995111990
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930560727	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLACK	0	1 ft
2	CLAY	STONES	n/a	GREY	1	59 ft
3	LIMESTONE	SHALE	n/a	GREY	59	60 ft
4	LIMESTONE	LAYERED	n/a	GREY	60	65 ft

End of Record

17

Easting:	705014.90
Northing:	4942124.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: **5112116**

TION

Lot: 012
Con: n/a
Municipality:

Tag:
Audit No: 05739
Contractor License: 2104

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LOCA

Township: SMITH TOWNSHIP
Street:
City: n/a

Well Completion Date: 12/03/1986
Received Date: 12/17/1986

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 33.528
Depth to Bedrock (m): 67
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 35
Final Level: 95 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 10888736
Pump Test ID 995112116
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREV. DRILLED	n/a	n/a	n/a	0	67 ft
2	LIMESTONE	POROUS	HARD	GREY	67	110 ft

End of Record

17

Easting:	732366.00
Northing:	4912117.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: 5112410

LOCATION

Lot: n/a
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 4814
Well Completion Date: 08/28/1986
Received Date: 06/16/1987

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): 51
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 16
Final Level: 22 ft
Pump Rate: 18 GPM
Recom. Rate: 6 GPM

Pipe ID: 10889030
Pump Test ID 995112410
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561194	6	inch	STEEL	n/a	51 ft
2	930561195	6	inch	OPEN HOLE	n/a	54 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	SAND	CLAY	FILL	BROWN	0	4 ft
2	CLAY	STONES	n/a	BROWN	4	18 ft
3	CLAY	STONES	n/a	GREY	18	26 ft
4	GRAVEL	STONES	n/a	GREY	26	38 ft
5	CLAY	GRAVEL	n/a	GREY	38	46 ft
6	GRAVEL	n/a	n/a	GREY	46	51 ft
7	LIMESTONE	ROCK	n/a	GREY	51	54 ft

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End of Record

17

Easting:	709164.10
Northing:	4918647.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: 5112681

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 12844
Contractor License: 1672
Well Completion Date: 08/22/1987
Received Date: 10/01/1987

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 4
Final Level: 12 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID: 10889300
Pump Test ID 995112681
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561476	6	inch	STEEL	n/a	30 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	2 ft
2	CLAY	SAND	n/a	n/a	2	8 ft
3	SAND	GRAVEL	n/a	n/a	8	30 ft

End of Record

18

Easting:	271529.70
Northing:	4947772.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: 5112921

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 1921
Well Completion Date: 02/26/1987
Received Date: 01/26/1988

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 14.6304
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 5
Final Level: 12 ft
Pump Rate: 20 GPM
Recom. Rate: 10 GPM

Pipe ID: 10889538
Pump Test ID 995112921
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561728	6	inch	<null>	n/a	48 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	SAND	BOULDERS	n/a	BROWN	1	15 ft

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3	CLAY	SANDY	STONES	GREY	15	44	ft
4	GRAVEL	SANDY	CLAY	BROWN	44	48	ft

End of Record

17

Easting:	728165.10
Northing:	4923623.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5112971

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 23945
Contractor License: 2104
Well Completion Date: 01/12/1988
Received Date: 02/16/1988

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Rotary (Air)

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: n/a
Pump Set (m): n/a
SWL (ft) n/a
Final Level: n/a ft
Pump Rate: n/a GPM
Recom. Rate: n/a GPM

Pipe ID: 10889588
Pump Test ID 995112971
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930561784	6	inch	STEEL	n/a	30	ft
2	930561785	6	inch	<null>	n/a	30	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	CLAY	MEDIUM GRAVEL	n/a	BROWN	0	30	ft

End of Record

17

Easting:	703265.10
Northing:	4913273.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5112972

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 23946
Contractor License: 2104
Well Completion Date: 01/12/1988
Received Date: 02/16/1988

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Rotary (Air)

Well Depth (m): 9.144
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: n/a
Pump Set (m): n/a
SWL (ft) n/a
Final Level: n/a ft
Pump Rate: n/a GPM
Recom. Rate: n/a GPM

Pipe ID: 10889589
Pump Test ID 995112972
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930561786	6	inch	STEEL	n/a	30	ft
2	930561787	6	inch	<null>	n/a	30	ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM GRAVEL	n/a	BROWN	0	30 ft

End of Record

17

Easting:	726715.30
Northing:	4902723.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5113048

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 21732
Contractor License: 2104
Well Completion Date: 03/03/1988
Received Date: 04/08/1988

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Rotary (Air)

Well Depth (m): 39.0144
Depth to Bedrock (m): 63
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 125 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pipe ID: 10889665
Pump Test ID 995113048
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561862	6	inch	STEEL	n/a	63 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM-GRAINED	n/a	GREY	0	31 ft
2	CLAY	STONES	DENSE	GREY	31	62 ft
3	GRAVEL	LOOSE	n/a	GREY	62	63 ft
4	LIMESTONE	LAYERED	n/a	GREY	63	128 ft

End of Record

17

Easting:	726415.30
Northing:	4911823.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5113049

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 21733
Contractor License: 2104
Well Completion Date: 03/03/1987
Received Date: 04/08/1988

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Rotary (Air)

Well Depth (m): 26.2128
Depth to Bedrock (m): 60
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 6
Final Level: 85 ft
Pump Rate: 1 GPM
Recom. Rate: 1 GPM

Pipe ID: 10889666
Pump Test ID 995113049
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561863	6	inch	STEEL	n/a	60 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	MEDIUM-GRAINED	n/a	GREY	0	27 ft
2	CLAY	STONES	DENSE	GREY	27	59 ft
3	GRAVEL	LOOSE	n/a	GREY	59	60 ft
4	LIMESTONE	LAYERED	n/a	GREY	60	86 ft

End of Record

17

Easting:	714315.00
Northing:	4955374.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5113054

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 21748
Contractor License: 2104
Well Completion Date: 03/16/1988
Received Date: 04/11/1988

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 15.5448
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 0
Final Level: 39 ft
Pump Rate: 15 GPM
Recom. Rate: 12 GPM

Pipe ID: 10889671
Pump Test ID 995113054
Flowing: N
Pump Duration (hr): 5
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930561869	6	inch	STEEL	n/a	51 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	MEDIUM-GRAINED	n/a	BROWN	0	6 ft
2	STONES	SAND	GRAVEL	BROWN	6	22 ft
3	GRAVEL	MEDIUM SAND	CLAY	BROWN	22	51 ft

End of Record

18

Easting:	277629.70
Northing:	4930522.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5113411

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 2104
Well Completion Date: 10/03/1988
Received Date: 10/31/1988

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 44.196
Depth to Bedrock (m): 85
Depth to Water: ft
Water Kind: Not stated

UMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 143 ft
Pump Rate: 1

Pipe ID: 10890027
Pump Test ID 995113411
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

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PI

Recom. Rate: 1 GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	PREV. DRILLED	n/a	n/a	n/a	0	85 ft
2	LIMESTONE	POROUS	n/a	GREY	85	145 ft

End of Record

17

Easting:	710715.10
Northing:	4911623.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5113705

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 4814
Well Completion Date: 11/18/1988
Received Date: 02/09/1989

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.4592
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) -18
Final Level: 6 ft
Pump Rate: 11 GPM
Recom. Rate: 6 GPM

Pipe ID: 10890321
Pump Test ID 995113705
Flowing: Y
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930562557	6	inch	STEEL	n/a	54 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	16 ft
3	CLAY	STONES	n/a	GREY	16	32 ft
4	FINE GRAVEL	COARSE GRAVEL	STONES	n/a	32	44 ft
5	GRAVEL	CLAY	n/a	GREY	44	50 ft
6	FINE GRAVEL	COARSE GRAVEL	n/a	n/a	50	54 ft

End of Record

17

Easting:	708705.10
Northing:	4918491.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: 5114122

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 27538
Contractor License: 1921
Well Completion Date: 05/23/1989
Received Date: 10/16/1989

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.0312
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

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PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 15
Final Level: n/a ft
Pump Rate: 7 GPM
Recom. Rate: 6 GPM

Pipe ID: 10890737
Pump Test ID 995114122
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930563008	6	inch	STEEL	n/a	70 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	MUCK	n/a	n/a	BLUE	0	4 ft
2	FILL	n/a	n/a	BROWN	4	6 ft
3	CLAY	SANDY	STONES	BROWN	6	20 ft
4	CLAY	STONES	n/a	GREY	20	45 ft
5	SAND	GRAVEL	n/a	GREY	45	69 ft

End of Record

17

Easting:	700406.10
Northing:	4903309.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: 5114124

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 27539
Contractor License: 1921
Well Completion Date: 05/18/1989
Received Date: 10/16/1989

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.2024
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 58 ft
Pump Rate: 6 GPM
Recom. Rate: 5 GPM

Pipe ID: 10890739
Pump Test ID 995114124
Flowing: N
Pump Duration (hr): n/a
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930563010	8	inch	OPEN HOLE	n/a	20 ft
2	930563011	6	inch	STEEL	n/a	63 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	n/a	n/a	BROWN	0	3 ft
2	MUCK	n/a	n/a	BLUE	3	8 ft
3	CLAY	SANDY	STONES	BROWN	8	60 ft
4	GRAVEL	SANDY	CLAY	BROWN	60	63 ft

End of Record

17

Easting:	708711.20
Northing:	4895705.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: 5114134

OCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:

Tag:
Audit No: 64201
Contractor License: 1921
Well Completion Date: 09/27/1989
Received Date:

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LOCATION

City: n/a

10/13/1989

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 20.4216
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 45 ft
Pump Rate: 10 GPM
Recom. Rate: 8 GPM

Pipe ID: 10890749
Pump Test ID 995114134
Flowing: N
Pump Duration (hr): 3
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930563022	6	inch	<null>	n/a	68 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	FILL	n/a	n/a	BROWN	0	4 ft
2	CLAY	SANDY	STONES	BROWN	4	20 ft
3	CLAY	SANDY	STONES	GREY	20	66 ft
4	GRAVEL	SANDY	n/a	BROWN	66	67 ft

End of Record

18

Easting:	265227.60
Northing:	4922520.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: **5114476**

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: NA
Contractor License: 1921
Well Completion Date: 10/30/1989
Received Date: 04/12/1990

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 16 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 10891091
Pump Test ID 995114476
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930563390	8	inch	OPEN HOLE	n/a	21 ft
2	930563391	6	inch	STEEL	n/a	35 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	SANDY	STONES	BROWN	0	22 ft
2	GRAVEL	SAND	n/a	BROWN	22	35 ft

End of Record

17

Easting:	708705.10
Northing:	4918491.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: **5114518**

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LOCATION

Lot:		**Tag:**	
Con:	n/a	**Audit No:**	76354
Municipality:	PETERBOROUGH	**Contractor License:**	2104
Township:	SMITH TOWNSHIP	**Well Completion Date:**	04/24/1990
Street:		**Received Date:**	05/16/1990
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	9.4488
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	Not stated

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10891133
Pump Set (m):	n/a	**Pump Test ID**	995114518
SWL (ft)	0	**Flowing:**	N
Final Level:	21 ft	**Pump Duration (hr):**	1
Pump Rate:	15 GPM	**Pump Duration (m):**	0
Recom. Rate:	15 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930563438	6	inch	STEEL	n/a	27 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	2 ft
2	CLAY	GRAVEL	SAND	GREY	2	25 ft
3	SAND	n/a	n/a	BROWN	25	31 ft

End of Record

17

Easting:	707038.10
Northing:	4919681.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: **5115847**

LOCATION

Lot:	n/a	**Tag:**	
Con:	n/a	**Audit No:**	110230
Municipality:	PETERBOROUGH	**Contractor License:**	4814
Township:	SMITH TOWNSHIP	**Well Completion Date:**	09/26/1991
Street:		**Received Date:**	05/06/1992
City:	n/a		

WELL

Well Status:	Water Supply	**Well Depth (m):**	14.0208
Prim. Use:	n/a	**Depth to Bedrock (m):**	34
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	FRESH

PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	10892461
Pump Set (m):	n/a	**Pump Test ID**	995115847
SWL (ft)	24	**Flowing:**	N
Final Level:	30 ft	**Pump Duration (hr):**	2
Pump Rate:	11 GPM	**Pump Duration (m):**	0
Recom. Rate:	6 GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930564969	6	inch	STEEL	n/a	34 ft
2	930564970	6	inch	OPEN HOLE	n/a	46 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	5 ft
2	CLAY	STONES	n/a	BROWN	5	18 ft
3	CLAY	STONES	n/a	GREY	18	30 ft
4	GRAVEL	STONES	n/a	GREY	30	34 ft
5	LIMESTONE	ROCK	n/a	GREY	34	46 ft

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End of Record

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	

Latitude: 44.382289
Longitude: -78.383922

Well ID: 5116173

LOCATION

Lot: 012
Con: 04
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 107254
Contractor License: 1455
Well Completion Date: 05/19/1992
Received Date: 03/03/1993

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 16.1544
Depth to Bedrock (m): 53
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 22
Final Level: 42 ft
Pump Rate: 5 GPM
Recom. Rate: 4 GPM

Pipe ID: 10892787
Pump Test ID 995116173
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930565373	6	inch	STEEL	n/a	50	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	CLAY	STONES	FILL	BROWN	0	7	ft
2	CLAY	STONES	n/a	BROWN	7	17	ft
3	CLAY	STONES	n/a	GREY	17	50	ft
4	SAND	GRAVEL	CLAY	n/a	50	51	ft
5	SAND	GRAVEL	n/a	n/a	51	53	ft
6	LIMESTONE	ROCK	n/a	GREY	n/a	n/a	ft

End of Record

17

Easting:	740302.20
Northing:	4966090.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382199

Well ID: 5116179

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 107292
Contractor License: 1455
Well Completion Date: 09/21/1992
Received Date: 03/03/1993

WELL

Well Status: Abandoned-Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Not Known

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water:
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930565379	30	inch	<null>	n/a	n/a	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

17

Easting:	721141.00
Northing:	4932305.00
Elev (masl):	265.98

Latitude: 44.374462
Longitude: -78.378283

Well ID: 5117072

LOCATION

Lot: 011
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 163792
Contractor License: 2104
Well Completion Date: 10/02/1995
Received Date: 10/05/1995

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 23.1648
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 25
Final Level: 68 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 10893676
Pump Test ID 995117072
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930566534	6	inch	STEEL	n/a	72 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	CLAY	BOULDERS	HARD	BROWN	0	18 ft
2	CLAY	HARDPAN	MEDIUM GRAVEL	GREY	18	72 ft
3	GRAVEL	SAND	WATER-BEARING	GREY	72	76 ft

End of Record

18

Easting:	276543.70
Northing:	4936530.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5117073

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 163791
Contractor License: 2104
Well Completion Date: 09/28/1995
Received Date: 10/04/1995

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Rotary (Air)

Well Depth (m): 12.192
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Not stated

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 18
Final Level: 32 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10893677
Pump Test ID 995117073
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930566535	6	inch	STEEL	n/a	40 ft

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	SAND	n/a	n/a	BROWN	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	35 ft
3	CLAY	STONES	GRAVEL	GREY	35	40 ft

End of Record

17

Easting:	703419.90
Northing:	4934216.00
Elev (masl):	262.02

Latitude: 44.380043
Longitude: -78.37433

Well ID: 5117716

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 180137
Contractor License: 1455
Well Completion Date: 08/22/1997
Received Date: 01/22/1998

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 19.2024
Depth to Bedrock (m): 57
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 7
Final Level: 55 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 10894315
Pump Test ID 995117716
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 30

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930567441	6	inch	STEEL	n/a	47 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	24 ft
3	CLAY	STONES	n/a	GREY	24	45 ft
4	SAND	n/a	n/a	BROWN	45	51 ft
5	CLAY	n/a	n/a	GREY	51	57 ft
6	LIMESTONE	n/a	n/a	GREY	57	63 ft

End of Record

17

Easting:	708351.20
Northing:	4900067.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5118153

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 199272
Contractor License: 2104
Well Completion Date: 07/22/1999
Received Date: 07/27/1999

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 13.716
Depth to Bedrock (m): 40
Depth to Water: ft
Water Kind: FRESH

UMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 12
Final Level: 23 ft
Pump Rate: 5

Pipe ID: 10894752
Pump Test ID 995118153
Flowing: N
Pump Duration (hr): 4
Pump Duration (m): 0

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PI

Recom. Rate: 5 GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930568095	6	inch	STEEL	n/a	45 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BLACK	0	1 ft
2	CLAY	STONES	n/a	GREY	1	40 ft
3	SHALE	GRAVEL	n/a	GREY	40	45 ft

End of Record

17

Easting:	713477.00
Northing:	4930927.00
Elev (masl):	263.98

Latitude: 44.381762
Longitude: -78.382164

Well ID: 5118414

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 190838
Contractor License: 1455
Well Completion Date: 02/02/1999
Received Date: 03/09/2000

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 21.0312
Depth to Bedrock (m): 41
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 20
Final Level: 60 ft
Pump Rate: 4 GPM
Recom. Rate: 3 GPM

Pipe ID: 10895013
Pump Test ID 995118414
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930568464	6	inch	STEEL	n/a	43 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	BROWN	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	14 ft
3	CLAY	STONES	n/a	GREY	14	41 ft
4	CLAY	SHALE	ROCK	GREY	41	43 ft
5	LIMESTONE	ROCK	n/a	GREY	43	69 ft

End of Record

17

Easting:	730450.10
Northing:	4959716.00
Elev (masl):	263.91

Latitude: 44.381763
Longitude: -78.382202

Well ID: 5118538

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 220995
Contractor License: 2104
Well Completion Date: 10/04/2000
Received Date: 10/13/2000

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Not Known

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water:
Water Kind:

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PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	930568648	6	inch	STEEL	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

17

Easting:	691201.10
Northing:	4956452.00
Elev (masl):	260.80

Latitude: 44.381329
Longitude: -78.383701

Well ID: 5119394

LOCATION

Lot: 011
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street:
City: n/a

Tag:
Audit No: 234588
Contractor License: 1455
Well Completion Date: 06/25/2002
Received Date: 02/07/2003

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 25.2984
Depth to Bedrock (m): 62
Depth to Water:
Water Kind:

PUMP TEST

Test Method: CLEAR
Pump Set (m): n/a
SWL (ft) 41
Final Level: 70 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 11089372
Pump Test ID 995119394
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	1 ft
2	CLAY	STONES	n/a	BROWN	1	24 ft
3	CLAY	STONES	n/a	GREY	24	40 ft
4	CLAY	STONES	n/a	BROWN	40	62 ft
5	GRAVEL	ROCK	LIMESTONE	n/a	62	63 ft
6	LIMESTONE	ROCK	n/a	GREY	63	83 ft

End of Record

17

Easting:	718680.10
Northing:	4928395.00
Elev (masl):	267.58

Latitude: 44.378203
Longitude: -78.384003

Well ID: 5120154

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 1815 CHARLES STREET
City: BRIDGEWORTH

Tag: A015334
Audit No: Z15363
Contractor License: 1455
Well Completion Date: 09/01/2004
Received Date: 01/27/2005

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WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 40.8
Depth to Bedrock (m): 67
Depth to Water: m
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 28
SWL (ft) 5.2
Final Level: 14.6m
Pump Rate: 13.6LPM
Recom. Rate: 13.6LPM

Pipe ID: 11344442
Pump Test ID 11354011
Flowing: n/a
Pump Duration (hr): 1
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930867132	15.9	cm	STEEL	0	20.4	m
2	930867133	n/a	cm	OPEN HOLE	20.4	40.8	m

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	SAND	n/a	BROWN	0	0.9	m
2	CLAY	n/a	n/a	BROWN	0.9	2.8	m
3	CLAY	GRAVEL	n/a	BROWN	2.8	5.4	m
4	CLAY	SAND	n/a	BROWN	5.4	10.7	m
5	CLAY	GRAVEL	SAND	GREY	10.7	19	m
6	CLAY	GRAVEL	BOULDERS	GREY	19	20.4	m
7	LIMESTONE	ROCK	n/a	GREY	20.4	40.8	m

End of Record

17

Easting:	710873.00
Northing:	4959414.00
Elev (masl):	255.34

Latitude: 44.382016
Longitude: -78.38539

Well ID: **5120157**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 1069 GORE STREET
City: BRIDGEWORTH

Tag: A015296
Audit No: Z15372
Contractor License: 1455
Well Completion Date: 09/23/2004
Received Date: 01/27/2005

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 18
Depth to Bedrock (m): 41
Depth to Water: m
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 15
SWL (ft) 2
Final Level: 4.6 m
Pump Rate: 56.8LPM
Recom. Rate: 48.4LPM

Pipe ID: 11344445
Pump Test ID 11354014
Flowing: n/a
Pump Duration (hr): 1
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930867138	15.9	cm	STEEL	0	13.3	m
2	930867139	n/a	cm	OPEN HOLE	13.3	18.8	m

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	BROWN	0	0.9	m
2	CLAY	n/a	n/a	BROWN	0.9	5	m
3	GRAVEL	n/a	n/a	BROWN	5	7.6	m
4	CLAY	GRAVEL	n/a	GREY	7.6	12.5	m
5	SHALE	n/a	n/a	GREY	12.5	13.2	m
6	n/a	n/a	n/a	n/a	13.2	18	m

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End of Record

17

Easting:	704975.90
Northing:	4920096.00
Elev (masl):	266.15

Latitude: 44.382811
Longitude: -78.374521

Well ID: **5120599**

LOCATION

Lot: 011
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 2839 BRUMMWELL ST
City: BRIDGENORTH

Tag: A039625
Audit No: Z33086
Contractor License: 3367
Well Completion Date: 02/28/2006
Received Date: 04/05/2006

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 28.3464
Depth to Bedrock (m): 80
Depth to Water: ft
Water Kind: SULPHUR

PUMP TEST

Test Method: n/a
Pump Set (m): 91
SWL (ft) 7.6
Final Level: 31 ft
Pump Rate: 2.5 GPM
Recom. Rate: 2.5 GPM

Pipe ID: 11565378
Pump Test ID 11572876
Flowing: n/a
Pump Duration (hr): 1
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	930876765	6.25	inch	STEEL	0	80	ft
2	930876766	n/a	inch	OPEN HOLE	80	93	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	BLACK	0	1	ft
2	SAND	STONES	n/a	BROWN	1	18	ft
3	CLAY	STONES	n/a	GREY	18	52	ft
4	CLAY	GRAVEL	SAND	GREY	52	53	ft
5	CLAY	GRAVEL	n/a	GREY	53	80	ft
6	LIMESTONE	SAND	n/a	GREY	80	93	ft

End of Record

17

Easting:	709064.00
Northing:	4917664.00
Elev (masl):	269.62

Latitude: 44.382104
Longitude: -78.375494

Well ID: **7054236**

LOCATION

Lot: 012
Con: 06
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 2819 BRUMWELL RD
City: BRIDGENORTH

Tag: A044970
Audit No: Z50200
Contractor License: 4635
Well Completion Date: 06/28/2007
Received Date: 12/28/2007

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 29.1
Depth to Bedrock (m): n/a
Depth to Water: m
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 27.9
SWL (ft) 3.6
Final Level: 21 m
Pump Rate: 13.5 LPM
Recom. Rate: 15.7 LPM

Pipe ID: 29054236
Pump Test ID 27054236
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	42154236	15.5	cm	STEEL	0	28.2	m
2	42254236	n/a	cm	OPEN HOLE	28.2	29.1	m

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FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	TOPSOIL	n/a	n/a	n/a	0	0.6 m
2	CLAY	TOPSOIL	n/a	BROWN	0.6	2.4 m
3	CLAY	GRAVEL	n/a	GREY	2.4	6 m
4	GRAVEL	CLAY	n/a	GREY	6	28.2 m
5	LIMESTONE	n/a	n/a	GREY	28.2	29.1 m

End of Record

17

Easting:	644941.00
Northing:	4852245.00
Elev (masl):	271.11

Latitude: 44.37995
Longitude: -78.382043

Well ID: 7106724

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: GORE ST
City: BRIDGENORTH

Tag:
Audit No: Z80035
Contractor License: 3367
Well Completion Date: 04/16/2008
Received Date: 06/19/2008

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: n/a

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1001716689	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

17

Easting:	509786.00
Northing:	4861549.00
Elev (masl):	271.60

Latitude: 44.379752
Longitude: -78.381637

Well ID: 7106725

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: GORE ST
City: BRIDGENORTH

Tag: _NO_TAG
Audit No: Z80036
Contractor License: 3367
Well Completion Date: 04/16/2008
Received Date: 06/19/2008

WELL

Well Status: Abandoned-Other
Prim. Use: n/a
Sec. Use: n/a
Boring Method: n/a

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

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CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1001716707	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	269.63

Latitude: 44.38707
Longitude: -78.380834

Well ID: 7137274

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 945 SHARON CRT
City: BRIDGENORTH

Tag: A090126
Audit No: Z103782
Contractor License: 3367
Well Completion Date: 10/10/2009
Received Date: 01/04/2010

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: n/a

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1002997100	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	269.64

Latitude: 44.387327
Longitude: -78.380659

Well ID: 7137275

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 949 SHARON COURT
City: BRIDGENORTH

Tag: A090127
Audit No: Z103781
Contractor License: 3367
Well Completion Date: 10/10/2009
Received Date: 01/04/2010

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: n/a

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

TEST

Test Method:
Pump Set (m):
SWL (ft)

Pipe ID:
Pump Test ID
Flowing:

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PUMP

Final Level: **Pump Duration (hr):**
Pump Rate: **Pump Duration (m):**
Recom. Rate:

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1002997122	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	266.67

Latitude: 44.387591
Longitude: -78.381965

Well ID: **7151123**

LOCATION

Lot: 012 **Tag:** A090158
Con: 07 **Audit No:** Z116953
Municipality: PETERBOROUGH **Contractor License:** 3367
Township: SMITH TOWNSHIP **Well Completion Date:** 07/05/2010
Street: 1087 EAST COMMUNICATION ROAD **Received Date:** 09/13/2010
City: Smith-Ennismore-Lakefield

WELL

Well Status: Water Supply **Well Depth (m):** 10.9728
Prim. Use: n/a **Depth to Bedrock (m):** n/a
Sec. Use: Domestic **Depth to Water:** ft
Boring Method: Cable Tool **Water Kind:** Untested

PUMP TEST

Test Method: CLEAR **Pipe ID:** 1003410624
Pump Set (m): 25 **Pump Test ID** 1003410625
SWL (ft) 2 **Flowing:** N
Final Level: 20 ft **Pump Duration (hr):** 1
Pump Rate: 5 GPM **Pump Duration (m):** n/a
Recom. Rate: 5 GPM

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	1003410630	6.25	inch	STEEL	-2	36 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	n/a	n/a	n/a	n/a	0	36 ft

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	274.16

Latitude: 44.385799
Longitude: -78.379196

Well ID: **7151124**

LOCATION

Lot: n/a **Tag:** A097083
Con: n/a **Audit No:** Z111962
Municipality: PETERBOROUGH **Contractor License:** 3367
Township: SMITH TOWNSHIP **Well Completion Date:** 05/28/2010
Street: 1042 BRIAR PL. **Received Date:** 09/13/2010
City: BRIDGENORTH

WELL

Well Status: Water Supply **Well Depth (m):** 0
Prim. Use: n/a **Depth to Bedrock (m):** n/a
Sec. Use: n/a **Depth to Water:** ft
Boring Method: Cable Tool **Water Kind:**

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PUMP TEST

Test Method:	CLEAR	**Pipe ID:**	1003410662
Pump Set (m):	n/a	**Pump Test ID**	1003410663
SWL (ft)	22	**Flowing:**	N
Final Level:	n/a ft	**Pump Duration (hr):**	n/a
Pump Rate:	n/a GPM	**Pump Duration (m):**	n/a
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	1003410668	6.25	inch	STEEL	-2	44 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	259.44

Latitude: 44.380467
Longitude: -78.384957

Well ID: 7164840

LOCATION

Lot:	n/a	**Tag:**	
Con:	n/a	**Audit No:**	M08505
Municipality:	PETERBOROUGH	**Contractor License:**	6607
Township:	SMITH TOWNSHIP	**Well Completion Date:**	05/17/2011
Street:		**Received Date:**	07/06/2011
City:	n/a		

WELL

Well Status:	<null>	**Well Depth (m):**	0
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	
Boring Method:		**Water Kind:**	

PUMP TEST

Test Method:		**Pipe ID:**	
Pump Set (m):		**Pump Test ID**	
SWL (ft)		**Flowing:**	
Final Level:		**Pump Duration (hr):**	
Pump Rate:		**Pump Duration (m):**	
Recom. Rate:			

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	256.18

Latitude: 44.382834
Longitude: -78.384939

Well ID: 7170157

LOCATION

Lot:	012	**Tag:**	A113737
Con:	n/a	**Audit No:**	Z133048
Municipality:	PETERBOROUGH	**Contractor License:**	3367
Township:	SMITH TOWNSHIP	**Well Completion Date:**	06/15/2011
Street:	869 GARTHORNE	**Received Date:**	10/18/2011
City:	BRIDGENORTH		

:LL

Well Status:	Water Supply	**Well Depth (m):**	19.5072
Prim. Use:		**Depth to Bedrock (m):**	n/a

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WE

Sec. Use: n/a
Boring Method: Cable Tool

Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 59
SWL (ft) 11.417
Final Level: 35.3ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 1004014312
Pump Test ID 1004014313
Flowing: n/a
Pump Duration (hr): 2
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1004014321	6.25	inch	STEEL	0	47	ft
2	1004014322	6.25	inch	OPEN HOLE	47	62	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	CLAY	STONES	PACKED	GREY	0	46	ft
2	CLAY	SAND	WATER-BEARING	BLACK	46	47	ft
3	LIMESTONE	n/a	HARD	GREY	47	62	ft
4	n/a	n/a	n/a	n/a	62	64	ft

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	257.32

Latitude: 44.386272
Longitude: -78.383694

Well ID: 7174788

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 917 KELLY BLVD.
City: BRIDGENORTH

Tag: A121047
Audit No: Z142716
Contractor License: 2662
Well Completion Date: 11/16/2011
Received Date: 01/11/2012

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 9.4488
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: Untested

PUMP TEST

Test Method: CLEAR
Pump Set (m): 24
SWL (ft) 2
Final Level: 21.3ft
Pump Rate: 7 GPM
Recom. Rate: 7 GPM

Pipe ID: 1004090925
Pump Test ID 1004090926
Flowing: N
Pump Duration (hr): 1
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1004090935	6.25	inch	STEEL	2	20	ft
2	1004090936	5.25	inch	STEEL	24	31	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	CLAY	STONES	n/a	BROWN	0	15	ft
2	CLAY	GRAVEL	n/a	GREY	15	20	ft
3	GRAVEL	n/a	n/a	BROWN	20	23	ft
4	CLAY	n/a	n/a	GREY	23	26	ft
5	LIMESTONE	n/a	n/a	GREY	26	31	ft

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	255.56

Latitude: 44.382837
Longitude: -78.385065

Well ID: 7175314

ON

Lot: 012
Con:

Tag:
Audit No: Z139575

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LOCATION

Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 869 GARTHORNE RD
City: BRIDGENORTH

Contractor License: 3367
Well Completion Date: 10/25/2011
Received Date: 01/19/2012

WELL

Well Status: Abandoned-Other
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method:
Pump Set (m):
SWL (ft)
Final Level:
Pump Rate:
Recom. Rate:

Pipe ID:
Pump Test ID
Flowing:
Pump Duration (hr):
Pump Duration (m):

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1004135657	6.25	inch	STEEL	0	4	ft
2	1004135658	6.25	inch	STEEL	4	39	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	265.75

Latitude: 44.379481
Longitude: -78.383206

Well ID: 7175324

LOCATION

Lot: n/a
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 1027 WILCOX
City: n/a

Tag: A123322
Audit No: Z139594
Contractor License: 3367
Well Completion Date: 11/28/2011
Received Date: 01/19/2012

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 24.9936
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 78
SWL (ft) 17
Final Level: 28.8 ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 1004136996
Pump Test ID 1004136997
Flowing: N
Pump Duration (hr): 20
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1004137006	6.25	inch	STEEL	2	44	ft
2	1004137007	5	inch	STEEL	42	82	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	SOFT	BROWN	0	1	ft
2	CLAY	SAND	SOFT	BROWN	1	19	ft
3	n/a	SAND	LOOSE	BROWN	19	42	ft
4	GRAVEL	CLAY	PACKED	GREY	42	51	ft
5	LIMESTONE	n/a	HARD	GREY	51	82	ft

End of Record

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n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	265.08

Latitude: 44.385537
Longitude: -78.38266

Well ID: 7188139

LOCATION

Lot:	012	**Tag:**	A131505
Con:	n/a	**Audit No:**	Z150019
Municipality:	PETERBOROUGH	**Contractor License:**	3367
Township:	SMITH TOWNSHIP	**Well Completion Date:**	06/12/2012
Street:	913 WARD ST	**Received Date:**	09/27/2012
City:	BRIDGENORTH		

WELL

Well Status:	Water Supply	**Well Depth (m):**	10.9728
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	Cable Tool	**Water Kind:**	Untested

PUMP TEST

Test Method:	n/a	**Pipe ID:**	1004455345
Pump Set (m):	n/a	**Pump Test ID**	1004455346
SWL (ft)	2	**Flowing:**	n/a
Final Level:	n/a ft	**Pump Duration (hr):**	n/a
Pump Rate:	n/a GPM	**Pump Duration (m):**	n/a
Recom. Rate:	n/a GPM		

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
1	1004455352	6.25	inch	STEEL	-2	6 ft
2	1004455353	6.25	inch	STEEL	6	36 ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	n/a	n/a	n/a	n/a	0	6 ft
2	n/a	n/a	n/a	n/a	6	36 ft

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	260.06

Latitude: 44.382072
Longitude: -78.38427

Well ID: 7236831

LOCATION

Lot:	012	**Tag:**	A146310
Con:	06	**Audit No:**	Z169473
Municipality:	PETERBOROUGH	**Contractor License:**	1455
Township:	SMITH TOWNSHIP	**Well Completion Date:**	01/30/2014
Street:	868 WARD ST.	**Received Date:**	01/30/2015
City:	BRIDGE NORTH		

WELL

Well Status:	Abandoned-Other	**Well Depth (m):**	0
Prim. Use:	n/a	**Depth to Bedrock (m):**	n/a
Sec. Use:	n/a	**Depth to Water:**	ft
Boring Method:	n/a	**Water Kind:**	

PUMP TEST

Test Method:		**Pipe ID:**	
Pump Set (m):		**Pump Test ID**	
SWL (ft)		**Flowing:**	
Final Level:		**Pump Duration (hr):**	
Pump Rate:		**Pump Duration (m):**	
Recom. Rate:			

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1005495092	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth

End of Record

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n/a		
	Easting:	<null>
	Northing:	<null>
	Elev (masl):	266.06

Latitude: 44.386317
Longitude: -78.382148

Well ID: 7236832

LOCATION

Lot: 012
Con: 07
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 929 WARD ST.
City: BRIDGE NORTH

Tag: A146313
Audit No: Z169476
Contractor License: 1455
Well Completion Date: 04/18/2014
Received Date: 01/30/2015

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 10.668
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method: CLEAR
Pump Set (m): 20
SWL (ft) 1
Final Level: 12.5ft
Pump Rate: 5 GPM
Recom. Rate: 5 GPM

Pipe ID: 1005495096
Pump Test ID 1005495097
Flowing: N
Pump Duration (hr): 2
Pump Duration (m): 0

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1005495104	6.25	inch	STEEL	0	35	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth	
1	TOPSOIL	n/a	n/a	BROWN	0	1	ft
2	CLAY	STONES	n/a	BROWN	1	22	ft
3	CLAY	STONES	n/a	GREY	22	27	ft
4	COARSE SAND	GRAVEL	n/a	BROWN	27	35	ft

End of Record

---

n/a		
	Easting:	<null>
	Northing:	<null>
	Elev (masl):	268.85

Latitude: 44.3767
Longitude: -78.384798

Well ID: 7271068

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 1017 MAITLAND STREET
City: BRIDGENORTH

Tag: A207974
Audit No: Z240778
Contractor License: 6069
Well Completion Date: 08/07/2010
Received Date: 09/08/2016

WELL

Well Status: Water Supply
Prim. Use: n/a
Sec. Use: n/a
Boring Method: Cable Tool

Well Depth (m): 44.8056
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind: FRESH

PUMP TEST

Test Method: CLEAR
Pump Set (m): 146
SWL (ft) 18
Final Level: 146 ft
Pump Rate: 10 GPM
Recom. Rate: 5 GPM

Pipe ID: 1006281930
Pump Test ID 1006281931
Flowing: n/a
Pump Duration (hr): 4
Pump Duration (m): n/a

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth	
1	1006281945	6.25	inch	STEEL	5	66	ft
2	1006281946	6	inch	OPEN HOLE	66	147	ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

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Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
1	LIMESTONE	ROCK	QUARTZ	GREY	0	98 ft
2	LIMESTONE	ROCK	QUARTZ	GREY	98	102 ft
3	LIMESTONE	ROCK	QUARTZ	GREY	102	123 ft
4	LIMESTONE	ROCK	HARD	GREY	123	129 ft
5	LIMESTONE	ROCK	QUARTZ	GREY	129	133 ft
6	LIMESTONE	ROCK	HARD	GREY	133	138 ft
7	LIMESTONE	ROCK	HARD	GREY	138	140 ft
8	LIMESTONE	ROCK	HARD	GREY	140	147 ft
9	n/a	n/a	n/a	n/a	147	n/a ft

End of Record

---

n/a

Easting:	<null>
Northing:	<null>
Elev (masl):	257.04

Latitude: 44.378888
Longitude: -78.386383

Well ID: **7286687**

LOCATION

Lot: 012
Con: n/a
Municipality: PETERBOROUGH
Township: SMITH TOWNSHIP
Street: 805 SIMCOE ST
City: BRIDGENORTH

Tag: A216115
Audit No: Z245924
Contractor License: 7364
Well Completion Date: 05/10/2017
Received Date: 05/15/2017

WELL

Well Status: <null>
Prim. Use: n/a
Sec. Use: n/a
Boring Method: n/a

Well Depth (m): 0
Depth to Bedrock (m): n/a
Depth to Water: ft
Water Kind:

PUMP TEST

Test Method: CLEAR
Pump Set (m): 30
SWL (ft) n/a
Final Level: 3 ft
Pump Rate: 4 GPM
Recom. Rate: 4 GPM

Pipe ID: 1006703137
Pump Test ID 1006703138
Flowing: Y
Pump Duration (hr): n/a
Pump Duration (m): 20

CASING DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Case ID	Casing Diamter	Diamter Units	Material	Top Depth	Bottom Depth
0	1006703142	n/a	inch	<null>	n/a	n/a ft

FORMATION DETAILS

Layer Value of "0" denotes a Null value and cannot be stratified and ordered.

Layer	Material	Material 2	Material 3	Colour	Top Depth	Bottom Depth
0	n/a	n/a	n/a	n/a	n/a	n/a ft

End of Record

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Well Record for 1032 East Communication Road

P1 ENC0431D8W

UTM 17 Z 708269 E

5 R 4918823 N

Elev. 5 R 10895

Basin 24

The Ontario Water Resources Commission Act

WATER WELL RECORD

GROUND WATER BRANCH
51 No. 3429
MAY 4 1964
ONTARIO WATER RESOURCES COMMISSION

County or District Peterboro

Township, Village, Town or City Smith

Con. C.B.E. Lot 12

Date completed 22 (day) 2 (month) 64 (year)

[redacted]dress Bridgenorth

Casing and Screen Record		Pumping Test	
Inside diameter of casing	6 5/8	Static level	12'
Total length of casing	72'	Test-pumping rate	10 G.P.M.
Type of screen	—	Pumping level	60'
Length of screen	—	Duration of test pumping	2 hrs
Depth to top of screen	—	Water clear or cloudy at end of test	Clear
Diameter of finished hole	6 1/4"	Recommended pumping rate	5 G.P.M.
		with pump setting of	60' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Top Soil	0	2		
Clay & Boulders	2	18		
Blue clay & Stones	18	70		
Gravel	70	72	72	fresh

For what purpose(s) is the water to be used? NEW HOUSE Domestic

Is well on upland, in valley, or on hillside?

Drilling or Boring Firm W. Sanderson

Address Peterboro

Licence Number 1355

Name of Driller or Borer S. Harrick

Address

Date Apr 2/64

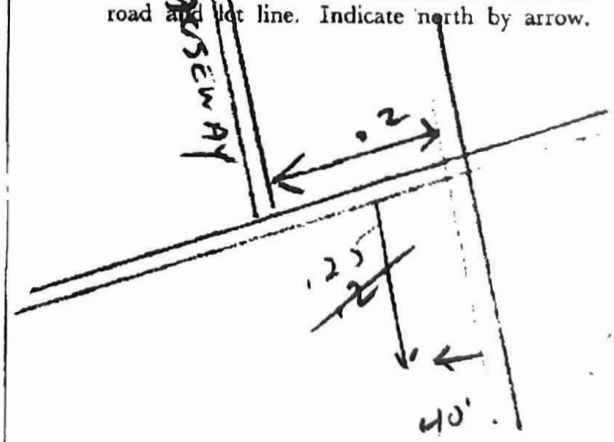
W. Sanderson
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



Appendix B

Test Pit and Borehole Logs

REFERENCE No.: 12637390

BOREHOLE No.: BH1A-24

ELEVATION: 262.9 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

NORTHING: 4917454 EASTING: 709094

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel / Sand / Silt / Clay	Unit Weight	Recovery/ TCR(%)	Moisture Content	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
		262.9		GROUND SURFACE			%	KN/m3	%	%		
0				**TOPSOIL** (610 mm)		SS-1			96	36	1-0-1-2	1
2		262.3		**SILTY SAND** - light brown, compact, wet		SS-2			96	17	4-5-6-9	11
3	1.0											
4						SS-3			100	19	6-9-6-6	15
6	2.0											
7				Very dense		SS-4			100	15	4-50/0"	100+
8												
9												
10	3.0	259.8		**TILL** - Silty Sand, some clay, some gravel, grey, very dense, moist		SS-5	16-38-29-17		100	8	15-31-50/0"	100+
11												
12												
13	4.0											
14												
15						SS-6			100	5	32-48-50/0"	100+
16	5.0											
17												
18												
19												
20	6.0					SS-7			100	12	22-50/6"	100+
21		256.5		**END OF BOREHOLE**								
22												
23	7.0			Notes:								
24												
25				- Borehole terminated at 6.4 m bgs.								
26	8.0			- Water level at 2.3 m bgs upon completion.								
27				- Groundwater level measured at 0.3 m bgs on 4/22/2024.								
28				- bgs denotes 'below ground surface.'								
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
Atterberg limits (%) W_p W_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

PIEZOMETER/ STANDPIPE INSTALLATION

4/22/2024
m
2.7 m
3.0 m
6.1 m

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66212637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE No.: BH1B-24

ELEVATION: 263.0 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

NORTHING: 4917452 EASTING: 709095

Depth Feet	Depth Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
0		263.0		GROUND SURFACE								
		262.4		**TOPSOIL** (610 mm)								
				SILTY SAND - light brown, compact, wet								
	1.0											
	2.0			Very dense								
	3.0	260.0		**END OF BOREHOLE**								

Notes:

- Borehole terminated at 3.0 m bgs.
- Water level at 2.7 m bgs upon completion.
- Groundwater level measured at 0.4 m bgs on 4/22/2024
- bgs denotes 'below ground surface.'

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

m — m —

m 4/22/2024

1.2 m

1.5 m

3.0 m

PIEZOMETER/ STANDPIPE INSTALLATION

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE No.: BH2A-24

ELEVATION: 271.1 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

NORTHING: 4917335 EASTING: 708794

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m)	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel / Sand / Silt / Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
0		271.1	GROUND SURFACE								
1			**TOPSOIL** (610 mm)		SS-1			100	24	1-0-1-2	1
2		270.5	**SILTY SAND** - light brown, loose, wet								
3	1.0				SS-2			50	23	1-3-5-4	8
4											
5			Compact		SS-3			100	13	3-4-12-16	16
6	2.0										
7		268.8									
8			**TILL** - Silty Sand, some clay, some gravel, grey, very dense, moist		SS-4			80	8	23-25-26-23	51
9											
10	3.0										
11					SS-5			100	9	20-38-30-14	68
12											
13	4.0										
14											
15											
16					SS-6			75	8	36-34-50/6"	100+
17	5.0										
18											
19											
20	6.0		Dense								
21					SS-7			25	8	11-23-17-20	40
22		264.4									
23	7.0		**END OF BOREHOLE**								
24			Notes:								
25			- Borehole terminated at 6.7 m bgs.								
26	8.0		- Water level at 6.6 m bgs upon completion.								
27			- Groundwater level measured at 0.4 m bgs on 4/22/2024.								
28			- bgs denotes 'below ground surface.'								
29	9.0										

Shear test (Cu) △ Field / Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

PIEZOMETER/ STANDPIPE INSTALLATION

m
4/22/2024
2.3 m
3.0 m
6.1 m

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE REPORT

Page 1 of 1

BOREHOLE No.: BH2B-24

ELEVATION: 271.2 m

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

NORTHING: 4917333 EASTING: 708795

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
		271.2		GROUND SURFACE								
0				**TOPSOIL** (610 mm)								
1												
2		270.5		**SILTY SAND** - light brown, loose, wet								
3	1.0											
4												
5				Compact								
6												
7	2.0											
		268.9		**TILL** - Silty Sand, some clay, some gravel, grey, very dense, moist								
8												
9												
10	3.0	268.1		**END OF BOREHOLE**								
11												
12				Notes:								
13	4.0			- Borehole terminated at 3.0 m bgs.								
14				- Water level at 2.5 m bgs upon completion.								
15				- Groundwater level measured at 0.5 m bgs on 4/22/2024.								
16	5.0			- bgs denotes 'below ground surface.'								
17												
18												
19												
20	6.0											
21												
22												
23	7.0											
24												
25												
26	8.0											
27												
28												
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

m
m

m
4/22/2024

1.2 m

1.5 m

3.0 m

PIEZOMETER/ STANDPIPE INSTALLATION

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE No.: BH3A-24

ELEVATION: 274.3 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

NORTHING: 4917607 EASTING: 708764

Depth Feet	Depth Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay %	Unit Weight KN/m3	Recovery/ TCR(%)	Moisture Content %	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)	Shear test (Cu) Sensitivity (S) / Water content (%) / Atterberg limits (%) / "N" Value (blows / 12 in.-30 cm) 10 20 30 40 50 60 70 80 90
0		274.3		GROUND SURFACE									
		274.1		**TOPSOIL** (150 mm)		SS-1A			100	20	1-1-2-3	3	
1				**SILTY SAND** - some clay, some gravel, light brown, compact, moist		SS-1B			100	17	--	--	
2													
3	1.0			Grey, wet		SS-2	15-38-(47)		100	9	4-6-7-12	13	
4													
5		272.7		**TILL** - Sandy Silt, some clay, some gravel, grey, dense, moist		SS-3	13-33-36-18		100	8	14-18-24-16	42	
6	2.0												
7				Very dense, occasional cobbles		SS-4			100	7	26-23-28-29	51	
8													
9													
10	3.0			Dense		SS-5			100	8	15-13-23-12	36	
11													
12													
13	4.0												
14													
15													
16	5.0					SS-6			100	8	9-15-17-18	32	
17													
18													
19													
20	6.0			Very dense		SS-7			100	6	22-25-50/3"	100+	
21		267.8		**END OF BOREHOLE**									
22													
23	7.0			Notes:									
24				- Borehole terminated at 6.5 m bgs.									
25				- Borehole open and dry upon completion.									
26	8.0			- Groundwater level measured at 0.9 m bgs on 4/22/2024.									
27				- bgs denotes 'below ground surface.'									
28													
29	9.0												

Shear test (Cu) △ Field □ Lab
Sensitivity (S)
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

m
m
2.7 m
3.0 m
6.1 m

PIEZOMETER/ STANDPIPE INSTALLATION

4/22/2024

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REFERENCE No.: 12637390

BOREHOLE No.: BH3B-24

ELEVATION: 274.1 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

NORTHING: 4917606 EASTING: 708762

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
0		274.1		GROUND SURFACE								
0		274.0		**TOPSOIL** (150 mm)								
1				**SILTY SAND** - some clay, some gravel, light brown, compact, moist								
2												
3	1.0			Grey, wet								
4												
5		272.6		**TILL** - Sandy Silt, some clay, some gravel, grey, dense, moist								
6	2.0											
7												
8												
9												
10	3.0	271.1		**END OF BOREHOLE**								
11												
12				Notes:								
13	4.0			- Borehole terminated at 3.0 m bgs.								
14				- Borehole open and dry upon completion.								
15				- Groundwater level measured at 0.8 m bgs on 4/22/2024.								
16	5.0			- bgs denotes 'below ground surface.'								
17												
18												
19												
20	6.0											
21												
22												
23	7.0											
24												
25												
26	8.0											
27												
28												
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

m —
m —

PIEZOMETER/ STANDPIPE INSTALLATION

m
4/22/2024
1.2 m
1.5 m
3.0 m

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE No.: BH4A-24

ELEVATION: 261.5 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

NORTHING: 4917751 EASTING: 708507

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
		261.5		GROUND SURFACE								
0				**TOPSOIL** (300 mm)		SS-1A			100	36	0-1-3-2	4
1		261.2		**SANDY SILT** - some clay, brown, loose, moist		SS-1B	0-35-(65)		--	22	--	--
2												
3	1.0					SS-2			50	12	3-3-5-6	8
4												
5		260.0		**TILL** - Sandy Silt, some clay, some gravel, brown, compact, moist		SS-3			50	10	8-14-15-19	29
6	2.0											
7				Grey, dense								
8						SS-4			75	8	13-15-21-28	36
9												
10	3.0											
11						SS-5			75	9	8-22-24-27	46
12												
13	4.0											
14												
15				Very dense		SS-6			100	7	50/6"	100+
16												
17	5.0			Augers grinding, inferred cobbles and boulders								
18												
19												
20	6.0					SS-7			25	6	27-50/4"	100+
21		255.1		**END OF BOREHOLE**								
22												
23	7.0			Notes:								
24				- Borehole terminated at 6.3 m bgs.								
25				- Water level at 4.3 m bgs upon completion.								
26	8.0			- Groundwater level measured at 0.4 m bgs on 4/22/2024.								
27				- bgs denotes 'below ground surface.'								
28												
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

PIEZOMETER/ STANDPIPE INSTALLATION

m — 4/22/2024
2.4 m
3.0 m
6.1 m

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REFERENCE No.: 12637390

BOREHOLE No.: BH4B-24

ELEVATION: 261.5 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 2 April 2024 DATE (FINISH): 2 April 2024

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

NORTHING: 4917752 EASTING: 708509

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel / Sand / Silt / Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
0		261.5		GROUND SURFACE								
		261.2		**TOPSOIL** (300 mm)								
1				**SANDY SILT** - some clay, brown, loose, moist								
2												
3	1.0											
4												
5		260.0		**TILL** - Sandy Silt, some clay, some gravel, brown, compact, moist								
6												
7	2.0											
8												
9												
10	3.0	258.5		**END OF BOREHOLE**								
11												
12				Notes:								
13	4.0			- Borehole terminated at 3.0 m bgs.								
14				- Water level at 2.9 m bgs upon completion.								
15				- Groundwater level measured at 0.5 m bgs on 4/22/2024.								
16	5.0			- bgs denotes 'below ground surface.'								
17												
18												
19												
20	6.0											
21												
22												
23	7.0											
24												
25												
26	8.0											
27												
28												
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

m —
m —

PIEZOMETER/ STANDPIPE INSTALLATION

m
4/22/2024
1.2 m
1.5 m
3.0 m

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390

BOREHOLE No.: BH5-24

ELEVATION: 270.4 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 3 April 2024 DATE (FINISH): 3 April 2024

NORTHING: 4917892 EASTING: 708692

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)
		270.4		GROUND SURFACE			%		%	%		
0				**TOPSOIL** (200 mm)		SS-1A			100	27	1-2-4-6	6
1		270.2		**SANDY SILT** - some clay, brown, loose, wet		SS-1B			100	16	--	--
2												
3	1.0			Compact		SS-2	17-40-29-14		50	12	8-10-12-14	22
4												
5		268.9		**TILL** - Sandy Silt, some clay, some gravel, brown, compact, moist		SS-3			25	9	9-13-15-14	28
6	2.0											
7				Very dense		SS-4			50	8	21-34-31-28	65
8												
9												
10	3.0			Dense		SS-5			75	7	8-16-19-18	35
11												
12												
13	4.0											
14												
15				Gravelly Sand, some silt, some clay		SS-6	21-40-(39)		100	8	9-12-18-20	30
16	5.0											
17												
18												
19												
20	6.0			Very dense		SS-7			75	8	12-24-29-30	53
21												
22		263.7		**END OF BOREHOLE**								
23	7.0			Notes:								
24												
25				- Borehole terminated at 6.3 m bgs.								
26	8.0			- Water level at 3.4 m bgs upon completion.								
27				- bgs denotes 'below ground surface.'								
28												
29	9.0											

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

PIEZOMETER/ STANDPIPE INSTALLATION

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REFERENCE No.: 12637390

BOREHOLE No.: BH6-24

ELEVATION: 276.4 m

BOREHOLE REPORT

CLIENT: Base-Land Developments Inc.

PROJECT: Hydrogeological/Geotechnical Assessment

LOCATION: Bridgenorth, Ontario

DESCRIBED BY: C. Frazer CHECKED BY: L. Ramos

DATE (START): 3 April 2024 DATE (FINISH): 3 April 2024

NORTHING: 4917776 EASTING: 708849

LEGEND

- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RC - ROCK CORE
- ▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL	State	Type and Number	Grain Size/ Hydrometer Comments: Gravel Sand Silt Clay (%)	Unit Weight (KN/m3)	Recovery/ TCR(%)	Moisture Content (%)	Blows per 15cm/ RQD(%)	'N' Value/ SCR(%)	Shear test (Cu) Sensitivity (S) △ Field □ Lab; ○ Water content (%); W_p W_l Atterberg limits (%); ● "N" Value (blows / 12 in.-30 cm)	PIEZOMETER/ STANDPIPE INSTALLATION
		276.4		GROUND SURFACE			%	KN/m3	%	%			10 20 30 40 50 60 70 80 90	
0		276.2		**TOPSOIL** (150 mm)		SS-1A			100	29	0-0-1-2	1		
1				**SANDY SILT** - some clay, brown, loose, moist		SS-1B			--	--	--	--		
2														
3	1.0					SS-2			75	19	0-0-1-1	1		
4														
5		274.9		**TILL** - Sandy Silt, some clay, some gravel, brown, compact, moist		SS-3			25	25	11-12-14-18	26		
6	2.0													
7				Dense		SS-4			100	6	10-12-18-16	30		
8														
9	3.0			Very dense		SS-5			50	10	18-23-32-28	55		
10														
11														
12	4.0													
13														
14						SS-6			50	6	27-29-50/2"	100+		
15	5.0													
16														
17		270.8				SS-7			25	8	50/6"	100+		
18	6.0			**END OF BOREHOLE**										
19														
20				Notes:										
21	7.0			- Borehole terminated at 5.6 m bgs upon auger refusal on cobbles.										
22				- Water level at 2.4 m bgs upon completion.										
23	8.0			- bgs denotes 'below ground surface.'										
24														
25														
26	9.0													
27														
28														
29														

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT BH LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: 12637390 SOIL LOG WITH GRAPH+WELL Date: 31/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-11

TEST PIT No.: TP1-24
ELEVATION: 267.24 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth Feet	Depth Metres	Elevation (m) BGS 267.24	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		266.93		**SILTY SAND** - some clay, some gravel, brown, moist				
	0.5							
2								
3		266.32		**TILL** - Sandy Silt, some clay, some gravel, some clay, occasional boulders, grey, moist Groundwater seepage at 0.9 m bgs				
	1.0							
4								
5	1.5							
6		265.41		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 1.8 m bgs - bgs denotes 'below ground surface'				
	2.0							
7								
8								
	2.5							
9								
	3.0							

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66212637390\WORKSHARE\04-FLD\GINT\12637390-GINT TP LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: TEST PIT LOG Date: 28/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-12

TEST PIT No.: TP2-24
ELEVATION: 263.11 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 263.11	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (330 mm)				
1		262.78		**SILTY SAND** - some clay, some gravel, brown, moist				
	0.5							
2								
3		262.19		**TILL** - Sandy Silt, some clay, some gravel, occasional cobbles, grey, moist				
4				Groundwater seepage at 1.2 m bgs				
	1.5							
5								
6		261.28		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 1.8 m bgs - bgs denotes 'below ground surface'				
	2.0							
7								
8								
	2.5							
9								
	3.0							

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66212637390\WORKSHARE\04-FLD\GINT\12637390-GINT TP LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: TEST PIT LOG Date: 28/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-13

TEST PIT No.: TP3-24
ELEVATION: 268.67 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 268.67	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (200 mm)				
		268.47		**SILTY SAND** - some clay, some gravel, brown, moist				
1								
	0.5			**GS-1 Grain Size Analysis:** Gravel: 5%, Sand: 45%, Clay & Silt: 50% trace clay				
2								
3		267.76		**TILL** - Sandy Silt, some clay, some gravel, grey, moist				
	1.0							
4				Groundwater seepage at 1.2 m bgs				
5	1.5							
6		266.84		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 1.8 m bgs - bgs denotes 'below ground surface'				
	2.0							
7								
8								
	2.5							
9								
	3.0							

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REFERENCE No.: 12637390 ENCLOSURE No.: B-14

TEST PIT No.: TP4-24
ELEVATION: 286.75 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 286.75	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		286.45		**SILTY SAND** - with gravel, some clay, brown, moist				
	0.5			**GS-1 Grain Size Analysis:** Gravel: 25%, Sand: 39%, Clay & Silt: 36%				
2								
3		285.84		**TILL** - Silty Sand, some gravel, some clay, occasional cobbles and boulders, grey, moist				
	1.0							
4								
5	1.5							
6		284.92		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 1.8 m bgs - Open and dry upon completion - bgs denotes 'below ground surface'				
	2.0							
7								
8								
	2.5							
9								
	3.0							

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66211263739O\WORKSHARE\04-FLD\GINT\12637390-GINT TP LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: TEST PIT LOG Date: 28/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-15

TEST PIT No.: TP5-24
ELEVATION: 269.35 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 269.35	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		269.04		**SILTY SAND** - some clay, brown, compact, moist				
	0.5			**GS-1 Grain Size Analysis:** Gravel: 0%, Sand: 69%, Silt: 23%, Clay: 8%				
2								
3		268.43		**TILL** - Silty Sand, some clay, some gravel, grey, moist				
	1.0							
4								
				Groundwater seepage at 1.4 m bgs				
5	1.5							
6								
	2.0	267.36		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 2.0 m bgs - bgs denotes 'below ground surface'				
7								
8								
	2.5							
9								
	3.0							

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REFERENCE No.: 12637390 ENCLOSURE No.: B-16

TEST PIT No.: TP6-24
ELEVATION: 263.61 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 263.61	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (410 mm)				
		263.21		**SILTY SAND** - some clay, brown, moist, mottled				
	0.5							
		262.70		**TILL** - Silty Sand, some clay, some gravel, grey, moist Groundwater seepage at 0.9 m bgs				
	1.0							
	1.5							
		261.63		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 2.0 m bgs - bgs denotes 'below ground surface'				
	2.0							
	2.5							
	3.0							

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REFERENCE No.: 12637390 ENCLOSURE No.: B-17

TEST PIT No.: TP7-24
ELEVATION: 280.13 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 280.13	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (460 mm)				
		279.68						
	0.5			**SILTY SAND** - some clay, brown, moist				
		279.22		**TILL** - Silty Sand, some clay, some gravel, grey, moist Groundwater seepage at 1.1 m bgs				
	1.0							
	1.5							
		278.31		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 1.8 m bgs - bgs denotes 'below ground surface'				
	2.0							
	2.5							
	3.0							

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REFERENCE No.: 12637390 ENCLOSURE No.: B-18

TEST PIT No.: TP8-24
ELEVATION: 274.90 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth Feet	Depth Metres	Elevation (m) BGS 274.90	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		274.60		**SILTY SAND** - with gravel, some clay, brown, moist				
	0.5			**GS-1 Grain Size Analysis:** Gravel: 21%, Sand: 42%, Clay & Silt: 37%				
2								
3		273.99		**TILL** - Silty Sand, some clay, some gravel, occasional boulders, grey, moist				
	1.0							
4								
5	1.5							
6								
	2.0							
7		272.77		**END OF TEST PIT:** **NOTE:** - Test pit terminated at 2.1 m bgs - Open and dry upon completion - bgs denotes 'below ground surface'				
8								
	2.5							
9								
	3.0							

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66\12637390\WORKSHARE\04-FLD\GINT\12637390-GINT TP LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: TEST PIT LOG Date: 28/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-19

TEST PIT No.: TP9-24
ELEVATION: 273.08 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth Feet	Depth Metres	Elevation (m) BGS 273.08	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		272.77		**SILTY SAND** - some clay, brown, moist				
	0.5							
2								
3		272.16		**TILL** - Silty Sand, some clay, some gravel, grey, moist				
	1.0							
4								
5	1.5							
6		271.25		**END OF TEST PIT:**				
	2.0			**NOTE:**				
7				- Test pit terminated at 1.8 m bgs				
				- Open and dry upon completion				
8	2.5			- bgs denotes 'below ground surface'				
9								
	3.0							

File: \\GHDNET\GHD\CA\PETERBOROUGH\PROJECTS\66211263739O\WORKSHARE\04-FLD\GINT\12637390-GINT TP LOGS, JK.GPJ Library File: 12637390 GHD_GEOTECH_V07.GLB Report: TEST PIT LOG Date: 28/5/24

REFERENCE No.: 12637390 ENCLOSURE No.: B-20

TEST PIT No.: TP10-24
ELEVATION: 270.38 m

TEST PIT REPORT

CLIENT: Base-Land Developments Inc.
PROJECT: Hydrogeological/Geotechnical Assessment
LOCATION: Bridgenorth, Ontario
DESCRIBED BY: J. Kempt DATE: 10 April 2024
CHECKED BY: L. Ramos DATE: 17 April 2024

LEGEND

GSE - GRAB SAMPLE (environmental)
GS - GRAB SAMPLE (geotechnical)
Cu - SHEAR TEST
CHEM - CHEMICAL ANALYSIS
OVC - ORGANIC VAPOR CONCENTRATION
INF - INFILTRATION
▼ - WATER LEVEL

Depth (Feet)	Depth (Metres)	Elevation (m) BGS 270.38	Symbol	STRATIGRAPHY	Sample Type & Number	OVC ppm	Tests Type	▼ INF
				TOPSOIL (300 mm)				
1		270.07		**SILTY SAND** - some clay, brown, moist				
	0.5							
2		269.61		**TILL** - Silty Sand, some clay, some gravel, grey, moist				
3								
	1.0							
4								
				Groundwater seepage at 1.4 m bgs				
5	1.5							
6								
	2.0							
7		268.24		**END OF TEST PIT:**				
				NOTE:				
				- Test pit terminated at 2.1 m bgs				
				- bgs denotes 'below ground surface'				
8								
	2.5							
9								
	3.0							

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Appendix C

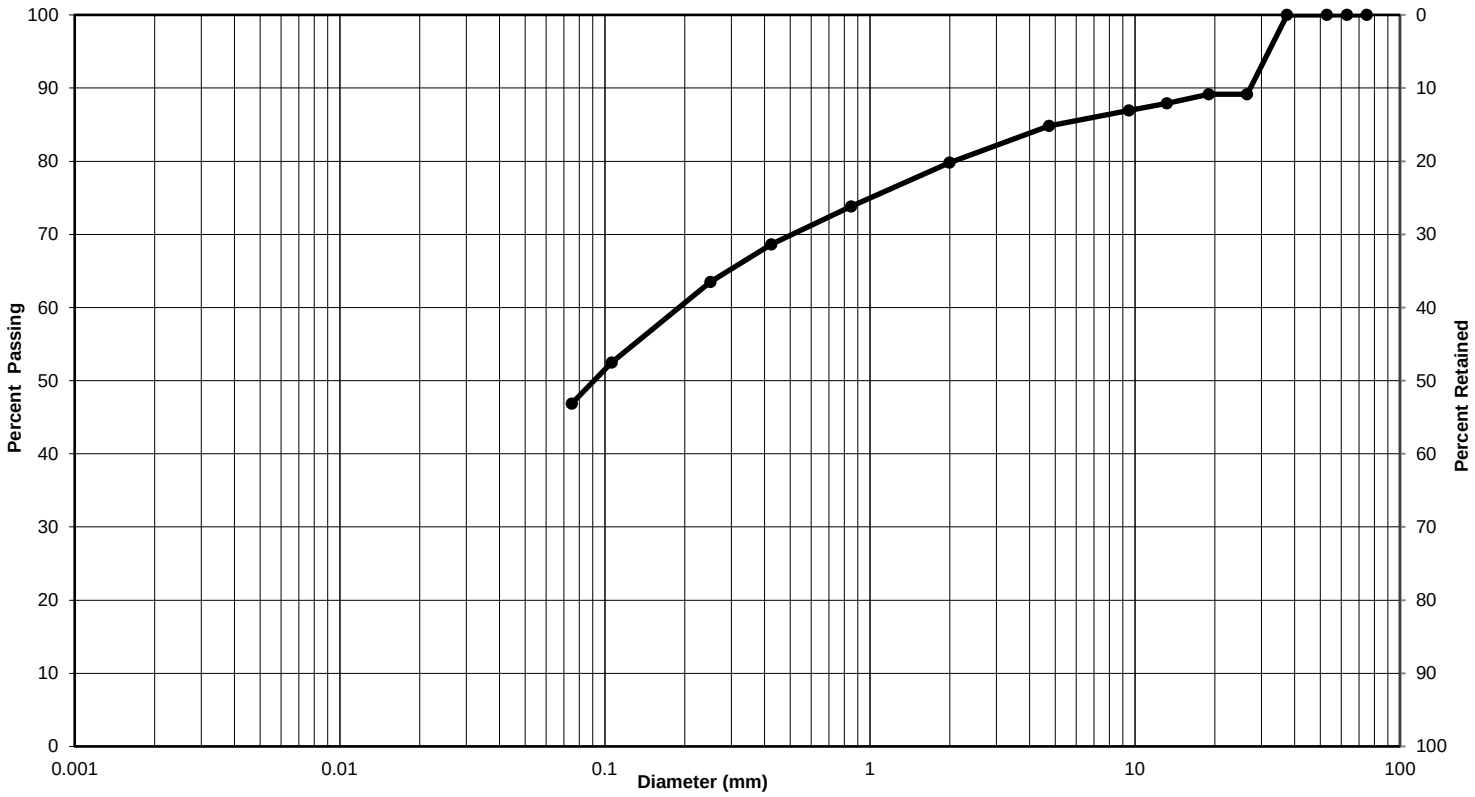
Geotechnical Laboratory Testing Results

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390

Borehole No.:	BH3A/B-24	Sample No.:	SS2
Depth:	0.8-1.4 m	Enclosure:	C-1



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Fines and sand, some gravel	15	38	47

Additional laboratory reporting information available upon request.

Remarks:

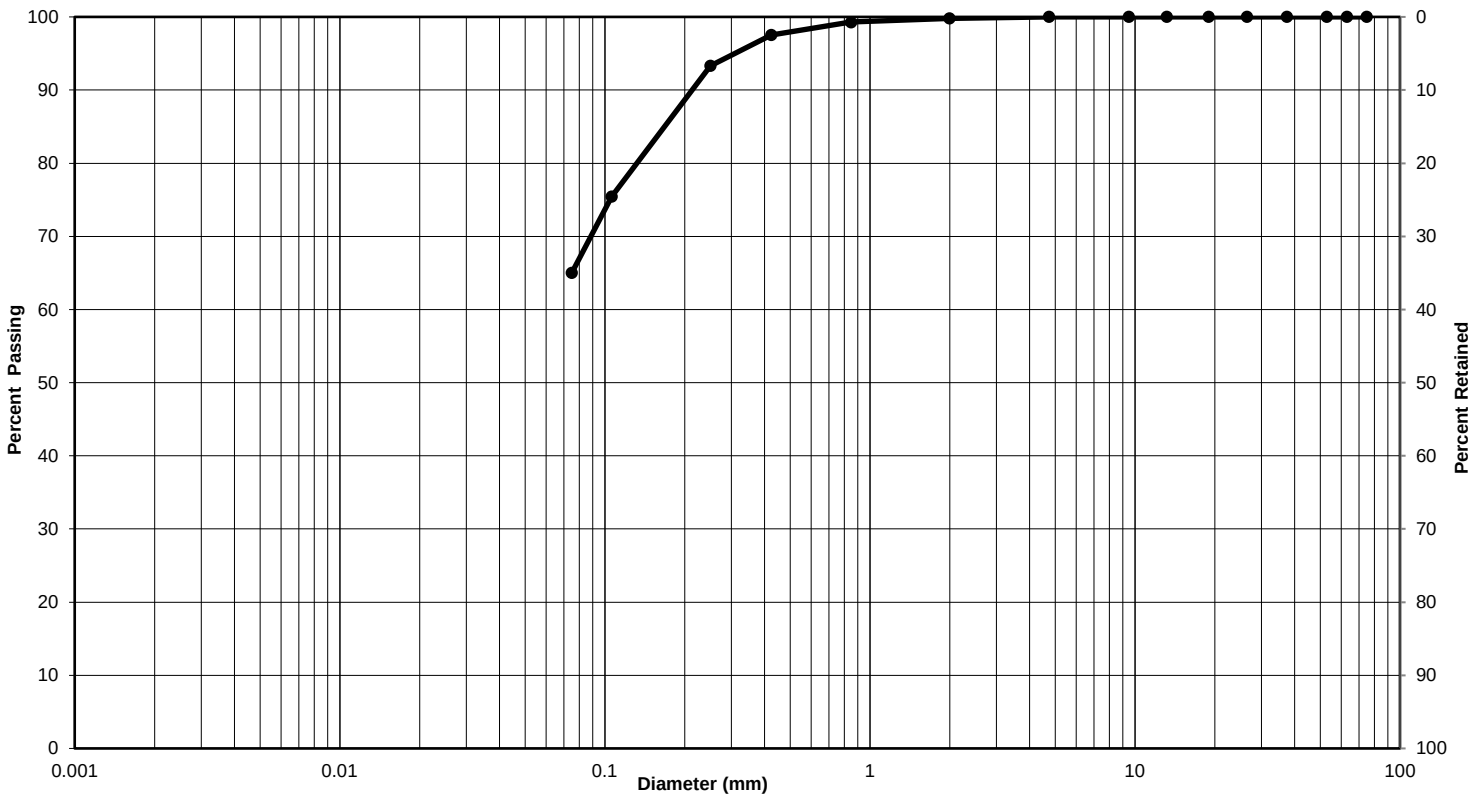
Performed by:	Josh Sullivan	**Date:**	April 18, 2024
Verified by:	Joe Sullivan	**Date:**	April 18, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390

Borehole No.:	BH4A/B-24	Sample No.:	SS1B
Depth:	0.3 - 0.6 m	Enclosure:	C-2



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Fines and sand	0	35	65

Additional laboratory reporting information available upon request.

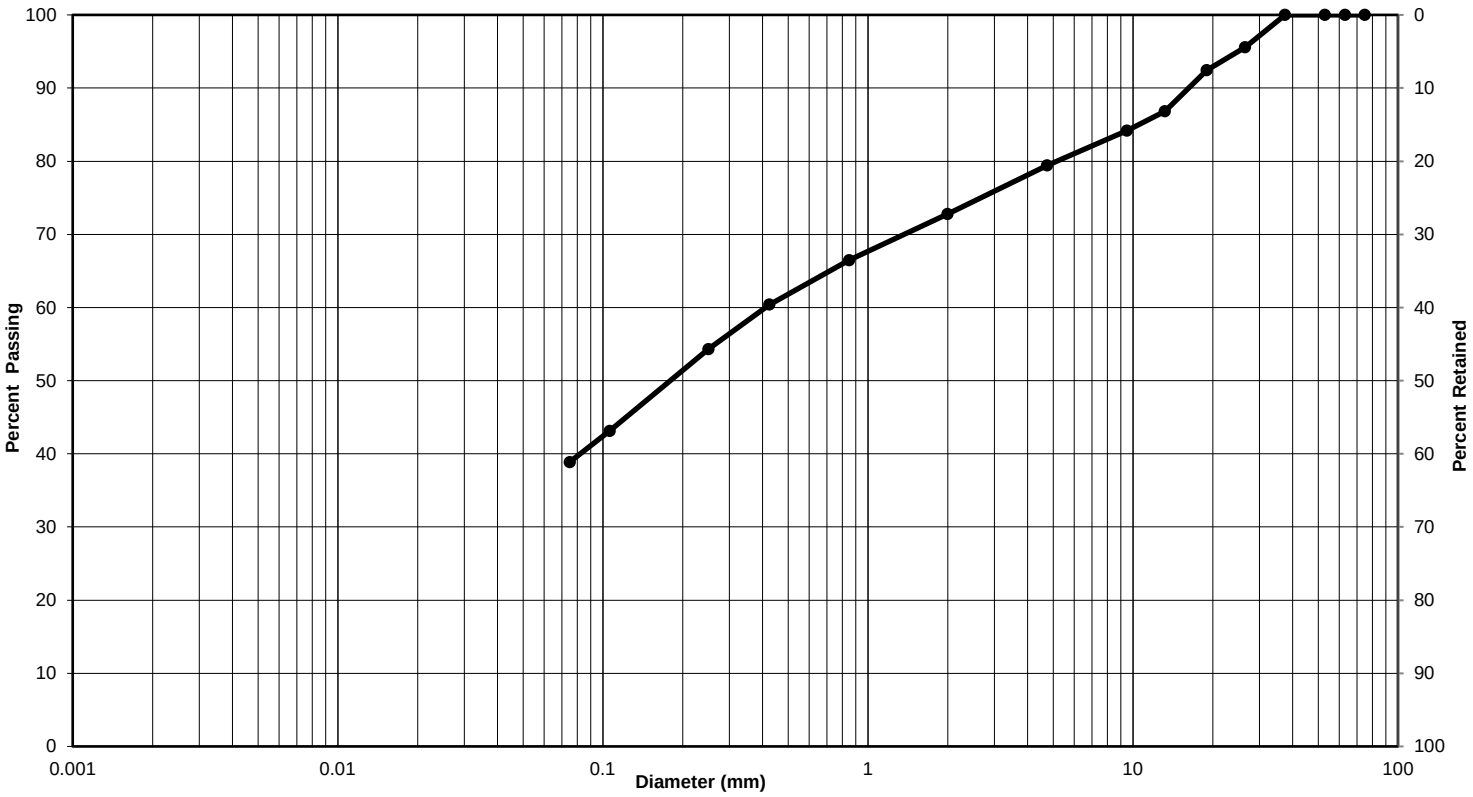
Remarks:

Performed by:	Josh Sullivan	**Date:**	April 18, 2024
Verified by:	Joe Sullivan	**Date:**	April 18, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390
Borehole No.:	BH5-24	Sample No.:	SS6
Depth:	4.6-5.2m	Enclosure:	C-3



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Gavelly, sand and fines	21	40	39

Additional laboratory reporting information available upon request.

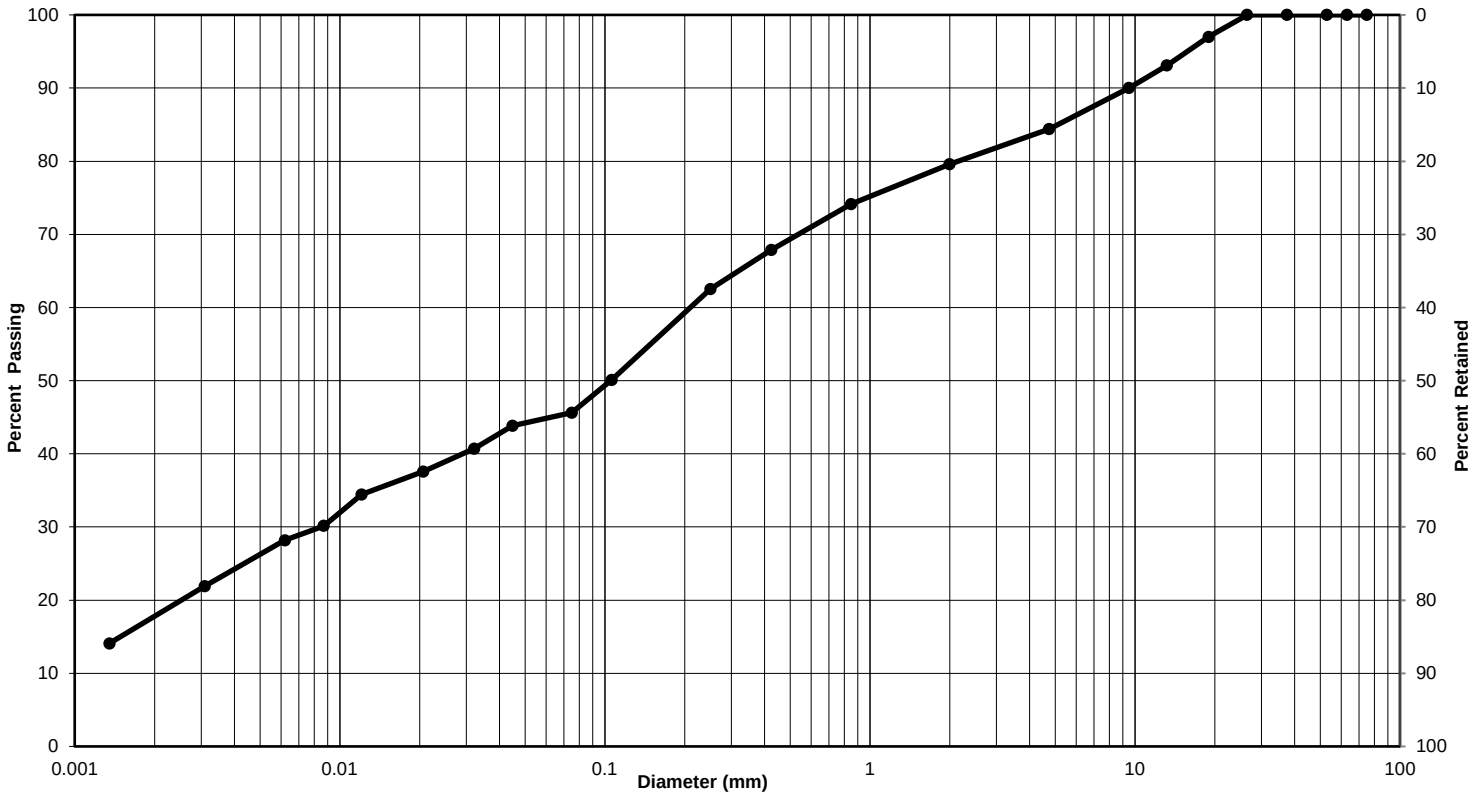
Remarks:

Performed by:	Josh Sullivan	**Date:**	April 18, 2024
Verified by:	Joe Sullivan	**Date:**	April 18, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390
Borehole No.:	BH1-24	Sample No.:	SS5
Depth:	3.0-3.4m	Enclosure:	C-4



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Silty sand, some clay and gravel	16	38	46
Silt-size particles (%) :		29	
Clay-size particles (%) (<0.002 mm):		17	

Additional laboratory reporting information available upon request.

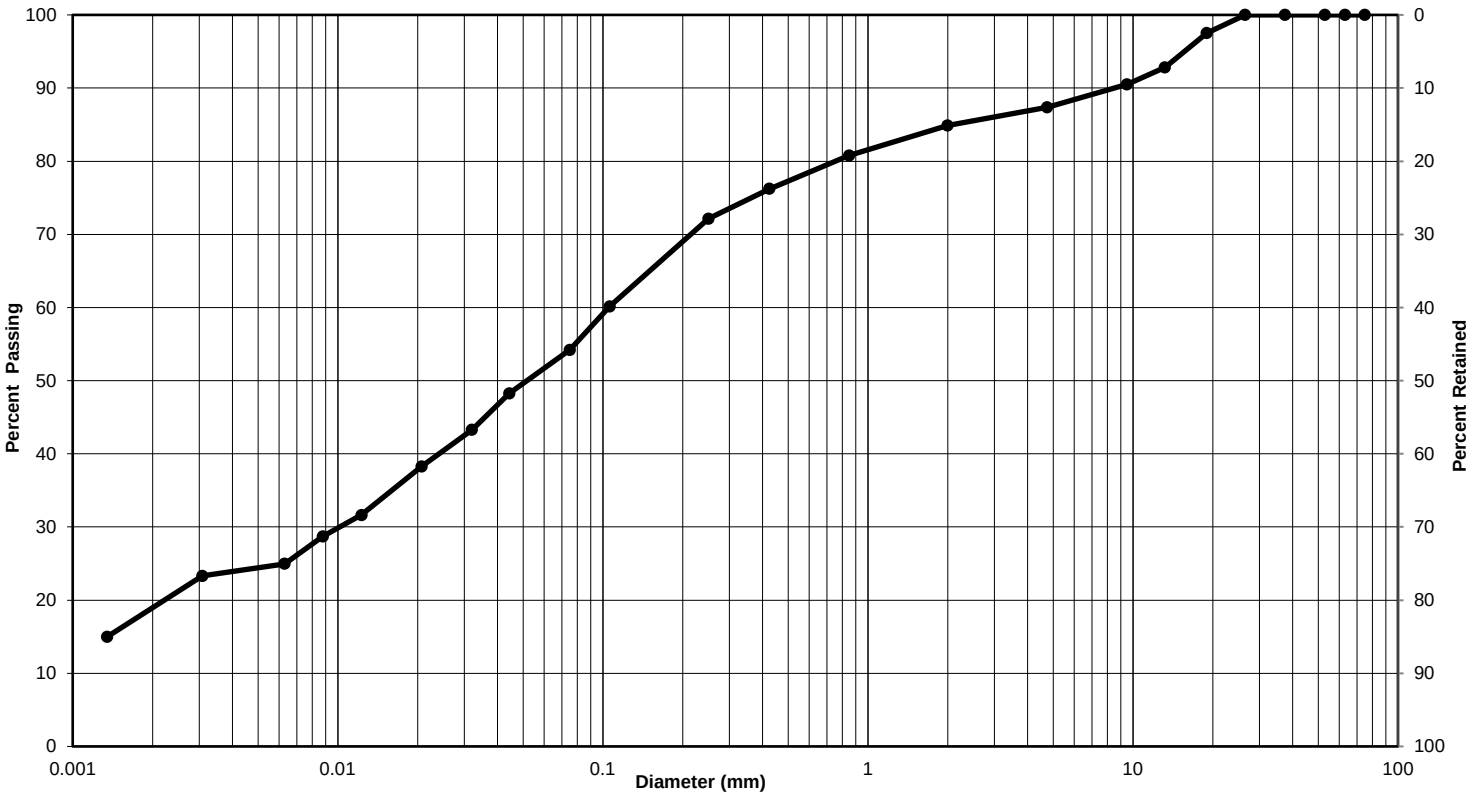
Remarks:

Performed by:	Josh Sullivan	**Date:**	April 18, 2024
Verified by:	Joe Sullivan	**Date:**	April 18, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390
Borehole No.:	BH3A/B-24	Sample No.:	SS3
Depth:	1.5-2.1m	Enclosure:	C-5



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Sandy silt, some clay and gravel	13	33	54
Silt-size particles (%) :	36		
Clay-size particles (%) (<0.002 mm):	18		

Additional laboratory reporting information available upon request.

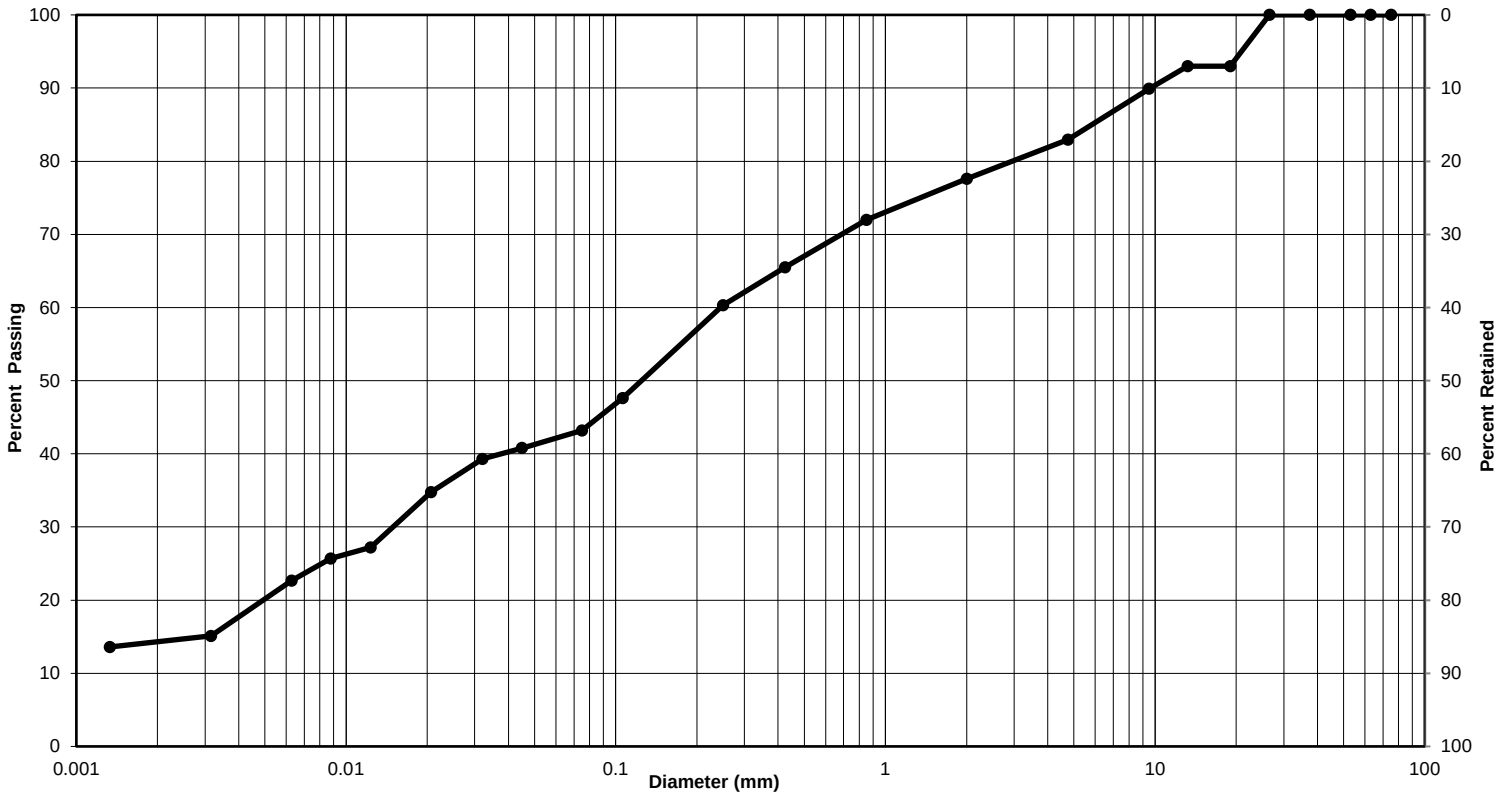
Remarks:

Performed by:	Josh Sullivan	**Date:**	April 18, 2024
Verified by:	Joe Sullivan	**Date:**	April 18, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Particle-Size Analysis of Soils

MTO LS-702 (Geotechnical)

Client:	Base-Land Development Inc.	**Lab No.:**	SS-24-18
Project/Site:	Bridgenorth, ON - Hydrogeological & Geotechnical	**Project No.:**	12637390
Borehole No.:	BH5-24	Sample No.:	SS2
Depth:	0.75 - 1.1 m	Enclosure:	C-6



Clay & Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse
Particle-Size Limits as per USCS (ASTM D-2487)					

Soil Description	Gravel (%)	Sand (%)	Clay & Silt (%)
Silty sand, some gravel and clay	17	40	43
Silt-size particles (%) :		29	
Clay-size particles (%) (<0.002 mm):		14	

Additional laboratory reporting information available upon request.

Remarks:

Performed by:	Josh Sullivan	**Date:**	May 3, 2024
Verified by:	Joe Sullivan	**Date:**	May 3, 2024
Laboratory Location:	GHD Limited - 347 Pido Road, Unit 29, Peterborough, ON		

Appendix D

Excess Soil Certificates of Analysis

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G113733 **REPORT No: 24-009840 - Rev. 0**

Report To:
GHD Limited
455 Phillip Street
Waterloo, ON N2L 3X2

CADUCEON Environmental Laboratories
110 West Beaver Creek Rd
Unit #14
Richmond Hill, ON L4B 1J9

Attention: Jake Kempt

DATE RECEIVED: 2024-Apr-11
DATE REPORTED: 2024-Apr-17
SAMPLE MATRIX: Soil

CUSTOMER PROJECT: 12637390/Bridgenorth
P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Conductivity Meter (Solid)	4	OTTAWA	STAILLON	2024-Apr-15	A-COND-03	MECP E3530
Boron-HWS (Solid)	4	OTTAWA	NHOGAN	2024-Apr-15	D-ICP-01	MECP E3470
Chromium VI (Solid)	4	OTTAWA	STAILLON	2024-Apr-15	D-CRVI-02	EPA 7196A
ICP/MS (Solid)	4	OTTAWA	AOZKAYMAK	2024-Apr-16	D-ICPMS-01	EPA 6020B
ICP/OES (Solid)	4	OTTAWA	NHOGAN	2024-Apr-16	D-ICP-02	EPA 6010
Mercury (Solid)	4	OTTAWA	TBENNETT	2024-Apr-16	D-HG-01	EPA 7471A
SAR analysed by ICPOES (Solid)	4	OTTAWA	APRUDYVUS	2024-Apr-17	D-ICP-02	EPA 6010
Moisture	4	KINGSTON	AAUCOIN	2024-Apr-15	% Moisture	SM 2540
pH Meter (Solid)	4	RICHMOND_HILL	JEVANS	2024-Apr-17	pH-03	MECP E3530
PHC F1 (Solid)	4	RICHMOND_HILL	JEVANS	2024-Apr-13	C-VPHS-01	CWS Tier 1
PHC F2-4 (Solid)	4	KINGSTON	STHOMPSON	2024-Apr-16	PHC-S-001	CWS Tier 1
VOC-Volatiles (Solid)	4	RICHMOND_HILL	JEVANS	2024-Apr-13	C-VOC-02	EPA 8260

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

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

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

Michelle Dubien
Data Specialist

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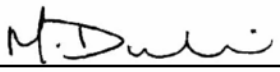
				Client I.D.	TP1-24, GS-1	TP4-24, GS-2	TP8-24, GS-2	TP10-24, GS-3
				Sample I.D.	24-009840-1	24-009840-2	24-009840-3	24-009840-4
				Date Collected	2024-Apr-10	2024-Apr-10	2024-Apr-10	2024-Apr-10
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
Conductivity @25°C	mS/cm	0.001	0.47, 0.57	T1AG, T1RPI	0.138	0.124	0.123	0.112
pH @25°C	-	-			7.47	7.66	7.64	7.71
Sodium Adsorption Ratio	-	-	1, 2.4	T1AG, T1RPI	0.10	0.07	0.05	0.07
Barium	µg/g	1	210, 220	T1AG, T1RPI	63	49	63	54
Beryllium	µg/g	0.2	2.5, 2.5	T1AG, T1RPI	0.4	0.3	0.3	0.3
Boron	µg/g	0.5	36, 36	T1AG, T1RPI	2.8	4.2	3.9	4.3
Cadmium	µg/g	0.5	1, 1.2	T1AG, T1RPI	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	1	67, 70	T1AG, T1RPI	13	10	9	12
Cobalt	µg/g	1	19, 21	T1AG, T1RPI	5	4	4	4
Copper	µg/g	1	62, 92	T1AG, T1RPI	8	9	10	8
Lead	µg/g	5	45, 120	T1AG, T1RPI	5	<5	<5	<5
Molybdenum	µg/g	1	2, 2	T1AG, T1RPI	<1	<1	<1	<1
Nickel	µg/g	1	37, 82	T1AG, T1RPI	8	8	7	8
Vanadium	µg/g	1	86, 86	T1AG, T1RPI	25	19	20	18
Zinc	µg/g	3	290, 290	T1AG, T1RPI	24	20	22	18
Antimony	µg/g	0.5	1, 1.3	T1AG, T1RPI	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/g	0.5	11, 18	T1AG, T1RPI	1.9	1.5	1.4	1.4
Selenium	µg/g	0.5	1.2, 1.5	T1AG, T1RPI	<0.5	<0.5	<0.5	<0.5
Silver	µg/g	0.2	0.5, 0.5	T1AG, T1RPI	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	0.1	1, 1	T1AG, T1RPI	0.1	<0.1	<0.1	<0.1
Uranium	µg/g	0.1	1.9, 2.5	T1AG, T1RPI	0.5	0.5	0.6	0.5



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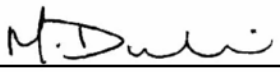
				Client I.D.	TP1-24, GS-1	TP4-24, GS-2	TP8-24, GS-2	TP10-24, GS-3
				Sample I.D.	24-009840-1	24-009840-2	24-009840-3	24-009840-4
				Date Collected	2024-Apr-10	2024-Apr-10	2024-Apr-10	2024-Apr-10
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
Boron (HWS)	µg/g	0.02			0.02	<0.02	<0.02	<0.02
Chromium (VI)	µg/g	0.2	0.66, 0.66	T1AG, T1RPI	<0.2	<0.2	<0.2	<0.2
Mercury	µg/g	0.01	0.16, 0.27	T1AG, T1RPI	0.03	<0.01	<0.01	<0.01



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				Client I.D.	TP1-24, GS-1	TP4-24, GS-2	TP8-24, GS-2	TP10-24, GS-3
				Sample I.D.	24-009840-1	24-009840-2	24-009840-3	24-009840-4
				Date Collected	2024-Apr-10	2024-Apr-10	2024-Apr-10	2024-Apr-10
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
Acetone	µg/g	0.5	0.5, 0.5	T1AG, T1RPI	<0.5	<0.5	<0.5	<0.5
Benzene	µg/g	0.02	0.02, 0.02	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Bromoform	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Bromomethane	µg/g	0.05	0.0, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	0.05	0.05, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Chloroform	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dibromochloromethane	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Ethylene Dibromide	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichlorobenzene,1,2-	µg/g	0.05	0.05, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,3-	µg/g	0.05	0.05, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,4-	µg/g	0.05	0.05, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane (Freon 12)	µg/g	0.05	0.05, 0.05	T1AG, T1RPI	<0.05	<0.05	<0.05	<0.05
Dichloroethane,1,1-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethane,1,2-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,1-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-cis-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-trans-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropane,1,2-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-cis-	µg/g	0.02			<0.02	<0.02	<0.02	<0.02

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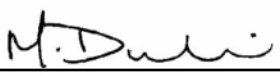
Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	TP1-24, GS-1	TP4-24, GS-2	TP8-24, GS-2	TP10-24, GS-3
					Sample I.D.	24-009840-1	24-009840-2	24-009840-3	24-009840-4
					Date Collected	2024-Apr-10	2024-Apr-10	2024-Apr-10	2024-Apr-10
						-	-	-	-
Dichloropropene,1,3-cis+trans-(Calculated)	µg/g	0.02	0.05, 0.05	T1RPI, T1AG		<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-trans-	µg/g	0.02				<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Hexane	µg/g	0.02	0.05, 0.05	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	µg/g	0.5	0.5, 0.5	T1AG, T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	µg/g	0.5	0.5, 0.5	T1AG, T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl tert-Butyl Ether (MTBE)	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethane,1,1,1,2-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.2	0.2, 0.2	T1AG, T1RPI		<0.2	<0.2	<0.2	<0.2
Trichloroethane,1,1,1-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethane,1,1,2-	µg/g	0.02	0.05, 0.05	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethylene	µg/g	0.05	0.05, 0.05	T1AG, T1RPI		<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane (Freon 11)	µg/g	0.02	0.05, 0.25	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Vinyl Chloride	µg/g	0.02	0.02, 0.02	T1AG, T1RPI		<0.02	<0.02	<0.02	<0.02
Xylene, m,p-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03
Xylene, m,p,o-	µg/g	0.03	0.05, 0.05	T1AG, T1RPI		<0.03	<0.03	<0.03	<0.03
Xylene, o-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03



Michelle Dubien
Data Specialist

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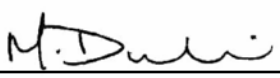
				Client I.D.	TP1-24, GS-1	TP4-24, GS-2	TP8-24, GS-2	TP10-24, GS-3
				Sample I.D.	24-009840-1	24-009840-2	24-009840-3	24-009840-4
				Date Collected	2024-Apr-10	2024-Apr-10	2024-Apr-10	2024-Apr-10
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
PHC F1 (C6-C10)	µg/g	10	17, 25	T1AG, T1RPI	<10	<10	<10	<10
PHC F2 (>C10-C16)	µg/g	5	10, 10	T1AG, T1RPI	<5	<5	<5	<5
PHC F3 (>C16-C34)	µg/g	10	240, 240	T1AG, T1RPI	<10	<10	<10	<10
PHC F4 (>C34-C50)	µg/g	10	120, 120	T1AG, T1RPI	<10	<10	<10	<10
Moisture	%	-			17.1	7.42	8.21	9.94

Reg 153/406: Reg 153/406
T1AG: R406 Tbl. 1 - Agricultural
T1RPI: R406 Tbl. 1 - RPI



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Appendix E

Infiltration Testing Results

Appendix E.1: Percolation Rate Testing (in-situ)

Project No.: 12637390
Date: April 10 and 22, 2024
Equipment: ETC Pask Permeameter

Test ID.:	**INF-01**	**INF-02**	**INF-03**	**INF-04**
Location:	**East area of site**	**TP2-24**	**TP9-24**	**Northeast area of site**
Depth of hole:	**0.3 mbgs**	**0.4 mbgs**	**0.4 mbgs**	**0.4 mbgs**

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	42.5	--
0.5	42.4	0.20
1.0	42.4	0.00
1.5	42.4	0.00
2.0	42.3	0.20
2.5	42.3	0.00
3.0	42.3	0.00
4.0	42.3	0.00
7.0	42.3	0.00
10.0	42.2	0.03
13.0	42.2	0.00
16.0	42.2	0.00
19.0	42.1	0.03
23.3	42.0	0.02
24.2	41.9	0.11
25.4	41.8	0.08
26.6	41.7	0.08

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	43.9	--
0.5	43.5	0.80
1.0	43.5	0.00
1.5	43.5	0.00
2.0	43.5	0.00
3.0	43.5	0.00
4.0	43.5	0.00
6.0	43.4	0.05
8.0	43.4	0.00
10.0	43.4	0.00
12.0	43.4	0.00
14.0	43.3	0.05
18.0	43.3	0.00
22.0	43.3	0.00
26.0	43.3	0.00
27.8	43.2	0.06

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	41.9	--
0.5	41.9	0.00
1.5	41.9	0.00
2.0	41.8	0.20
2.5	41.7	0.20
3.0	41.6	0.20
3.5	41.5	0.20
4.0	41.4	0.20
4.5	41.3	0.20
5.0	41.2	0.20
5.5	41.1	0.20
6.0	41.0	0.20
7.0	40.8	0.20
8.0	40.6	0.20
10.0	40.2	0.20

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	45.2	--
0.5	45.2	0.00
1.0	45.2	0.00
2.0	45.2	0.00
2.5	45.2	0.00
3.0	45.2	0.00
4.0	45.2	0.00
5.0	45.2	0.00
6.0	45.2	0.00
7.0	45.2	0.00
8.0	45.2	0.00
10.0	45.1	0.05
30.0	44.4	0.04
45.0	42.5	0.13
65.0	42.2	0.01
75.0	41.7	0.05
80.0	41.3	0.08
85.0	41.1	0.04
90.0	40.8	0.06
95.0	40.5	0.06

Quasi Steady Flow Rate ®				
(cm/min)	0.03	0.025	0.20	0.05
	Over duration of the testing	Over duration of the testing		Over duration of the testing
Field-Saturated Hydraulic Conductivity (Kfs)				
(m/sec)	9.40E-08	7.80E-08	6.30E-07	1.60E-07
Estimated Infiltration Rate = (Kfs / 6E-11) exp (3.7363^-1)				
(mm/hr)	25	23	41	28
Estimated Percolation Rate (T)* (min/cm)	**24**	**26**	**15**	**21**

*Based upon the relationship of Infiltration Rate = 1/T

Appendix E.2: Percolation Rate Testing (in-situ)

Project No.: 12637390
Date: April 10 and 22, 2024
Equipment: ETC Pask Permeameter

Test ID.:	**INF-05**	**INF-06**	**INF-07**
Location:	**Northwest area of site**	**Southeast area of site**	**Southwest area of site**
Depth of hole:	**0.4 mbgs**	**0.4 mbgs**	**0.4 mbgs**

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	44.6	--
1.0	44.5	0.10
2.5	44.4	0.07
3.0	44.3	0.20
4.0	44.1	0.20
5.0	43.9	0.20
6.0	43.7	0.20
7.0	43.5	0.20
8.0	43.3	0.20
9.0	43.1	0.20
10.0	42.9	0.20

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	43.0	--
1.0	43.0	0.00
2.0	43.0	0.00
2.5	42.9	0.20
3.0	42.9	0.00
4.0	42.9	0.00
5.0	42.9	0.00
6.0	42.9	0.00
8.0	42.9	0.00
10.0	42.9	0.00
15.0	42.6	0.06
20.0	42.1	0.10
25.0	41.7	0.08
30.0	41.1	0.12
35.0	40.7	0.08
40.0	40.3	0.08
45.0	39.8	0.10
50.0	39.4	0.08
55.0	38.9	0.10
60.0	38.5	0.08
70.0	37.6	0.09

Elapsed Time (minutes)	Permeameter Reading (cm)	Rate (cm/min)
0.0	40.6	--
1.0	40.2	0.40
3.0	39.2	0.50
4.0	39.0	0.20
5.0	38.7	0.30
10.0	37.9	0.16
16.0	37.0	0.15
19.0	36.6	0.13
22.0	36.3	0.10
25.0	35.9	0.13
31.0	35.1	0.13
37.0	34.1	0.17
43.0	33.4	0.12
49.0	32.5	0.15
55.0	31.7	0.13
61.0	30.8	0.15
67.0	30.0	0.13
73.0	29.0	0.17
78.0	28.2	0.16
84.0	27.4	0.13
90.0	26.5	0.15
96.0	25.6	0.15

Quasi Steady Flow Rate ® (cm/min)	0.20	0.08 Over duration of the testing	0.16 Over duration of the testing
Field-Saturated Hydraulic Conductivity (Kfs) (m/sec)	6.30E-07	2.50E-07	4.70E-07
Estimated Infiltration Rate = (Kfs / 6E-11) exp (3.7363^-1) (mm/hr)	41	32	38
Estimated Percolation Rate (T)* (min/cm)	**15**	**19**	**16**

*Based upon the relationship of Infiltration Rate = 1/T

Appendix F

Water Balance Calculations

Appendix F.1

Water Budget (Thornthwaite Method 1948) - Average Values*

Peterborough Trent U 1981 - 2010 **Elevation:** 198.10 masl **Distance Away:** ~ 6.6 km

Month	Mean Temperature (^{o}C)	Heat Index	Potential ET (mm)	Daylight Correction Factor	Adjusted ET (mm)	Total Precipitation (mm)	Surplus (mm)	Deficit (mm)
January	-8.4	0	0	0.82	0	57.3	57.30	
February	-6.5	0	0	0.82	0	48.8	48.80	
March	-1.3	0	0	1.03	0	56.5	56.50	
April	6.3	1.42	28.62	1.1	31.48	66.4	34.92	
May	12.8	4.15	61.37	1.25	76.72	88.7	11.98	
June	18	6.95	88.58	1.27	112.50	83	0.00	29.50
July	20.7	8.59	102.96	1.29	132.82	73.6	0.00	59.22
August	19.4	7.79	96.02	1.15	110.42	87	0.00	23.42
September	15	5.28	72.80	1.04	75.71	92.4	16.69	
October	8.4	2.19	39.00	0.94	36.66	77	40.34	
November	2.4	0.33	10.13	0.8	8.10	85.5	77.40	
December	-4	0	0	0.78	0	66	66.00	
TOTAL	6.9	36.7	499.5		584.4	882.2	409.9	112.1
				TOTAL WATER SURPLUS:		297.8	mm	

Notes:

Oshawa WPCP weather station utilized: 43° 52' N, 78° 50' W

*Average values of precipitation were used. Average values of temperature were also used.

Water budget adjusted for latitude and daylight

Total Water Surplus is calculated as total precipitation minus adjusted potential evapotranspiration

Total Moisture Surplus is calculated as total precipitation minus actual evapotranspiration

Formulas utilized:

$I = (T_i/5)^{1.514}$

$E=0$ when $T_i<0$ ^{o}C

$E=16(10T_i/I_{tot})^{a}$ when $0<T_i<26.5$ ^{o}C

$E=-415.85+32.24T_i-0.43T_i^{2}$ when $T_i>26.5$ ^{o}C

$a=6.7x10^{-7}I^{3}-7.71x10^{-5}I^{2}+1.79x10^{-2}I+0.49$

a = 1.076272213

Appendix F.2

Water Budget Pre-Development

Catchment Designation	PRE-DEVELOPMENT SITE	
	Treed/Grass	Total
Area (m^2)	152000	152000
Pervious Area (m^2)	152000	152000
Impervious Area (m^2)	0	0
INFILTRATION FACTORS		
Topography Infiltration Factor	0.15	
Soil Infiltration Factor	0.2	
Land Cover Infiltration Factor	0.2	
MOE Infiltration Factor	0.55	
Actual Infiltration Factor	0.55	
Runoff Coefficient	0.45	
Runoff from Impervious Surfaces*	0	
INPUTS (PER UNIT AREA)		
Precipitation (mm/yr)	882	882
Run On (mm/yr)	0	0
Other Inputs (mm/yr)	0	0
Total Inputs (mm/yr)	882	882
OUTPUTS (PER UNIT AREA)		
Precipitation Surplus (mm/yr)	298	298
Net Surplus (mm/yr)	298	298
Evaportranspiration (mm/yr)	584	584
Infiltration (mm/yr)	164	164
Rooftop Infiltration (mm/yr)	0	0
Total Infiltration (mm/yr)	164	164
Runoff Pervious Areas	134	134
Runoff Impervious Areas	0	0
Total Runoff (mm/yr)	134	134
Total Outputs (mm/yr)	882	882
Difference (Inputs - Outputs)	0	0
INPUTS (VOLUMES)		
Precipitation (m^3/yr)	134094	134094
Run On (m^3/yr)	0	0
Other Inputs (m^3/yr)	0	0
Total Inputs (m^3/yr)	134094	134094
OUTPUTS (VOLUMES)		
Precipitation Surplus (m^3/yr)	45264	45264
Net Surplus (m^3/yr)	45264	45264
Evaportranspiration (m^3/yr)	88830	88830
Infiltration (m^3/yr)	24895	24895
Rooftop Infiltration (m^3/yr)	0	0
Total Infiltration (m^3/yr)	24895	24895
Runoff Pervious Areas (m^3/yr)	20369	20369
Runoff Impervious Areas (m^3/yr)	0	0
Total Runoff (m^3/yr)	20369	20369
Total Outputs (m^3/yr)	134094	134094
Difference (Inputs - Outputs)	0	0

Notes:

Total area does not include blocks in which the intended land use has

Appendix F.3

Water Budget Post-Development - No Mitigation Strategies

Catchment Designation	POST-DEVELOPMENT SITE no MITIGATION						
	Lawn	Driveways	Asphalt Roads	Open Space / Park	Stormwater Pond	Rooftops Single Detached	Total
Area (m^2)	57550	11000	13550	8200	6700	55000	152000
Pervious Area (m^2)	57550	0	0	8200	0	0	65750
Impervious Area (m^2)	0	11000	13550	0	6700	55000	86250
INFILTRATION FACTORS							
Topography Infiltration Factor	0.15	0.15	0.15	0.15	0.15	0.15	
Soil Infiltration Factor	0.2	0.2	0.2	0.2	0	0.2	
Land Cover Infiltration Factor	0.15	0	0	0.15	0	0	
MOE Infiltration Factor	0.5	0.35	0.35	0.5	0.15	0.35	
Actual Infiltration Factor	0.5	0	0	0.5	0.05	0	
Runoff Coefficient	0.5	1	1	0.5	0.95	1	
Runoff from Impervious Surfaces*	0	0.8	0.8	0	0.8	0.8	
INPUTS (PER UNIT AREA)							
Precipitation (mm/yr)	882	882	882	882	882	882	882
Run On (mm/yr)	0	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0	0
Total Inputs (mm/yr)	882	882	882	882	882	882	882
OUTPUTS (PER UNIT AREA)							
Precipitation Surplus (mm/yr)	298	706	706	298	706	706	498
Net Surplus (mm/yr)	298	706	706	298	706	706	498
Evaportranspiration (mm/yr)	584	176	176	584	176	176	345
Infiltration (mm/yr)	149	0	0	149	35	0	64
Rooftop Infiltration (mm/yr)	0	0	0	0	0	0	0
Total Infiltration (mm/yr)	149	0	0	149	35	0	64
Runoff Pervious Areas	149	0	0	149	670	0	64
Runoff Impervious Areas	0	706	706	0	0	706	369
Total Runoff (mm/yr)	149	706	706	149	670	706	434
Total Outputs (mm/yr)	882	882	882	882	882	882	843
Difference (Inputs - Outputs)	0	0	0	0	0	0	0
INPUTS (VOLUMES)							
Precipitation (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
Run On (m^3/yr)	0	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0	0
Total Inputs (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
OUTPUTS (VOLUMES)							
Precipitation Surplus (m^3/yr)	17138	7763	9563	2442	4729	38817	80451
Net Surplus (m^3/yr)	17138	7763	9563	2442	4729	38817	80451
Evaportranspiration (m^3/yr)	33633	1941	2391	4792	1182	9704	53643
Infiltration (m^3/yr)	8569	0	0	1221	236	0	10026
Rooftop Infiltration (m^3/yr)	0	0	0	0	0	0	0
Total Infiltration (m^3/yr)	8569	0	0	1221	236	0	10026
Runoff Pervious Areas (m^3/yr)	8569	0	0	1221	4492	0	14282
Runoff Impervious Areas (m^3/yr)	0	7763	9563	0	0	38817	56143
Total Runoff (m^3/yr)	8569	7763	9563	1221	4492	38817	70425
Total Outputs (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
Difference (Inputs - Outputs)	0	0	0	0	0	0	0

Notes:

*Evaporation from impervious areas was assumed to be 20% of precipitation.

Appendix F.4

Water Budget Post-Development - With Mitigation Strategies

Catchment Designation	POST-DEVELOPMENT SITE with MITIGATION						
	Lawn	Driveways	Asphalt Roads	Open Space / Park	Stormwater Pond	Rooftops Single Detached	Total
Area (m^2)	57550	11000	13550	8200	6700	55000	152000
Pervious Area (m^2)	57550	0	0	8200	0	0	65750
Impervious Area (m^2)	0	11000	13550	0	6700	55000	86250
INFILTRATION FACTORS							
Topography Infiltration Factor	0.15	0.2	0.15	0.15	0.15	0.15	
Soil Infiltration Factor	0.2	0.2	0.2	0.2	0	0.2	
Land Cover Infiltration Factor	0.15	0	0	0.15	0	0	
MOE Infiltration Factor	0.5	0.4	0.35	0.5	0.15	0.35	
Actual Infiltration Factor	0.5	0	0	0.5	0.05	0	
Runoff Coefficient	0.5	1	1	0.5	0.95	1	
Runoff from Impervious Surfaces*	0	0.8	0.8	0	0.8	0.8	
INPUTS (PER UNIT AREA)							
Precipitation (mm/yr)	882	882	882	882	882	882	882
Run On (mm/yr)	0	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0	0
Total Inputs (mm/yr)	882	882	882	882	882	882	882
OUTPUTS (PER UNIT AREA)							
Precipitation Surplus (mm/yr)	298	706	706	298	706	706	529
Net Surplus (mm/yr)	298	706	706	298	706	706	529
Evaportranspiration (mm/yr)	584	176	176	584	176	176	353
Infiltration (mm/yr)	149	0	0	149	35	0	66
% Rooftop to balance infiltration	--	--	--	--	--	38%	--
Rooftop Infiltration (mm/yr)	0	0	0	0	0	268	97
Total Infiltration (mm/yr)	149	0	0	149	35	268	163
Runoff Pervious Areas	149	0	0	149	0	0	64
Runoff Impervious Areas	0	706	706	0	670	438	302
Total Runoff (mm/yr)	149	706	706	149	670	438	366
Total Outputs (mm/yr)	882	882	882	882	882	882	882
Difference (Inputs - Outputs)	0	0	0	0	0	0	0
INPUTS (VOLUMES)							
Precipitation (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
Run On (m^3/yr)	0	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0	0
Total Inputs (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
OUTPUTS (VOLUMES)							
Precipitation Surplus (m^3/yr)	17138	7763	9563	2442	4729	38817	80451
Net Surplus (m^3/yr)	17138	7763	9563	2442	4729	38817	80451
Evaportranspiration (m^3/yr)	33633	1941	2391	4792	1182	9704	53643
Infiltration (m^3/yr)	8569	0	0	1221	236	0	10026
Rooftop Infiltration (m^3/yr)	0	0	0	0	0	14750	14750
Total Infiltration (m^3/yr)	8569	0	0	1221	236	14750	24777
Runoff Pervious Areas (m^3/yr)	8569	0	0	1221	0	0	9790
Runoff Impervious Areas (m^3/yr)	0	7763	9563	0	4492	24066	45885
Total Runoff (m^3/yr)	8569	7763	9563	1221	4492	24066	55675
Total Outputs (m^3/yr)	50771	9704	11954	7234	5911	48521	134094
Difference (Inputs - Outputs)	0	0	0	0	0	0	0

Notes:

*Evaporation from impervious areas was assumed to be 20% of precipitation.

Appendix F.5

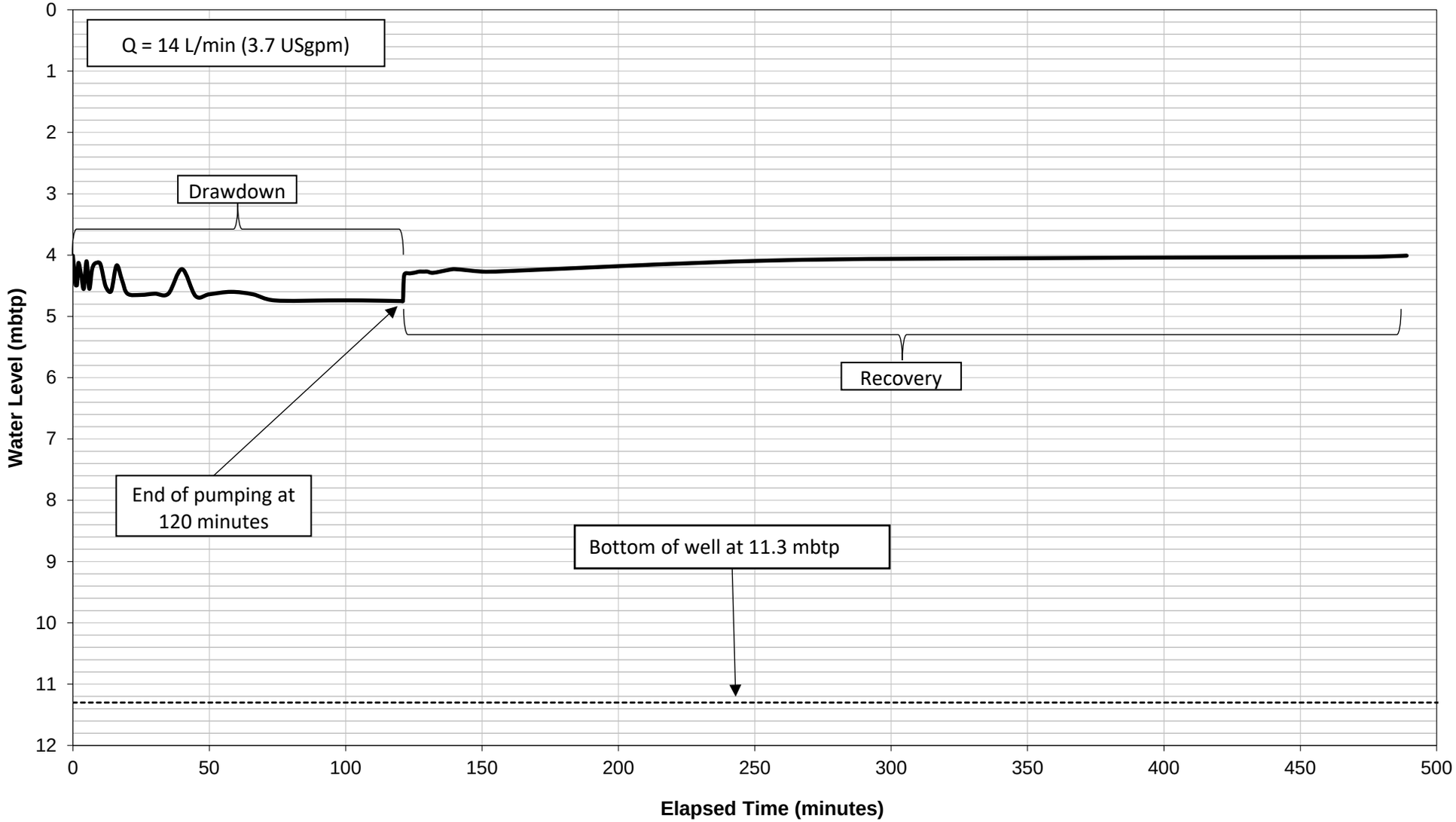
Water Budget Summary

PARAMETER	SITE				
	Pre-Development	***Post-Development No Mitigation***	***Difference Pre- vs. Post-***	***Post-Development Mitigation***	***Difference Pre- vs. Post-***
	INPUTS (VOLUMES)				
Precipitation (m^3/yr)	134094	134094	0%	134094	0%
Run On (m^3/yr)	0	0	0%	0	0%
Other Inputs (m^3/yr)	0	0	0%	0	0%
Total Inputs (m^3/yr)	134094	134094	0%	134094	0%
	OUTPUTS (VOLUMES)				
Precipitation Surplus (m^3/yr)	45264	80451	78%	80451	78%
Net Surplus (m^3/yr)	45264	80451	78%	80451	78%
Evapotranspiration (m^3/yr)	88830	53643	-40%	53643	-40%
Infiltration (m^3/yr)	24895	10026	-60%	10026	-60%
Rooftop Infiltration (m^3/yr)	0	0	0%	14750	--
Total Infiltration (m^3/yr)	24895	10026	-60%	24777	0%
Runoff Pervious Areas (m^3/yr)	20369	14282	-30%	9790	-52%
Runoff Impervious Areas (m^3/yr)	0	56143	--	45885	--
Total Runoff (m^3/yr)	20369	70425	246%	55675	173%
Total Outputs (m^3/yr)	134094	134094	0%	134094	0%

Appendix G

Well Record and Aquifer Performance Testing Data

PUMP HISTORY CURVE
966 Burnside Road: September 23, 2024



PUMP HISTORY CURVE

Drilled Well

MECP Well ID: Unknown

Static Level = 4.01 mbtp (3.91 mbgs)

mbtp indicated metres below top of pipe

DATE: JANUARY 2025

LOCATION: 966 Burnside Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-1

GHD

347 PIDO ROAD, UNIT 29

PETERBOROUGH, ON K9J 6X7

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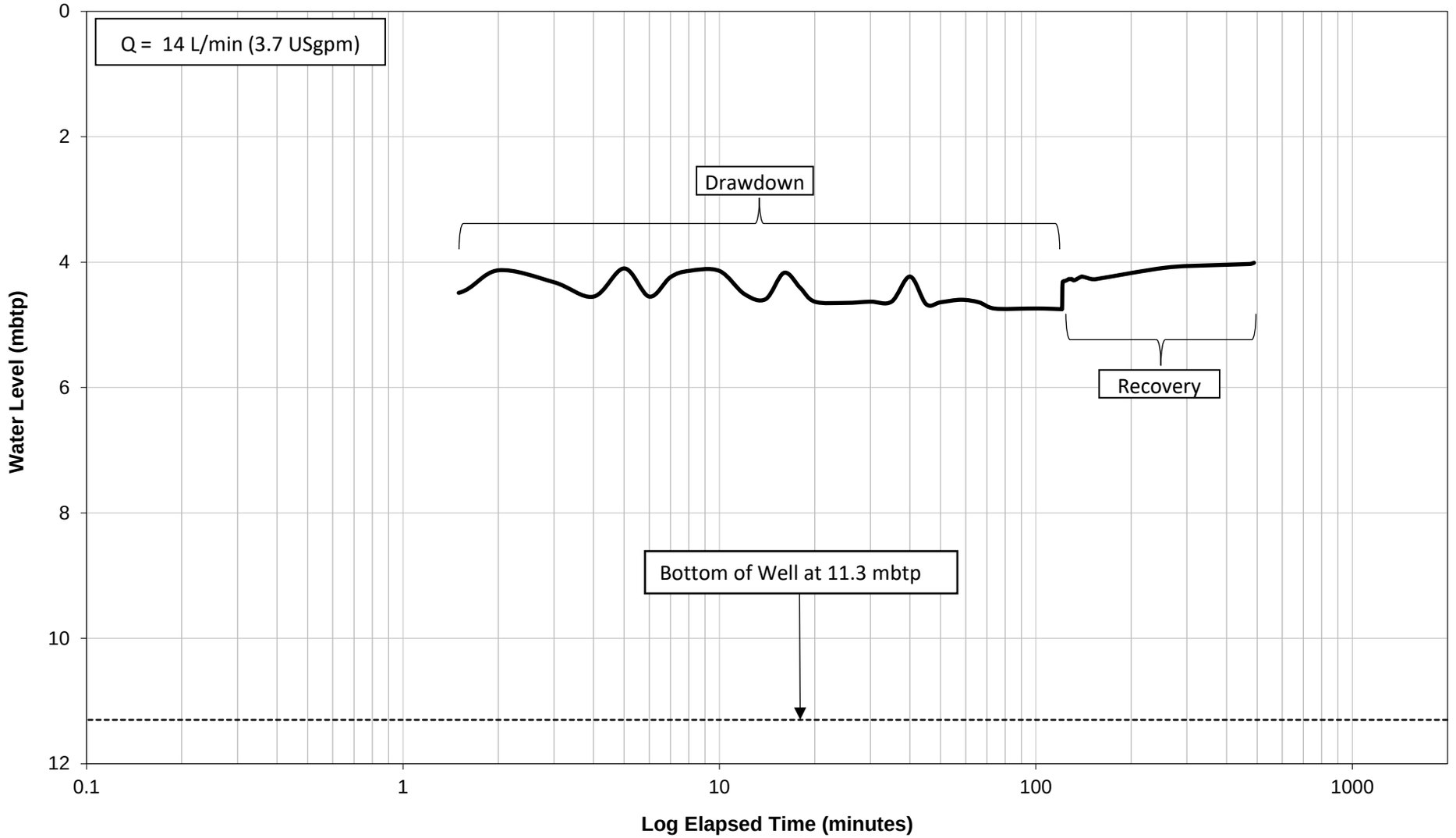
WATER LEVEL vs. LOG ELAPSED TIME
966 Burnside Road: September 23, 2024



WATER LEVEL vs LOG TIME

Drilled Well
MECP Well ID: Unknown
Static Level = 4.01 mbtp (3.91 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.10 m

DATE: JANUARY 2025

LOCATION: 966 Burnside Road, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-2

GHD

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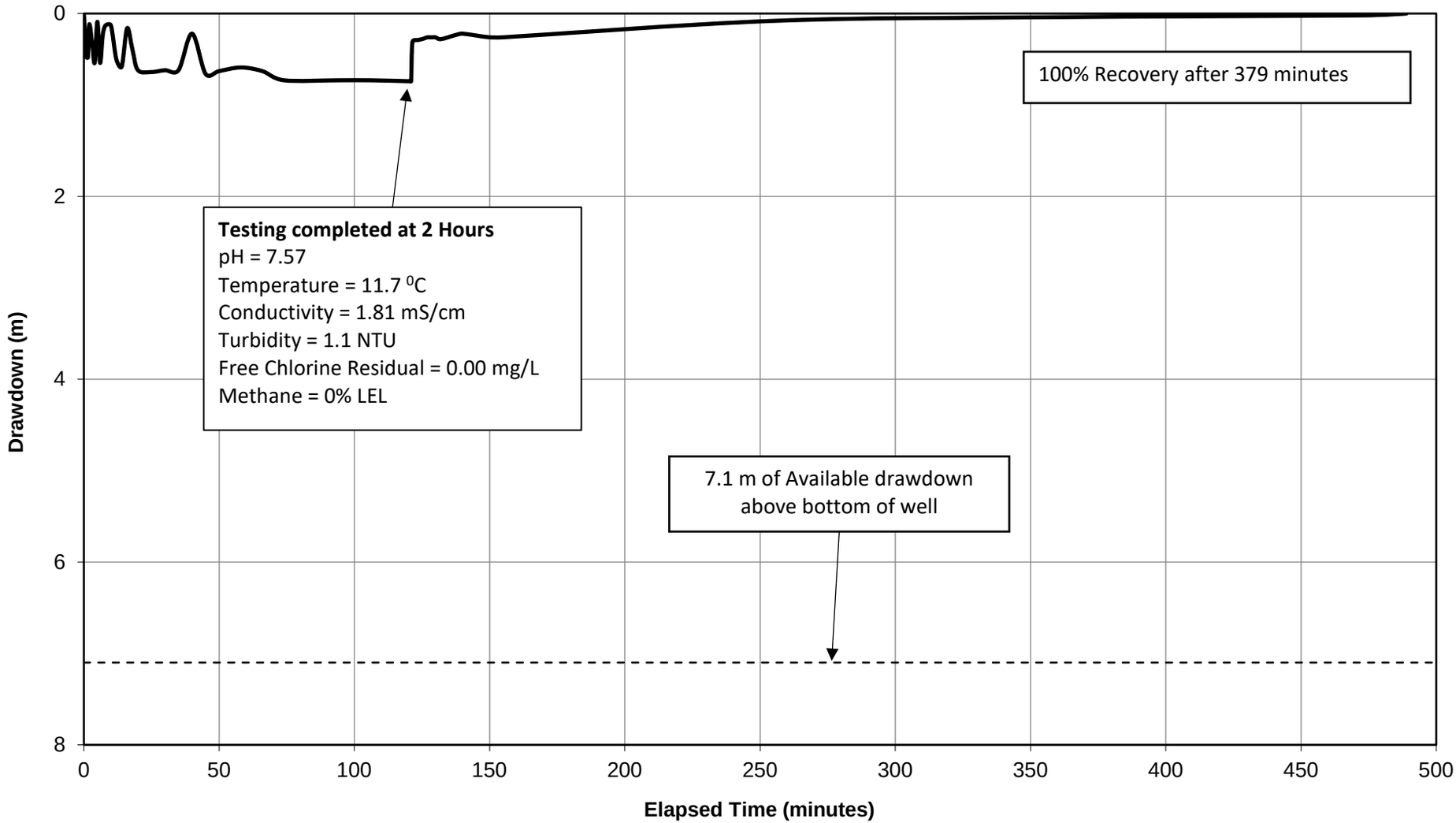
PETERBOROUGH, ON K9J 6X7
www.ghd.com

DRAWDOWN, RECOVERY AND TESTING DETAILS
966 Burnside Road: September 23, 2024



DRAWDOWN & RECOVERY

Drilled Well
MECP Well ID: Unknown
Static Level = 4.01 mbtp (3.91 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.10 m

DATE: JANUARY 2025

LOCATION: 966 Burnside Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-3

GHD

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PETERBOROUGH, ON K9J 6X7
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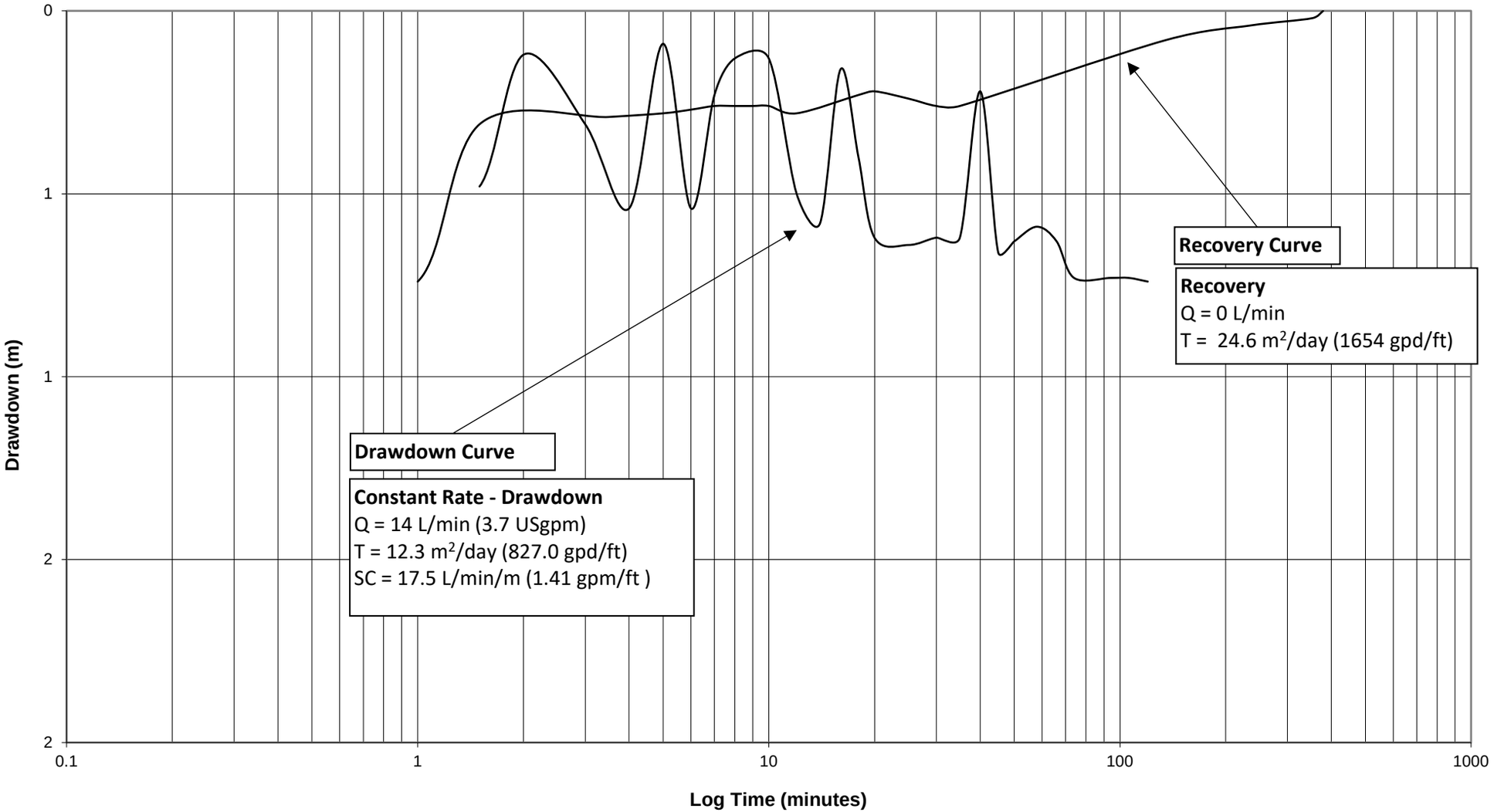
TRANMISSIVITY - DRAWDOWN and RECOVERY VS LOG TIME
966 Burnside Road: September 23, 2024



TRANSMISSIVITY

Drilled Well
MECP Well ID: Unknown
Static Level =4.01 mbtp (3.91 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.1 m

DATE: JANUARY 2025

LOCATION: 966 Burnside Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-4

GHD

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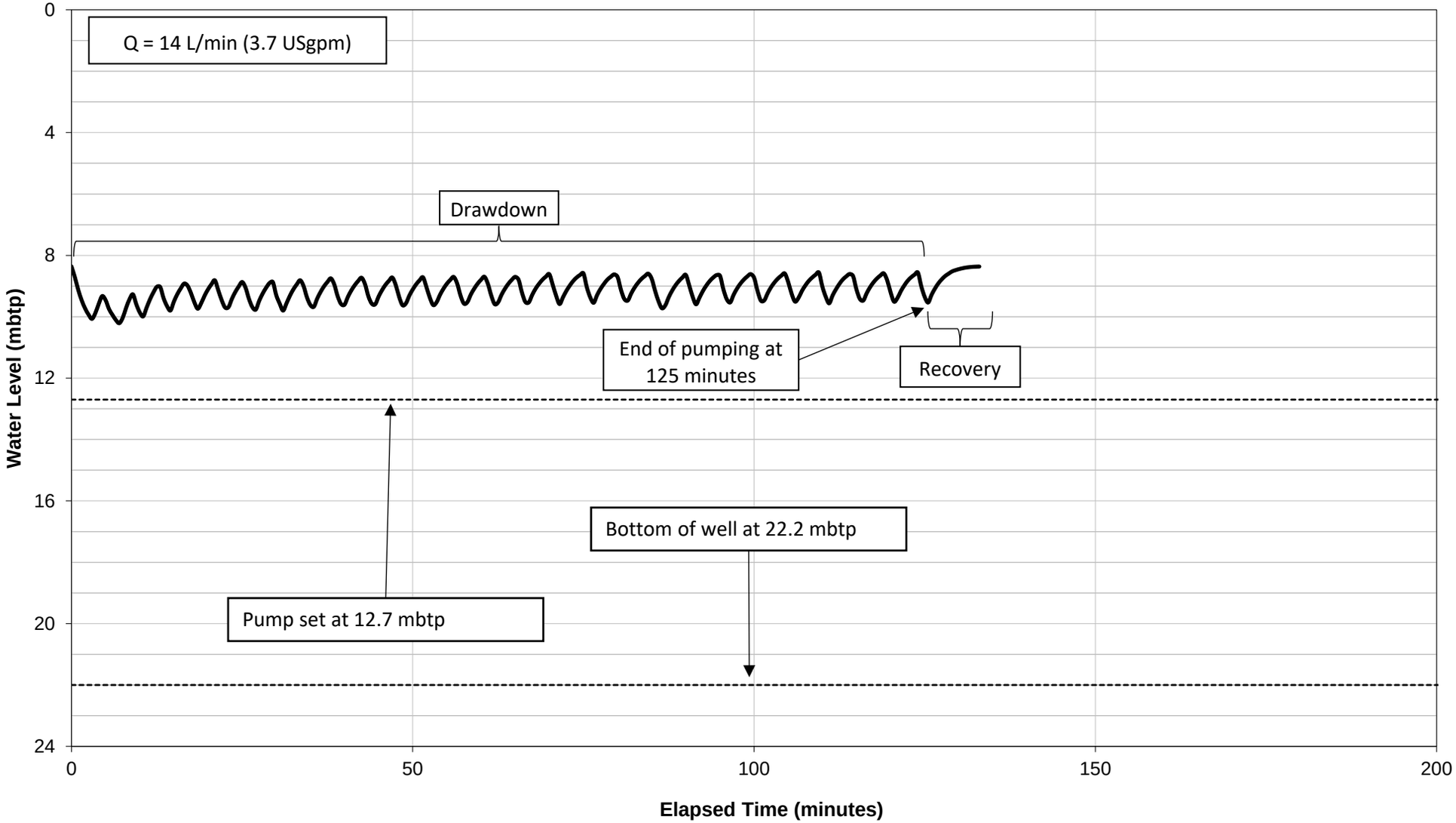
PUMP HISTORY CURVE
1032 East Communication Road: Sep. 24, 2024



PUMP HISTORY CURVE

Drilled Well

MECP Well ID: No Well Tag

Static Level = 8.36 mbtp (7.86 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.50 m

DATE: JANUARY 2025

LOCATION: 1032 East Communication Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-5

GHD

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PETERBOROUGH, ON K9J 6X7

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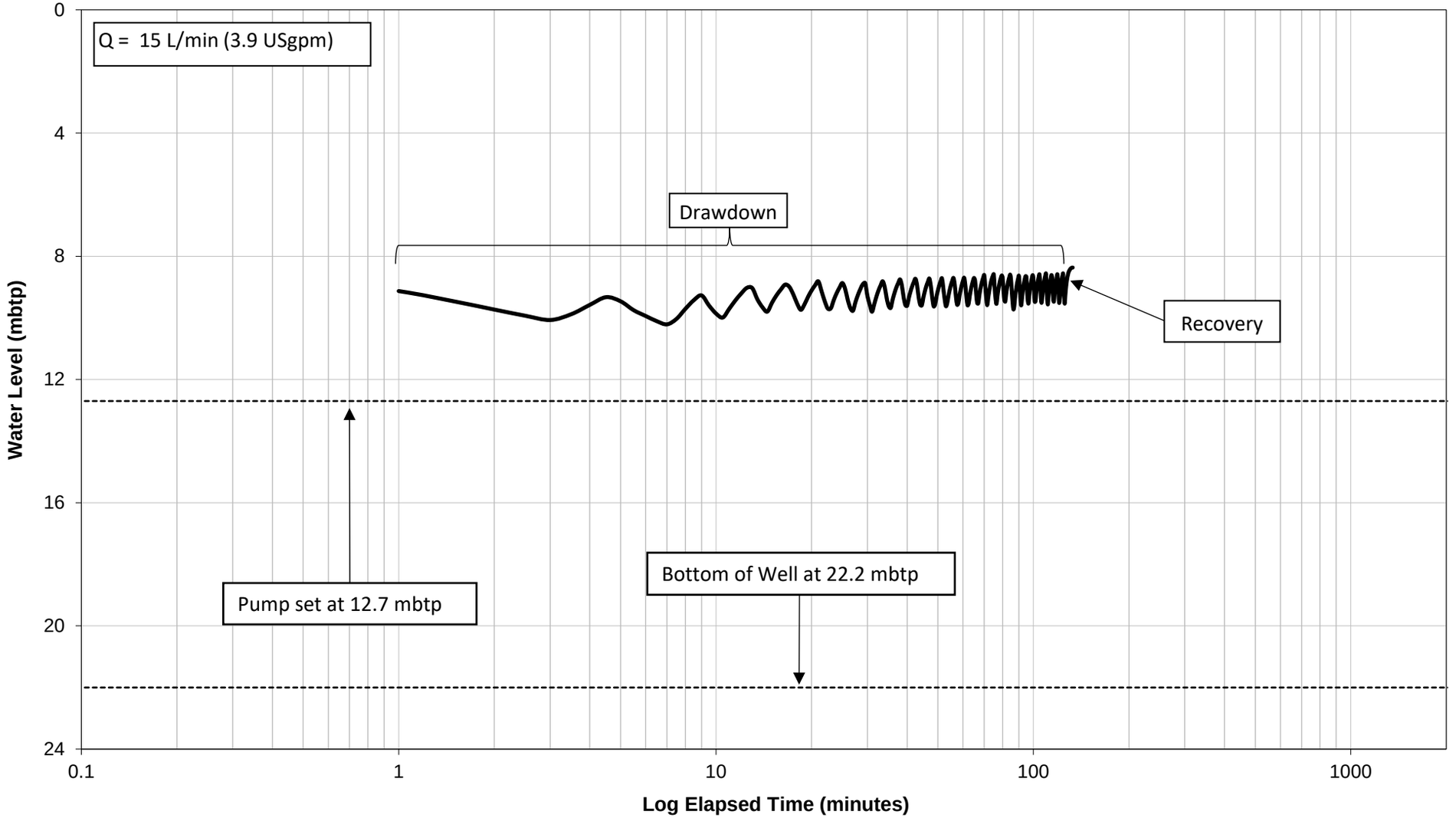
WATER LEVEL vs. LOG ELAPSED TIME
1032 East Communication Road: September 24, 2024



WATER LEVEL vs LOG TIME

Drilled Well
MECP Well ID: No Well Tag
Static Level = 8.36 mbtp (7.86 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.50 m

DATE: JANUARY 2025

LOCATION: 1032 East Communication Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-6

GHD

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PETERBOROUGH, ON K9J 6X7
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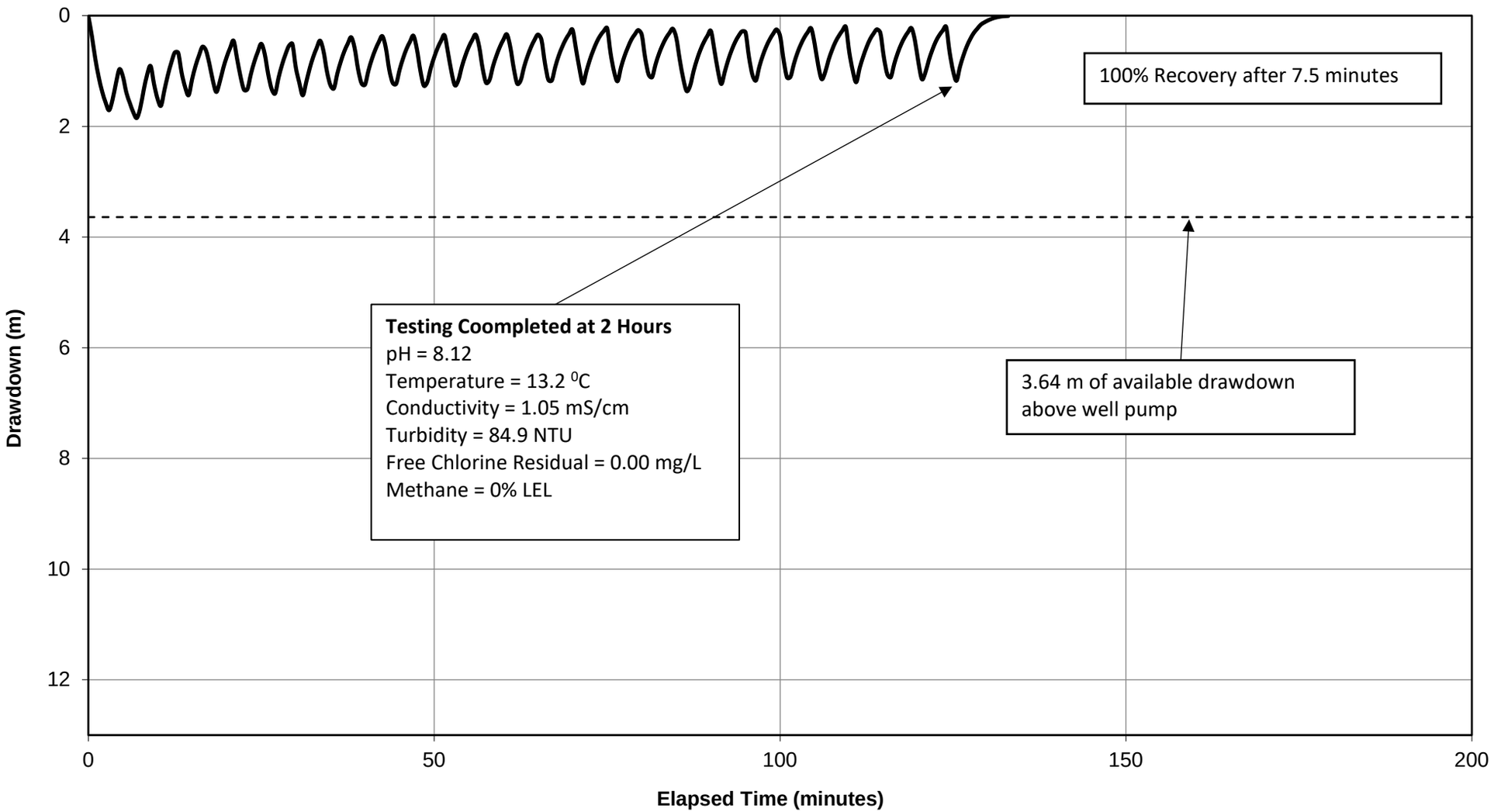
DRAWDOWN, RECOVERY AND TESTING DETAILS
1032 East Communication Road: September 24, 2024



DRAWDOWN & RECOVERY

Drilled Well
MECP Well ID: No Well Tag
Static Level = 8.36 mbtp (7.86 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.50 m

DATE: JANUARY 2025

LOCATION: 1032 East Communication Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-7

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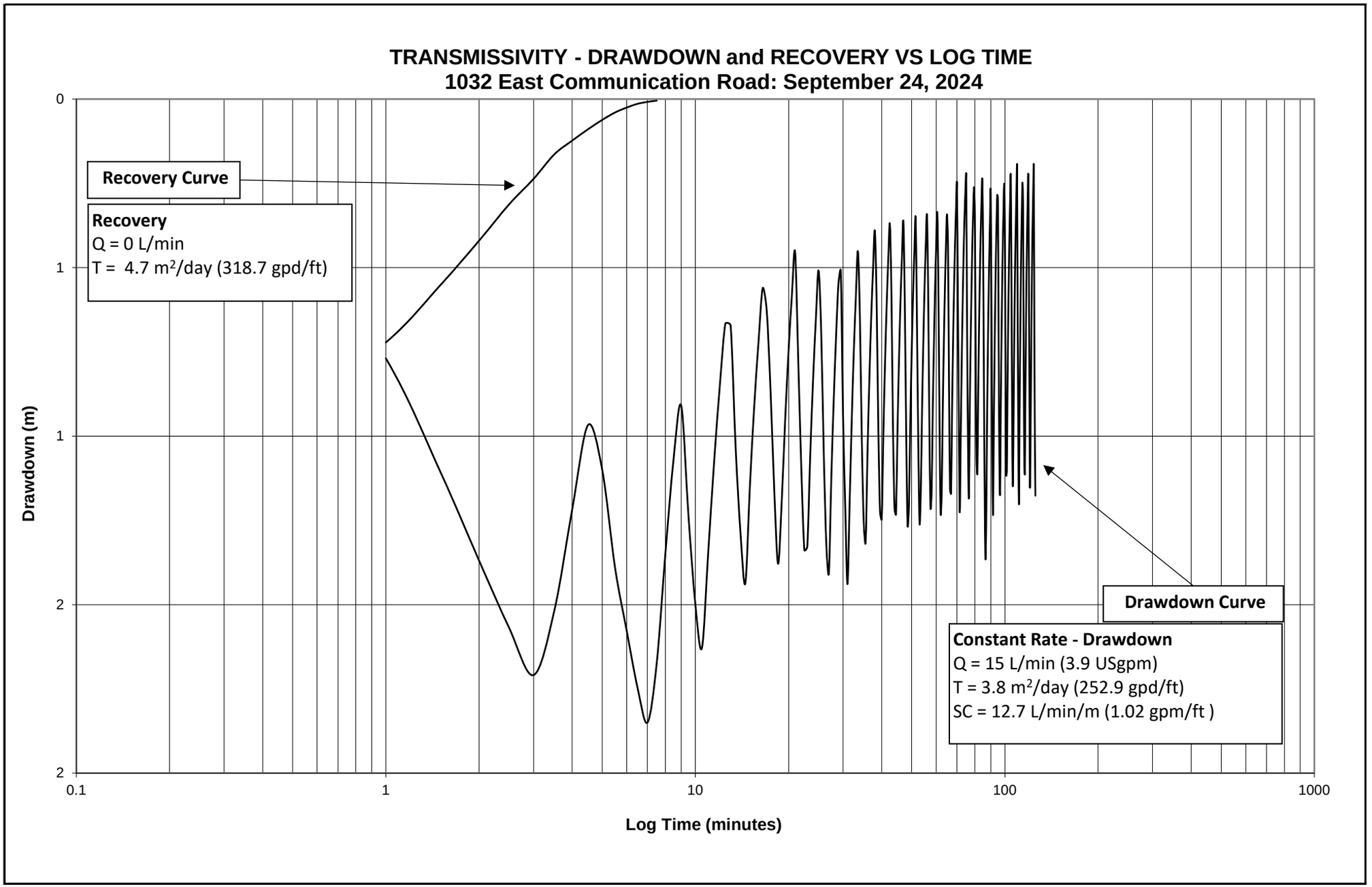

TRANSMISSIVITY

Drilled Well
MECP Well ID: No Well Tag
Static Level = 8.36 mbtp (7.86 mbgs)

Note: mbtp = metres below top of pipe; mbgs = metres below ground surface; Stick up = 0.5 m

DATE: JANUARY 2025

LOCATION: 1032 East Communication Rd, Bridgenorth, ON

JOB NUMBER: 12637390

DRAWING NUMBER: G-8

GHD

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Appendix H

Aquifer Testing Certificates of Analysis

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : 12637390, Bridgenorth

01-October-2024

GHD Limited - 735
Attn : Gus Bolin

347 Pido Rd., Unit #29
Peterborough, ON
K9J 6Z8, Canada

Phone: 705-749-3317
Fax:

Date Rec. : 23 September 2024
LR Report: **CA40182-SEP24**
Reference: 12637390, Gus Bolin

Copy: 1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	3: Analysis Completed Date	5: RL	8: 966 Burnside	9: 1032 ECR
Sample Date & Time				23-Sep-24 11:00	23-Sep-24 15:00
Temp Upon Receipt [°C]	***	***	***	***	***
UV Transmittance [%T]	24-Sep-24	25-Sep-24	---	87.6	92.2
Alkalinity [mg/L as CaCO3]	24-Sep-24	24-Sep-24	2	376	267
Colour [TCU]	24-Sep-24	24-Sep-24	3	< 3	< 3
Conductivity [uS/cm]	24-Sep-24	24-Sep-24	2	1410	996
pH [No unit]	24-Sep-24	24-Sep-24	0.05	7.48	7.68
TSS [mg/L]	25-Sep-24	26-Sep-24	2	7	62
TDS [mg/L]	24-Sep-24	25-Sep-24	30	874	577
Turbidity [NTU]	23-Sep-24	24-Sep-24	0.1	33	45
Organic N [mg/L]	24-Sep-24	26-Sep-24	0.05	< 0.05	< 0.05
TKN [as N mg/L]	24-Sep-24	26-Sep-24	0.05	0.09	0.05
NH3+NH4 [as N mg/L]	24-Sep-24	25-Sep-24	0.04	0.07	< 0.04
TOC [mg/L]	24-Sep-24	25-Sep-24	1	1	< 1
DOC [mg/L]	24-Sep-24	25-Sep-24	1	2	1
Cl [mg/L]	28-Sep-24	30-Sep-24	0.20	260	140
F [mg/L]	24-Sep-24	25-Sep-24	0.06	0.17	0.11
NO2 [as N mg/L]	24-Sep-24	25-Sep-24	0.030	< 0.03	< 0.03
NO3 [as N mg/L]	24-Sep-24	25-Sep-24	0.06	< 0.06	0.13
SO4 [mg/L]	28-Sep-24	30-Sep-24	0.20	50	36
Total P [mg/L]	24-Sep-24	25-Sep-24	0.03	< 0.03	< 0.03
Tot.Reactive P [mg/L]	24-Sep-24	25-Sep-24	0.03	< 0.03	< 0.03
Hg (diss) [mg/L]	27-Sep-24	30-Sep-24	1e-05	< 0.00001	< 0.00001
Hardness (dissolved) [mg/L as CaCO3]	25-Sep-24	01-Oct-24	0.05	556	337
Al (diss) [mg/L]	25-Sep-24	01-Oct-24	0.001	< 0.001	0.001
Sb (diss) [mg/L]	25-Sep-24	01-Oct-24	0.0009	< 0.0009	< 0.0009
As (diss) [mg/L]	25-Sep-24	01-Oct-24	0.0002	0.0011	< 0.0002
Ba (diss) [mg/L]	25-Sep-24	01-Oct-24	8e-05	0.197	0.0866
B (diss) [mg/L]	25-Sep-24	01-Oct-24	0.002	0.032	0.015
Cd (diss) [mg/L]	25-Sep-24	01-Oct-24	3e-06	0.000005	< 0.000003

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Project : 12637390, Bridgenorth

LR Report : **CA40182-SEP24**

Analysis	1: Analysis Start Date	3: Analysis Completed Date	5: RL	8: 966 Burnside	9: 1032 ECR
Ca (diss) [mg/L]	25-Sep-24	01-Oct-24	0.01	161	103
Cr (diss) [mg/L]	25-Sep-24	01-Oct-24	8e-05	0.00017	< 0.00008
Cu (diss) [mg/L]	25-Sep-24	01-Oct-24	0.0002	0.003	0.001
Fe (diss) [mg/L]	25-Sep-24	01-Oct-24	0.007	2.60	< 0.007
Pb (diss) [mg/L]	25-Sep-24	01-Oct-24	9e-05	< 0.00009	< 0.00009
Mg (diss) [mg/L]	25-Sep-24	01-Oct-24	0.001	37.3	19.5
Mn (diss) [mg/L]	25-Sep-24	01-Oct-24	1e-05	0.0737	0.00639
K (diss) [mg/L]	25-Sep-24	01-Oct-24	0.009	3.60	2.17
Na (diss) [mg/L]	25-Sep-24	01-Oct-24	0.01	71.2	63.9
Se (diss) [mg/L]	25-Sep-24	01-Oct-24	4e-05	0.00009	0.00006
U (diss) [mg/L]	25-Sep-24	01-Oct-24	2e-06	0.00382	0.00220
Zn (diss) [mg/L]	25-Sep-24	01-Oct-24	0.002	< 0.002	0.005
Cation Sum [meq/L]	---	---	---	14.45	9.58
Anion Sum [meq/L]	---	---	---	15.92	9.98
Anion-Cation Balance [% difference]	---	---	---	-4.85	-2.02
Ion Ratio	---	---	---	0.91	0.96
TDS (calculated) [mg/L]	---	---	---	810	523
Conductivity (calc) [uS/cm]	---	---	---	1519	978
Langelier's Index [@ 4° C]	---	---	---	0.26	0.14
Saturation pH [pHs @ 4°C]	---	---	---	7.22	7.54

Total phospuorous includes all Ortho-phosphates as well as Organics and hydrolyzable Phosphorous.

Temperature of Sample upon Receipt: 11 degrees C
Cooling Agent Present:yes
Custody Seal Present:yes

Chain of Custody Number:n/a

F-EWL Spike rep low, accepted based on all other QC

Jill Campbell

Jill Campbell, B.Sc.,GISAS
Project Specialist,
Environment, Health & Safety

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Appendix I

Nitrate Impact Assessment

Appendix I.1

Recharge Calculations for Predictive Nitrate Assessment using Conventional System

Recharge Calculations

Total Area Considered	15.20	ha
Recharge rate based on excavation*	175	mm/yr
Average recharge volume	72876.7	L/day

Note: *GHD completed 10 test pits where silty sand till was observed across the Site. The annual recharge rate for silty sand is approximately 150 to 200 mm/year. Assume an average rate of 175 mm/year

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Predictive Nitrate Assessment Calculations

Background nitrate - worst case	0.08	mg/L	From analytical testing of local drilled wells
Nitrate	40	mg/L	Constant
Effluent	38000	L/day	Constant
Lots	38	lots	Number of lots proposed
Site Dilution	72876.7	L/day	Daily recharge volume
Nitrate in precipitation recharge	0.0	mg/L	

Predicted Nitrate Concentation = Background + (Sewage Nitrate+Dilution Nitrate)/(Onsite Dilution+Effluent)

Where: Sewage = Nitrate * Effluent

Dilution Nitrate = Onsite Dilution * Nitrate in precipitation recharge (assumed to be zero)

Predicted Nitrate Concentation = 13.79 mg/L

Background nitrate samples:		[Nitrate]	
Drilled well 966 Burnside		<0.06	
Drilled well 1032 East Communication Road		0.13	mg/L
	Average	0.08	mg/L

Appendix I.2

Recharge Calculations for Predictive Nitrate Assessment using Tertiary System

Recharge Calculations

Total Area Considered	15.20	ha
Recharge rate based on excavation*	175	mm/yr
Average recharge volume	72876.7	L/day

Note: *GHD completed 10 test pits where silty sand till was observed across the Site. The annual recharge rate for silty sand is approximately 150 to 200 mm/year. Assume an average rate of 175 mm/year

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Predictive Nitrate Assessment Calculations

Background nitrate - average	0.08	mg/L	From analytical testing of local drilled wells
Septic Nitrate Conc. treated by Tertiary System	28	mg/L	Assume 70% of 40 mg/L
Effluent	38000	L/day	Constant
Lots	38	lots	Number of lots proposed
Site Dilution	72876.7	L/day	Daily recharge volume
Nitrate in precipitation recharge	0.0	mg/L	

Predicted Nitrate Concentation = Background + (Sewage Nitrate+Dilution Nitrate)/(Onsite Dilution+Effluent)

Where: Sewage = Nitrate * Effluent

Dilution Nitrate = Onsite Dilution * Nitrate in precipitation recharge (assumed to be zero)

Predicted Nitrate Concentation = 9.68 mg/L

Background nitrate samples:		[Nitrate]	
Drilled well 966 Burnside Road		<0.06	
Drilled well 1032 East Communication Road		0.13	mg/L
	Average	0.08	mg/L

