CHUNG & VANDER DOELEN
ENGINEERING LTD.

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
6581 Highway 6
Fergus, Ontario

SUBMITTED TO:
Mr. Mike Puopolo
Polocorp Inc.
379 Queen Street South
Kitchener, ON
N2G 1W6

FILE NO: 1495 **/** February 28, 2025

CHUNG & VANDER DOELEN
ENGINEERING LTD.

311 VICTORIA STREET NORTH
KITCHENER / ONTARIO / N2H 5E1
519-742-8979

February 28, 2025
FILE NO.: 1495

Polocorp Inc.
379 Queen Street South
Kitchener, ON
N2G 1W6

Attention: Mike Puopolo

RE: Preliminary Hydrogeological Investigation
Proposed Residential Development
6581 Highway 6, Fergus, Ontario

This report summarizes the preliminary results of a hydrogeological investigation completed in support of a proposed residential development containing a combination of residential single units, stacked townhouses, mixed-use units, roadways, and parkland, located at 6581 Highway 6 in Fergus, Ontario.

If you have any questions or concerns regarding the report, please contact the undersigned.

Yours truly,
CHUNG & VANDER DOELEN ENGINEERING LTD.

Peter Dao, M.Sc., P.Geo.
Manager, Environmental & Hydrogeology

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LIST OF APPENDICES AND ENCLOSURES

1.0 INTRODUCTION

CHUNG & VANDER DOELEN ENGINEERING LTD. (CVD) has been retained by the 'Client', Polocorp Inc., to complete a scoped hydrogeological investigation for the property located at 6581 Highway 6 in Fergus, Ontario ("Site") to support a proposed residential subdivision. The proposed development area comprises part of Lot 17, Concession 16 of the Subject Lands.

The purpose of the investigation is to evaluate existing hydrogeological conditions at the Site in support of a proposal for a residential subdivision and subsequent development, comprised of a combination of residential single units, stacked townhouses, mixed-use units, roadways, and park.

This report presents the preliminary findings of the ongoing hydrogeological investigation, conducted between February and September 2024 for the proposed subdivision. At the time of the writing of this report, only a Draft Plan of Subdivision (Polocorp Inc., December 10, 2024), as provided in Appendix A, was available for our review.

The 20.03±-hectare (ha) Site is currently comprised of a cultivated agricultural field and a residential dwelling with its related structures fronting Highway 6. The Site is bound by Highway 6 to the west and predominantly by agricultural lands to the north, east, and south. An existing residential subdivision is situated southwest of the Site on the opposite side of Highway 6, and another residential subdivision is found approximately 400± m southeast of the property. Figure 1 shows the location of the subject Site in the Town of Fergus.

It is understood that the Site is proposed to be fully municipally serviced with the water and wastewater services. Although no current plans for on-Site stormwater management (SWM) facilities are available, it is expected that the property will be connected to a 2.41± ha sized SWM facility which is proposed to be constructed in the lot directly south of the Site (968 St. David Street North). A roadway network, connected to Highway 6, is planned throughout the subdivision. This investigation characterizes the hydrogeological setting and assesses potential impacts from future servicing. Other characteristics of the future development are to include a 0.89± ha sized parkland (Block 66).

The overall objectives of the hydrogeological investigation are as follows:

1. To characterize the hydrogeologic setting, using data from the current and previous investigations, with primary emphasis on the near surface hydrogeologic setting.
2. To assess the roles (or functions) that groundwater and surface water have with respect to nearby environmental features at or adjacent to the property.
3. To identify and evaluate potential impacts and opportunities to enhance groundwater and surface water contribution to receptors from the proposed development, and to make recommendations to safeguard these features from the potential impacts associated with the development.

As this is a preliminary report, early in the investigation process, the objectives above cannot be fully addressed at this time. An updated report will be provided after the completion of the investigative scope of work.

2.0 INVESTIGATION SCOPE

2.1 BACKGROUND DATA REVIEW

The following background information (Section 8.0 lists the specific information), which has been considered and reviewed as part of this investigation:

- CVD Engineering Ltd.; Preliminary Geotechnical Investigation (May 28, 2024)
- Golder; Hydrogeological Investigation, 8243 and 8282 Wellington Road 19, Ontario (February 2022)
- Grounded Engineering; Hydrogeological Assessment, 350 Wellington Road 7, Elora, Ontario (October 2022)
- Government of Canada Environment and Natural Resources; Historical Data; Fergus Shand Dam Weather Station; 2024 Daily Data Reports
- Grand River Conservation Authority; ESRI; ArcGIS; Map Your Property Tool (2024)
- Karrow, P.F.; Pleistocene Geology of the Guelph Area, Southern Ontario; Geological Report 61; Map 22153, scale 1:63,360 (1968) (Figure 2)
- Matrix Solutions Inc.; Centre Wellington Scoped Tier Three Water Budget Assessment (December 2017)
- Polocorp; Draft Plan of Subdivision (December 10, 2024) (Appendix A)
- MECP Water Well Records near Site (Appendix G)
- Toporama Topographical Map (Ministry of Natural Resources, Retrieved June 11, 2024) (Figure 1)
- WSP Canada Inc.; Hydrogeological Investigation - Updated, 8243 and 8282 Wellington Road 19, Ontario (April 2023)

2.2 BOREHOLE DRILLING & MONITORING WELL INSTALLATION

As part of both the initial hydrogeological and preliminary geotechnical investigations completed between January 16 and 17, 2024, five (5) boreholes were advanced to depths of between 6.70 and 8.25 m below existing grade, and monitoring wells were installed at each borehole location (labelled BH 1 to 5). A supplemental investigation was completed, between September 11 and 12, 2024, in which eight (8) additional boreholes/monitoring wells (labelled BH 101 to 105) were drilled and installed to depths between 8.10 and 9.60 m below grade. These boreholes/wells were drilled/installed to investigate the shallow subsoil and shallow groundwater table conditions at the property.

The investigation was completed using a track-mounted CME-55 drill rig, equipped with standard 83 mm inner diameter hollow stem augers (HSA) operated by Davis Drilling Ltd. of Milton, Ontario. Soil samples collected during the borehole investigation program were examined in the field and subsequently brought to CVD's laboratory for tactile and textural examination. Moisture content determinations were performed on all retrieved soil samples from the drilling program.

The ground surface elevation of the boreholes, monitoring wells, and geomorphological features of the site were surveyed by CVD for the purpose of this report using a Network RTK Global Navigation Satellite

System (GNSS) Receiver. The survey data was collected using the UTM Zone 17N Projection, NAD83(CSRS)v7-2010 datum and Canada Geoid Model HT2_2010v70 (CGVD28).

2.3 WELL DEVELOPMENT, WATER LEVEL MONITORING, & RESPONSE TESTS

Each monitoring well was developed using Waterra™ polyethylene tubing and foot-valve hand pumps. As of the writing of this report, groundwater level monitoring was performed on five (5) occasions: on February 6, March 11, July 22, September 12, and September 18, 2024. Groundwater levels were obtained at all of the monitoring wells and piezometer locations during each occasion. Table 1 provides a summary of the groundwater levels and calculated elevations for the five monitoring events.

Well response tests (slug/bail tests) were completed at two (2) of the monitoring well locations (Boreholes 1 and 5) on March 11, 2024, to provide a more accurate estimate of the hydraulic conductivity (K) (or permeability) of the saturated aquifer subsoil strata, to assist in providing more accurate infiltration rates. The hydraulic conductivities were calculated through the Aquifer Test software utilizing the Bouwer and Rice method. The results of the tests are graphically presented in Appendix C, and a summary of the data is also included in Table 1.

Furthermore, two (2) grain size distribution analyses were carried out on representative subsoil samples to help identify and assist in providing estimates of hydraulic conductivities for the encountered groundwater-bearing subsoil deposits. The results of these tests are presented in Enclosures 22 and 23.

Additionally, to provide a more comprehensive summary of groundwater conditions at the Site, three (3) Van Essen DI801 10 m TD-Diver automated data loggers and one (1) Baro-Diver were installed in wells BH 1, 5, and 101. The automated monitoring of water level fluctuations at these wells using the data loggers is currently ongoing.

3.0 SITE CHARACTERIZATION

3.1 TOPOGRAPHY, DRAINAGE & WETLAND FEATURES

The Site is located within the Upper Grand River watershed and is split between the West Montrose – Grand River Sub watershed and the Irvine Creek Sub watershed. Locally, the groundwater table and any surface water runoff traverses across the Site in a generally north to south orientation, towards the southern portion of the property and towards a wetland, located southeast of the Site.

According to the Grand River Conservation Authority (GRCA), this wetland southeast of the property is GRCA-regulated and is split into two categories: marsh and swamp. Roughly the northern third of the wetland and a small section of the southeastern side of the area are designated as a swamp wetland, while the remainder of the wetland is designated as a marsh. The wetland includes multiple ponds connected by perennial streams. Occasional intermittent streams can be observed travelling along the north-south axis across the wetland, towards the southern streams/ponds. Various trees, frequent

cattails, and other marsh-related vegetation are present throughout most of the wetland. The GRCA mapping for the regulated lands abreast of the wetlands and water courses are shown on Figure 3.

Regionally, the surface topography decreases significantly towards Guelph and Kitchener/Waterloo, and generally increases north, towards The Grand Valley and Arthur. Elevations also decrease westward, towards Listowel, and significantly decrease eastward, towards Brampton. Currently, the topography in the area is formed from the most recent glacial activity (Wisconsin). The area around Fergus is full of kames associated with the Orangeville Moraine (Karrow, 1968). Figure 1 shows the topographic contours across the Site.

Local Site topography is considered 'rolling land', with ground elevations from north to south across the Site ranging from 430± to 425± mASL. There is also generally a slight increase in surface elevation from east to west, across the Site. The current terrain on-Site is relatively even, with no major undulations, or topographical features. In general, runoff will mimic topography flowing to low elevations where watercourses and wetlands are present. As a result, surface runoff from the farm fields is anticipated to be primarily controlled by topography and to drain towards the relatively lower lying south/wetland southeast of the Site.

Most of the Site consists of a farm field with occasional minor residential/grassy areas fronting Highway 6. Occasional medium to large sized trees can be found along the boundaries of the property.

3.2 GEOLOGIC SETTING

Surface geological mapping for the area (by Karrow P.F., 1968) is presented in the Quaternary Geology map of Figure 2. According to Karrow (1968), the Site is primarily underlain by lacustrine, kame deposits, comprising mainly outwash sands, with an underlying Wentworth till unit. Both deposits were laid down during the late Wisconsinan stage of the Pleistocene period. The local topography of the area has been largely influenced by the presence of The Wentworth Till. The entire area is underlain by dolostone bedrock of the Guelph Formation. This is confirmed through the MECP well record data for drinking water wells in the area surrounding the property, as included in Appendix G. According to the records, bedrock was encountered at depths between 24± and 32± m below existing grade (mbeg). Bedrock outcrops can be found in certain areas around Fergus and are notably present towards the southwest within the Elora Gorge.

The monitoring well recorded data and borehole log data (Enclosures 1 to 5 and 9 to 13) collected during the Site investigation are generally consistent with Quaternary geological mapping. Based on the drilled boreholes, the soils encountered generally consist of 180 to 300 mm of topsoil predominantly underlain by a major deposit of fine to medium sand with trace to some silt which extends to between at least 8.10 and 9.60 mbeg. Occasional silt and/or clayey silt seams were observed within the sand deposit. Minor seams/layers of grey silt were encountered near the bottom of Boreholes 4, 5, 101, 104, and 105, which likely indicate the transition zone to the clayey silt till underlying the area. This clayey silt geological unit is presumed to be the Wentworth Till deposit, referred to in Karrow (1968). It should be

noted that the deposit was not directly encountered during borehole investigation at the Site; however, it is expected that it is present, just at deeper depths.

3.3 HYDROGEOLOGIC SETTING

3.3.1 Water Table Depth and Configuration

The water table exists predominantly within the shallow fine granular deposits (fine to medium sand, silt subsoils) encountered beneath the entire Site. The encountered depth of the groundwater table greatly reduces from north to south across the property. Table 1 summarizes the groundwater level measurements collected thus far during this investigation from the period extending from February 2024 to September 2024 at all of monitoring well locations.

Figure 5 presents an interpretation of the water table configuration and shallow groundwater flow directions across the property using the groundwater elevation measurements gathered on September 18, 2024. As expected, the water table mimics the topography with shallow groundwater flowing southerly towards the south/southeastern portion of the Site in the direction of the nearby wetland.

During the monitoring period, according to the gathered data, groundwater levels were encountered at depths ranging between 4.83 (BH 1) and 2.02 mbeg (BH 5), corresponding to elevations ranging between 425.02 and 423.56 masl according to the July 22, 2024, water levels measurements. It should be noted that these high-water levels documented during the summer season are likely caused by the abnormally high amount of precipitation experienced throughout the first half of 2024. Furthermore, groundwater level monitoring is required to understand the seasonal and yearly variability in groundwater elevations across the Site. Ongoing groundwater monitoring is being conducted on a seasonal basis to provide an evaluation of the seasonal variability of the groundwater table and its fluctuations.

Appendix D includes a summary table of measured groundwater levels (Table 1) and interpreted hydrographs collected during the monitoring period. The hydrographs were plotted against monthly precipitation data sourced from the Government of Canada Environment and Natural Resources Daily Data Reports for the Fergus Shand Dam weather station, the nearest active weather station to the Site.

3.3.2 Groundwater Infiltration and Recharge

Groundwater infiltration rates are expected to be generally high across the Site due to the predominance of the sand deposit and the relatively deep depth of the water table. Infiltration and recharge areas are also heavily influenced by the topographical features of the land, which in this case promotes shallow groundwater to flow towards the south.

Based on the single well response tests and physical examination of the soil deposits, the correlating estimated infiltration rates for the various surficial soils at the property range as follows:

- Fine to Medium Sand: 75 to 150 mm/hr
- Silty Sand: 15 to 30 mm/hr
- Sandy Silt to Sand and Silt: 10 to 20 mm/hr
- Silt: 3 to 5 mm/hr
- Clayey Silt Till: <1 mm/hr

According to data layers provided from the GRCA-Web GIS application, the property has a recharge rate of 140± to 320± mm/year. Recharge/infiltration should be generally high due to the ubiquitous presence of the fine sand deposit and its overall 'dry' condition, since the water table during the peak groundwater elevation period (February to March 2024) was encountered at depths of between 2± to 5± mbeg.

3.4 SOURCE WATER PROTECTION AND GROUNDWATER USE

The entire Site is located within the Fergus Wellhead Protection Area (WHPA). Fergus currently has six (6) municipal supply wells (wells F1, F2, F4, F5, F6, F7), with the Site located in between three of these wells (F4, F6, F7). According to data provided on the GRCA-Web GIS application, most of the property is classified as WHPA-C, denoting an area in which travel time is between 2 to 5 years, and with a vulnerability score of 6. The entire eastern boundary of the Site falls with WHPA-B for the municipal well, F6, denoting an area in which the groundwater travel time to the well is 2 years or less, and having a vulnerability score of 8. Both sections are considered to have a medium vulnerability. It should also be noted that the Belwood Reservoir, where the lake levels are controlled by the Fergus Shand Dam, is located along the Grand River, upstream of Fergus.

All six (6) of the existing municipal supply wells pump groundwater from the dolostone bedrock aquifers of the Guelph, Gasport, and Goat Island Formations. They are both primarily cased and open in the Guelph Formation dolostone. One of these six wells (F2), which is now inactive, is a well with groundwater under the direct influence of surface water (GUDI). Transmissivity values of the Fergus wells range between 52 to 395 m^2/day (Matrix Solutions Inc., 2017). The wells were drilled to depths of between 76.5 mbeg (F2) and 138.7 mbeg (F7).

Regarding the water quality at the Site, two (2) groundwater samples were submitted from monitoring wells BH 1 and 5 for analysis of general chemistry, nutrients, and metals. These samples were submitted to the AGAT Laboratories of Mississauga for testing/analysis, with results being provided in Appendix F. No major concerns were identified. Elevated levels of iron were present which exceed the aesthetic drinking water objectives; however, this is naturally occurring within the shallow groundwater of the area. Minor amounts of cadmium, cobalt, copper, vanadium, and zinc were also detected. Slightly elevated amounts of sulphate were also detected in monitoring well BH 5. No chemical threats to groundwater at the Site were detected.

4.0 WATER BUDGET ASSESSMENT

Pre-Development Water Balance

Precipitation ultimately becomes split into three 'water budget' components: evapotranspiration, runoff, and recharge, with the latter two often referred to together as 'the water balance' (i.e., the remainder after evapotranspiration is removed). Groundwater recharge rates will vary at a given site based on the permeability of the surficial deposits but will also depend on topography and type of vegetative cover. Most of the subject property has been historically agricultural and has had different types of crops depending on the year, with no crop planted at all during certain portions of the year.

A pre-development water balance for the property has been estimated using the Water Balance Method (WBM) of Thornthwaite and Mather (1957), a method cited in the MECP document "Stormwater Management Planning and Design Manual" (March 2003) to estimate evapotranspiration. The calculations utilize the 1981-2010 'Climate Normals' from the closest weather station located at the Fergus Shand Dam (gives an annual precipitation rate of 946 mm/yr) and considers a combination of cultivated land use with moderately deep-rooted crops (e.g. wheat), pasture & lawns, and impervious surfaces. Using these conditions, the subject Site has an average evapotranspiration rate of about 56.5% (or 536 mm/yr) and remaining 'water balance' of about 43.5% (410 mm/yr) is estimated.
The 2003 MECP document also provides a methodology for estimating the proportions of the water balance that ultimately become runoff vs. recharge, based on applicable infiltration factors for soil, vegetative cover, and topography.

The overall water balance and water budget calculations are included in Appendix E. In summary, the pre-development average annual water budget for the 20.03± ha property is as follows:

A) Pervious Cultivated Land of 18.86 ha

Precipitation	946 mm/yr	178,349 m^3/yr
Evapotranspiration	536 mm/yr	101,010 m^3/yr
Water Balance	410 mm/yr	77,339 m^3/yr
Recharge	**287 mm/yr**	**54,137 m^3/yr**
Runoff	123 mm/yr	23,202 m^3/yr

B) Pervious Pasture & Lawns of 1.00 ha

Precipitation	946 mm/yr	9,459 m^3/yr
Evapotranspiration	536 mm/yr	5,357 m^3/yr
Water Balance	410 mm/yr	4,102 m^3/yr
Recharge	**308 mm/yr**	**3,076 m^3/yr**
Runoff	103 mm/yr	1,025 m^3/yr

C) Impervious Rooftops to Pervious Areas of 0.17 ha

Precipitation	946 mm/yr	1,627 m^3/yr
Evapotranspiration	95 mm/yr	163 m^3/yr
Water Balance	851 mm/yr	1,464 m^3/yr
Recharge	**213 mm/yr**	**366 m^3/yr**
Runoff	638 mm/yr	1,098 m^3/yr

The target recharge quantity for matching in post-development is 57,580 m^3/yr. Recharge can likely be met through a stormwater management design utilizing enhanced infiltration facilities as Low Impact Development (LID) infrastructure for the developed Site.

5.0 SITE SERVICING REQUIREMENTS & IMPACT ASSESSMENT

5.1 WASTEWATER SYSTEMS & POTENTIAL IMPACT OF EFFLUENT

The proposed subdivision will be connected to municipal sanitary sewers. No private wastewater treatment system requirements are anticipated for the proposed subdivision.

5.2 WATER SUPPLY & POTENTIAL IMPACT OF WATER TAKING

The proposed subdivision will be serviced by municipal water services. No private water supply service requirements are anticipated.

5.3 STORMWATER MANAGEMENT & POTENTIAL IMPACT TO GROUNDWATER RECHARGE

The proposed subdivision will be serviced by municipal stormwater management works; however, at the time of the writing of this report, no specific design drawings/plans were available. It is understood there are plans to connect the proposed development at the Site to the 2.41± ha SWM facility that is proposed for a separate subdivision development on the adjacent lot south of the Site. The general shallow groundwater gradient travels towards the proposed location of the SWM facility. As the realization of the project proceeds, addendums addressing stormwater management and any theoretical impacts to groundwater recharge including proposed LID infrastructure at the Site may be provided during the detailed design stage.

It is recommended that water balance and quality of water are maintained throughout the property, and any potential effects associated with erosion and sedimentation control to the topographical/environmental features are properly designed and controlled.

The Stormwater Management Planning and Design Manual (March 2003) provided by the Ministry of Environment may be used as a reference to the planning of the stormwater systems. Additionally, the

Township of Centre Wellington Sewer Use By-Law No. 2022-66 should be consulted.

Further groundwater monitoring is being performed to better understand the water table and its seasonal variations to support development design.

Due to the abundance of 'dry' and highly permeable sands throughout much of the Site, infiltration galleries, open ditches and/or swales, and or soak away pits can be constructed into the sandy soils to maintain pre-development recharge rates. Further recommendations may be provided once a more detailed plan is available.

6.0 CONCLUSIONS & RECOMMENDATIONS

Based on the results of the hydrogeological investigation described in this report, the following conclusions and recommendations are provided:

1. The subject property is predominantly underlain by fine to medium grained sand deposits of the late Wisconsin stage of the Pleistocene period, which likely reduce in thickness from north to south across the property. A clayey silt till deposit, likely the Wentworth Till, is believed to underly the fine granular deposits. During the spring to early summer 2024 period, the groundwater table depths ranged between 5.39 (BH 1) and 1.99 mbeg (BH 5) across the property, corresponding to elevations between 425.02 and 423.56 masl.

2. Topography decreases in elevation from north to south with ground surface elevations approximately ranging from between 430± to 425± mASL. Shallow groundwater generally mimics the topography of the Site and flows towards the southern portion of the property and towards the nearby wetland located southeast of the Site.

3. Due to the predominance of the underlying fine sand deposits with a high infiltration rate (100± mm/hr), and the relatively deeper lying groundwater table of the Site (2± to 5± mbeg, March 2024), infiltration/recharge opportunities throughout the Site should be abundant. Based on the calculated pre-development water balance, the Site has an average evapotranspiration rate of about 56.5% (or 536 mm/yr) and a remaining 'water balance' of about 43.5% (410 mm/yr) is estimated. The target recharge quantity for matching in post-development is 57,580 m^3/yr.

4. The property falls within the Fergus Wellhead Protection Area (WHPA) and is currently classified as WHPA-C and WHPA-B with an overall medium vulnerability rating between 6 and 8. The property is located between three (3) of the six (6) Fergus municipal supply wells. No chemical threats or concerns were identified within the property bounds.

5. Site servicing (wastewater, water supply, stormwater management) for the development is to be fully municipally supplied. At the time of the writing of this report, no specific design drawings / plans were available. It is also recommended that as design plans are updated and information becomes available, addendums be added to address the specific site servicing issues.

6. Seasonal groundwater monitoring is incomplete and is ongoing at the Site to better characterize the hydrogeological setting and groundwater/surface water interactions.

7. It is recommended that once finished floor elevations and a site grading plan are available, that CVD be retained to review the final design and provide updates to the recommendations and conclusions provided in this report. Based on the final design, additional boreholes/monitoring wells might be required to delineate the extent of the water table and provide additional information.

7.0 CLOSING

This hydrogeological investigation report has been prepared for the exclusive use of the Client and their assigns for specific application to this project property.

The assessment was conducted in accordance with the verbal and written requests from the Client, and generally accepted assessment practices. Performance of this assessment is intended to reduce, but not eliminate, uncertainty regarding the hydrogeological conditions encountered at the project site, given reasonable limits of time and cost. No other warranty, expressed or implied, is made.

We trust this report is sufficient for your immediate requirements. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
CHUNG & VANDER DOELEN ENGINEERING LTD.

Yaroslav Chudin, EIT
Geotechnical Engineering Intern

Gavin R O'Brien

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8.0 REFERENCES

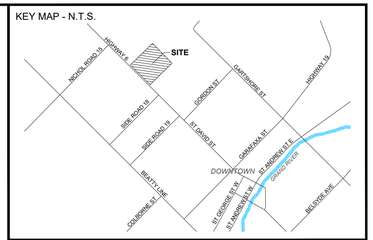
The following documents, maps, or other publications have been used in the preparation of this report.

- "Centre Wellington Scoped Tier Three Water Budget Assessment", Matrix Solutions Inc. (December 2017).
- "Draft Plan of Subdivision", Polocorp (December 10, 2024).
- "Historical Data; Fergus Shand Dam Weather Station; 2024 Daily Data Reports" Government of Canada Environment and Natural Resources; Retrieved October 1, 202
- "Preliminary Geotechnical Investigation: Proposed Residential Subdivision", Project No.: 1495, CVD Engineering Ltd. (May 28, 2024)
- "Hydrogeological Assessment, 350 Wellington Road 7, Elora, Ontario", Grounded Engineering (October 2022)
- "Hydrogeological Investigation, 8243 and 8282 Wellington Road 19, Ontario", Golder (February 2022)
- "Hydrogeological Investigation - Updated, 8243 and 8282 Wellington Road 19, Ontario", WSP Canada Inc. (April 2023)
- "Map Your Property Tool", Grand River Conservation Authority; ESRI; ArcGIS (2024)
- "Pleistocene Geology of the Guelph Area, Southern Ontario; Geological Report 61", Map 22153, scale 1:63,360, Karrow, P. F. (1968).
- Toporama Topographical Map, Ministry of Natural Resources (Retrieved June 11, 2024)

APPENDIX A

Conceptual Subdivision Plan (Polocorp, December 10, 2024)

KEY MAP - N.T.S.



DRAFT PLAN OF SUBDIVISION

PT OF LOT 18, CONCESSION 16
IN THE FORMER GEOGRAPHIC TWP OF NICHOL
CENTRE WELLINGTON

POLOCORP INC.

20 0 20 40 60 80 100
SCALE = 1:1400 (metric)

LAND USE SCHEDULE

DESCRIPTION	LOTS/BLKS.	UNITS	AREA (ha.)
Single Detached	31-43	87-129	4.863
Street Townhouses	44-61	179-266	5.512
Medium Density	62, 63	93-125	2.065
Mixed Use	64	8-14	0.338
Existing House	65	0-1	0.172
Stormwater Management Facility	-	-	-
Trail	-	-	-
Parkland	66	-	0.892 (4.6%)
Pedestrian Walkway	67-69	-	0.115
Environmental Feature & Buffer	-	-	-
MTO Allowance	70, 71	-	0.534
Roads	-	-	5.279
TOTAL		367-535	20.027

SALEABLE FRONTAGE	LENGTH	UNIT SMALL	UNIT LARGE
Single Detached	1,466.3m	36' (11.0m)	50' (15.2m)
Street Townhouses	1,773.2m	18' (5.5m)	27' (8.3m)
TOTAL	3,239.5m		

DENSITY	
Gross Area (ha)	20.027 ha (49.49 ac)
Developable Area (ha)	19.457 ha (48.08 ac)
Net Density (uph)	18.9 - 27.5 upha
Net People-Jobs (3.05 per unit)	57.7 - 83.9 PJ pha

INFORMATION REQUIRED

UNDER SECTION 51 (17) OF THE PLANNING ACT, R.S.O. 1990, c.P.13 AS AMENDED

INFORMATION REQUIRED BY CLAUSES a,b,c,d,e,f,g, j AND I ARE AS SHOWN ON THE DRAFT PLAN.

(h) Municipal Water Supply
(i) Sandy Loam
(k) Municipal Sanitary and Storm Sewers

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

O.L.S.
Surveying Inc.

XX XX, 2024
DATE

OWNER'S CERTIFICATE

I HEREBY CONSENT TO THE FILING OF THIS PLAN BY POLOCORP INC., IN DRAFT FORM

MIKE PUOPOLO
Polocorp Inc.

DATE

APPROVALS

REGIONAL MUNICIPALITY OF
WATERLOO APPROVAL BLOCK

DRAFT
FOR DISCUSSION
PURPOSES ONLY

APPROVED: DATE:

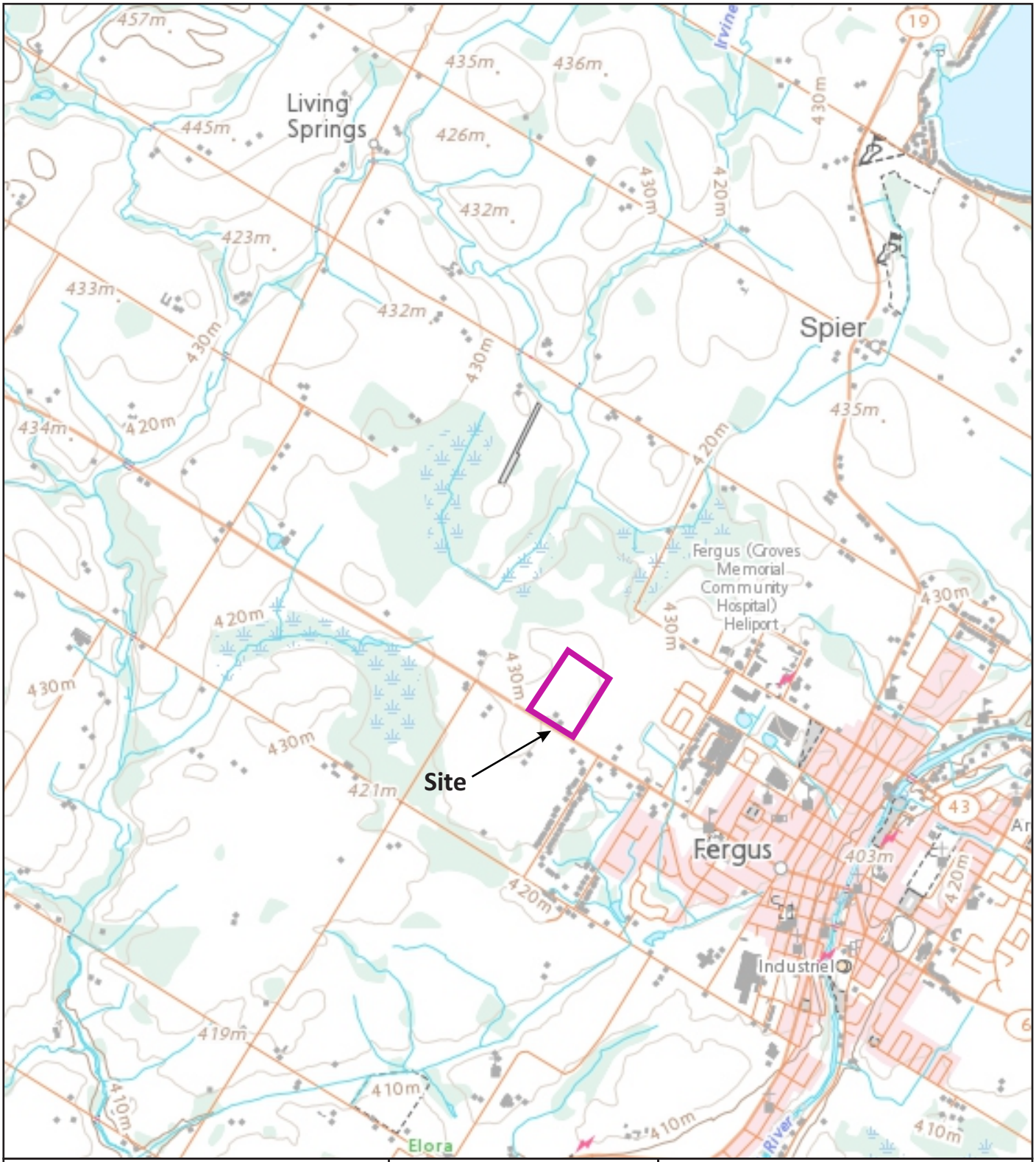
REVISIONS		
DATE	BY	DESCRIPTION

POLOCORP
379 Queen Street South, Kitchener | N2T 1W6 | 519-745-3249 | polocorpinc.com

DATE: December 10, 2024	SCALE 1:4000 (metric)
PROJECT: 1012 (Fergus)	DRAWN BY: GFE

APPENDIX B

Figures 1 to 5



LEGEND

Subject Development Property

Map Ref.: Toporama; Natural Resources Canada; GeoGratis; Retrieved June 6, 2024

0 m 500 1000

Scale 1:40,000

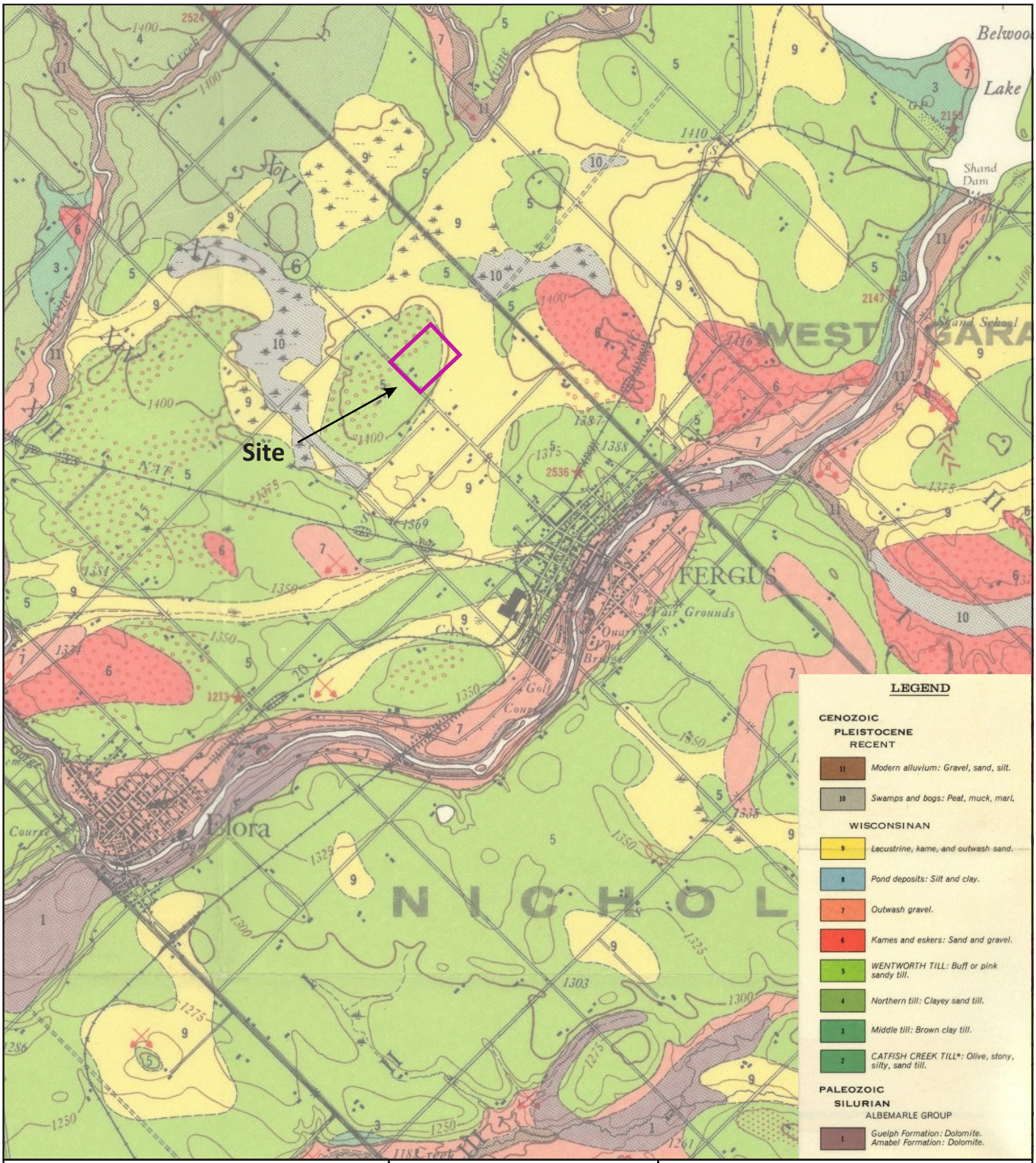
Figure 1 - Site Location

Hydrogeological Assessment

6581 Highway 6
Fergus, ON

Drawn By: YC	Date: Feb. 24/25	File No. 1495

CHUNG & VANDER DOELEN
ENGINEERING LTD.
311 VICTORIA STREET NORTH
KITCHENER / ONTARIO / N2H 2E1 / 519-742-8979



LEGEND

Subject Development Property

Map Ref.: Karrow, P.F.; Pleistocene Geology of the Guelph Area, Southern Ontario (Map 2153); 1968.

N

0 m 1000 2000

Scale 1:50,000

Figure 2 - Quaternary Geology

Hydrogeological Assessment

6581 Highway 6
Fergus, ON

Drawn By: YC	Date: Feb. 24/25	File No. 1495

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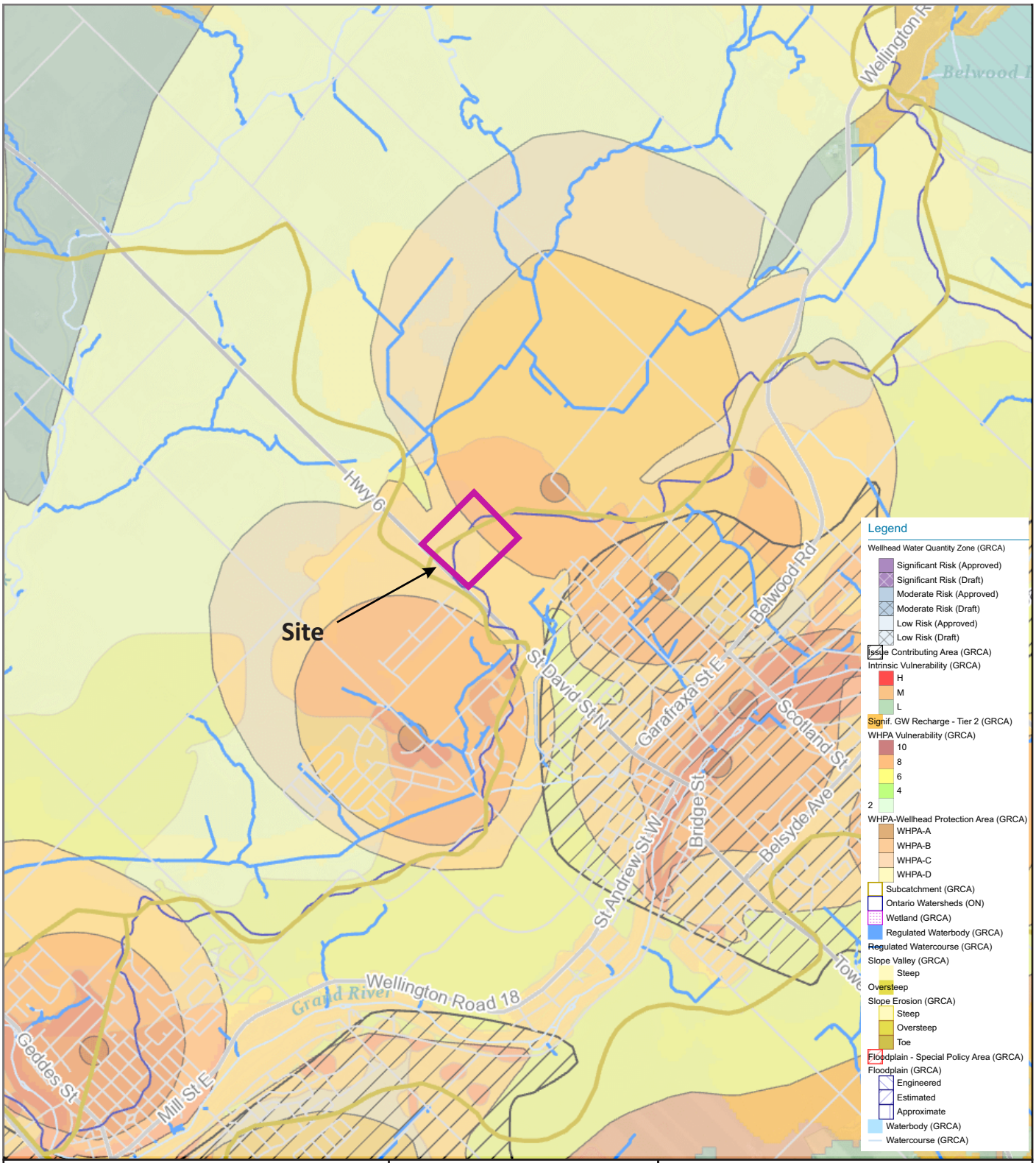

LEGEND

Subject Development Property

Map Ref.: Grand River Conservation Authority; GRCA Web-GIS; Retrieved September 30, 2024

N

0 m 500 1000

Scale 1:40,000

Figure 3 - Watershed Mapping

Hydrogeological Assessment

6581 Highway 6
Fergus, ON

Drawn By: YC	Date: February 24/25	File No. 1495

CHUNG & VANDER DOELEN
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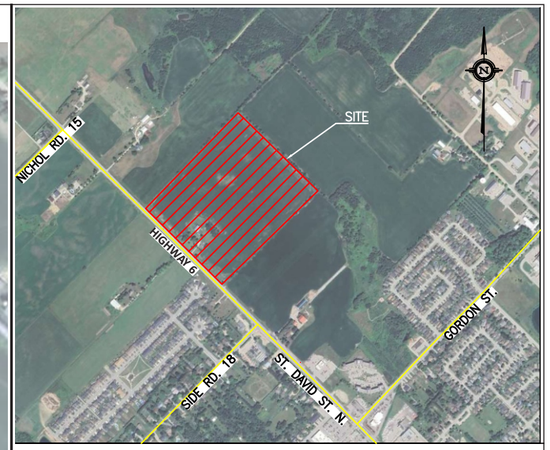

LEGEND

- Property Boundary
- CVD Monitoring Well Location
- (422.93, *423.89*) Ground Surface, Top of Well Pipe Elevation (m)

N

0 50 100 m

Scale 1:4000

Image Reference: Google Earth; Retrieved: May 1, 2024

Figure 4:
Monitoring Well and Piezometer Locations

Hydrogeological Assessment
Proposed Residential Subdivision

6581 Highway 6
Fergus, ON

CHUNG & VANDER DOELEN
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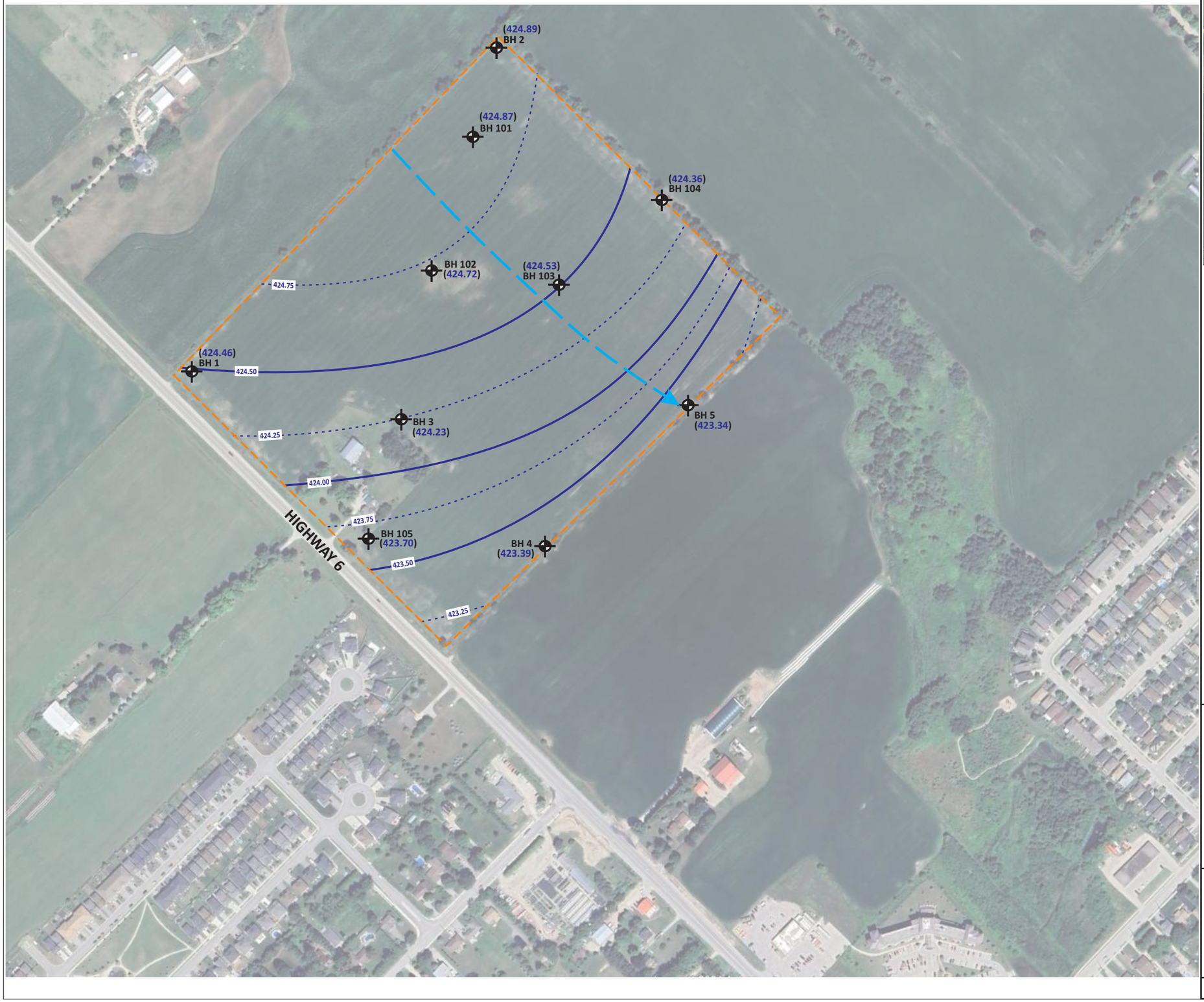
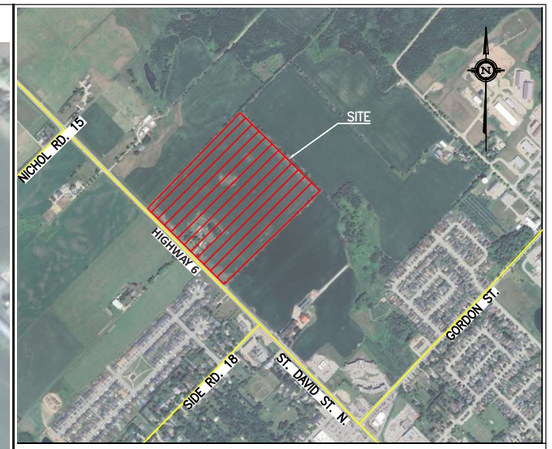
KITCHENER / ONTARIO / N2H 2E1 / 519-742-8979

Drawn By: YC	Date:February 2025	File No.: 1495





LEGEND

- Property Boundary
- CVD Monitoring Well Location
- (424.19) Water Table Elevation (mASL) - September 18, 2024
- 424.50 Interpreted Groundwater Contour (mASL)
- Interpreted Shallow Groundwater Flow Direction

N

0 50 100 m

Scale 1:4000

Image Reference: Google Earth; Retrieved: May 1, 2024

Figure 5:
Water Table Interpretation (September 18, 2024)

Hydrogeological Assessment
Proposed Residential Subdivision

6581 Highway 6
Fergus, ON

CHUNG & VANDER DOELEN
ENGINEERING LTD.
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KITCHENER / ONTARIO / N2H 2E1 / 519-742-8979

Drawn By: YC / PD	Date: February 2025	File No.: 1495

APPENDIX C

Well Response Test Analysis Charts

CHUNG & VANDER DOELEN
ENGINEERING LTD.
311 Victoria Street North
Kitchener / Ontario / N2H 5E1
519-742-8979

Project: Polocorp Fergus Subdivision

Number: 1495

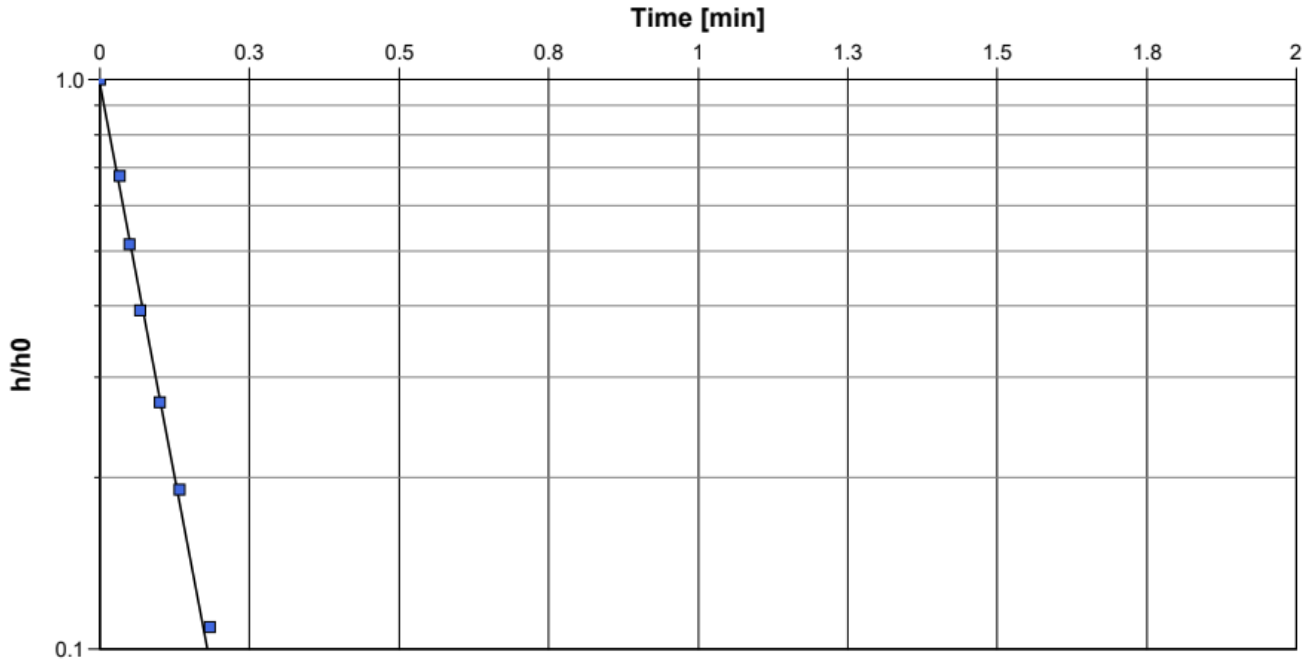
Client: Polocorp Inc.

Location: 968 St. David Street North & 6581 Highway 6, Fergus, ON | Response Test: BH 1

Test Conducted by: Y.C. | Test Date: 2024-03-11 | Aquifer Thickness: 2.90 m

Water level at t=0 [m]: 5.46 | Static Water Level [m]: 5.22 | Water level change at t=0 [m]: 0.25

	Time [min]	Water Level [m]	WL Change [m]
1	0	5.462	0.247
2	0.0333	5.382	0.167
3	0.05	5.342	0.127
4	0.0667	5.312	0.097
5	0.1	5.282	0.067
6	0.1333	5.262	0.047
7	0.1833	5.242	0.027
8	0.2333	5.232	0.017
9	0.45	5.225	0.01
10	0.6	5.222	0.007
11	0.9833	5.22	0.005
12	1.2667	5.217	0.002



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
BH 1	1.06×10^{-4}

CHUNG & VANDER DOELEN
ENGINEERING LTD.
311 Victoria Street North
Kitchener / Ontario / N2H 5E1
519-742-8979

Project: Polocorp Fergus Subdivision

Number: 1495

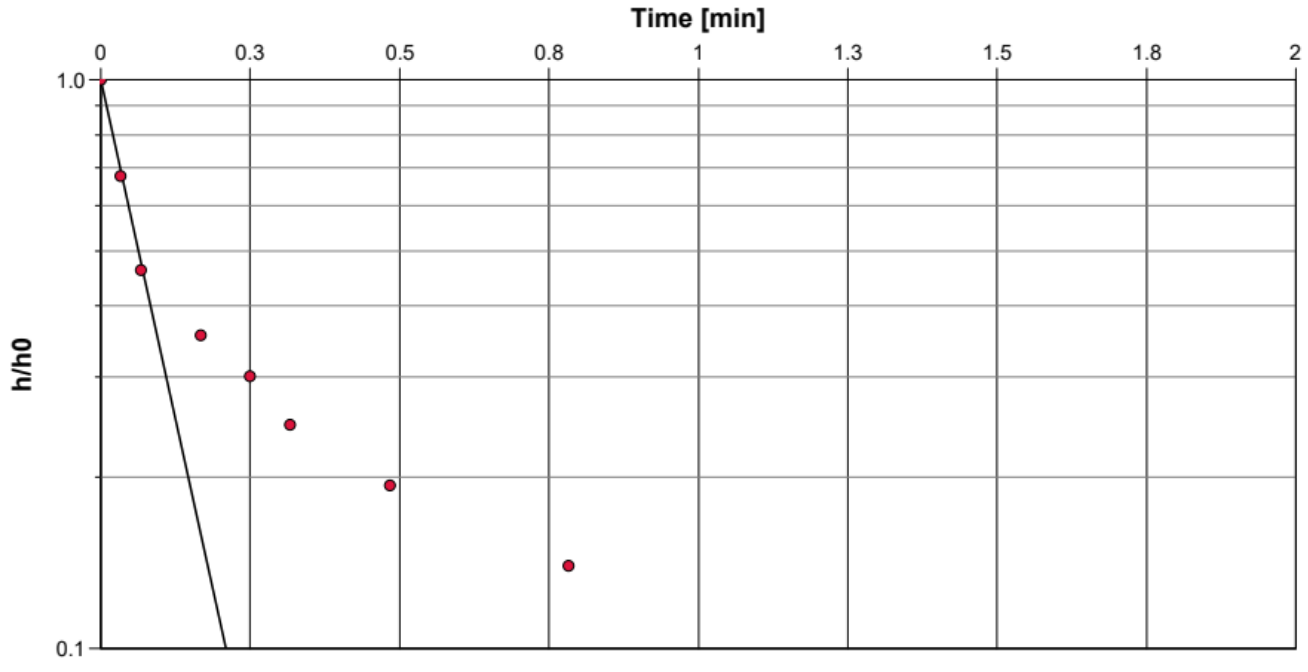
Client: Polocorp Inc.

Location: 968 St. David Street North & 6581 Highway 6, Fergus, ON | Response Test: BH 5

Test Conducted by: Y.C. | Test Date: 2024-03-11 | Aquifer Thickness: 6.20 m

Water level at t=0 [m]: 2.09 | Static Water Level [m]: 1.99 | Water level change at t=0 [m]: 0.09

	Time [min]	Water Level [m]	WL Change [m]
1	0	2.087	0.093
2	0.0333	2.057	0.063
3	0.0667	2.037	0.043
4	0.1667	2.027	0.033
5	0.25	2.022	0.028
6	0.3167	2.017	0.023
7	0.4833	2.012	0.018
8	0.7833	2.007	0.013
9	1.1167	2.002	0.008
10	1.55	2.00	0.006



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]	
BH 5	8.69×10^{-5}	

APPENDIX D

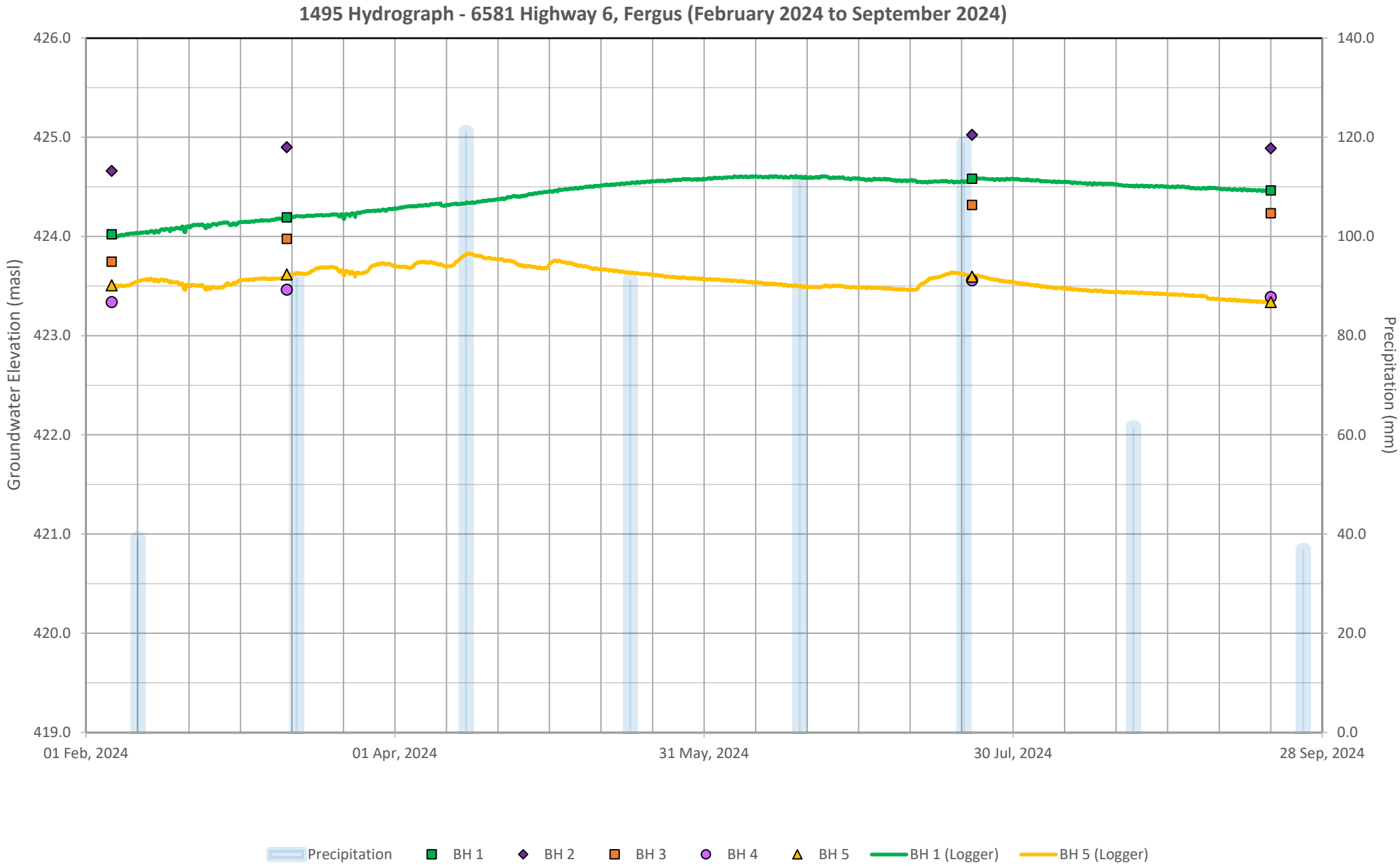
Table 1 – Water Level Measurements & Hydrograph (February 2024 to September 2024)

Table 1 - Summary of Water Levels, Elevations & Fluctuations

6581 Highway 6, Fergus
CVD Engineering Ltd.
Project: 1495

Well	Ground Elevation (mASL)	Top Pipe Elevation (mASL)	Pipe Length (m)	Hydraulic Conductivity (m/s)	Water Level (m Below Ground)							Water Elevation (m Above Sea Level)							Fluctuation Relative to February 6, 2024 (m)			
					10-Nov-23	12-Dec-23	06-Feb-24	11-Mar-24	22-Jul-24	12-Sep-24	18-Sep-24	10-Nov-23	12-Dec-23	06-Feb-24	11-Mar-24	22-Jul-24	12-Sep-24	18-Sep-24	11-Mar-24	22-Jul-24	12-Sep-24	18-Sep-24
BH 1	429.41	430.55	1.14	1×10^{-4}			5.39	5.22	4.83		4.94			424.02	424.19	**424.58**		424.46	0.17	0.56		0.44
BH 2	429.10	430.28	1.18	-			4.44	4.20	4.08		4.21			424.66	424.90	**425.02**		424.89	0.24	0.36		0.23
BH 3	428.87	429.89	1.02	-			5.12	4.89	4.55		4.64			423.75	423.98	**424.32**		424.23	0.23	0.57		0.49
BH 4	426.94	428.13	1.18	-			3.61	3.48	3.39		3.56			423.34	423.46	**423.56**		423.39	0.13	0.22		0.05
BH 5	425.61	426.87	1.26	9×10^{-5}			2.10	1.99	2.02		2.27			423.51	**423.62**	423.59		423.34	0.11	0.09		-0.17
BH 101	428.68	429.79	1.10	-						3.80	3.82						**424.88**	424.87				
BH 102	429.37	430.36	0.99	-						4.64	4.65						**424.73**	424.72				
BH 103	428.31	429.27	0.96	-						3.76	3.77						**424.55**	424.53				
BH 104	427.36	428.60	1.25	-						2.97	3.00						**424.39**	424.36				
BH 105	428.15	429.20	1.05	-						4.44	4.45						**423.71**	423.70				

Notes:
1) All Elevations Referenced to Geodetic Survey by CVD.
2) **Bolded** elevations represent the maximum water table aquifer elevation measured at each monitoring well throughout all seasons.
3) Negative water level indicates that water level is above ground.
4) : Monitoring well/piezometer dry
5) Negative fluctuation indicates drop in water level relative to baseline.


1495 Hydrograph - 6581 Highway 6, Fergus (February 2024 to September 2024)
Groundwater Elevation (masl)
Precipitation (mm)
426.0
425.0
424.0
423.0
422.0
421.0
420.0
419.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
01 Feb, 2024
01 Apr, 2024
31 May, 2024
30 Jul, 2024
28 Sep, 2024
Precipitation
BH 1
BH 2
BH 3
BH 4
BH 5
BH 1 (Logger)
BH 5 (Logger)

APPENDIX E

Water Balance Calculation

Pre-Development Water Budget Calculations - 6581 Highway 6, Fergus **Feb-25**

Pervious Areas (Cultivated Land and Grassed Pasture, with Trees and Shubs)

Determination of Evapotranspiration and Water Balance Components - by Water Balance Method (Thornthwaite & Mather, 1957)

Precipitation: Fergus Shand Dam (1981-2010), Vegetation: Moderately-Deep Crops, Mature Grasses with Trees/Shubs, Soil: Fine Sand and Clay

	Units	Annual	% Total	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Temperature	deg C	**6.68**		-7.4	-6.3	-1.9	5.7	12.2	17.5	20.0	19.0	14.9	8.3	2.1	-3.9
Heat Index (i)	-	**35.09**		0.00	0.00	0.00	1.22	3.86	6.66	8.16	7.55	5.22	2.15	0.27	0.00
Unadjusted PET (UPET)	mm/day	**1.038**		0.00	0.00	0.00	0.87	1.91	2.78	3.20	3.03	2.35	1.28	0.31	0.00
latitude correction (r)	-			24.3	24.5	30.6	33.6	37.9	38.5	38.8	36	31.2	28.5	24.2	23
Potential Evapotranspiration (PET)	mm	**559.3**		0.0	0.0	0.0	29.2	72.5	107.1	124.0	109.1	73.5	36.5	7.4	0.0
Precipitation (P)	mm	**945.9**	**100.0**	67.9	55.9	59.6	74.1	86.9	83.8	89.2	96.6	93.1	77.2	93	68.6
P - PET	mm			67.9	55.9	59.6	44.9	14.4	-23.3	-34.8	-12.5	19.6	40.7	85.6	68.6
Accum. Water Loss	mm							0.0	-23.3	-58.1	-70.6				
Soil Moisture Retention (Storage - ST)	mm			75.0	75.0	75.0	75.0	75.0	54.0	34.0	28.0	47.6	75.0	75.0	75.0
Storage Change (ΔST)	mm			75.0	0.0	0.0	0.0	0.0	-21.0	-20.0	-6.0	19.6	27.4	0.0	0.0
Actual Evapotranspiration (AE)	mm	**535.7**	**56.6**	0.0	0.0	0.0	29.2	72.5	104.8	109.2	102.6	73.5	36.5	7.4	0.0
Water Balance as Surplus/Deficit	mm	**410.2**	**43.4**	67.9	55.9	59.6	44.9	14.4	-21.0	-20.0	-6.0	19.6	40.7	85.6	68.6
Determination of Water Balance as 'Combined-Runoff' (Recharge + Direct Runoff) - (using WBM Assumptions)															
Soil Moisture Surplus (SMS)	mm	**158.2**		0.0	0.0	0.0	44.9	14.4	0.0	0.0	0.0	0.0	13.3	85.6	0.0
Water Balance from SMS (Assumption 1)	mm	**144.8**		10.8	5.4	2.7	23.8	19.1	9.6	4.8	2.4	1.2	0.6	43.1	21.5
				0.03	0.01	0.00	0.00	7.20	3.60	1.80	0.90	0.45	0.22	0.11	0.06
				0.04	0.02	0.01	22.47	11.23	5.62	2.81	1.40	0.70	0.35	0.18	0.09
				10.69	5.35	2.67	1.34	0.67	0.33	0.17	0.08	0.04	0.02	42.78	21.39
Accumulated Snow (Assumption 2)	mm	**252.0**		0.0	0.0	0.0	252.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Balance from Snow (Assumption 3)	mm	**252.0**		0.5	0.3	0.1	25.2	113.4	56.7	28.4	14.2	7.1	3.5	1.8	0.9
Water Balance as 'Combined-Runoff'	mm	**396.8**	**42.0**	11.3	5.7	2.8	49.0	132.5	66.3	33.1	16.6	8.3	4.1	44.8	22.4

Assumptions for Monthly 'Combined-Runoff' Estimations (from WBM):

1 - Combined 'Runoff' from the Soil Moisture Surplus is assumed to be 50% in the first month and then 50% of the remaining soil surplus each following month.

2 - All Snow is Accumulated and Stored throughout Winter Sub-Zero Months (i.e. No melt until first above-zero month)

3 - Combined 'Runoff' from Snowmelt is assumed to be 10% of the Accumulated Snow in the first month and then 50% of the remaining snowmelt in each following month.

Determination of Recharge + Direct Runoff Components - using MOE Infiltration Factor Method (MOE 1995, 2003)

Catchment Area (m^2)	MOE Infiltration Factors (0 to 1.00)							Annual Rates				Annual Rates			
								EvapoT	Balance	Recharge	Runoff	EvapoT	Balance	Recharge	Runoff
	Topography		Soil		Cover		Sum	(mm)	(mm)	(mm)	(mm)	(m^3/yr)	(m^3/yr)	(m^3/yr)	(m^3/yr)
Pervious, Cultivated Land	Rolling	0.2	Sand	0.4	Cultivated	0.1	0.7	535.7	410.2	287.1	123.1	101,010	77,339	54,137	23,202
188,550 m2								56.6%	43.4%	30.4%	13.0%	56.6%	43.4%	30.4%	13.0%
Pervious, Pasture & Lawns	Rolling	0.2	Sand	0.4	Pasture	0.15	0.75	535.7	410.2	307.6	102.5	5,357	4,102	3,076	1,025
10,000 m2					& Lawns			56.6%	43.4%	32.5%	10.8%	56.6%	43.4%	32.5%	10.8%
Pervious, Woodland/Wetland	Rolling	0.2	Sand	0.4	Woodland	0.2	0.8	535.7	410.2	328.1	82.0	0	0	0	0
0 m2					& Wetland			56.6%	43.4%	34.7%	8.7%	0.0%	0.0%	0.0%	0.0%
Impervious Rooftops to Pervious Areas							0.25	94.6	851.3	212.8	638.5	163	1,464	366	1,098
1,720 m2								10.0%	90.0%	22.5%	67.5%	10.0%	90.0%	22.5%	67.5%
Total Site												106,530	82,905	57,580	25,325
200,270 m2												56.2%	43.8%	30.4%	13.4%

Assumptions for Evapotranspiration/Recharge/Runoff Proportioning

1 - Pervious Areas - by MOE Infiltration Factor Method (MOE 1995, 2003)

2 - Impervious Areas Shed to Pervious Areas - Assume 10% Lost to Evapotranspiration and Balance Split 25/75% to Recharge/Runoff

APPENDIX F

Water Chemistry Results
(AGAT Laboratories of Mississauga, Ontario)

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: CHUNG AND VANDER DOELEN
311 VICTORIA STREET NORTH
KITCHENER, ON N2H5E1
(519) 742-8979
ATTENTION TO: Yaroslav Chudin
PROJECT: 1495
AGAT WORK ORDER: 24T129206
WATER ANALYSIS REVIEWED BY: Yris Verastegui, Inorganic Team Lead
DATE REPORTED: Mar 22, 2024
PAGES (INCLUDING COVER): 10
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

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AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24T129206

PROJECT: 1495

CLIENT NAME: CHUNG AND VANDER DOELEN

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

Water Quality Assessment - PWQO (mg/L)

DATE RECEIVED: 2024-03-13

DATE REPORTED: 2024-03-22

		SAMPLE DESCRIPTION:		BH1	BH5	BH6		BH7
		SAMPLE TYPE:		Water	Water	Water		Water
		DATE SAMPLED:		2024-03-11 11:30	2024-03-11 11:30	2024-03-11 11:30		2024-03-11 11:30
Parameter	Unit	G / S	RDL	5722603	5722663	5722665	RDL	5722666
Electrical Conductivity	µS/cm		2	480	497	596	2	1620
pH	pH Units	6.5-8.5	NA	7.43	7.64	7.62	NA	7.41
Saturation pH (Calculated)				6.53	6.62	6.72		6.36
Langelier Index (Calculated)				0.896	1.02	0.896		1.05
Hardness (as CaCO3) (Calculated)	mg/L		0.5	679	688	664	0.5	1260
Total Dissolved Solids	mg/L		10	224	338	412	10	706
Alkalinity (as CaCO3)	mg/L		5	291	255	206	5	271
Bicarbonate (as CaCO3)	mg/L		5	291	255	206	5	271
Carbonate (as CaCO3)	mg/L		5	<5	<5	<5	5	<5
Hydroxide (as CaCO3)	mg/L		5	<5	<5	<5	5	<5
Fluoride	mg/L		0.05	<0.05	<0.05	<0.05	0.05	<0.05
Chloride	mg/L		0.10	9.18	2.04	27.3	0.12	269
Nitrate as N	mg/L		0.05	1.48	12.8	24.9	0.05	<0.05
Nitrite as N	mg/L		0.05	<0.05	<0.05	<0.05	0.05	<0.05
Bromide	mg/L		0.05	<0.05	<0.05	<0.05	0.05	<0.05
Sulphate	mg/L		0.10	1.62	30.1	6.71	0.10	31.5
Ortho Phosphate as P	mg/L		0.10	<0.10	<0.10	<0.10	0.10	<0.10
Ammonia as N	mg/L		0.02	0.05	0.06	<0.02	0.02	0.03
Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.000002	0.000774	0.00151	<0.000002	0.000002	0.000453
Total Phosphorus	mg/L	*	0.02	0.73	0.74	1.22	0.06	2.03
Total Organic Carbon	mg/L		0.5	7.6	9.2	8.4	0.5	14.4
True Colour	TCU		2.50	<2.50	<2.50	<2.50	2.50	4.55
Turbidity	NTU		0.5	92.5	192	60.3	0.5	97.6
Total Calcium	mg/L		0.20	204	209	192	0.20	394
Total Magnesium	mg/L		0.10	41.1	40.4	44.9	0.10	65.9
Total Potassium	mg/L		0.50	3.04	3.57	3.32	0.50	6.64
Total Sodium	mg/L		0.10	3.94	4.32	3.03	0.10	98.5
Aluminum-dissolved	mg/L	*	0.004	0.004	0.008	<0.004	0.004	<0.004
Total Antimony	mg/L	0.020	0.003	<0.003	<0.003	<0.003	0.003	<0.003

Certified By: Iris Verástegui

AGAT Laboratories

5835 COOPERS AVENUE
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Certificate of Analysis

AGAT WORK ORDER: 24T129206

PROJECT: 1495

CLIENT NAME: CHUNG AND VANDER DOELEN

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

Water Quality Assessment - PWQO (mg/L)

DATE RECEIVED: 2024-03-13

DATE REPORTED: 2024-03-22

		SAMPLE DESCRIPTION:		BH1	BH5	BH6		BH7
		SAMPLE TYPE:		Water	Water	Water		Water
		DATE SAMPLED:		2024-03-11 11:30	2024-03-11 11:30	2024-03-11 11:30		2024-03-11 11:30
Parameter	Unit	G / S	RDL	5722603	5722663	5722665	RDL	5722666
Total Arsenic	mg/L	0.1	0.003	0.006	0.008	0.007	0.003	0.007
Total Barium	mg/L		0.002	0.043	0.059	0.050	0.002	0.203
Total Beryllium	mg/L	*	0.001	<0.001	<0.001	<0.001	0.001	<0.001
Total Boron	mg/L	0.2	0.010	0.026	0.031	0.017	0.010	0.031
Total Cadmium	mg/L	0.0002	0.0001	**0.0003**	**0.0003**	**0.0003**	0.0001	**0.0004**
Total Chromium	mg/L		0.003	0.011	0.018	0.011	0.003	0.042
Total Cobalt	mg/L	0.0009	0.0005	**0.0066**	**0.0096**	**0.0084**	0.0005	**0.0137**
Total Copper	mg/L	0.005	0.002	**0.021**	**0.029**	**0.030**	0.002	**0.037**
Total Iron	mg/L	0.3	0.050	**12.2**	**18.0**	**15.2**	0.050	**31.5**
Total Lead	mg/L	*	0.0005	0.0224	0.0322	0.0318	0.0005	0.0249
Total Manganese	mg/L		0.002	0.651	0.860	0.991	0.002	1.03
Total Mercury	mg/L		0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Total Molybdenum	mg/L	0.040	0.002	<0.002	<0.002	<0.002	0.002	<0.002
Total Nickel	mg/L	0.025	0.003	0.012	0.019	0.018	0.003	**0.032**
Total Selenium	mg/L	0.1	0.002	<0.002	0.004	<0.002	0.002	0.004
Total Silver	mg/L	0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Total Strontium	mg/L		0.005	0.298	0.281	0.304	0.005	0.670
Total Thallium	mg/L	0.0003	0.0003	<0.0003	<0.0003	<0.0003	0.0003	<0.0003
Total Tin	mg/L		0.002	0.002	0.002	0.002	0.002	<0.002
Total Titanium	mg/L		0.010	0.199	0.325	0.302	0.010	0.832
Total Tungsten	mg/L	0.030	0.010	<0.010	<0.010	<0.010	0.010	<0.010
Total Uranium	mg/L	0.005	0.0005	<0.0005	0.0006	<0.0005	0.0005	0.0023
Total Vanadium	mg/L	0.006	0.002	**0.017**	**0.022**	**0.017**	0.002	**0.052**
Total Zinc	mg/L	0.030	0.020	**0.153**	**0.185**	**0.136**	0.020	**0.498**
Total Zirconium	mg/L	0.004	0.004	<0.004	<0.004	<0.004	0.004	0.004
Lab Filtration Aluminum Dissolved				Y	Y	Y		Y

Certified By: Iris Verástegui

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24T129206

PROJECT: 1495

CLIENT NAME: CHUNG AND VANDER DOELEN

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

Water Quality Assessment - PWQO (mg/L)

DATE RECEIVED: 2024-03-13

DATE REPORTED: 2024-03-22

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to PWQO * Variable - refer to guideline reference document
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5722603-5722666 Dilution required, RDL has been increased accordingly.
Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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Exceedance Summary

AGAT WORK ORDER: 24T129206

PROJECT: 1495

CLIENT NAME: CHUNG AND VANDER DOELEN

ATTENTION TO: Yaroslav Chudin

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cadmium	mg/L	0.0002	0.0003
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cobalt	mg/L	0.0009	0.0066
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Copper	mg/L	0.005	0.021
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Iron	mg/L	0.3	12.2
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Vanadium	mg/L	0.006	0.017
5722603	BH1	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Zinc	mg/L	0.030	0.153
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cadmium	mg/L	0.0002	0.0003
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cobalt	mg/L	0.0009	0.0096
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Copper	mg/L	0.005	0.029
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Iron	mg/L	0.3	18.0
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Vanadium	mg/L	0.006	0.022
5722663	BH5	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Zinc	mg/L	0.030	0.185
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cadmium	mg/L	0.0002	0.0003
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cobalt	mg/L	0.0009	0.0084
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Copper	mg/L	0.005	0.030
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Iron	mg/L	0.3	15.2
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Vanadium	mg/L	0.006	0.017
5722665	BH6	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Zinc	mg/L	0.030	0.136
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cadmium	mg/L	0.0002	0.0004
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Cobalt	mg/L	0.0009	0.0137
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Copper	mg/L	0.005	0.037
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Iron	mg/L	0.3	31.5
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Nickel	mg/L	0.025	0.032
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Vanadium	mg/L	0.006	0.052
5722666	BH7	ON PWQO	Water Quality Assessment - PWQO (mg/L)	Total Zinc	mg/L	0.030	0.498

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Quality Assurance

CLIENT NAME: CHUNG AND VANDER DOELEN

AGAT WORK ORDER: 24T129206

PROJECT: 1495

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

Water Analysis

RPT Date: Mar 22, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Water Quality Assessment - PWQO (mg/L)															
Electrical Conductivity	5722603	5722603	480	477	0.6%	< 2	104%	90%	110%						
pH	5722603	5722603	7.43	7.55	1.6%	NA	99%	90%	110%						
Total Dissolved Solids	5720157		190	168	12.3%	< 10	92%	80%	120%						
Alkalinity (as CaCO3)	5722603	5722603	291	306	5.0%	< 5	95%	80%	120%						
Bicarbonate (as CaCO3)	5722603	5722603	291	306	5.0%	< 5	NA								
Carbonate (as CaCO3)	5722603	5722603	<5	<5	NA	< 5	NA								
Hydroxide (as CaCO3)	5722603	5722603	<5	<5	NA	< 5	NA								
Fluoride	5718363		<0.05	<0.05	NA	< 0.05	105%	70%	130%	91%	80%	120%	98%	70%	130%
Chloride	5718363		153	152	0.7%	< 0.10	96%	70%	130%	91%	80%	120%	NA	70%	130%
Nitrate as N	5718363		<0.05	<0.05	NA	< 0.05	100%	70%	130%	98%	80%	120%	100%	70%	130%
Nitrite as N	5718363		<0.05	<0.05	NA	< 0.05	101%	70%	130%	101%	80%	120%	109%	70%	130%
Bromide	5718363		<0.05	<0.05	NA	< 0.05	105%	70%	130%	96%	80%	120%	95%	70%	130%
Sulphate	5718363		<0.10	<0.10	NA	< 0.10	94%	70%	130%	94%	80%	120%	94%	70%	130%
Ortho Phosphate as P	5718363		<0.10	<0.10	NA	< 0.10	101%	70%	130%	104%	80%	120%	105%	70%	130%
Ammonia as N	5724966		<0.02	<0.02	NA	< 0.02	108%	70%	130%	105%	80%	120%	103%	70%	130%
Total Phosphorus	5737950		0.05	0.05	NA	< 0.02	99%	70%	130%	99%	80%	120%	105%	70%	130%
Total Organic Carbon	5720157		1.8	1.7	NA	< 0.5	98%	90%	110%	98%	90%	110%	99%	80%	120%
True Colour	5720157		<2.50	<2.50	NA	< 2.5	100%	90%	110%						
Turbidity	5722603	5722603	92.5	144	43.6%	< 0.5	90%	80%	120%						
Total Calcium	5724836		80.1	80.4	0.4%	< 0.20	113%	70%	130%	107%	80%	120%	108%	70%	130%
Total Magnesium	5724836		6.75	6.85	1.5%	< 0.10	118%	70%	130%	111%	80%	120%	94%	70%	130%
Total Potassium	5724836		5.43	5.50	1.3%	< 0.50	113%	70%	130%	106%	80%	120%	97%	70%	130%
Total Sodium	5724836		858	817	4.9%	< 0.10	114%	70%	130%	108%	80%	120%	NA	70%	130%
Aluminum-dissolved	5722603	5722603	0.004	0.005	NA	< 0.004	104%	70%	130%	110%	80%	120%	104%	70%	130%
Total Antimony	5724836		<0.003	<0.003	NA	< 0.003	105%	70%	130%	105%	80%	120%	100%	70%	130%
Total Arsenic	5724836		<0.003	<0.003	NA	< 0.003	99%	70%	130%	105%	80%	120%	102%	70%	130%
Total Barium	5724836		0.009	0.010	NA	< 0.002	100%	70%	130%	105%	80%	120%	97%	70%	130%
Total Beryllium	5724836		<0.001	<0.001	NA	< 0.001	104%	70%	130%	115%	80%	120%	94%	70%	130%
Total Boron	5724836		0.072	0.076	5.4%	< 0.010	101%	70%	130%	112%	80%	120%	93%	70%	130%
Total Cadmium	5724836		0.0002	0.0002	NA	< 0.0001	102%	70%	130%	106%	80%	120%	98%	70%	130%
Total Chromium	5724836		0.005	0.005	NA	< 0.003	100%	70%	130%	106%	80%	120%	105%	70%	130%
Total Cobalt	5724836		0.0013	0.0015	NA	< 0.0005	101%	70%	130%	104%	80%	120%	103%	70%	130%
Total Copper	5724836		0.026	0.026	0.0%	< 0.002	99%	70%	130%	106%	80%	120%	98%	70%	130%
Total Iron	5724836		1.68	1.67	0.6%	< 0.050	102%	70%	130%	112%	80%	120%	108%	70%	130%
Total Lead	5724836		0.0079	0.0081	2.5%	< 0.0005	101%	70%	130%	98%	80%	120%	89%	70%	130%
Total Manganese	5724836		0.383	0.389	1.6%	< 0.002	103%	70%	130%	109%	80%	120%	105%	70%	130%
Total Mercury	5722014		<0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	97%	80%	120%	98%	70%	130%
Total Molybdenum	5724836		0.009	0.010	NA	< 0.002	106%	70%	130%	91%	80%	120%	116%	70%	130%
Total Nickel	5724836		0.030	0.028	6.9%	< 0.003	102%	70%	130%	105%	80%	120%	101%	70%	130%

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Quality Assurance

CLIENT NAME: CHUNG AND VANDER DOELEN

AGAT WORK ORDER: 24T129206

PROJECT: 1495

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

Water Analysis (Continued)

RPT Date: Mar 22, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Total Selenium	5724836		0.004	0.006	NA	< 0.002	101%	70%	130%	108%	80%	120%	101%	70%	130%
Total Silver	5724836		0.0001	<0.0001	NA	< 0.0001	103%	70%	130%	110%	80%	120%	96%	70%	130%
Total Strontium	5724836		1.15	1.14	0.9%	< 0.005	104%	70%	130%	109%	80%	120%	99%	70%	130%
Total Thallium	5724836		<0.0003	<0.0003	NA	< 0.0003	92%	70%	130%	105%	80%	120%	94%	70%	130%
Total Tin	5724836		<0.002	<0.002	NA	< 0.002	100%	70%	130%	109%	80%	120%	105%	70%	130%
Total Titanium	5724836		<0.010	<0.010	NA	< 0.010	102%	70%	130%	110%	80%	120%	106%	70%	130%
Total Tungsten	5724836		<0.010	<0.010	NA	< 0.010	94%	70%	130%	100%	80%	120%	97%	70%	130%
Total Uranium	5724836		<0.0005	<0.0005	NA	< 0.0005	92%	70%	130%	109%	80%	120%	106%	70%	130%
Total Vanadium	5724836		0.003	0.002	NA	< 0.002	103%	70%	130%	110%	80%	120%	111%	70%	130%
Total Zinc	5724836		0.119	0.125	4.9%	< 0.020	100%	70%	130%	105%	80%	120%	93%	70%	130%
Total Zirconium	5724836		<0.004	<0.004	NA	< 0.004	101%	70%	130%	106%	80%	120%	109%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.
Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

Certified By: Iris Verástegui

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Method Summary

CLIENT NAME: CHUNG AND VANDER DOELEN

AGAT WORK ORDER: 24T129206

PROJECT: 1495

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Electrical Conductivity	INOR-93-6000	modified from SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Saturation pH (Calculated)		SM 2320 B	CALCULATION
Langelier Index (Calculated)		SM 2330B	CALCULATION
Hardness (as CaCO3) (Calculated)	MET-93-6105	modified from EPA SW-846 6010C & 200.7 & SM 2340 B	CALCULATION
Total Dissolved Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Alkalinity (as CaCO3)	INOR-93-6000	Modified from SM 2320 B	PC TITRATE
Bicarbonate (as CaCO3)	INOR-93-6000	modified from SM 2320 B	PC TITRATE
Carbonate (as CaCO3)	INOR-93-6000	modified from SM 2320 B	PC TITRATE
Hydroxide (as CaCO3)	INOR-93-6000	modified from SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Ortho Phosphate as P	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Ammonia-Un-ionized (Calculated)		MOE REFERENCE, PWQOs Tab 2	CALCULATION
Total Phosphorus	INOR-93-6022	modified from SM 4500-P B and SM 4500-P E	SPECTROPHOTOMETER
Total Organic Carbon	INOR-93-6049	modified from SM 5310 B	SHIMADZU CARBON ANALYZER
True Colour	INOR-93-6074	modified from SM 2120 B	LACHAT FIA
Turbidity	INOR-93-6000	modified from SM 2130 B	PC TITRATE
Total Calcium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP/MS
Total Magnesium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP/MS
Total Potassium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP/MS
Total Sodium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP/MS
Aluminum-dissolved	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Barium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Beryllium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Boron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

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Method Summary

CLIENT NAME: CHUNG AND VANDER DOELEN

AGAT WORK ORDER: 24T129206

PROJECT: 1495

ATTENTION TO: Yaroslav Chudin

SAMPLING SITE:968 ST. DAVID ST. N. FERGUS

SAMPLED BY:Y.C.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Iron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Manganese	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Strontium	INOR-93-6003	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Thallium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tin	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Titanium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tungsten	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Uranium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Vanadium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zirconium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Lab Filtration Aluminum Dissolved	SR-78-9001		FILTRATION

GAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Have feedback? Scan here for a quick survey!

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 24T129206

Cooler Quantity: 1 med.

Arrival Temperatures: 3.7 | 3.9 | 4.3

Depot Temperatures: | |

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: courier

Report Information:

Company: CVD Engineering Ltd.

Contact: Yaroslav Chudin

Address: 311 Victoria St. N., Kitchener, N2H 5E1

Phone: Fax:

Reports to be sent to:

1. Email: yaroslav.chudin@cvdengineering.com

2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

☐ Regulation 153/04
Table (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☐ Coarse ☐ Fine

☐ Regulation 406
Table (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
Region

☑ Prov. Water Quality Objectives (PWQO)

☐ Other
Indicate One

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CSR

Project Information:

Project: 1495

Site Location: 968 St. David St. N., Fergus

Sampled By: Y.C.

AGAT Quote #: PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a **Record of Site Condition (RSC)**? ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:

Contact:

Address:

Email: ap@cvdengineering.com

Legal Sample ☐

Sample Matrix Legend

GW	Ground Water	**SD**	Sediment
O	Oil	**SW**	Surface Water
P	Paint	**R**	Rock/Shale
S	Soil		

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs	VOC	PAHs	PCBs: Aroclors ☐	O. Reg 406: Regulation 406 Characterization Package pH, Metals, BTEX, F1-F4	EC, SAR	Regulation 406 SPLP Rainwater Leach mSPLP: ☐ Metals ☐ VOCs ☐ SVOCs ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	"Routine Water Analysis" Package						Potentially Hazardous or High Concentration (Y/N)
1. RH1	March 11/24	11:30 AM PM	3	GW		N												✓						
2. RH5	"	12:30 AM PM	3	"		N												✓						
3. RH6	"	1:45 AM PM	3	"		N												✓						
4. RH7	"	3:15 AM PM	3	"		N												✓						
5.		AM PM																						
6.		AM PM																						
7.		AM PM																						
8.		AM PM																						
9.		AM PM																						
10.		AM PM																						
11.		AM PM																						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Yaroslav Chudin	March 13/24	12:00 p.m.		Mar 13	1:46
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

N°: T-153484

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

APPENDIX G

MECP Well Records

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 — 6709834 — MUNICIP 67009 — CON. CON 16

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON BLOCK, TRACT, SURVEY, ETC	LOT
Wellington	Nichol	XVI	17

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Fergus PUC	P.O. Box 10, Fergus, Ont. N1M 2W7	DAY 15 MO 5 YR 89

21 — ZONE — EASTING — NORTHING — RC — ELEVATION — RC — BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Clay	Fill, Gravel Silt		0	18
Brown	Clay	Gravel		18	24
Grey	Clay	Gravel		24	84
Grey	Limestone			84	165
Brown	Limestone			165	213
Grey	Limestone			213	225
Brown	Limestone			225	232
Lt.Grey	Limestone			232	315
Brown	Limestone			315	378
Grey	Limestone			378	400
White	Limestone			400	402

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
128' – 402'	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
12	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.375	109.5 +1.5	109.5
11	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE 5 ☐ PLASTIC	109.5	109.5	402
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
–	– INCHES	– FEET

MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN
–	– FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
0	109.5	12" casing cemented
		in 18" dia. open hole

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	350 GPM	24 HOURS – MINS

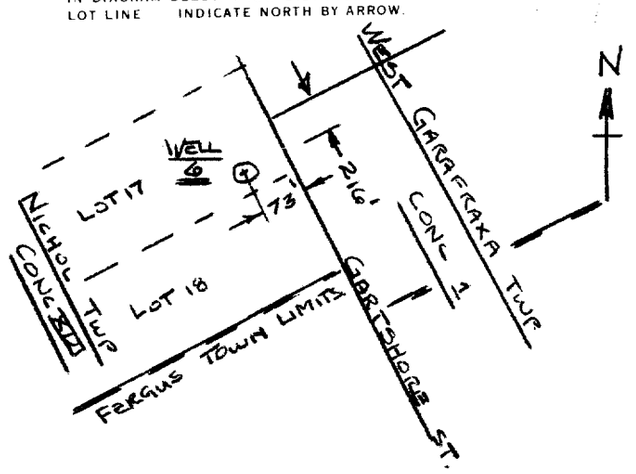
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING (1 ☐ PUMPING 2 ☐ RECOVERY)	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
57.51 FEET	153.29 FEET		109.52 FEET	112.41 FEET	– FEET	115.75 FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	250 FEET	300 GPM

LOCATION OF WELL 6

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



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DRILLERS REMARKS

FINAL STATUS OF WELL	WATER USE	METHOD OF CONSTRUCTION
1 ☒ WATER SUPPLY	1 ☐ DOMESTIC	1 ☐ CABLE TOOL
2 ☐ OBSERVATION WELL	2 ☐ STOCK	2 ☒ ROTARY (CONVENTIONAL)
3 ☐ TEST HOLE	3 ☐ IRRIGATION	3 ☐ ROTARY (REVERSE)
4 ☐ RECHARGE WELL	4 ☐ INDUSTRIAL	4 ☒ ROTARY (AIR)
5 ☐ ABANDONED, INSUFFICIENT SUPPLY	5 ☐ COMMERCIAL	5 ☐ AIR PERCUSSION
6 ☐ ABANDONED, POOR QUALITY	6 ☐ MUNICIPAL	6 ☐ BORING
7 ☐ UNFINISHED	7 ☒ PUBLIC SUPPLY	7 ☐ DIAMOND
9 ☐ DEWATERING	8 ☐ COOLING OR AIR CONDITIONING	8 ☐ JETTING
	9 ☐ NOT USED	9 ☐ DRIVING
	☐ OTHER	☐ DIGGING ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR	WELL CONTRACTOR'S LICENCE NUMBER
International Water Supply,Ltd.	2801

ADDRESS
342 Bayview Dr., Barrie, Ont. L4M 4T5

NAME OF WELL TECHNICIAN	WELL TECHNICIAN'S LICENCE NUMBER
R.C. Magee	T0117

SIGNATURE OF TECHNICIAN/CONTRACTOR	SUBMISSION DATE
[signature]	DAY 14 MO 07 YR 89

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
	2801	JUL 20 1989

DATE OF INSPECTION	INSPECTOR

REMARKS

CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

6710068 MUNICIP 67009 CON CON 15

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Wellington	Nichol	XV	20

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
W. Dixon & Sons Ltd.	745 St. David St. N., Fergus, Ont. N1M 2L1	DAY 29 MO 02 YR 89

21 ZONE | EASTING | NORTHING | RC | ELEVATION | RC | BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
	Gravel	Fill		0	3
Br.	Clay	Stones		3	20
Gr.	Clay			20	30
Gr.	Clay	Stones		30	77
Br./Gr.	Limestone			77	96
Gr.	Limestone			96	125
Br.	Limestone			125	265

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
225 to 264	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	0	85
6 1/8	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE 5 ☐ PLASTIC		85	265
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☐ BAILER — AIR

PUMPING RATE: 20 GPM

DURATION OF PUMPING: 1 HOURS 15 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
97 FEET	140 FEET	140 FEET	140 FEET	140 FEET	140 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

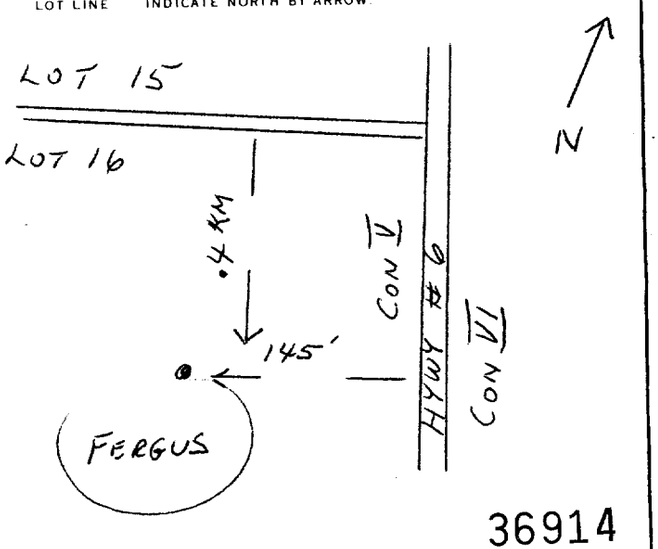
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: 160 FEET

RECOMMENDED PUMPING RATE: 18 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



36914

DRILLERS REMARKS

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED 9 ☐ DEWATERING

WATER USE

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☒ COOLING OR AIR CONDITIONING 9 ☐ NOT USED ☐ OTHER

METHOD OF CONSTRUCTION

1 ☐ CABLE TOOL 2 ☒ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING ☐ DIGGING ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Langdrill Drilling Ltd. — WELL CONTRACTOR'S LICENCE NUMBER: 3317

ADDRESS: R.R.1 Dillsburgh Ont.

NAME OF WELL TECHNICIAN: Roy LANG — WELL TECHNICIAN'S LICENCE NUMBER: T-0158

SIGNATURE OF TECHNICIAN/CONTRACTOR: R. Lang

SUBMISSION DATE: DAY 31 MO 10 YR 89

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR 3317 | DATE RECEIVED NOV 15 1989

DATE OF INSPECTION | INSPECTOR

REMARKS

CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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

25-97

11 6712246 Municipality 67009 Con. CON 15

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
[redacted]	NICHOL TWP	15	18

Address: P.O. BOX 6 FERGUS, ONT N1M-2W7

Date completed: 21 day 05 month 97 year

Northing | RC | Elevation | RC | Basin Code | ii | iii | iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
BROWN	SAND			0	30
GREY	CLAY	SAND		30	50
GREY	CLAY	GRAVEL		50	94
BROWN	ROCK			94	115
GREY	ROCK			115	140
			TOTAL DEPTH	140'	
		6" DRIVE SHOE.			

41 WATER RECORD

Water found at – feet	Kind of water
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth – feet From	Depth – feet To
6"	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	+1	95
6"	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		95	140
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			

SCREEN

Sizes of opening (Slot No.)	Diameter	Length
	inches	feet
Material and type	Depth at top of screen	feet

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at – feet From	Depth set at – feet To	Material and type (Cement grout, bentonite, etc.)
0	25	BENTONITE

71 PUMPING TEST

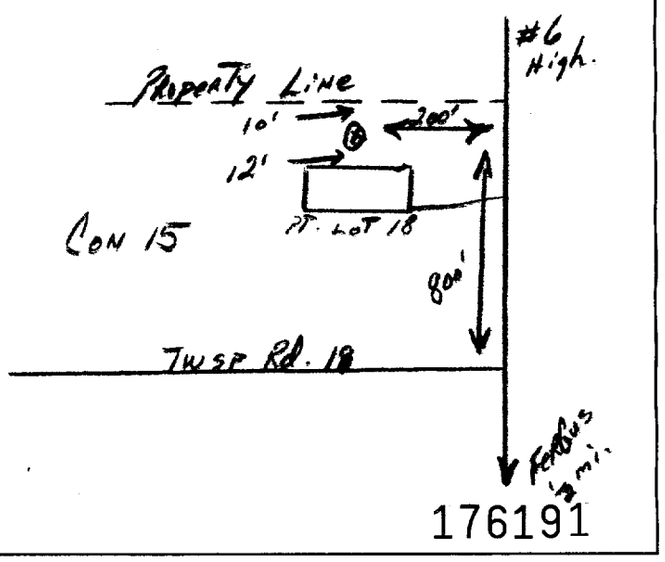
Pumping test method: 1 ☒ Pump 2 ☐ Bailer
Pumping rate: 3 GPM
Duration of pumping: ..1.. Hours ..0.. Mins

Static level	Water level end of pumping	Water levels during: 1 ☒ Pumping 2 ☐ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
44 feet	125 feet	125 feet	125 feet	125 feet	125 feet

If flowing give rate: GPM
Pump intake set at: feet
Water at end of test: ☒ Clear ☐ Cloudy
Recommended pump type: ☐ Shallow ☒ Deep
Recommended pump setting: 135 feet
Recommended pump rate: 3 GPM

LOCATION OF WELL

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



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FINAL STATUS OF WELL

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

WATER USE

1 ☒ Domestic 2 ☐ Stock 3 ☐ Irrigation 4 ☐ Industrial 5 ☐ Commercial 6 ☐ Municipal 7 ☐ Public supply 8 ☐ Cooling & air conditioning 9 ☐ Not used 10 ☐ Other

METHOD OF CONSTRUCTION

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

Name of Well Contractor	Well Contractor's Licence No.
GRAHAM WELL DRILLING LTD	2336
Address: RR#5 ROCKWOOD, ONT. N0B-2K0	
Name of Well Technician: Jim Wilson	Well Technician's Licence No.: T-1924
Signature of Technician/Contractor: Robert W. Graham	Submission date: 030 day 05 mo 97 yr

MINISTRY USE ONLY

Data source	Contractor	Date received
	2336	JUN 27 1997
Date of inspection	Inspector	
Remarks		

CSS. S

0506 (07/94) Front Form 9

2 - MINISTRY OF ENVIRONMENT & ENERGY COPY

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) 6713078 Municipality 67009 (10 14) Con. CON (15 22 23 24) 16

64-99

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
WELLINGTON	NICHOL TWP	16	16

Owner's surname (28-47) First name	Address	Date completed (48-53)
1188521 ONTARIO LTD	142 South River Rd. ELORA, ONT.	26 day 08 month 99 year

21 (1 2) U T M Zone (10) Easting (12 17) Northing (18 24) RC (25) Elevation (26 30) RC Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
BROWN	SAND			0	25
GREY	CLAY	STONES		25	70
GREY	CLAY	GRAVEL		70	83
BROWN	ROCK			83	115
GREY-BROWN	ROCK			115	190
			TOTAL DEPTH	190'	
		6" DRIVE SHOE			

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

41 WATER RECORD

Water found at – feet	Kind of water
(10-13) 190	1 ☒ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (14)
(15-18)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (19)
(20-23)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (24)
(25-28)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (29)
(30-33)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (34) (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth – feet From	Depth – feet To
(10-11) 6"	1 ☒ Steel (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	+1	84 (13-16)
(17-18) 6"	1 ☐ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		84	190 (20-23)
(24-25)	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at – feet From	Depth set at – feet To	Material and type (Cement grout, bentonite, etc.)
(10-13) 0	(14-17) 25	BENTONITE.
(18-21)	(22-25)	
(26-29)	(30-33) (80)	

71 PUMPING TEST

Pumping test method (10)	Pumping rate (11-14)	Duration of pumping (15-16) Hours (17-18) Mins
1 ☒ Pump 2 ☐ Bailer	7 GPM	1 Hours 0 Mins

Static level	Water level end of pumping	Water levels during (25) 1 ☒ Pumping 2 ☐ Recovery			
(19-21) 80 feet	(22-24) 120 feet	15 minutes (26-28) 93 feet	30 minutes (29-31) 104 feet	45 minutes (32-34) 115 feet	60 minutes (35-37) 120 feet

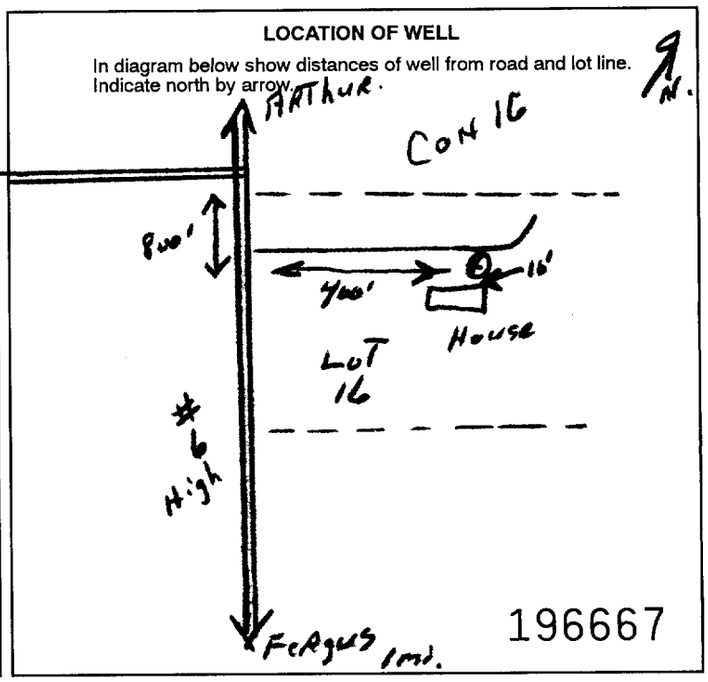
If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	☒ Clear ☐ Cloudy

Recommended pump type	Recommended pump setting (43-45)	Recommended pump rate (46-49)
☐ Shallow ☒ Deep	130 feet	7 GPM

(50-53)

LOCATION OF WELL

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



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FINAL STATUS OF WELL (54)

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

WATER USE (55-56)

1 ☒ Domestic 2 ☐ Stock 3 ☐ Irrigation 4 ☐ Industrial 5 ☐ Commercial 6 ☐ Municipal 7 ☐ Public supply 8 ☐ Cooling & air conditioning 9 ☐ Not used 10 ☐ Other

METHOD OF CONSTRUCTION (57)

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

Name of Well Contractor	Well Contractor's Licence No.
GRAHAM WELL DRILLING LTD	2336
Address: RR#5 ROCKWOOD, ONT. N0B-2K0	
Name of Well Technician: Jim Wilson	Well Technician's Licence No. T-1924.
Signature of Technician/Contractor	Submission date: 31 day 08 mo 99 yr

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	2336	SEP 08 1999
Date of inspection	Inspector	
Remarks		

0506 (07/94) Front Form 9

2 - MINISTER OF ENVIRONMENT & ENERGY COPY

Ontario — Ministry of the Environment

Measurements recorded in: [x] Metric [ ] Imperial

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

Tag#: A139028

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
6581 Hwy 6 N	West Garafraxa	12	1

County/District/Municipality	City/Town/Village	Province	Postal Code
Wellington	Fergus	Ontario	N1M2M3

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	548508	4840521		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Sand			0	10.66
Grey	Clay & stones			10.66	29.87
Grey	Clay			29.87	32.30
Brown	limestone			32.30	54.25

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0	10m	Bentonite Grout	.25

Method of Construction

[ ] Cable Tool [ ] Diamond
[x] Rotary (Conventional) [ ] Jetting
[ ] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[ ] Air percussion
[ ] Other, *specify*

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
15.9	steel	188	+.50	33.2

Construction Record - Screen

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

Status of Well

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

Water Details

Water found at Depth	Kind of Water	
54.15 (m/ft)	[ ] Fresh [x] Untested	[ ] Gas [ ] Other, *specify*
(m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*
(m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	33.2	22.8
33.2	54.25	15.6

Results of Well Yield Testing

After test of well yield, water was:
[x] Clear and sand free
[ ] Other, *specify*

If pumping discontinued, give reason:

Pump intake set at (m/ft): 175

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

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 33.28

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

Recommended pump depth (m/ft): 175

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

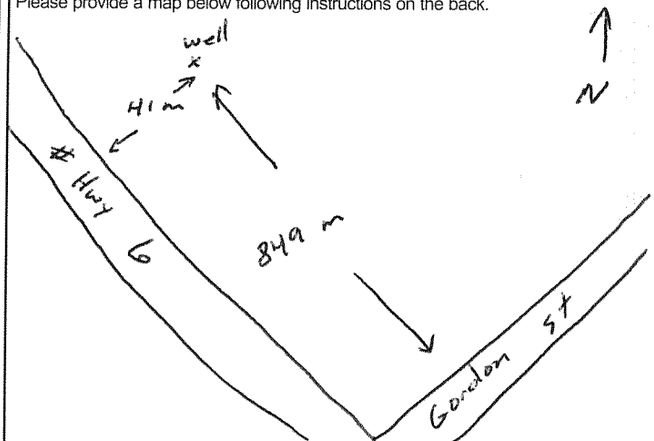
Well production (l/min / GPM):

Disinfected? [x] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	30.08		33.38
1	31.05	1	32.56
2	31.22	2	32.03
3	31.50	3	31.72
4	31.72	4	31.55
5	31.86	5	31.36
10	32.33	10	31.08
15	32.60	15	30.95
20	32.76	20	30.85
25	32.87	25	30.78
30	32.97	30	30.72
40	33.14	40	30.62
50	33.28	50	30.54
60	33.38	60	30.47

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Well Initiatives	7221

Business Address (Street Number/Name)	Municipality
15 Townline	Orangeville

Province	Postal Code	Business E-mail Address
ON	L9W3R4	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5198468289	Losch Kim

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T9217	Kim Losch	20130631

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[ ] Yes [x] No	YYYY MM DD	20130613

Ministry Use Only

Audit No. Z159276

Receipt JUL 09 2013

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APPENDIX H

Limitations of Report

STATEMENT OF LIMITATIONS

1. The work performed in this report was carried out in accordance with the Standard Terms of Conditions made part of our contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract.

2. The report has been prepared in accordance with generally accepted hydrogeological study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

3. The services performed and outlined in this report were based, in part, upon visual observations of the site and attendant structures. Our opinion cannot be extended to portions of the site which were unavailable for direct observation, reasonably beyond the control of CHUNG & VANDER DOELEN ENGINEERING LTD.

4. The objective of this report was to assess hydrogeological conditions at the site, within the context of our contract and hydrogeological assessment guidelines within the applicable jurisdiction. Evaluating compliance of past or future owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.

5. CHUNG & VANDER DOELEN ENGINEERING LTD. has relied in good faith on information and services provided by others while conducting the record search. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omission, misinterpretation or fraudulent acts of the services used.

6. It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored. The information presented in terms of the thickness and types of the subsoils encountered, groundwater levels, and chemical testing results, etc., are only applicable to the actual locations explored. Variations may be present between these locations. Should significant variation become apparent during later investigations, it may be necessary to reevaluate the findings of this report.

7. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, CHUNG & VANDER DOELEN ENGINEERING LTD. must be notified in order that we may determine if modifications to our conclusions are necessary.

ENCLOSURES

Soil Abbreviations and Terms Used on Record of Borehole Sheets

TERMINOLOGY DESCRIBING COMMON SOIL TYPES:

Topsoil	-	mixture of soil and humus capable of supporting vegetation
Peat	-	mixture of visible and invisible fragments of decayed organic matter
Till	-	unstratified glacial deposit which may range from clay to boulders
Fill	-	soil materials identified as being placed anthropologically

CLASSIFICATION (UNIFIED SYSTEM)

Clay	<0.002mm		
Silt	0.002 to .075mm		
Sand	0.075 to 4.75mm		
		Fine	0.075 to 0.425 mm
		Medium	0.425 to 2.0 mm
		Coarse	2.0 to 4.75 mm
Gravel	4.75 to 75mm		
		Fine	4.75 to 19 mm
		Coarse	19 to 75 mm
Cobbles	75 to 300mm		
Boulders	>300mm		

TERMINOLOGY

Soil Composition	**% by Weight**
"traces"	<10%
"some"(eg. some silt)	10-20%
Adjective (eg. sandy)	20-35%
"and"(eg. sand and gravel)	35-50%

Standard Penetration Resistance (SPT): Standard Penetration Resistance ('N' Values) refers to the number of blows required to advance a standard (ASTM D1586) 51 mm Ø (2 inch) split-spoon sampler by the use of a free falling, 63.5 Kg (140lbs) hammer. The number of blows from the drop weight is recorded for every 15 cm (6 inches). The hammer is dropped from a distance of 0.76m (30 inches) providing 474.5 Joules per blow. When the sampler is driven a total of 45 cm (18 inches) into the soil, the standard penetration index ('N' Value) is the total number of blows for the last 30 cm (12 inches).

Dynamic Cone Penetration Resistance (DCPT): Dynamic Cone Penetration Resistance is similar to a SPT with the 474.5 Joule/blow impulse provided by the free falling hammer where the split-spoon sampler is replaced by a 51 mm Ø, 60˚ conical point and the number of blows is recorded continuously for every 30 cm (12 inches).

COHESIVE SOILS CONSISTENCY

	(kPa)	**(P.S.F.)**	**Nominal 'N' Value**
Very Soft	<12	<250	0-2
Soft	12-25	250-500	2-4
Firm	25-50	500-1000	4-8
Stiff	50-100	1000-2000	8-15
Very Stiff	100-200	2000-4000	15-30
Hard	>200	>4000	>30

RELATIVE DENSITY OF COHESIONLESS SOIL

	'N' Value
Very Loose	0-4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

MOISTURE CONDITIONS:

Cohesive Soil
DTPL- Drier than plastic limit
APL- About plastic limit
WTPL- Wetter than plastic limit
MWTPL- Much wetter than plastic limit

Cohesionless Soil
Damp
Moist
Wet
Saturated

SAMPLE TYPES AND ADDITIONAL FIELD TESTS

SS	Split Spoon Sample (obtained from SPT)	**GS**	Grab Sample	**PP**	Pocket Penetrometer
		BS	Bulk Sample	**VANE**	Peak & Remolded shear
AS	Auger Sample	**TW**	Thin Wall Sample or Shelby Tube	**DMT**	Flat Plate Dilatometer

LABORATORY TESTS

SG	Specific Gravity	**S**	Sieve Analysis	**W**	Water Content
H	Hydrometer	**P**	Field Permeability	**K**	Lab Permeability
W_p	Plastic Limit	**W_l**	Liquid Limit	**I_p**	Plasticity Index
GSA	Grain Size Analysis	**C**	Consolidation	**UNC**	Unconfined compression

Enclosure No.: 1
Sheet 1 of 1

FILE No: 1495

BOREHOLE No. 1

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Jan 17 - 24** TO **Jan 17 - 24**

SOIL LITHOLOGY

Ground Elevation: **429.41 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)
429.16	250 mm TOPSOIL	
0.25	loose, orangey brown SANDY SILT moist	0.5
428.66		
0.75	loose to compact, brown Fine SAND trace silt moist	1.0
		1.5
		2.0
		2.5
		3.0
		3.5
		4.0
		4.5
		5.0
	---------- saturated	5.5
		6.0
		6.5
		7.0
		7.5
		8.0
421.16		
8.25	End of Borehole	8.5
		9.0
		9.5
		10.0
		10.5

SYMBOL

SAMPLE

SAMPLE ID	TYPE	N-VALUE
1	SS	5
2	SS	9
3	SS	9
4	SS	13
5	SS	19
6	SS	27
7	SS	17
8	SS	17

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

WELL DATA

DEPTH (m)

REMARKS

- above-ground steel casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- 3.05 m long, 50 mm I.D. PVC screen with sandpack
- water level in monitoring well measured at 5.39 m depth on February 6, 2024, and measured at 4.94 m depth on September 18, 2024

PROJECT MANAGER: **EYC**

CHUNG & VANDER DOELEN ENGINEERING LTD.
311 Victoria Street North
Kitchener, Ontario N2H 5E1
ph. (519) 742-8979, fx. (519) 742-7739

Enclosure No.: 2
Sheet 1 of 1

FILE No: 1495

BOREHOLE No. 2

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Jan 17 - 24** TO **Jan 17 - 24**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	Ground Elevation: **429.10 m**					FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ (50 100 150 200) PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ (20 40 60 80)	W_P W W_L (10 20 30)			
428.80	300 mm TOPSOIL									
0.30	loose, orangey brown SANDY SILT moist	0.5	1	SS	4				0.5	above-ground steel casing set in concrete
428.05		1.0	2	SS	4				1.0	bentonite seal/50 mm I.D. PVC riser
1.05	loose to compact, brown Fine SAND trace gravel, trace silt occ. silt seam with trace clay from 2.3± to 2.6± m bgs moist	1.5	3	SS	6				1.5	
		2.0							2.0	3.05 m long, 50 mm I.D. PVC screen with sandpack
		2.5	4	SS	4				2.5	
		3.0							3.0	
		3.5	5	SS	17				3.5	
	---------- saturated	4.0							4.0	water level in monitoring well measured at 4.44 m depth on February 6, 2024, and measured at 4.21 m depth on September 18, 2024
		4.5							4.5	
		5.0	6	SS	29				5.0	
		5.5							5.5	
		6.0							6.0	
422.40		6.5	7	SS	14				6.5	
6.70	End of Borehole	7.0							7.0	
		7.5							7.5	
		8.0							8.0	
		8.5							8.5	
		9.0							9.0	
		9.5							9.5	
		10.0							10.0	
		10.5							10.5	

PROJECT MANAGER: **EYC**

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FILE No: 1495

BOREHOLE No. 3

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Jan 16 - 24** TO **Jan 16 - 24**

Ground Elevation: **428.87 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE	REMARKS
428.64	230 mm TOPSOIL					
0.23	firm, brown CLAYEY SANDY SILT trace gravel, trace topsoil, DTPL	0.5	1	SS	5	above-ground steel casing set in concrete
428.12						bentonite seal/50 mm I.D. PVC riser
0.75	compact to dense, brown Fine SAND trace silt moist	1.0	2	SS	13	
		1.5				
		2.0	3	SS	11	
		2.5				
		3.0	4	SS	10	
		3.5	5	SS	11	
		4.0				3.05 m long, 50 mm I.D. PVC screen with sandpack
		4.5				water level in monitoring well measured at 5.12 m depth on February 6, 2024, and measured at 4.64 m depth on September 18, 2024
	---------- saturated	5.0	6	SS	31	
		5.5				
		6.0				
		6.5	7	SS	18	
		7.0				
		7.5				
		8.0	8	SS	15	
420.62						
8.25	End of Borehole	8.5				
		9.0				
		9.5				
		10.0				
		10.5				

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

WELL DATA

PROJECT MANAGER: **EYC**

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FILE No: 1495

BOREHOLE No. 4

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Solid Stem Auger**
Size: **152 mm O.D.**
Date: **Jan 16 - 24** TO **Jan 16 - 24**

Ground Elevation: **426.94 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE
426.64	300 mm TOPSOIL				
0.30	firm to stiff, brown CLAYEY SANDY SILT trace gravel, trace topsoil DTPL	0.5	1	SS	5
425.89		1.0	2	SS	9
1.05	loose to compact, brown Fine SAND trace gravel, trace silt moist	1.5	3	SS	14
	---------- saturated	2.0	4	SS	6
		2.5			
		3.0	5	SS	8
		3.5			
		4.0			
		4.5			
		5.0	6	SS	10
		5.5			
		6.0			
	---------- silt seam, trace clay	6.5	7	SS	21
420.24					
6.70	End of Borehole	7.0			
		7.5			
		8.0			
		8.5			
		9.0			
		9.5			
		10.0			
		10.5			

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

WELL DATA

DEPTH (m)

REMARKS

- above-ground steel casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- 3.05 m long, 50 mm I.D. PVC screen with sandpack
- water level in monitoring well measured at 3.61 m depth on February 6, 2024, and measured at 3.56 m depth on September 18, 2024

PROJECT MANAGER: **EYC**

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Enclosure No.: 5
Sheet 1 of 1

FILE No: 1495

BOREHOLE No. 5

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Jan 16 - 24** TO **Jan 16 - 24**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	Ground Elevation: **425.61 m**						FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ (50 100 150 200) PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ (20 40 60 80)	W_P W W_L (10 20 30)			
425.43 0.18	180 mm TOPSOIL										
	loose, orangey brown SANDY SILT trace topsoil moist to wet	0.5 1.0 1.5		1 2 3	SS SS SS	5 4 5				0.5 1.0 1.5	above-ground steel casing set in concrete bentonite seal/50 mm I.D. PVC riser 3.05 m long, 50 mm I.D. PVC screen with sandpack
423.76 1.85	loose to compact, brown Fine SAND trace silt wet to saturated	2.0 2.5 3.0 3.5 4.0 4.5		4 5 6	SS SS SS	7 9 9				2.0 2.5 3.0 3.5 4.0 4.5	water level in monitoring well measured at 2.10 m depth on February 6, 2024, and measured at 2.27 m depth on September 18, 2024
	---------- silt seam, trace clay	5.0 5.5 6.0 6.5 7.0 7.5 8.0		7 8	SS SS	12 13				5.0 5.5 6.0 6.5 7.0 7.5 8.0	
417.36 8.25	End of Borehole	8.5 9.0 9.5 10.0 10.5								8.5 9.0 9.5 10.0 10.5	

PROJECT MANAGER: **EYC**

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FILE No: 1495

BOREHOLE No. 101

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Sep 11 - 24** TO **Sep 11 - 24**

Ground Elevation: **428.68 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE	REMARKS
428.50	180 mm TOPSOIL					
0.18	very loose, orangey brown SANDY SILT, moist	0.5	1	SS	2	
427.93						
0.75	stiff, brown CLAYEY SILT, some sand trace gravel, DTPL	1.0	2	SS	8	
427.33						
1.35	compact, brown Fine to Medium SAND trace gravel, trace silt moist to wet	1.5	3	SS	15	
		2.0				
		2.5	4	SS	23	
		3.0				
		3.5	5	SS	26	
	---------- saturated	4.0	6	SS	22	
		4.5				
		5.0	7	SS	13	
		5.5				
		6.0				
		6.5	8	SS	19	
		7.0				
	---------- silty	7.5				
420.88			9	SS	15	
7.80	compact, grey SILT trace to sand trace clay occ. clayey silt seams saturated	8.0				
		8.5				
		9.0				
		9.5	10	SS	18	
419.08						
9.60	End of Borehole	10.0				
		10.5				

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

WELL DATA

- above-ground steel casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- 3.05 m long, 50 mm I.D. PVC screen with sandpack
- water level in monitoring well measured at 3.82 m depth on September 18, 2024

PROJECT MANAGER: **EYC**

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Enclosure No.: 10
Sheet 1 of 1

FILE No: 1495

BOREHOLE No. 102

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Sep 12 - 24** TO **Sep 12 - 24**

Ground Elevation: **429.37 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE	REMARKS
429.17 / 0.20	200 mm TOPSOIL					above-ground steel casing set in concrete
	loose, orangey brown SANDY SILT, moist	0.5	1	SS	4	DCPT conducted from 0 to 3.95± m depth
428.57 / 0.80	silty --- loose to compact, brown Fine to Medium SAND trace to some silt trace gravel moist to wet	1.0	2	SS	7	bentonite seal/50 mm I.D. PVC riser
		1.5	3	SS	7	
		2.0	4	SS	8	
		2.5				
		3.0	5	SS	9	
		3.5				
		4.0	6	SS	19	3.05 m long, 50 mm I.D. PVC screen with sandpack
	--- saturated	4.5	7	SS	27	water level in monitoring well measured at 4.65 m depth on September 18, 2024
		5.0				
		5.5				
		6.0	8	SS	8	
		6.5				
		7.0				
		7.5	9	SS	21	
		8.0				
		8.5				
		9.0				
419.77 / 9.60	End of Borehole	9.5	10	SS	17	
		10.0				
		10.5				

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

WELL DATA

PROJECT MANAGER: **EYC**

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FILE No: 1495

BOREHOLE No. 103

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Sep 11 - 24** TO **Sep 11 - 24**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	WELL DATA	DEPTH (m)	REMARKS
	Ground Elevation: **428.31 m**								
427.51	very loose, dark brown FILL, sand and silt trace gravel, trace clay trace topsoil, moist	0.5		1	SS	3		0.5	above-ground steel casing set in concrete
0.80	loose, brown SANDY SILT, trace gravel trace clay, moist	1.0		2	SS	5		1.0	bentonite seal/50 mm I.D. PVC riser
426.96		1.5		3	SS	21		1.5	
1.35	compact, brown Fine to Medium SAND trace silt moist	2.0		4	SS	13		2.0	
		2.5						2.5	
		3.0		5	SS	12		3.0	3.05 m long, 50 mm I.D. PVC screen with sandpack
	---------- saturated	3.5						3.5	water level in monitoring well measured at 3.77 m depth on September 18, 2024
		4.0		6	SS	12		4.0	
		4.5		7	SS	14		4.5	
		5.0						5.0	
		5.5						5.5	
		6.0						6.0	
		6.5		8	SS	24		6.5	
		7.0						7.0	
		7.5						7.5	
420.21		8.0		9	SS	14		8.0	
8.10	End of Borehole	8.5						8.5	
		9.0						9.0	
		9.5						9.5	
		10.0						10.0	
		10.5						10.5	

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

PROJECT MANAGER: **EYC**

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Enclosure No.: 12
Sheet 1 of 1

FILE No: 1495

BOREHOLE No. 104

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Sep 11 - 24** TO **Sep 11 - 24**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	Ground Elevation: **427.36 m**						FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ (50 100 150 200) PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ (20 40 60 80)	W_P W W_L (10 20 30)			
427.11	250 mm TOPSOIL										
0.25	loose, orangey brown to brown FILL, sand and silt trace gravel, trace clay occ. clayey silt seams moist	0.5 1.0 1.5 2.0		1 2 3	SS SS SS	6 7 5				0.5 1.0 1.5 2.0	above-ground steel casing set in concrete bentonite seal/50 mm I.D. PVC riser
425.21											
2.15	moist --- loose to compact, brown Fine to Medium SAND trace to some silt occ. silty sand seams saturated	2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0		4 5 6 7	SS SS SS SS	10 15 9 10				2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0	3.05 m long, 50 mm I.D. PVC screen with sandpack water level in monitoring well measured at 3.0 m depth on September 18, 2024
421.06											
6.30	brown --- compact, grey SILT trace sand, trace clay saturated	6.5 7.0 7.5		8 9	SS SS	15 12				6.5 7.0 7.5	
419.26											
8.10	End of Borehole	8.0 8.5 9.0 9.5 10.0 10.5								8.0 8.5 9.0 9.5 10.0 10.5	

PROJECT MANAGER: **EYC**

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FILE No: 1495

BOREHOLE No. 105

Client: **PoloCorp Inc.**

Project: **Proposed Residential Subdivision**

Location: **968 St. David Street North, Fergus, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Auger**
Size: **83 mm I.D.**
Date: **Sep 12 - 24** TO **Sep 12 - 24**

Ground Elevation: **428.15 m**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SAMPLE ID	TYPE	N-VALUE	REMARKS
	loose, dark brown FILL, sand and silt some topsoil trace clay, moist	0.5	1	SS	8	above-ground steel casing set in concrete
427.25						bentonite seal/50 mm I.D. PVC riser
0.90	orangey brown, some silt	1.0	2	SS	6	
	very loose to compact, brown	1.5				
	Fine to Medium SAND trace silt	2.0	3	SS	12	
	moist to wet	2.5	4	SS	16	
		3.0				
	saturated	3.5	5	SS	14	
		4.0	6	SS	19	
		4.5				water level in monitoring well measured at 4.45 m depth on September 18, 2024
		5.0	7	SS	17	
		5.5				3.05 m long, 50 mm I.D. PVC screen with sandpack
		6.0				
		6.5	8	SS	15	
		7.0				
		7.5				
		8.0	9	SS	11	
		8.5				
		9.0				
		9.5	10	SS	3	
418.55						
9.60	End of Borehole	10.0				
		10.5				

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

PROJECT MANAGER: **EYC**

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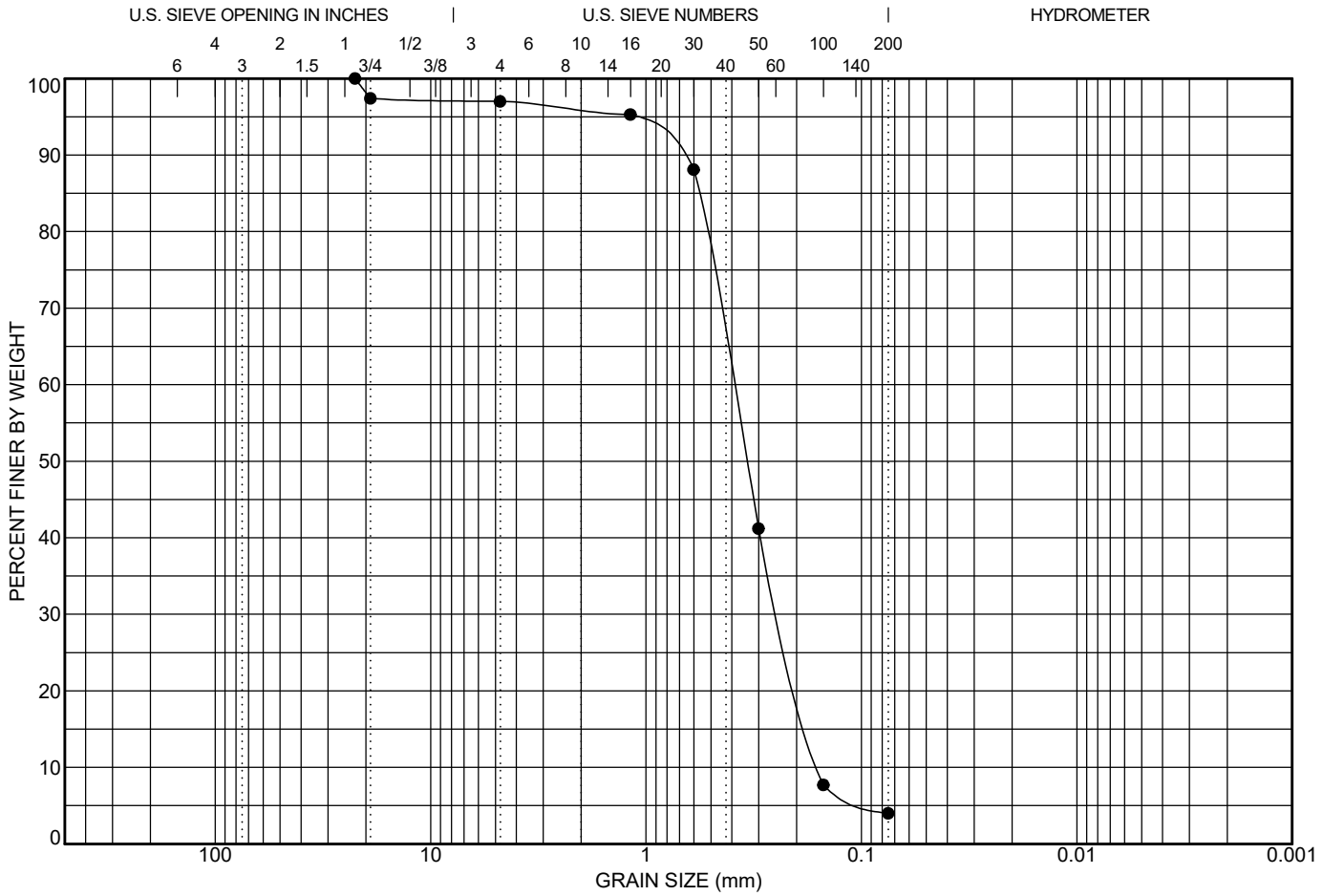

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
			0.91	2.52	22.4	0.396	0.238	0.157	3.0	93.0	4.0	

Date: Sep. 25 - 2024
Client: PoloCorp Inc.
Contractor:
Source:
Sampled From: BH 101 - SA 4, 2.30 to 2.75 m depth
Sample No.: 101-4
Date Sampled: Sep. 11 - 2024
Sampled By: RS
Lab No.: 1033
Date Tested: Sep. 25 - 2024
Type of Material: Fine to Medium Sand, trace gravel, trace silt

Sieve Size (mm)	Percent Passing	No Specifications

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GRAIN SIZE DISTRIBUTION

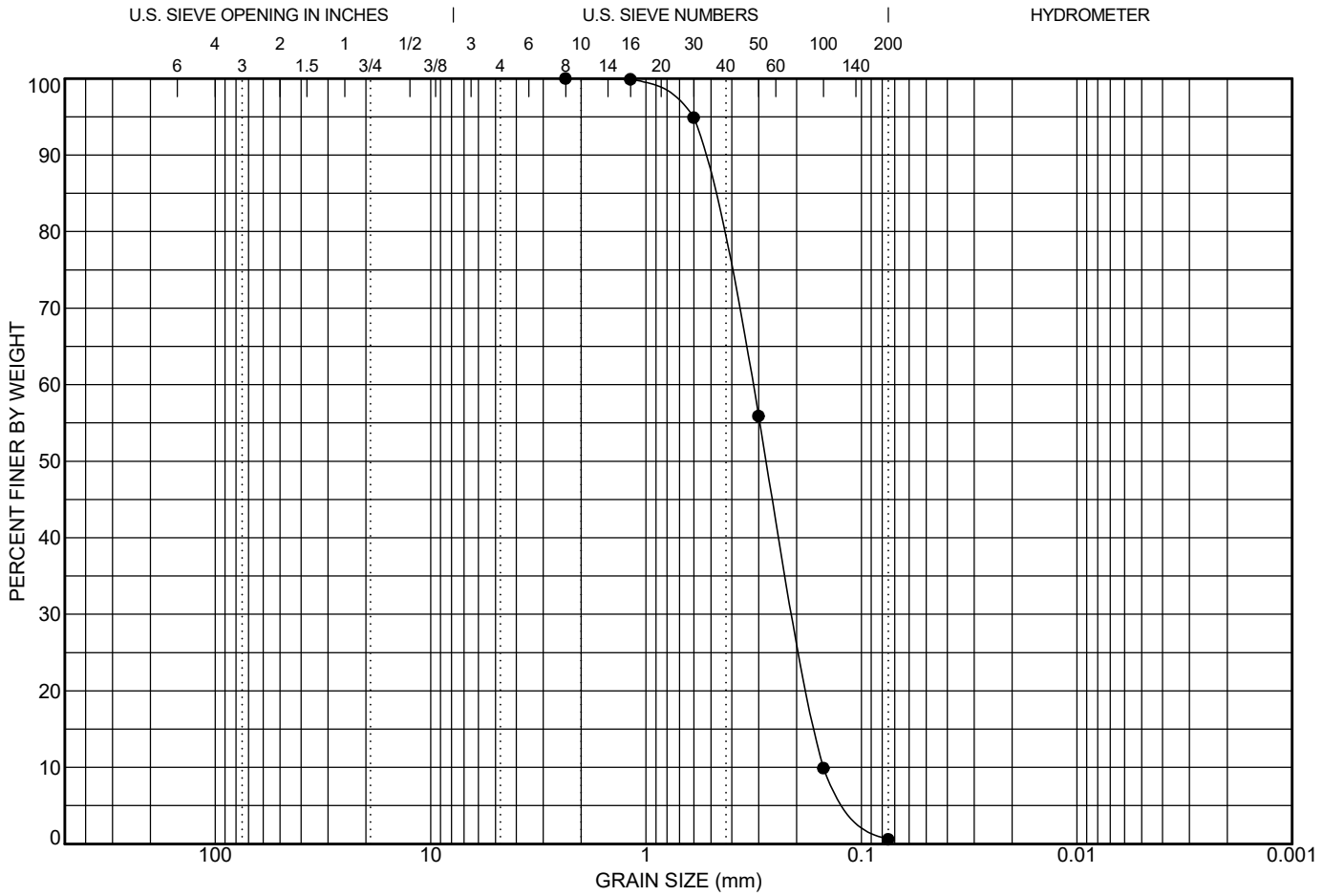
Project: Proposed Residential Subdivision

Location: 968 St. David Street North, Fergus, Ontario

File No.: 1495

Enclosure No.: 22

DM - NO SPECIFICATIONS 1495 968 ST. DAVID STREET NORTH, FERGUS (SEPTEMBER 2024).GPJ LAW LNDN.GDT 10-1-24



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
			0.85	2.15	2.36	0.323	0.203	0.15	0.0	99.4	0.6	

Date: Sep. 25 - 2024
Client: PoloCorp Inc.
Contractor:
Source:
Sampled From: BH 105 - SA 4, 2.30 to 2.75 m depth
Sample No.: 105-4
Date Sampled: Sep. 12 - 2024
Sampled By: RS
Lab No.: 1034
Date Tested: Sep. 25 - 2024
Type of Material: Fine to Medium Sand, trace silt

Sieve Size (mm)	Percent Passing	No Specifications

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GRAIN SIZE DISTRIBUTION

Project: Proposed Residential Subdivision

Location: 968 St. David Street North, Fergus, Ontario

File No.: 1495

Enclosure No.: 23