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SCOPED HYDROGEOLOGICAL ASSESSMENT

Proposed Lot Severance

2342 Snyders Road East, Township of Wilmot, Ontario

SUBMITTED TO:
Bogdan Pelczar
2170 Huron Road
Township of Wilmot, Ontario
N0B 2H0

ATTENTION:
Bogdan Pelczar

FILE NO.: 2775H-1v0 / February 2, 2026

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1.0 INTRODUCTION

CHUNG & VANDER DOELEN ENGINEERING LTD. ("CVD") has been retained by Bogdan Pelczar (the "Client") to complete a scoped hydrogeological assessment for the property located at 2342 Snyders Road East, Township of Wilmot, Ontario (the "Site" or "Property"), as shown in Figure 1 (Appendix B). The purpose of the investigation is to conduct a Scoped Stage 2 Hydrogeological Study in advance of planning approval for a proposed lot severance (the "Project").

The subject Site is currently occupied by one single-detached dwelling and has a total area of 0.81± hectares. CVD reviewed the proposed severance drawing provided by GSP Group and notes that the plan would see the property split in half, resulting in two (2) new lots of approximately 0.4± hectares each, and then redeveloped into low-density residential use properties.

In order to satisfy the requirements under the Region of Waterloo's "Hydrogeological Assessment Guidelines for Privately-Serviced Developments – Scoped Stage 2 Studies (Revised November 25, 2020)", the overall objectives of the hydrogeological investigation are as follows:

- To characterize the overall hydrogeologic setting (including shallow subsoil and groundwater conditions).
- Provide an evaluation of the general water table zone characteristics including hydraulic conductivity of the aquifer, assessment of the water table, and general groundwater flow direction.
- Review soil grain size results and comment on infiltration rates.
- Review laboratory analytic results of groundwater samples and comment on baseline groundwater quality.
- Assess potential impacts from the proposed lot severance to any surrounding water supply wells and groundwater dependent natural heritage features and complete a desktop well inventory of properties within 500-metre radius of the Site.
- Review available well records for well yield and aquifer depths and screen intervals, comment on the feasibility of installing a new test well to service the water supply needs for the proposed development.
- Comment on any groundwater control needs during construction.

This report presents the findings of the investigation conducted between October 2025 and January 2026. It should also be noted that CVD previously completed an assessment (January 2022) for the lot severance of the neighbouring property located at 2372 Snyder's Road East, and the findings of that study will be discussed in the current investigation.

2.0 FIELD INVESTIGATION

2.1 Borehole Drilling and Monitoring Well Installation

On October 25, 2025, CVD advanced six (6) boreholes on the Site, Boreholes 1 to 6, to depths between 4.55 and 7.60 metres below ground surface (mbgs), corresponding to elevations from 373.85 to 377.23 metres above sea level (mASL). Monitoring wells were installed at three (3) borehole locations, specifically Borehole 1, 3, and 6, and the monitoring wells are labelled as BH 1, 3, and 6. A borehole location plan is presented in Figure 2 (Appendix B). All borehole/monitoring well logs are included in Appendix F.

The investigation was completed using a Geoprobe direct-push drill rig, equipped both with 76 mm inner diameter hollow stem augers (HSA). Drilling was completed by Arrow Drilling Ltd. of London, Ontario. Arrow Drilling Ltd. is an MECP licensed water well contractor. 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 subsoil samples collected 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).

2.2 Well Development, Water Sampling and Water Level Monitoring

CVD developed each monitoring well using Waterra™ polyethylene tubing, foot-valve and hand pumps. As of the writing of this report, a full round of groundwater level monitoring was performed on three (3) occasions between October 24, 2025, and January 9, 2026. A summary of the groundwater levels and calculated elevations for all the monitoring events are provided in Table 1, included in Appendix C.

CVD collected groundwater samples from wells BH 1, BH 6, and the drinking water from within the existing residence on the Property (from an untreated tap in the utilities room) on October 24, 2025. The water samples were submitted to ALS Laboratories for chemical analyses. The laboratory certificate of analysis (COA) is provided in Appendix D.

3.0 SITE CHARACTERIZATION

3.1 Site Description

The Site, as shown in Figure 2 (Appendix B), is a rectangular shaped plot of land that is approximately 0.81± hectares in area, and is located on the north side of Snyder's Road East in the Township of Wilmot, Ontario, approximately 250± m west of Trussler Road. The Site is bounded to the south by Snyders Road East, to the north by agricultural lands, and to the east and west by residential properties.

The Site is currently occupied by a residential dwelling with attached garage and a shed. Drinking water for the Property is sourced from an on-Site drilled well. It is understood that the Site and neighbouring properties were historically agricultural lands prior to re-development as residential properties.

In terms of topography, regionally, elevations decrease significantly westwards towards the Alder Creek. Elevations also decrease northwards and southwards towards tributaries to Alder Creek. Locally, the ground surface elevation across the Site decreases from South to North with elevations ranging from approximately 384 to 380 m ASL. The ground surface elevations at boreholes locations advanced by CVD (detailed in Section 3.0 below) ranged from 379.72 to 383.33 mASL

3.2 Nearby Watercourses and Wetlands

Publicly available Grand River Conservation Authority (GRCA) mapping indicates the presence of a GRCA-regulated watercourse (stream) located approximately 200± m north of the Site. The stream flows west towards Alder Creek which is located approximately 900± m west of the Site. There are no regulated wetlands in the vicinity of the property.

3.3 Geological and Hydrogeological Conditions

The Site is situated within the central section of the Waterloo Moraine (Blackport et al., 2014). The hydrogeology of the Moraine has been characterized in considerable detail through numerous studies commissioned by the Region, mostly over the past 25 years, and documented in scientific literature (e.g., Blackport et al., 2014). This work has established that there is a strong correlation between the subsoil stratigraphy, water resources, and groundwater movement within and in the areas flanking the Moraine. Four overburden aquifers, a bedrock aquifer, and four overburden aquitards have been identified and generically named (e.g., AFB1 – Aquifer 1; ATB2 – Aquitard 2; etc.) in a conceptual hydrogeologic model of the Moraine developed through these studies (Aqua Resource et al., 2009). Notably, one or more of these aquifers and aquitards may be absent at any given location.

Based on review of available reports, the interpreted hydrostratigraphy for the Site and surrounding area are described as follows:

- Youngest tills represented by the Port Stanley and/or Upper Maryhill Till (ATB1 or Regional Aquitard 1);
- Shallow Upper Waterloo Moraine Aquifer (AFB1 or Regional Aquifer 1) and intermediate (AFB2 or Regional Aquifer – Middle Waterloo Moraine);
- In some areas Regional Aquifer 1 is interpreted to be bisected by the Middle Maryhill Till (ATB2 or Regional Aquitard 1), effectively separating it into two aquifer units;
- The lower, older till units, i.e., Lower Maryhill Till (ATB3 or Regional Aquitard 2) and Catfish Creek Till (ATC1 or Regional Aquitard 3); and
- Deep regional aquifer unit (Pre-Catfish Creek Sand and Gravel – AFD1 or Regional Aquifer 3) that is spatially discontinuous throughout much of the core areas of the Waterloo Moraine.

Paleozoic geological mapping shows that the property is located within the Salina formation of the Middle and Lower Silurian (Armstrong and Carter, 2006). The bedrock in this area is comprised of dolostone and shale. Deep well record in the vicinity of the Site confirm a soil overburden thickness of 90± to 100± m.

In terms of on-site soils, publicly available surficial geology mapping by the Ontario Geological Survey, as presented in Figure 3 (Appendix B), shows that the Site is located in an area of ice-contact sand (poorly to well sorted, fine sand) and Maryhill till (clay till).

These descriptions of on-site soils generally correspond with the findings of the current investigation. Based on the stratigraphic logs provided in Appendix F, the Site was generally underlain by 180 to 360 mm of topsoil, which was underlain either by fine granular deposits in the south end of the property (Boreholes 1 to 3), consisting of sandy silt to sand and silt layers of variable thickness extending to depths between 0.80 and 3.30 mbgs, or directly by clayey silt in the north end of the property (Boreholes 4 to 6), which represents the predominant soil unit across the Site. Occasional sand seams and silt seams/layers were observed within the clayey silt deposit. The clayey silt deposit was further underlain by a clayey sandy silt till deposit encountered at depths between 5.50 and 5.95 mbgs and extending to at least 7.60 mbgs, the maximum depth of exploration.

3.4 Soil Sampling and Grain Size Analysis

As part of the requirements needed to satisfy the Region of Waterloo Scoped Stage 2 Study criteria, CVD completed two (2) grain size distribution analyses on near-surface samples collected in the vicinity of the new proposed septic system. The hydraulic conductivity of the deposits was calculated based on D10 value of the grain size distribution analysis using the Hazen Method. The following table presents the results of the grain size testing, associated hydraulic conductivities, and equivalent T-Time rate of the soils:

Material	Estimated Hydraulic Conductivity Range (K) (cm/s)	Infiltration Rate Range (mm/hr)	Equivalent T-Time (min/cm)
Sandy Silt to Silt, some Sand	1×10^{-6} to 1×10^{-5}	1 to 5	30 to 50
Clayey Silt	$<1 \times 10^{-6}$	<1	>50

The full results of all grain size distribution analysis test results are presented on Enclosures 11 to 15 (Appendix F).

3.5 Source Water Protection

The Grand River Source Protection Plan (updated February 2022) has established four Wellhead Protection Areas (A, B, C & D) in the Region of Waterloo; WHPA-A for the immediate 100-m zone around each municipal well and WHPA-B to D based on modelled groundwater 'times of travel' to each well (or wellfield), varying between 2, 5, and 25-years, respectively. In addition, relative groundwater '*vulnerability*' to contamination scores (on an increasing scale from 1 to 10) have been established for all lands within the WHPAs.

CVD reviewed publicly available data provided on the GRCA-Web GIS application which maps existing Wellhead Protection Areas (WHPAs). Based on the GRCA mapping, CVD confirmed the following:

- The Site is situated within the WHPA-C zone of municipal wells K91 to K94, located approximately 2.5± km southeast of the Site. WHPA-C indicates an area in which travel time is 5 years or less but greater than 2 years.
- The Intrinsic Vulnerability (IV) of the aquifer is designated as medium, with a vulnerability score of four (4).
- The Site is located within a Significant Groundwater Recharge Area (SGRA).

Considering that the Site is predominantly underlain by generally very low permeability materials (e.g. clayey silt and till) with a thickness of at least 10± m separating the upper aquifer from the Regional Aquifer (see Section 4.1), it can be presumed that sufficient hydraulic isolation exists on-site that would mitigate potential impacts (i.e., nutrient loading, and any temporary construction dewatering activities of the water table) to the underlying aquifer from the proposed severance and construction of new homes and private wastewater treatment systems.

Furthermore, although the property is located within a significant groundwater recharge area, the presence of low-permeability underlying soils, the northward downslope topography, and the associated northward groundwater flow direction indicate that significant recharge is unlikely to occur within the property itself. Instead, groundwater recharge is more likely to occur in the lower-lying surrounding fields.

4.0 PRIVATE WELL INVENTORY STUDY

4.1 Private Water Supply Wells

CVD completed a review of all water well records available from the MECP's water well database[1] within a 500 m radius of the Site. Through the investigation, thirty-six (36) records were identified within the Study Area, of which twenty-two (22) were flagged as potentially active water supply wells. All other records were for monitoring/observation wells or for abandoned water supply wells.

Water well records indicate a mix of occasional shallower wells located 10± to 15± m in depth and screened likely in perched saturated layers within the lower permeability clayey silt and till units, and deeper wells drilled into sand and/or gravel water bearing zones, typically encountered at depths of 35± mbgs or greater. These deep wells, which are most commonly used in the area, typically contain at least 10± m of low-permeable clayey material followed by 10± to 20± m of dry sand / sand and gravel overlying deeper water-bearing (aquifer) sand and gravel zones. According to the well records, static water level depths in the deep wells range from 38± to 43± mbgs, with recommended pumping rates varying between 35± to 60± L/min. According to nearby well records, the sand and gravel aquifer extends up to at least 57± mbgs, the deepest explored depth

As such, it is expected and recommended that any new water supply wells drilled for the proposed development be installed in the deeper sand and gravel aquifer. Considering the aquifer yield and that the aquifer is at least 14± to 18± m thick, it is anticipated that the construction of new water supply wells in the deep sand and gravel aquifer will have no notable effect on the aquifer, and the aquifer will be able to sustain future water demands of the area.

4.2 Door-to-Door Private Well Inventory Survey

Following the database review, CVD completed a door-to-door survey of all residences and addresses within a 500 m radius of the Site. CVD surveyed property owners to confirm the information from the MECP database and to gather supplemental information, including details of any water supply wells not listed in the database. Survey packages which included a letter of explanation, a questionnaire, and a pre-paid envelope were left at vacant residencies for the owner to complete and mail back to CVD.

Based on the door-to-door survey, six (6) water supply wells were identified for which there were no records in the MECP database. Several wells were also identified which required their location to be adjusted in comparison to the information provided in the MECP database.

The locations of the identified wells (adjusted where applicable) are presented in Figure 6, and the associated well details are provided in Table 2, both of which are included in Appendix E. Wells with

[1] https://www.ontario.ca/page/map-well-records

records in the MECP database are given numbered IDs. Wells without records (NR – no record) in the MECP database are given separate lettered IDs (e.g. NR1 to NR5). Three (3) of the identified wells were confirmed not to be in use.

Of the addresses within the Study Area, CVD was unable to gather any information concerning water wells for the below listed properties The addresses did not have any associated water well records in the MECP database and CVD was unable to contact the owners.

- 2345 Snyders Road East
- 2363A, 2363B and 2363C Snyders Road East
- 2392B Snyders Road East
- 2386 Snyders Road East

4.3 Municipal Water Supply Wells

CVD reviewed publicly available GRCA mapping and confirmed there are no municipal supply wells are present within the Study Area. The nearest municipal supply wells are located on Erbs Road approximately 2.5± km northwest of the Site.

5.0 DATA ASSESSMENT

5.1 Water Table Depth and Configuration

Due to the predominance of the clayey silt subsoils throughout the majority of the Site (see Section 3.3), the shallow groundwater table aquifer exists predominantly within the occasional fine granular seams / layers located above the clayey silt in the southern portion or the property, and within fine granular seams in the clayey silt in the northern portion of the property.

Between October 2025 and January 2026, maximum groundwater levels across the Site varied from 378.89 to 382.72 mASL, corresponding to depths between 0.61 and 1.31 mbgs. During this time period, groundwater levels continually rose, and considering the very slow recharge rate of the soils, it is possible that some of the groundwater levels measured in October and December 2025 were still not stabilized. Since the recharge is very slow, large variations of water levels between wet and dry seasons are expected, and as such, groundwater levels following the spring freshet may potentially be higher than those currently recorded. The groundwater measurements for each monitoring well collected thus far for the investigation are summarized in Table 1, included in Appendix C.

As presented in Figure 5, based on the groundwater elevation data collected on January 9, 2026, shallow groundwater at the Site flows in a north-northwesterly direction towards the agricultural field located north of the Site, and largely follows local topography.

Regarding hydraulic conductivity, due to the very slow recharge rate of the on-site soils, and in order to

properly assess the stabilized water table, single well response tests (SWRT) were not performed. If required, they may be performed at a later date; however, considering the very slow recharge rate, it is CVD's professional opinion that the hydraulic conductivity calculated through the grain size distribution analyses discussed in Section 3.4 are sufficiently representative.

5.2 Background Groundwater Chemistry

A summary of the nutrient analytical results from the groundwater sampling completed on October 24, 2025, are provided below. The full analytical results are provided in the laboratory certificate of analysis, included in Appendix C.

Parameter	Concentration (mg/L)		
	House (tap)	BH1	BH6
Ammonia, total (as N)	0.161	<0.0050	<0.0050
Chloride	21.7	55.6	5.60
Fluoride	0.058	0.075	0.107
Nitrate (as N)	0.142	0.221	1.64
Nitrite (as N)	0.454	<0.010	<0.010
Phosphorus, total	<0.0010	0.0012	<0.0010
Sulfate (as SO4)	51.0	8.34	5.71

Nitrate concentrations ranged from 0.221 to 1.64 mg/L, which is sufficiently low, and suggests that the shallow groundwater at the Site is not significantly affected by nutrient application (e.g. from agricultural use or septic systems). Chloride concentrations ranged from 5.60 to 55.6, indicating low to only minor impacts from salt use (e.g. on nearby roadways). Background total phosphorus concentrations are low.

Similarly, nitrate, chloride, and phosphorus concentrations measured within the on-Site drilled well, measured through the indoor tap, were also low (0.142, 21.7, and <0.0010 mg/L, respectively).

Based on these groundwater results, no notable background water quality exceedances or issues were encountered.

5.3 Preliminary Dewatering Assessment

At the time of writing this report, neither finalized site plans nor site grading plans were available. As such, it is unknown whether the development will include partial underground levels. If basements are proposed, it is recommended that finished basement floor elevations be located at a minimum of

approximately 0.6 m above the seasonal high groundwater table, where feasible.

In view of the very low hydraulic conductivity of the predominant water-bearing clayey silt unit (≤1 x 10^{-8} m/s) and fine granular deposits, it is expected that the volume of groundwater ingress into the excavation during any temporary construction dewatering will be less than 50,000 L/day with a zone of influence (ZOI) of less than 50 m. As such, an Environment and Sector Registry (EASR) for temporary construction dewatering may not be required, and temporary construction dewatering can likely be accomplished using traditional filtered sump pumping techniques (possibly together with drainage ditches and intercept ditches). However, it should be noted that pockets of more conductive granular materials may exist.

Similarly, considering that groundwater levels were observed to range from 378.89 to 382.72 mASL, corresponding to depths between 0.61 and 1.31 mbgs, unless the grade is raised, any underground structure will likely be below the water table. However, due to the very low permeability soils, it is anticipated that for a residential home construction, standard foundation damp proofing and weeper system to a sump pit and pump will be sufficient to manage groundwater ingress into the basement.

5.4 Predictive Nitrate Loading Assessment

A predictive nitrate loading assessment was completed in accordance with Ontario Ministry of Environment, Conservation, and Parks (MECP) D-5-4 Individual On-Site Sewage Systems guidelines to estimate the concentration of groundwater nitrate at the property boundary as a result of input from increased septic effluent from the proposed lot severance and subsequent development.

In estimating these concentrations, the following assumption and rationale were used:

- Given that the existing and proposed use of the property is residential, with an anticipated density of approximately one to four occupants per home, the domestic wastewater generated is assumed to have an influent nitrate concentration of 40 mg/L.

Based on these assumptions, a conventional private wastewater treatment system without any tertiary treatment will have an estimated nitrate loading concentration of 16 mg/L at the northern property boundary.

With the implementation of tertiary treatment system, it is estimated that 50% or greater of nitrogen can be reliably removed, resulting in a nitrate loading that is estimated to be 8 mg/L or less.

The predictive nitrate loading calculations are included in Appendix G.

5.5 Evaluation of Potential Impact of Effluent

With tertiary treatment, the resultant nitrate loading is anticipated to be below the Ontario Drinking Water Standards (ODWS) of 10 mg/L and is therefore not expected to adversely affect groundwater quality from a potable water perspective. Nonetheless, it is understood that Region of Waterloo Official Plan Policy 5.B.8 does not support the consideration of tertiary treatment in the evaluation of nitrate loading and potential impacts to water quality due to the uncertainty regarding maintenance oversight of such systems.

However, the findings of this assessment suggest that there are no on-site or down-gradient groundwater users that would be adversely impacted by nitrate even if tertiary treatment systems are not maintained as specified and the resultant loading is 16 mg/L. This is based on the following:

- All surrounding private water supply wells identified through the well inventory study, discussed in Section 4.0, are located upgradient (south), or cross-gradient (east and west) of the property. As evidenced by the on-Site investigation and available water well records, the Site and surrounding area are underlain by generally very low permeable soils of sufficient thickness (typically at least 10 m of aquitard material separating the underlying sand and gravel aquifer), and as such, nitrate concentrations will be significantly attenuated by the time they reach the underlying deep aquifer.
- On-site water supply, currently and for future development, will be supplied by a drilled well into a confined sand and gravel aquifer at 30± mbgs that is hydraulically isolated from the shallow water table.
- Shallow groundwater flow from the proposed septic leaching area, which is to be located in the northern portion of the property, travels in a northerly direction towards an adjacent agricultural field with no residential occupants and/or private water supply wells.

6.0 CONCLUSIONS AND RECOMMENDATIONS

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

1) The Site is predominantly underlain by low-permeability soils (percolation rate >50 min/cm), clayey silt and till deposits. These soils are present directly at ground surface at the northern end of the property and beneath a generally thin layer of low-permeability fine granular deposits at the southern end of the property.

2) Shallow groundwater flow direction mimics the local topography of the Site, with groundwater travelling in a north-northwesterly direction towards the adjacent unoccupied agricultural field.

3) All private wells within 500 m of the Site are located to the east, west, and south of the property. These private wells are predominantly situated within a deep, hydraulically isolated sand and gravel confined aquifer (overlain by at least 10 m of aquitard). While several dug wells were identified, they are not located down-gradient of the subject Site.

4) The subject property is located within the WHPA-C zone of municipal wells K91 to K94, located 2.5 km southeast of the Site, with a relatively low vulnerability of 4. Although classified as a Tier 2 Significant Groundwater Recharge Area, the presence of low-permeability underlying soils, the and the northward groundwater flow direction indicate that significant recharge is unlikely to occur within the property itself.

5) Due to the lack of down-gradient shallow groundwater users and the presence of a greater than 10-metre thick low-permeability aquitard providing reasonable hydraulic isolation of the shallow water table from the underlying confined sand and gravel aquifer, the resultant nitrate loading of 16 mg/L to the shallow groundwater table from the proposed severance and development is not anticipated to adversely impact nearby water users from a quality perspective.

6) A confined sand & gravel aquifer, located at 38± to 43± m depth, is the primary source of potable water to the Site and adjacent properties. A review of well records suggests that this aquifer is at least 14± to 18± m thick, with recommended pumping rates varying from 35± to 60± L/min. As such, the aquifer should have sufficient capacity and provide sufficient yield to facilitate the addition of another private drinking water well without adverse impact to nearby water users from a quantity perspective.

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.

Neil Risk, M.Sc., P.Geo.
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8.0 REFERENCES

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

- Armstrong, D.K. and Carter, T.R., "An Updated Guide to the Subsurface Paleozoic Stratigraphy of Southern Ontario," Ontario Geological Survey Open File Report 6191 (2006)
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- Ontario Geological Survey, "Surficial Geology of Ontario", Pub. No. MRD128-REV. (2010)
- Ontario Ministry of the Environment, Conservation and Parks (MECP) Water Well Records; https://www.ontario.ca/page/map-well-records (January 2026)
- QGIS.org, 2026. QGIS Geographic Information System. QGIS Association. http://www.qgis.org. Retrieved January 2026
- Toporama Topographical Map, Ministry of Natural Resources (Retrieved January 2026)

APPENDIX A

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.

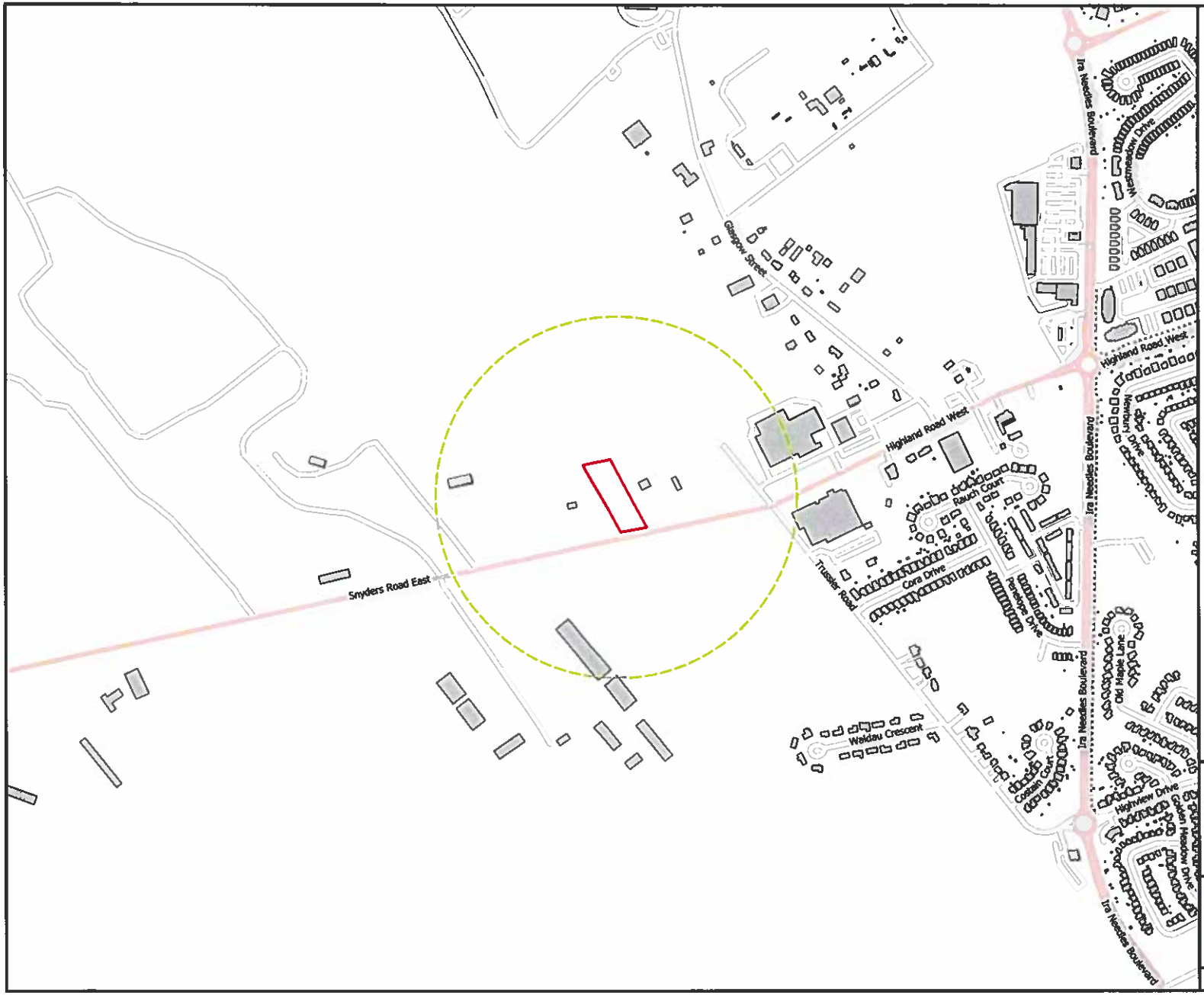
5. CHUNG & VANDER DOELEN ENGINEERING LTD. has relied in good faith on information and services provided by others while conducting the record search. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omission, misinterpretation or fraudulent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

APPENDIX B

Figures



LEGEND

- Site Boundary
- Survey Area (500-metre Radius)

N

0 100 200 300 m

1:10,000

FIGURE 1: SITE LOCATION MAP

HYDROGEOLOGICAL ASSESSMENT

2432 SNYDERS ROAD EAST
TOWNSHIP OF WOOLWICH, ONTARIO

CHUNG & VANDER DOELEN ENGINEERING LTD.
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Kitchener, Ontario, N2H 2E1
519-742-8979

Drawn By: NR	Date: Jan. 2025	File No.: 2775





KEY PLAN SOURCE: Google Earth

LEGEND

- TBM: Top of front porch at 2342 Snyder's Road East. Elev.: 384.62 m (Geodetic)
- Borehole Location
- Borehole and Monitoring Well Location
- Approximate Site Boundary

Site Ref.: The borehole and monitoring well locations and associated ground surface elevations were surveyed using a Network RTK Global Navigation Satellite System (GNSS) Receiver. The survey data was collected using UTM Zone 17N Projection NAD83 (CSRS)+ T-2010 datum and Canada Geoid Model HT2_2013v70 (CGVD28).

GIS Ref.: Regional of Waterloo ArcGIS

BOREHOLE LOCATION PLAN

Proposed Lot Severance

2342 Snyder's Road East
Township of Wilmot, Ontario

CHUNG & VANDER DOELEN ENGINEERING LTD.
311 VICTORIA STREET NORTH
KITCHENER / ONTARIO / N2H 5E1 / 519-742-8979

Drawn By: JR	Date: October 2025	File No.: 2775
Checked By: YC	Scale: 1:750	Figure 2



LEGEND

Site Boundary

Surficial Geology

- 19 - Fluvial (modern floodplain)
  Fine sand, silt, organics, muck
- 20 - Wetland
  Organic deposits
- 5b - Glacial
  Till, sandy and silty
- 5d - Glacial
  Till, clay
- 6 - Glaciofluvial (ice-contact)
  Sand, gravel
- 7a - Glaciofluvial (proglacial outwash)
  Sand, minor gravel
- 7b - Glaciofluvial (proglacial outwash)
  Gravel
- 8a - Glaciolacustrine (foreshore/basinal)
  Clay, silt

Map Source: Surficial Geology of Ontario, Ontario Geological Survey, 2010, Pub. No. MRD128-REV

N

0 400 800 1,200 m

1:30,000

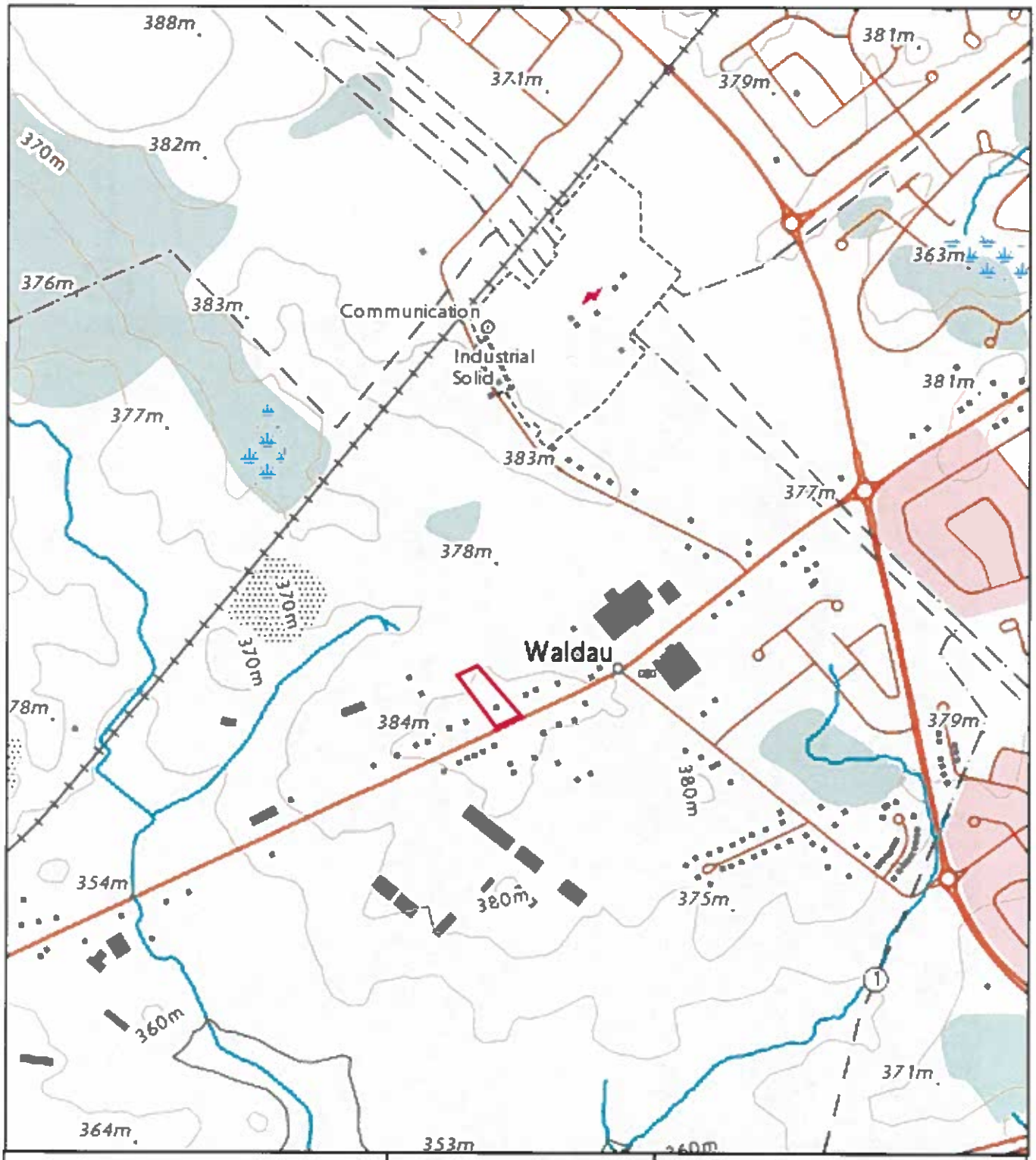
FIGURE 3: SURFICIAL GEOLOGY

HYDROGEOLOGICAL ASSESSMENT

2432 SNYDERS ROAD EAST
TOWNSHIP OF WOOLWICH, ONTARIO

CHUNG & VANDER DOELEN ENGINEERING LTD.
311 Victoria Street North
Kitchener, Ontario, N2H 2E1
519-742-8979

Drawn By: NR	Date: Jan. 2025	File No.: 2775



LEGEND

Approximate Site Boundary

Map Ref.: Toporama; Natural Resources Canada; GeoGratis; Jan 13, 2026

0 m 400 800

Scale 1:20,000

Figure 4 - Topography Mapping

Scoped Hydrogeological Assessment
Proposed Lot Severance

2342 Snyders Road East
Township of Woolwich, ON

Drawn By: NR	Date: Jan 2026	File No. 2775

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



LEGEND

- Property Boundary
- Monitoring Well
- Borehole
- (200.43) Measured Groundwater Elevation (mASL) January 9, 2026
- 200.00 Water Table Contours
- Interpreted Groundwater Flow Direction
- Water Supply Well

N

0 18 36 54 m

Scale 1:900

FIGURE 5: SHALLOW GROUNDWATER FLOW DIRECTION PLAN

HYDROGEOLOGICAL ASSESSMENT

2432 SNYDERS ROAD EAST
TOWNSHIP OF WOOLWICH, ONTARIO

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

Drawn By: NR	Date: Jan. 2026	File No.: 2775

APPENDIX C

Table 1 – Summary of Groundwater Levels & Elevations

Table 1 - Summary of Groundwater Levels and Elevations
2342 Snyders Road East
Township of Wilmot, Ontario

Monitoring Well	Ground Elevation (mASL)	Top of Riser Elevation (mASL)	Stickup (m)	Water Level (mBTOR)			Water Level (mbgs)			Water Elevation (mASL)		
				24-Oct-25	22-Dec-25	09-Jan-26	24-Oct-25	22-Dec-25	09-Jan-26	24-Oct-25	22-Dec-25	09-Jan-26
BH 1	383.33	384.02	0.69	4.16	3.39	1.30	3.47	2.70	0.61	379.86	380.63	382.72
BH 3	381.31	382.24	0.93	5.21	5.22	1.71	4.52	4.53	1.02	377.03	377.02	380.53
BH 6	379.95	380.89	0.94	6.07	6.23	2.00	5.38	5.54	1.31	374.82	374.66	378.89

Notes:
1) All elevations referenced to geodetic survey by CVD
2) Negative water level indicates that water level is above ground
3) mASL - metres above sea level
4) mBTOR - metres below top of riser
5) mbgs - metres below ground surface
6) : Monitoring well dry

APPENDIX D

Water Chemistry Results
(ALS Laboratories of Waterloo, Ontario)

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2530610**		
Client	: **Chung and Vander Doelen Engineering Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Peter Dao	Account Manager	: Andrew Martin
Address	: 311 Victoria St. N. Kitchener Ontario Canada N2H 5E1	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 519 742 8979	Telephone	: +1 519 886 6910
Project	: 2775	Date Samples Received	: 24-Oct-2025 17:45
PO	: ----	Date Analysis Commenced	: 27-Oct-2025
C-O-C number	: ----	Issue Date	: 03-Nov-2025 15:26
Sampler	: KP		
Site	: 2342 Snyder's Road		
Quote number	: 2024/2025 SOA		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
John Tang	Lab Analyst	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

No Breaches Found

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key: LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre

>: greater than.
<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Analytical Results Evaluation

Matrix: Water

Analyte	CAS Number	Method/Lab	Unit	Client sample ID: 2342 SNYDERS RD -HOUSE	BH1	BH6	---	---	---	---
				Client sampling date / time: 24-Oct-2025 09:00	24-Oct-2025 09:00	24-Oct-2025 09:00	---	---	---	---
				Sub-Matrix: Groundwater	Groundwater	Groundwater	---	---	---	---
				WT2530610-001	WT2530610-002	WT2530610-003	---	---	---	---
				Result	Result	Result	---	---	---	---
Physical Tests										
Alkalinity, total (as CaCO3)	---	E290/WT	mg/L	264	384	307	---	---	---	---
Colour, apparent	---	E330/WT	CU	32.7	12.1	207	---	---	---	---
Conductivity	---	E100/WT	µS/cm	621	833	496	---	---	---	---
pH	---	E108/WT	pH units	8.33	7.85	7.84	---	---	---	---
Solids, total dissolved [TDS]	---	E162/WT	mg/L	364 DLDS	506 DLDS	293 DLDS	---	---	---	---
Turbidity	---	E121/WT	NTU	6.15	2.42	67.1	---	---	---	---
Hardness (as CaCO3), dissolved	---	EC100/WT	mg/L	333	378	339	---	---	---	---
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	mg/L	0.161	<0.0050	<0.0050	---	---	---	---
Chloride	16887-00-6	E235.Cl/WT	mg/L	21.7	55.6	5.60	---	---	---	---
Fluoride	16984-48-8	E235.F/WT	mg/L	0.058	0.075	0.107	---	---	---	---
Nitrate (as N)	14797-55-8	E235.NO3/WT	mg/L	0.142	0.221	1.64	---	---	---	---
Nitrite (as N)	14797-65-0	E235.NO2/WT	mg/L	0.454	<0.010	<0.010	---	---	---	---
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	mg/L	<0.0010	0.0012	<0.0010	---	---	---	---
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	mg/L	51.0	8.34	5.71	---	---	---	---
Total Metals										
Aluminum, total	7429-90-5	E420/WT	mg/L	0.0104	0.132	2.19	---	---	---	---
Antimony, total	7440-36-0	E420/WT	mg/L	0.00022	<0.00010	0.00013	---	---	---	---
Arsenic, total	7440-38-2	E420/WT	mg/L	0.00065	0.00022	0.00300	---	---	---	---

Matrix: Water

Analyte	CAS Number	Method/Lab	Unit	Client sample ID: 2342 SNYDERS RD -HOUSE	BH1	BH6	---	---	---	---
Client sampling date / time				24-Oct-2025 09:00	24-Oct-2025 09:00	24-Oct-2025 09:00	---	---	---	---
Sub-Matrix				Groundwater	Groundwater	Groundwater	---	---	---	---
				WT2530610-001	WT2530610-002	WT2530610-003	---	---	---	---
				Result	Result	Result	---	---	---	---
Total Metals										
Barium, total	7440-39-3	E420/WT	mg/L	0.171	0.0539	0.0538	---	---	---	---
Beryllium, total	7440-41-7	E420/WT	mg/L	<0.000020	<0.000020	0.000124	---	---	---	---
Bismuth, total	7440-69-9	E420/WT	mg/L	<0.000050	<0.000050	<0.000050	---	---	---	---
Boron, total	7440-42-8	E420/WT	mg/L	0.011	<0.010	0.019	---	---	---	---
Cadmium, total	7440-43-9	E420/WT	mg/L	0.00271	0.0000196	<0.0000400 DLM	---	---	---	---
Calcium, total	7440-70-2	E420/WT	mg/L	101	117	148	---	---	---	---
Cesium, total	7440-46-2	E420/WT	mg/L	<0.000010	0.000016	0.000201	---	---	---	---
Chromium, total	7440-47-3	E420/WT	mg/L	0.00067	0.00068	0.00587	---	---	---	---
Cobalt, total	7440-48-4	E420/WT	mg/L	0.00198	0.00043	0.00249	---	---	---	---
Copper, total	7440-50-8	E420/WT	mg/L	0.268	0.00067	0.00676	---	---	---	---
Iron, total	7439-89-6	E420/WT	mg/L	4.39	0.233	4.05	---	---	---	---
Lead, total	7439-92-1	E420/WT	mg/L	0.306	0.000208	0.00250	---	---	---	---
Lithium, total	7439-93-2	E420/WT	mg/L	0.0053	0.0041	0.0156	---	---	---	---
Magnesium, total	7439-95-4	E420/WT	mg/L	26.2	21.5	30.7	---	---	---	---
Manganese, total	7439-96-5	E420/WT	mg/L	0.392	0.0103	0.304	---	---	---	---
Molybdenum, total	7439-98-7	E420/WT	mg/L	0.000350	0.000137	0.0397	---	---	---	---
Nickel, total	7440-02-0	E420/WT	mg/L	0.00426	0.00062	0.00641	---	---	---	---
Phosphorus, total	7723-14-0	E420/WT	mg/L	<0.050	<0.050	0.297	---	---	---	---
Potassium, total	7440-09-7	E420/WT	mg/L	1.88	0.694	2.81	---	---	---	---

Matrix: Water			Client sample ID	2342 SNYDERS RD -HOUSE	BH1	BH6	---	---	---	---
			Client sampling date / time	24-Oct-2025 09:00	24-Oct-2025 09:00	24-Oct-2025 09:00	---	---	---	---
			Sub-Matrix	Groundwater	Groundwater	Groundwater	---	---	---	---
Analyte	CAS Number	Method/Lab	Unit	WT2530610-001	WT2530610-002	WT2530610-003	---	---	---	---
				Result	Result	Result	---	---	---	---
Total Metals										
Rubidium, total	7440-17-7	E420/WT	mg/L	0.00100	0.00120	0.00415	---	---	---	---
Selenium, total	7782-49-2	E420/WT	mg/L	<0.000050	0.000304	0.000131	---	---	---	---
Silicon, total	7440-21-3	E420/WT	mg/L	5.25	6.90	11.1	---	---	---	---
Silver, total	7440-22-4	E420/WT	mg/L	0.000049	<0.000010	<0.000010	---	---	---	---
Sodium, total	7440-23-5	E420/WT	mg/L	11.1	69.7	4.88	---	---	---	---
Strontium, total	7440-24-6	E420/WT	mg/L	0.174	0.191	0.259	---	---	---	---
Sulfur, total	7704-34-9	E420/WT	mg/L	18.2	3.18	2.25	---	---	---	---
Tellurium, total	13494-80-9	E420/WT	mg/L	<0.00020	<0.00020	<0.00020	---	---	---	---
Thallium, total	7440-28-0	E420/WT	mg/L	0.000028	<0.000010	0.000035	---	---	---	---
Thorium, total	7440-29-1	E420/WT	mg/L	<0.00010	<0.00010	0.00166	---	---	---	---
Tin, total	7440-31-5	E420/WT	mg/L	0.00448	0.00010	0.00072	---	---	---	---
Titanium, total	7440-32-6	E420/WT	mg/L	0.00070	0.00358	0.0983	---	---	---	---
Tungsten, total	7440-33-7	E420/WT	mg/L	<0.00010	<0.00010	<0.00010	---	---	---	---
Uranium, total	7440-61-1	E420/WT	mg/L	0.000813	0.000383	0.000501	---	---	---	---
Vanadium, total	7440-62-2	E420/WT	mg/L	<0.00050	0.00073	0.00536	---	---	---	---
Zinc, total	7440-66-6	E420/WT	mg/L	1.52	<0.0030	0.0150	---	---	---	---
Zirconium, total	7440-67-7	E420/WT	mg/L	<0.00020	<0.00020	0.00038	---	---	---	---
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/WT	mg/L	93.6	117	95.7	---	---	---	---
Magnesium, dissolved	7439-95-4	E421/WT	mg/L	24.1	20.9	24.4	---	---	---	---

Matrix: Water			Client sample ID	2342 SNYDERS RD -HOUSE	BH1	BH6	---	---	---	---
			Client sampling date / time	24-Oct-2025 09:00	24-Oct-2025 09:00	24-Oct-2025 09:00	---	---	---	---
			Sub-Matrix	Groundwater	Groundwater	Groundwater	---	---	---	---
Analyte	CAS Number	Method/Lab	Unit	WT2530610-001	WT2530610-002	WT2530610-003	---	---	---	---
				Result	Result	Result	---	---	---	---
Dissolved Metals										
Dissolved metals filtration location	---	EP421/WT	-	Laboratory	Laboratory	Laboratory	---	---	---	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Summary of Guideline Limits

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	:**WT2530610**	Page	: 1 of 12
Client	:**Chung and Vander Doelen Engineering Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	:Peter Dao	Account Manager	: Andrew Martin
Address	:311 Victoria St. N. Kitchener ON Canada N2H 5E1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:519 742 8979	Telephone	: +1 519 886 6910
Project	:2775	Date Samples Received	: 24-Oct-2025 17:45
PO	:---	Issue Date	: 03-Nov-2025 15:26
C-O-C number	:---		
Sampler	:KP		
Site	:2342 Snyder's Road		
Quote number	:2024/2025 SOA		
No. of samples received	:3		
No. of samples analysed	:3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] 2342 SNYDERS RD-HOUSE	E298	24-Oct-2025	30-Oct-2025	28 days	6 days	✓	31-Oct-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] BH1	E298	24-Oct-2025	30-Oct-2025	28 days	6 days	✓	31-Oct-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] BH6	E298	24-Oct-2025	30-Oct-2025	28 days	6 days	✓	31-Oct-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E235.Cl	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] BH1	E235.Cl	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] BH6	E235.Cl	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E378-U	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] BH1	E378-U	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] BH6	E378-U	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E235.F	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] BH1	E235.F	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] BH6	E235.F	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E235.NO3	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] BH1	E235.NO3	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] BH6	E235.NO3	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E235.NO2	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
BH1	E235.NO2	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
BH6	E235.NO2	24-Oct-2025	29-Oct-2025	7 days	5 days	✓	30-Oct-2025	7 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
2342 SNYDERS RD-HOUSE	E235.SO4	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
BH1	E235.SO4	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
BH6	E235.SO4	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	30-Oct-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE [ON MECP]										
2342 SNYDERS RD-HOUSE	E421	24-Oct-2025	28-Oct-2025	0 hrs	103 hrs	× UCP	28-Oct-2025	0 hrs	103 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE [ON MECP]										
BH1	E421	24-Oct-2025	28-Oct-2025	0 hrs	103 hrs	× UCP	28-Oct-2025	0 hrs	103 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE [ON MECP]										
BH6	E421	24-Oct-2025	28-Oct-2025	0 hrs	103 hrs	× UCP	28-Oct-2025	0 hrs	103 hrs	× UCP
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
2342 SNYDERS RD-HOUSE	E290	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] BH1	E290	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] BH6	E290	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E330	24-Oct-2025	----	----	----		27-Oct-2025	48 hrs	75 hrs	× EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE [ON MECP] BH1	E330	24-Oct-2025	----	----	----		27-Oct-2025	48 hrs	75 hrs	× EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE [ON MECP] BH6	E330	24-Oct-2025	----	----	----		27-Oct-2025	48 hrs	75 hrs	× EHT
Physical Tests : Conductivity in Water										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E100	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	29-Oct-2025	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] BH1	E100	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	29-Oct-2025	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] BH6	E100	24-Oct-2025	29-Oct-2025	28 days	5 days	✓	29-Oct-2025	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E108	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] BH1	E108	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] BH6	E108	24-Oct-2025	29-Oct-2025	14 days	5 days	✓	29-Oct-2025	14 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E162	24-Oct-2025	---	---	---		30-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] BH1	E162	24-Oct-2025	---	---	---		30-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] BH6	E162	24-Oct-2025	---	---	---		30-Oct-2025	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] 2342 SNYDERS RD-HOUSE	E121	24-Oct-2025	---	---	---		28-Oct-2025	48 hrs	97 hrs	× EHT
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] BH1	E121	24-Oct-2025	---	---	---		28-Oct-2025	48 hrs	97 hrs	× EHT
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] BH6	E121	24-Oct-2025	---	---	---		28-Oct-2025	48 hrs	97 hrs	× EHT
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) 2342 SNYDERS RD-HOUSE	E420	24-Oct-2025	29-Oct-2025	180 days	5 days	✓	29-Oct-2025	180 days	5 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
BH1	E420	24-Oct-2025	29-Oct-2025	180 days	5 days	✓	29-Oct-2025	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
BH6	E420	24-Oct-2025	29-Oct-2025	180 days	5 days	✓	29-Oct-2025	180 days	5 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Water

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Conductivity in Water	E100	2304981	1	14	7.1	5.0	✓
pH by Meter	E108	2304980	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	2302812	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	2308137	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	2304988	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2304986	1	16	6.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2304987	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2304984	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2304985	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	2304982	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	2308566	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	2300941	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2304990	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2304670	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2303982	1	6	16.6	5.0	✓
Laboratory Control Samples (LCS)							
Conductivity in Water	E100	2304981	1	14	7.1	5.0	✓
pH by Meter	E108	2304980	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	2302812	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	2308137	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	2304988	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2304986	1	16	6.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2304987	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2304984	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2304985	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	2304982	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	2308566	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	2300941	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2304990	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2304670	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2303982	1	6	16.6	5.0	✓
Method Blanks (MB)							
Conductivity in Water	E100	2304981	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	2302812	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	2308137	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Chloride in Water by IC	E235.Cl	2304988	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2304986	1	16	6.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2304987	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2304984	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2304985	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	2304982	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	2308566	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	2300941	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2304990	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2304670	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2303982	1	6	16.6	5.0	✓
Matrix Spikes (MS)							
Chloride in Water by IC	E235.Cl	2304988	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2304986	1	16	6.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2304987	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2304984	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2304985	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	2308566	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2304990	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2304670	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2303982	1	6	16.6	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Waterloo	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

QUALITY CONTROL REPORT

Work Order	:WT2530610	Page	: 1 of 13
Client	:Chung and Vander Doelen Engineering Ltd.	Laboratory	:ALS Environmental - Waterloo
Contact	:Peter Dao	Account Manager	:Andrew Martin
Address	:311 Victoria St. N. Kitchener ON Canada N2H 5E1	Address	:60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:519 742 8979	Telephone	:+1 519 886 6910
Project	:2775	Date Samples Received	:24-Oct-2025 17:45
PO	:---	Date Analysis Commenced	:27-Oct-2025
C-O-C number	:---	Issue Date	:03-Nov-2025 15:26
Sampler	:KP		
Site	:2342 Snyder's Road		
Quote number	:2024/2025 SOA		
No. of samples received	:3		
No. of samples analysed	:3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
John Tang	Lab Analyst	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 2300941)											
HA2504650-001	Anonymous	Colour, apparent	---	E330	2.0	CU	7.3	7.8	0.5	Diff <2x LOR	---
Physical Tests (QC Lot: 2302812)											
HA2504658-001	Anonymous	Turbidity	---	E121	0.10	NTU	1.76	1.79	1.69%	15%	---
Physical Tests (QC Lot: 2304980)											
WT2530548-001	Anonymous	pH	---	E108	0.10	pH units	8.31	8.34	0.360%	4%	---
Physical Tests (QC Lot: 2304981)											
WT2530548-001	Anonymous	Conductivity	---	E100	2.0	µS/cm	598	594	0.671%	10%	---
Physical Tests (QC Lot: 2304982)											
WT2530548-001	Anonymous	Alkalinity, total (as CaCO3)	---	E290	2.0	mg/L	192	192	0.0209%	20%	---
Physical Tests (QC Lot: 2308137)											
WT2530509-001	Anonymous	Solids, total dissolved [TDS]	---	E162	20	mg/L	859	852	0.877%	20%	---
Anions and Nutrients (QC Lot: 2304984)											
WT2530754-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	---
Anions and Nutrients (QC Lot: 2304985)											
WT2530754-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	---
Anions and Nutrients (QC Lot: 2304986)											
WT2530754-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.266	0.263	0.842%	20%	---
Anions and Nutrients (QC Lot: 2304987)											
WT2530754-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
Anions and Nutrients (QC Lot: 2304988)											
WT2530754-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	6.88	6.90	0.378%	20%	---
Anions and Nutrients (QC Lot: 2304990)											
HA2504437-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0062	0.0062	0.00001	Diff <2x LOR	---
Anions and Nutrients (QC Lot: 2308566)											
HA2504571-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0115	0.0118	0.0003	Diff <2x LOR	---
Total Metals (QC Lot: 2304670)											
HA2504663-002	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0066	0.0063	0.0004	Diff <2x LOR	---
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00019	0.00021	0.00002	Diff <2x LOR	---
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00011	0.00012	0.000009	Diff <2x LOR	---
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00661	0.00668	1.01%	20%	---

Sub-Matrix: Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 2304670) - continued											
HA2504663-002	Anonymous	Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.056	0.056	0.0010	Diff <2x LOR	—
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000423	0.0000434	0.0000011	Diff <2x LOR	—
		Calcium, total	7440-70-2	E420	0.050	mg/L	5.38	5.40	0.475%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000650	0.000654	0.552%	20%	—
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00219	0.00219	0.132%	20%	—
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.0103	0.0104	0.568%	20%	—
		Iron, total	7439-89-6	E420	0.010	mg/L	0.118	0.120	1.86%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000086	0.000090	0.000004	Diff <2x LOR	—
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0026	0.0027	0.00009	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	10.4	10.5	0.877%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.329	0.331	0.688%	20%	—
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00232	0.00229	1.43%	20%	—
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00504	0.00507	0.597%	20%	—
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	—
		Potassium, total	7440-09-7	E420	0.050	mg/L	4.84	4.86	0.521%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00208	0.00207	0.593%	20%	—
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	—
		Silicon, total	7440-21-3	E420	0.10	mg/L	0.94	0.94	0.004	Diff <2x LOR	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	97.6	98.4	0.776%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0714	0.0715	0.152%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	6.03	6.02	0.0438%	20%	—
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	—
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	—
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	—
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	—
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00449	0.00451	0.00002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0459	0.0461	0.517%	20%	----

Sub-Matrix: Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 2304670) - continued											
HA2504663-002	Anonymous	Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	—
Dissolved Metals (QC Lot: 2303982)											
WT2530692-001	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	—
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	—

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 2300941)						
Colour, apparent	---	E330	2	CU	<2.0	---
Physical Tests (QCLot: 2302812)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 2304981)						
Conductivity	---	E100	1	µS/cm	1.2	---
Physical Tests (QCLot: 2304982)						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 2308137)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 2304984)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 2304985)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 2304986)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 2304987)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	---
Anions and Nutrients (QCLot: 2304988)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 2304990)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 2308566)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Total Metals (QCLot: 2304670)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 2304670) - continued						
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	—
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	—
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	—
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	—
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	—
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	—
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	—
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	—
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	—
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	—
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	—
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	—
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	—
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	—
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	—
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	—
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	—
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	—
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	—
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	—
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	—
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	—
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	—
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	—
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	—
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	—
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	—
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	—
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	—
Dissolved Metals (QCLot: 2303982)						
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	—
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	—

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 2300941)									
Colour, apparent	---	E330	2	CU	25 CU	90.0	85.0	115	---
Physical Tests (QCLot: 2302812)									
Turbidity	---	E121	0.1	NTU	200 NTU	97.0	85.0	115	---
Physical Tests (QCLot: 2304980)									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
Physical Tests (QCLot: 2304981)									
Conductivity	---	E100	1	µS/cm	1410 µS/cm	100	90.0	110	---
Physical Tests (QCLot: 2304982)									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	104	85.0	115	---
Physical Tests (QCLot: 2308137)									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	101	85.0	115	---
Anions and Nutrients (QCLot: 2304984)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.6	90.0	110	---
Anions and Nutrients (QCLot: 2304985)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 2304986)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 2304987)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 2304988)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 2304990)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	104	80.0	120	---
Anions and Nutrients (QCLot: 2308566)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	108	85.0	115	---
Total Metals (QCLot: 2304670)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	105	80.0	120	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	102	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	105	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.012 mg/L	100	80.0	120	---

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 2304670) - continued									
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	104	80.0	120	—
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	99.4	80.0	120	—
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	99.2	80.0	120	—
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	98.9	80.0	120	—
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	97.4	80.0	120	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.002 mg/L	96.4	80.0	120	—
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	101	80.0	120	—
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.012 mg/L	98.4	80.0	120	—
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	97.2	80.0	120	—
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	99.7	80.0	120	—
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	98.7	80.0	120	—
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	108	80.0	120	—
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	104	80.0	120	—
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	101	80.0	120	—
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	96.1	80.0	120	—
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	97.8	80.0	120	—
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	109	80.0	120	—
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	—
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	104	80.0	120	—
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	97.5	80.0	120	—
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	106	80.0	120	—
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	97.5	80.0	120	—
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	105	80.0	120	—
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	101	80.0	120	—
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	103	80.0	120	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	92.7	80.0	120	—
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	101	80.0	120	—
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	93.7	80.0	120	—
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	95.5	80.0	120	—
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	102	80.0	120	—
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	95.8	80.0	120	—
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	96.7	80.0	120	—
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	101	80.0	120	—
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	97.6	80.0	120	—
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	95.7	80.0	120	—

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 2303982)									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	—
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	100	80.0	120	—

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 2304984)										
WT2530754-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.45 mg/L	2.5 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 2304985)										
WT2530754-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 2304986)										
WT2530754-001	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 2304987)										
WT2530754-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.513 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 2304988)										
WT2530754-001	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 2304990)										
HA2504437-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0196 mg/L	0.02 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 2308566)										
HA2504571-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.118 mg/L	0.1 mg/L	118	75.0	125	----
Total Metals (QCLot: 2304670)										
HA2504663-003	Anonymous	Aluminum, total	7429-90-5	E420	0.111 mg/L	0.1 mg/L	111	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0514 mg/L	0.05 mg/L	103	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0539 mg/L	0.05 mg/L	108	70.0	130	----
		Barium, total	7440-39-3	E420	0.0124 mg/L	0.012 mg/L	99.3	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00528 mg/L	0.005 mg/L	106	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0467 mg/L	0.05 mg/L	93.5	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00487 mg/L	0.005 mg/L	97.3	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00237 mg/L	0.002 mg/L	94.7	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0129 mg/L	0.012 mg/L	103	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0124 mg/L	0.012 mg/L	98.8	70.0	130	----
		Copper, total	7440-50-8	E420	0.0118 mg/L	0.012 mg/L	94.4	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0232 mg/L	0.025 mg/L	92.7	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0134 mg/L	0.012 mg/L	107	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0123 mg/L	0.012 mg/L	98.8	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0240 mg/L	0.025 mg/L	96.0	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.604 mg/L	0.5 mg/L	121	70.0	130	----

Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 2304670) - continued										
HA2504663-003	Anonymous	Potassium, total	7440-09-7	E420	ND mg/L	---	ND	70.0	130	---
		Rubidium, total	7440-17-7	E420	0.00519 mg/L	0.005 mg/L	104	70.0	130	---
		Selenium, total	7782-49-2	E420	0.0477 mg/L	0.05 mg/L	95.4	70.0	130	---
		Silicon, total	7440-21-3	E420	ND mg/L	---	ND	70.0	130	---
		Silver, total	7440-22-4	E420	0.00471 mg/L	0.005 mg/L	94.3	70.0	130	---
		Sodium, total	7440-23-5	E420	ND mg/L	---	ND	70.0	130	---
		Strontium, total	7440-24-6	E420	ND mg/L	---	ND	70.0	130	---
		Sulfur, total	7704-34-9	E420	ND mg/L	---	ND	70.0	130	---
		Tellurium, total	13494-80-9	E420	0.00456 mg/L	0.005 mg/L	91.2	70.0	130	---
		Thallium, total	7440-28-0	E420	0.0475 mg/L	0.05 mg/L	95.1	70.0	130	---
		Thorium, total	7440-29-1	E420	0.00461 mg/L	0.005 mg/L	92.1	70.0	130	---
		Tin, total	7440-31-5	E420	0.0241 mg/L	0.025 mg/L	96.2	70.0	130	---
		Titanium, total	7440-32-6	E420	0.0131 mg/L	0.012 mg/L	105	70.0	130	---
		Tungsten, total	7440-33-7	E420	0.00482 mg/L	0.005 mg/L	96.3	70.0	130	---
		Uranium, total	7440-61-1	E420	0.000237 mg/L	0 mg/L	94.8	70.0	130	---
		Vanadium, total	7440-62-2	E420	0.0263 mg/L	0.025 mg/L	105	70.0	130	---
		Zinc, total	7440-66-6	E420	ND mg/L	---	ND	70.0	130	---
		Zirconium, total	7440-67-7	E420	0.00495 mg/L	0.005 mg/L	98.9	70.0	130	---
Dissolved Metals (QCLot: 2303982)										
WT2530472-001	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	---	ND	70.0	130	---
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	---	ND	70.0	130	---

GC-087
N-361
& MM-622.

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo

Work Order Reference WT2530610

www.alsglobal.com

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	CVD
Contact:	Peter Dao
Phone:	519 498 6453
	Company address below will appear on the final report
Street:	311 Victoria St N
City/Province:	Kitchener, ON
Postal Code:	N2H 5E1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Project Information

ALS Account # / Quote #:	
Job #:	2775
PO / AFE:	
LSD:	2342 Snyder's Road

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: peter.dao@cvdengineering.com

Email 2: n.risk@cvdengineering.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge min
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge min
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge min
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge min
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge

Additional fees may apply to rush requests on weeke

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please

ALS Lab Work Order # (ALS use only): WT2530610 NTB.

ALS Contact: Andrew Martin Sampler: KP

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINER	General Chemistry 1	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	2342 Snyders Rd. - House	24-Oct-25	9:00	Ground water	3	R			
	BH1	24-Oct-25	9:00	Ground water	3	R			
	BH6	24-Oct-25	9:00	Ground water	3	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				4.3			

SHIPMENT RELEASE (client use)

Released by: Katarina Poganatz Date: 24-Oct-25 Time: 4:55 pm

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: AG Date: 24.10.25 Time: 17:45

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2017 FRONT

TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy

ater samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form

APPENDIX E

Door-to-Door Well Inventory

Table 2 - Private Water Supply Well Inventory
2342 Snyders Road East
Township of Wilmot, Ontario

Property Address	Inventory Number	Record in Database	Potential MECP Well Record (WR) #	Well Type	Potential Depth (m)	Quality (Well Owner Comments)	Quantity (Well Owner Comments)	Septic System (Location, Comments)	Aquifer Type	General Comments
Snyder's Road East - North Side										
2880	01	Y	6502403	Drilled	49.7	Good	Good	Located behind house.	Sand and Gravel	Confirmed Well located on east side of house.
2294	02	Y	6503980	Drilled	52.7	Good	Good	Located behind house.	Sand and Gravel	Confirmed Well located in front of house.
2302	03	Y	6502405	Drilled	48.7	No response.	No response.	No response.	Sand and Gravel	
2308	04	Y	7142833	Drilled	51.5	Good	Good	Located west of house.	Gravel	Confirmed Well located in front of house.
2316	05	Y	6502404	Drilled	43.6	Good	Good	Located behind house.	Gravel	Confirmed Well located in front of house.
2348	06	Y	7167266	Drilled	51.8	Good	Good	Located behind house.	Gravel	Confirmed Well located in front of house.
2356	07	Y	7178700	Drilled	57.0	Good	Good	Located behind house.	Sand and Gravel	Confirmed Well located in front of house.
2372	08	Y	6504186	Drilled	46.9	No response.	No response.	No response.	Sand and Gravel	
2392A	09	Y	7279220	Drilled	50.9	No response.	No response.	No response.	Sand	
2312	N.A	N	Unknown	Drilled	Unknown	Good	Good	Located in front of house.	Unknown	Confirmed Well located east of house.
2326	N.B	N	Unknown	Dug	2.1	Good	Good	Located behind house.	Unknown	Confirmed Well located at rear of property.
2326	N.C	N	Unknown	Dug	7.6	Not used	Not used	Located in front on house.	Unknown	Confirmed Located East of house.
2326	N.D	N	Unknown	Dug	7.6	Good	Good	Unknown	Unknown	Confirmed Well located behind house.

Table 2 - Private Water Supply Well Inventory
2342 Snyders Road East
Township of Wilmot, Ontario

Snyder's Road East - South Side										
2305	10	Y	6509867	Drilled	47.9	No response.	No response.	No response.	Sand and Gravel	
2313	11	Y	6509841	Drilled	48.8	No response.	No response.	No response.	Gravel	
2313	12	Y	6502454	Drilled	46.3	No response.	No response.	No response.	Sand and Gravel	
2323	13	Y	7387008	Drilled	49.4	Good	Good	Located behind house.	Sand and Gravel	Confirmed Well located in front of house.
2327	14	Y	6509869	Drilled	49.0	Good	Good	Located behind house.	Sand and Gravel	Confirmed Well located in front of house.
2331	15	Y	7336915	Drilled	48.2	No response.	No response.	No response.	Gravel	
2341A	16	Y	7227654	Drilled	Unknown	Good	Good	Located behind house.	Unknown	Confirmed Well located in front of house.
2341B	17	Y	6503330	Drilled	43.9	No response.	No response.	No response.	Sand and Gravel	
2357	18	Y	7359358	Drilled	50.6	No response.	No response.	No response.	Gravel	
2357	19	Y	6502451	Dug	8.2	No response.	No response.	No response.	Clay	
2369	20	Y	6504998	Dug	9.1	No response.	No response.	No response.	Sand / Clay	
2371	21	Y	6509636	Drilled	48.8	Good	Good	Located behind house.	Gravel	Confirmed Well located in front of house.
2379	22	Y	6503164	Drilled	48.8	No response.	No response.	No response.	Sand and Gravel	
2319	5.A	N	n/a	Dug	10.7 (estimated)	Good	Decreased volume during periods of drought	Located behind house.	Unknown	Confirmed Well located in front of house.



LEGEND

- Site Boundary
- Survey Area (500-metre Radius)
- Drilled Water Supply Well
- Dug Water Supply Well
- Well Not In Use

N

0 50 100 150 m

1:3750

FIGURE 6: WATER SUPPLY WELL INVENTORY MAP

HYDROGEOLOGICAL ASSESSMENT

2432 SNYDERS ROAD EAST
TOWNSHIP OF WOOLWICH, ONTARIO

CHUNG & VANDER DOELEN ENGINEERING LTD.
311 Victoria Street North
Kitchener, Ontario, N2H 2E1
519-742-8979

Drawn By: NR	Date: Jan. 2026	File No.: 2775

APPENDIX F

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	Cohesionless Soil
DTPL- Drier than plastic limit	Damp
APL- About plastic limit	Moist
WTPL- Wetter than plastic limit	Wet
MWTPL- Much wetter than plastic limit	Saturated

SAMPLE TYPES AND ADDITIONAL FIELD TESTS

SS or SA	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

FILE No: 2775

BOREHOLE No. 1

Enclosure No.: 1
Sheet 1 of 1

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

SOIL LITHOLOGY

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)
	Ground Elevation: **383.33 m**	
	360 mm TOPSOIL	
382.97 / 0.36	trace topsoil mottled brown to brown SANDY SILT to SAND AND SILT trace gravel occ. sand lenses/seams occ. clay lenses moist to saturated	0.5 – 3.0
380.03 / 3.30	occ. sand seams brown to grey CLAYEY SILT trace to some sand DTPL	3.5 – 4.0
379.03 / 4.30	grey SILT trace sand occ. clay seams saturated	4.5 – 5.0
377.83 / 5.50	grey CLAYEY SANDY SILT TILL trace gravel APL	5.5 – 6.0
377.23 / 6.10	End of Borehole	6.5 – 7.5

SYMBOL

SAMPLE ID	TYPE	N-VALUE
1	DP	
2	DP	
3	DP	
4	DP	
5	DP	
6	DP	
7	DP	
8	DP	

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 casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- water level measured at 0.61 mbgs (382.72 mASL) in monitoring well on January 9, 2026
- 3.0 m long, 50 mm I.D. PVC screen with sandpack

PROJECT MANAGER: **NR/YC**

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

CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST TOWNSHIP OF WILMOT GPJ CVD ENG GDT 26-1-27

Enclosure No.: 2
Sheet 1 of 1

FILE No: 2775

BOREHOLE No. 2

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

SOIL LITHOLOGY

ELEV / DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	SAMPLE TYPE	N-VALUE
	Ground Elevation: **382.56 m**					
382.25	310 mm TOPSOIL					
0.31	dark brown to grey FILL, gravelly sand trace silt moist	0.5		1	DP	
	FILL, sandy silt trace to some gravel trace topsoil moist	1.0		2	DP	
380.96		1.5				
1.60	mottled brown to brown SANDY SILT trace gravel, trace clay occ. clay seams moist to wet	2.0		3	DP	
		2.5		4	DP	
379.51		3.0				
3.05	sandy grey CLAYEY SILT trace to some sand trace gravel occ. sand seams DTPL	3.5		5	DP	
		4.0		6	DP	
377.96		4.5				
4.60	grey SILT trace sand, trace clay occ. clay seams saturated freq clay seams	5.0		7	DP	
		5.5		8	DP	
376.61		6.0				
5.95	sand seam grey CLAYEY SANDY SILT TILL trace gravel occ. sand lenses/seams occ. silt seams DTPL	6.5		9	DP	
		7.0		10	DP	
374.96		7.5				
7.60	End of Borehole					

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

PROJECT MANAGER: **NR/YC**

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

CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT GPJ CVD_ENG GDT 26-1-27

FILE No: 2775

BOREHOLE No. 3

Enclosure No.: 3
Sheet 1 of 1

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

SOIL LITHOLOGY

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL
	Ground Elevation: **381.31 m**		
381.06	250 mm TOPSOIL		
0.25	orangey brown SANDY SILT to SILT, some sand trace clay, trace topsoil, moist	0.5	
380.51			
0.80	sandy / brown CLAYEY SILT trace gravel, trace sand occ. sand lenses DTPL	1.0	
		1.5	
		2.0	
		2.5	
	grey	3.0	
		3.5	
		4.0	
376.76		4.5	
4.55	End of Borehole		
		5.0	
		5.5	
		6.0	
		6.5	
		7.0	
		7.5	

SAMPLE

SAMPLE ID	TYPE	N-VALUE
1	DP	
2	DP	
3	DP	
4	DP	
5	DP	
6	DP	

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 casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- water level measured at 1.02 mbgs (380.53 mASL) in monitoring well on January 9, 2026
- 3.0 m long, 50 mm I.D. PVC screen with sandpack

PROJECT MANAGER: **NR/YC**

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CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT GPJ CVD_ENG.GDT 26-1-27

FILE No: 2775

BOREHOLE No. 4

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

ELEV / DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	SAMPLE TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	Ground Elevation: **381.46 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			
381.15	310 mm TOPSOIL										
0.31	some sand, trace topsoil brown CLAYEY SILT trace gravel, trace sand occ. silt lenses/seams occ. sand lenses DTPL	0.5		1	DP					0.5	
		1.0		2	DP					1.0	
		1.5		3	DP					1.5	
		2.0		4	DP					2.0	
		2.5		5	DP					2.5	
		3.0		6	DP					3.0	
		3.5								3.5	
		4.0								4.0	
376.91		4.5								4.5	
4.55	End of Borehole	5.0								5.0	
		5.5								5.5	
		6.0								6.0	
		6.5								6.5	
		7.0								7.0	
		7.5								7.5	

PROJECT MANAGER: **NR/YC**

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ph. (519) 742-8979, fx. (519) 742-7739

CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT.GPJ CVD_ENG.GDT 26-1-27

FILE No: 2775

BOREHOLE No. 5

Enclosure No.: 5
Sheet 1 of 1

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE
	Ground Elevation: **379.72 m**					
379.47	250 mm TOPSOIL					
0.25	trace topsoil	0.5		1	DP	
	sandy brown CLAYEY SILT trace gravel, trace sand occ silt lenses/seams DTPL	1.0		2	DP	
		1.5		3	DP	
		2.0				
		2.5		4	DP	
		3.0				
		3.5		5	DP	
375.77		4.0		6	DP	
3.95	brown, SILT trace sand, occ. clay seams wet to saturated					
375.17		4.5				
4.55	End of Borehole					
		5.0				
		5.5				
		6.0				
		6.5				
		7.0				
		7.5				

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

PROJECT MANAGER: **NR/YC**

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CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST TOWNSHIP OF WILMOT GPJ CVD_ENG.GDT 26-1-27

Enclosure No.: 6
Sheet 1 of 1

FILE No: 2775

BOREHOLE No. 6

Client: **Bogdan Pelczar**

Project: **Proposed Lot Severance**

Location: **2342 Snyders Road East, Township of Wilmot, Ontario**

EQUIPMENT DATA

Machine: **Geoprobe**
Method: **Direct Push**
Size: **76 mm I.D**
Date: **Oct 25 - 25** TO **Oct 25 - 25**

SOIL LITHOLOGY

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	SAMPLE TYPE	N-VALUE
	Ground Elevation: **379.95 m**					
379.77 / 0.18	180 mm TOPSOIL					
	sandy, trace topsoil brown CLAYEY SILT trace gravel, trace sand occ. silt lenses/seams DTPL	0.5 1.0 1.5 2.0 2.5		1 2 3 4	DP DP DP DP	
376.90 / 3.05	brown SILT, trace sand occ. clay seams saturated	3.0 3.5		5	DP	
376.15 / 3.80	brown CLAYEY SANDY SILT TILL trace gravel occ. sand seams DTPL coarse sand seam	4.0 4.5 5.0 5.5		6 7 8	DP DP DP	
373.85 / 6.10	End of Borehole	6.0 6.5 7.0 7.5				

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)

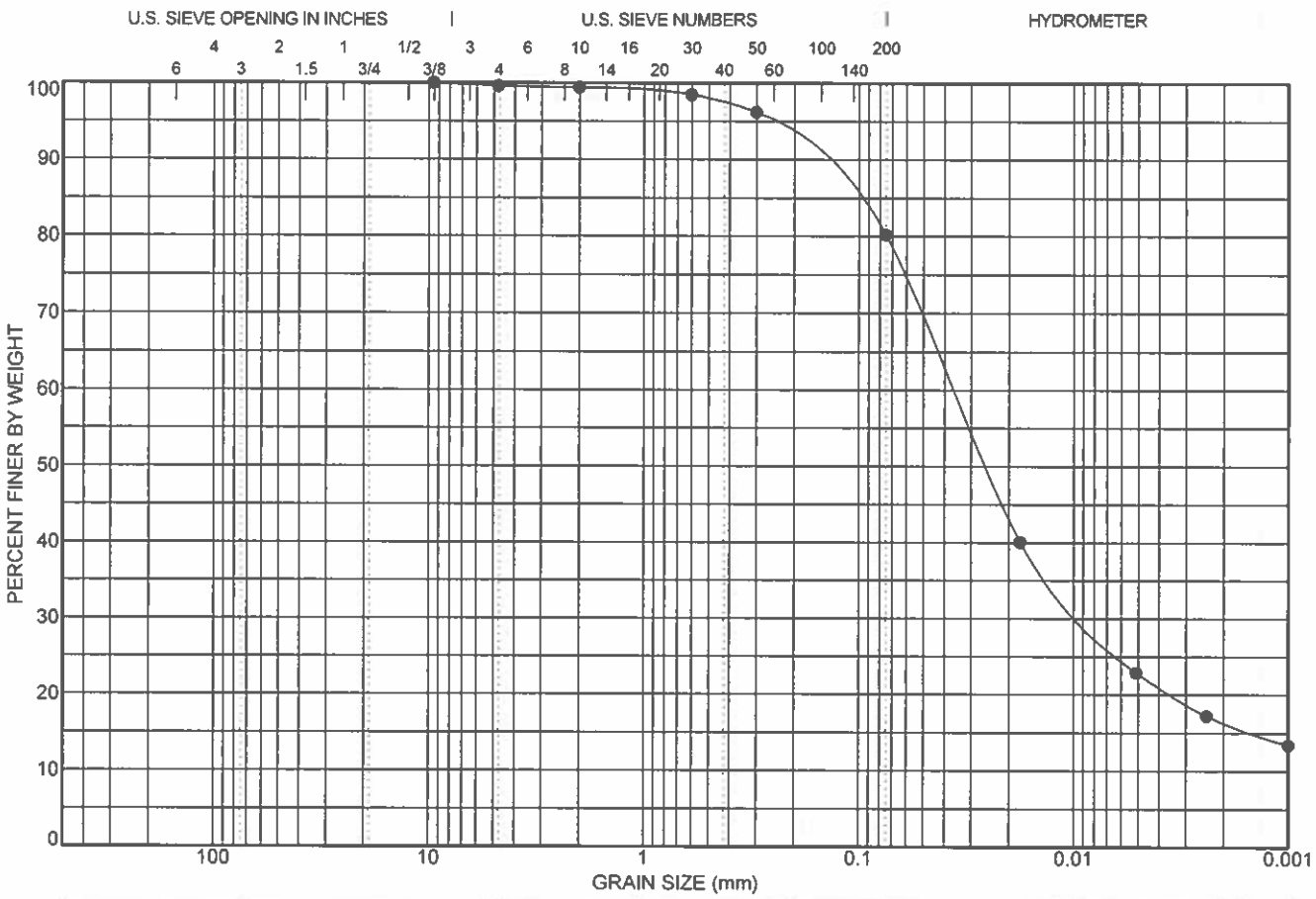
REMARKS

- above ground casing set in concrete
- bentonite seal/50 mm I.D. PVC riser
- water level measured at 1.31 mbgs (378.89 mASL) in monitoring well on January 9, 2026
- 3.0 m long, 50 mm I.D. PVC screen with sandpack

PROJECT MANAGER: **NR/YC**

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CVD BOREHOLE (2017) 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT.GPJ CVD_ENG.GDT 26-1-27



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
					9.5	0.036	0.009		0.4	19.4	80.2	

Date: Jan. 21 - 2026
Client: Bogdan Pelczar
Contractor:
Source:
Sampled From: BH 3 - SA 1; 0.25 to 0.70 m depth
Sample No.: 3-1
Date Sampled: Oct. 25 - 2025
Sampled By: KP
Lab No.: 0022
Date Tested: Jan. 21 - 2026
Type of Material: Silt, some sand, trace gravel, trace clay

Sieve Size (mm)	Percent Passing	No Specifications

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e-mail: info@cvdengineering.com

GRAIN SIZE DISTRIBUTION

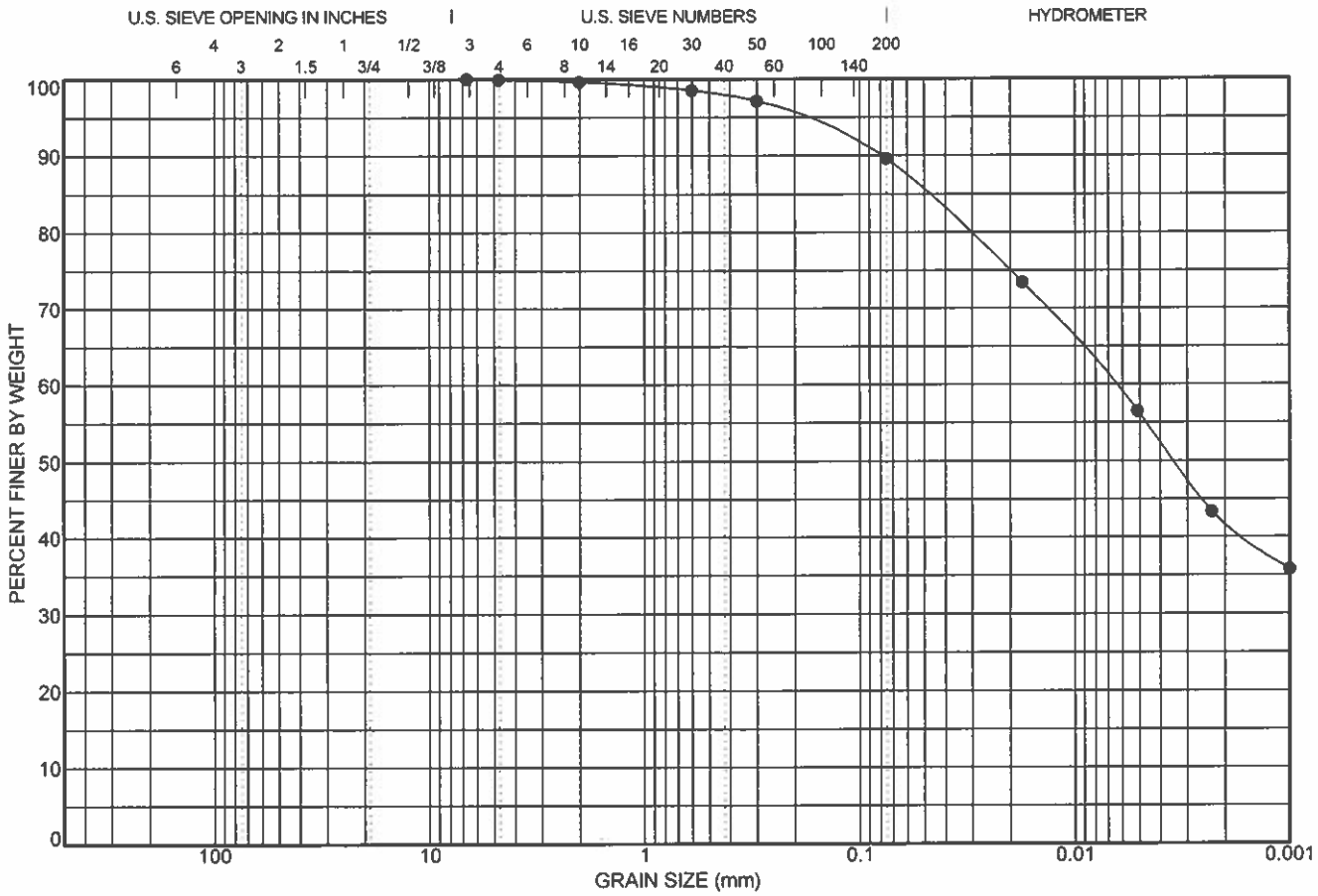
Project: Proposed Lot Severance

Location: 2342 Snyders Road East, Township of Wilmot, Ontario

File No.: 2775

Enclosure No.: 7

DM - NO SPECIFICATIONS 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT.GPJ LAW_LNDN.GDT 26-1-27



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
					6.7	0.007			0.1	10.3	89.6	

Date: Jan. 21 - 2026
Client: Bogdan Pelczar
Contractor:
Source:
Sampled From: BH 4 - SA 1; 0.35 to 0.70 m depth
Sample No.: 4-1
Date Sampled: Oct. 25 - 2025
Sampled By: KP
Lab No.: 0023
Date Tested: Jan. 21 - 2026
Type of Material: Clayey Silt, some sand

Sieve Size (mm)	Percent Passing	No Specifications

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e-mail: info@cvdengineering.com

GRAIN SIZE DISTRIBUTION

Project: Proposed Lot Severance

Location: 2342 Snyders Road East, Township of Wilmot, Ontario

File No.: 2775

Enclosure No.: 8

DM - NO SPECIFICATIONS 2775 - 2342 SNYDERS ROAD EAST, TOWNSHIP OF WILMOT.GPJ LAW_LNDN.GDT 26-1-27

APPENDIX G

Predictive Nitrate Loading Calculations

Table 3 - Predictive Nitrate Loading

2342 Snyders Road East
Petersburg, Ontario

Assumptions:
1000 L/day effluent flow per household
Recharge for Clayey Silt = 0.15 m/yr

Calculation Scenario:	1 No Tertiary Treatment
Number Houses	2
Effluent Volume per House (L/day)	1,000
Nitrate Concentration (mg/L) (C)	40
Recharge Area (m^2)	8,100
Impervious Surface Factor	0.10
Recharge Rate (m/yr)	0.15
Volume Effluent (m^3/yr) (V)	730
Volume Recharge (m^3/yr)	1,094
Volume Crossflow (m^3/yr)	44
Average Background Nitrate (mg/L)	0.67
Nitrate Loading (kg/yr)	29.2
Resultant Nitrate Loading Concentration (g/m^3 or mg/L)	**16.0**