Supporting Document 1-3

Geology and Hydrogeology Existing Conditions Report

Eastern Ontario Waste Handling Facility Future Development Environmental Assessment

GFL Environmental Inc.

Moose Creek, Ontario

October 7, 2022

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Acknowledgements

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GEOLOGY AND HYDROGEOLOGY EXISTING CONDITIONS REPORT

EASTERN ONTARIO WASTE HANDLING FACILITY FUTURE DEVELOPMENT ENVIRONMENTAL ASSESSMENT

Lots 13 to 18, Concession Road 10, Township of North Stormont, United Counties of Stormont, Dundas and Glengarry

October 7, 2022

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LIST OF ACRONYMS

°C	Degrees Celsius
AASHTO	American Association of State Highway and Transportation Officials
ANSI	Areas of Natural and Scientific Interest
AO	Aesthetic Objectives
BOD	Biological Oxygen Demand
CALA	Canadian Association for Laboratory Accreditation
C_c	Curvature coefficient
CME	Central Mine Equipment Company
C_u	Uniformity coefficient
D_{10}	Particle size for which 10% of the material by weight is smaller
D_{15}	Particle size for which 15% of the material by weight is smaller
D_{30}	Particle size for which 30% of the material by weight is smaller
D_{50}	Median particle size
D_{60}	Particle size for which 60% of the material by weight is smaller
D_{85}	Particle size for which 85% of the material by weight is smaller
DOC	Dissolved Organic Carbon
EA	Environmental Assessment
Elev.	Elevation
EOWHF	Eastern Ontario Waste Handling Facility
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GWL	Groundwater Level
ISO	International Organization for Standardization
kPa	Kilopascal
LDPE	Low Density Polyethylene
LL	Liquid Limit
m	Metre
m/m	Metres per Metre
m/s or m/sec	Metres per Second
masl or m asl	Metres Above Sea Level
mbg or m bg or mbgs	Metres Below Ground
mbmp or m bmp	Metres Below Measurement Point
MECP	Ministry of the Environment, Conservation and Parks
mg/L	Milligrams per Litre
min	Minutes
mm	Millimetre
mm/year	Millimetres per Year
MW	Monitoring Well
NQ	47.6 mm core diameter
NV	No Value
ODWO	Ontario Drinking Water Objectives
ODWQS	Ontario Drinking Water Quality Standards (O.Reg. 169/03)
ODWS	Ontario Drinking Water Standards (Revised June 2006)
OG	Operational Guidelines
P.Eng.	Professional Engineer

P.Geo.	Professional Geoscientist
PL	Plastic Limit
PVC	Polyvinyl Chloride
PWSW	Provincially Significant Wetlands
QA/QC	Quality Assurance/Quality Control
RQD	Rock Quality Designation
SCC	Standards Council of Canada
SOP	Standard Operating Procedure
SPT	Standard Penetration Tests
SPT (N)	Standard Penetration Tests - "N" value
TCR	Total Core Recovery
TDS	Total Dissolved Solids
ug/L	micrograms per Litre
USCS	Unified Soil Classification System
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Terrapex Environmental Ltd. (Terrapex) was retained by GFL Environmental Inc. (GFL) to prepare a combined geological and hydrogeological assessment for a property that GFL owns near the community of Moose Creek, Ontario. This report describes the existing geological and hydrogeological conditions in the on-site and off-site study areas in support of the GFL Eastern Ontario Waste Handling Facility (EOWHF) Future Development Environmental Assessment (EA). The regional location of the property is shown on Figure 1. The property includes the currently operating EOWHF (EOWHF Area) and an Expansion Area. The EOWHF Area includes an approved solid waste landfill site that is active and also hosts other waste management related activities. The Expansion Area is currently agricultural.

GFL plans to eventually expand waste deposition operations to the Expansion Area. GFL authorized this detailed study of geological and hydrogeological conditions as one of a wide range of studies required for the EA and for planning future development within the property.

The information and interpretations provided by this assessment will also be required by various levels of government and agencies for their review and approval of the application for the Expansion Area. The following governments and agencies have jurisdiction of the EOWHF Area and Expansion Area, as well as adjacent lands within 1.0 kilometre of the site:

- Township of North Stormont
- United Counties of Prescott and Russell
- United Counties of Stormont, Dundas and Glengarry
- South Nation Conservation Authority
- Government of Ontario (Ministry of the Environment, Conservation and Parks) (MECP).

2.0 SETTING

2.1 DEFINITIONS OF STUDY AREAS

Discussions herein are facilitated by defining several study areas, which are described below. The layouts of these areas are depicted in Figures 2 and 3.

- *On-Site Study Area*: For the purpose of the Environmental Assessment, the On-Site Study Area includes both the EOWHF Area and the Expansion Area, which are defined further below. It is situated on the majority (but not all) of Lot 13 and Lots 14 to 18 within Concession 10, in the Township of North Stormont, within the United Counties of Stormont, Dundas and Glengarry. It is bound on the west by agricultural land, on the east by Highway 138, on the south by Lafleche Road and various private properties, and on the north by Road 700, which is also known as Concession Road 7.
- *Off-Site Study Area*: Perimeter lands that are outside of the On-Site Study Area and within a 1.0 km radius of the On-Site Study Area boundary. The Off-Site Study area is located within both the Township of North Stormont in the United Counties of Stormont, Dundas, and Glengarry, and the Nation Municipality in the United Counties of Prescott and Russell. Given the nature of the soils in the vicinity of the site (fine-textured soils of silt and clay) which overlie limestone bedrock, the 1.0 km radius is suitable to evaluate hydrogeological conditions. The silt and clay soils are not present in the vicinity of a quarry to the east of the Expansion Area. The quarry is within the 1.0 km Off-Site Study Area.
- *EOWHF Area*: The western half of Lot 16 and Lots 17 and 18. The western portion of the On-Site Study Area hosts the approved EOWHF.
- *Expansion Area*: The majority (but not all) of Lot 13, Lots 14 and 15 and the eastern half of Lot 16. The eastern portion of the On-Site Study Area for which approval to develop for additional landfill capacity is being sought.

2.2 LOCATION AND DIMENSIONS

The nearest communities to the On-Site Study Area are Moose Creek, which is 4.9 km to the south and Casselman, which is 5.4 km to the west, as shown on Figure 1. The On-Site Study Area is located 58 km east of the City of Ottawa and 36 km northwest of the City of Cornwall, relative to urban centres. Locations and directions are approximate.

The On-Site Study Area essentially covers a quadrilateral wedge shape with sides of the following lengths: east is 1,705 m; west is 2,065 m; north is 2,750 m; and south is 2,315 m. Its area is 429 hectares. The EOWHF Area spans an essentially rectangular parcel of 925 m by 1,975 m covering 189 hectares. Relatively minor portions at the southeast and northeast corners are not part of the On-Site Study Area. See Figures 2 and 3 for the layout of the On-Site Study Area.

2.3 EXISTING AND LOCAL LAND USE

The EOWHF Area has official zoning of “Waste Disposal” and “Rural”. The expansion area has official zoning of “Agricultural” with a minor portion of Lot 13 that is zoned “Highway Commercial”.

The Off-Site Study Area has mixed zoning. It is mostly zoned as “Rural” or “Agricultural”. In the area east of the site, Lot 12 is zoned as “Employment District” and Lots 10 and 11 are a Licenced Pit Quarry. The area further to the west is zoned as “Agricultural”.

The On-Site Study Area is owned by GFL. The Off-Site Study Area includes multiple properties and parcels that are owned by the Province of Ontario (along Highways 138 and 417) and by assorted private individuals and commercial entities.

The current land use of the approved area of the On-Site Study Area is the Eastern Ontario Waste Handling Facility at 17125 Lafleche Road. The EOWHF includes closed waste cells, active waste cells, vacant cleared land and wooded areas (deciduous swamp and thicket swamp) that are planned to become waste cells, composting areas, internal roads, and diverse buildings for administration and operations. The current land use of the Expansion Area is agricultural, with crops including corn, soybeans and grass sod.

The current land uses within the Off-Site Study Area are diverse, and are characterised as follows.

- North: Primarily agricultural with crop farming. Highway 417 includes two lanes each for eastward and westward traffic. Road 700 and County Road 8 are two-lane roads. A single-family rural residence is located at 2251 County Road 8. A commercial property (Agro Culture 2001 Inc., Supreme Seeds Inc.) is located at 2311 County Road 8. A truck inspection station is located to the northwest along Highway 417.
- South: Primarily agricultural as grass sod farming. Lafleche Road is a two-lane road. A portion of the Moose Creek wetland is located in the extreme southwest, sometimes referred to as “Moose Creek Bog” on maps. To the southeast are commercial buildings for Champion Mushrooms Ltd. at 1434 Highway 138.
- West: Mostly agricultural lands with crops. To the northwest along Road 700 are two locations of rural-residential with agriculture and one location with a complex of agricultural buildings. Casselman Performance operates an all-terrain vehicle commercial operation at 49 Road 700.
- East: Primarily agricultural with diverse minor uses. Highway 138 and Allaire Road are two lane roads. Rural-residential style dwellings line Allaire Road. Also along Allaire Road are various commercial operations, including Larcorp Inc., Calco Soil, GFL Environmental, and Moose Creek Tire Recycling. The active Martin Quarry operated by A. L. Blair Construction Limited (Site ID 605082) and a possible former quarry exist along the north side of the road.

The above characterization is a summary. Other relatively minor land uses may also be present.

2.4 TOPOGRAPHIC RELIEF

Local topographic relief within the On-Site Study Area and the Off-Site Study Area is essentially a plain, descending in elevation toward the north. The average grade across the On-Site Study Area is approximately 0.2%. There are no distinct hills or valleys within the vicinity, although there are subtle and broad higher and lower areas that may affect local drainage patterns.

2.5 SURFACE WATER AND DRAINAGE

The On-Site Study Area and Off-Site Study Area are within the watersheds of Moose Creek and Scotch Creek, which are tributaries to the South Nation River that itself is tributary to the Ottawa River toward the north.

The On-Site Study Area and Off-Site Study Area have stormwater drained by a network of mostly linear ditches, termed “Drains”. Moose Creek flows toward the north, approximately 600 m to 850 m west of the EOWHF Area. The Fraser Drain runs along the northern and western boundaries of the On-Site Study Area and transects the EOWHF and Expansion Lands. The Upper Tayside Drain (also known as the Tayside-Legault Drain) runs within the interior of the southeastern part of the On-Site Study Area. This watercourse is tributary to the west branch of the Scotch River. See their alignments in Figure 3. Un-named drains and shallower ditches are also present along local roads and highways. Most of the On-Site Study Area is within the Moose Creek watershed.

Surface water generated within the EOWHF is managed internally, with grades and complex ditching feeding to storm water management ponds that release to the Fraser Drain.

The Expansion Area includes shallow ditches, spaced approximately 50 m apart and running in a south to north orientation, which feed into these drains, as observed in aerial photographs and provincial mapping. Flows are captured along a perimeter channel directly south of the Roxborough-Plantagenet Boundary Municipal Drain and flow westerly towards the Fraser Drain, and by the Upper Tayside Drain, which runs toward the northeast and discharges to the Scotch River.

Many features testify to poor natural drainage throughout the On-Site Study Area and Off-Site Study Area. Much of the Off-Site Study Area is mapped as being covered by organic deposits, as discussed in Section 2.6. The EOWHF Area was mapped as once being un-designated wetlands. The Moose Creek wetland is located to the southwest. A relatively dense network of ditches within the Expansion Area, as noted above, was necessary to promote drainage.

2.6 REGIONAL STRATIGRAPHY

The Off-Site Study Area and On-Site Study Area are mapped as being almost entirely covered by overburden deposits (Ontario Geological Survey, 2010). The overburden thickness varies from a few metres to approximately 30 m (MECP, 1997), where present.

The following main units are noted for the local region, in order of increasing depth (decreasing elevation). See Figure 4 that shows the distribution of geological units exposed at surface.

Organic. Deposits of peat, muck and marl. Covers the majority of the western, central and southern parts of the Off-Site Study Area and On-Site Study Area. Generally absent to the east and north.

Glaciomarine sediment. Generally fine-textured soils of silt and clay, with minor sand and gravel. Deposited by the post-glacial era Champlain Sea, which drained approximately 10,000 years ago. Covers the Off-Site Study Area and the On-Site Study Area, with the exception of an area to the east. Where present, thickness varies from a metre or so to approximately 20 metres.

Gravelly sand or sandy till. A bed of gravelly sand soils of variable description. Found below the glaciomarine sediment and above bedrock across the Off-Site Study Area and On-Site Study Area, although may be absent at some locations, leaving the glaciomarine sediment layer in direct contact with the underlying bedrock.

Bedrock. Limestone, sometimes with internal shale layers. Classified as the Lindsay Formation of the Simcoe Group, which dates to approximately the middle Ordivician era, i.e., approximately 450 million years old (Ontario Geological Survey, 2007). Its texture is sublithographic to fine crystalline, commonly nodular, with interbeds of calcarenite and shale (Ontario Geological Survey, 1985). The thickness of the Lindsay Formation is up to approximately 32.0 m. Shale interbeds may be present within the limestone and are up to 5 cm thick. Other bedrock layers / formations lie deeper than the Lindsay Formation. Bedrock is exposed or thinly covered over an approximately 100 hectare area that is east of Highway 138 and straddling north and south of Allaire Road.

2.7 REGIONAL HYDROGEOLOGY

2.7.1 STRATIGRAPHY

The main units described in Section 2.6 are anticipated to function as hydrostratigraphic units that are anticipated to provide distinct hydraulic properties. The units are discussed in order of increasing depth (decreasing elevation).

Organic. Partially saturated where shallow, saturated at depth. Variable hydraulic conductivity, with decreasing values at greater depth due to compaction. Likely to function as an unconfined aquifer.

Glaciomarine sediments. Saturated. Very low hydraulic conductivity, with variation due to soil fractures. Likely to function as a regional aquitard due to low hydraulic conductivity and relatively significant thickness. Likely to produce a limited groundwater yield when used for domestic water supply.

Gravelly sand or sandy till. Saturated. Moderate to relatively high hydraulic conductivity, with variation. Likely to function as a confined aquifer.

Bedrock. Saturated. Low to relatively high hydraulic conductivity, with variation due to fracture aperture (width) and density. Likely to function as a confined aquifer where more highly

fractured - usually in the upper few metres of bedrock. At some locations the bedrock exhibits sparse fracture spacing and at depth it is unweathered featuring fewer fractures and tighter fracture apertures.

Vertically-oriented fractures in the upper bedrock are apparent in an aerial image (Google Earth Pro, 2016) of the yard of 17305 Allaire Road, which is within 100 m of the On-Site Study Area. The fractures appear to be clustered in two main preferred orientations and spacings, as follows.

- Oriented 110°/ 290° with spacing of approximately 1 to 2 m
- Oriented 75°/ 235° with spacing of approximately 4 to 7 m

The above-indicated orientations are approximate, with variance of +/- 10° . Fractures in other orientations occur in this outcrop, either as individual outliers or as sets. In addition, there will also be horizontally-oriented fractures and partings reflecting internal layers, bedding planes and other structures.

Regionally, groundwater movement trends toward the north or northwest (Map 2200. Ministry of the Environment, 1997).

2.7.2 GROUNDWATER QUANTITY

Aquifers are hydrostratigraphic units that are capable of yielding significant quantities of water to a supply well.

The glaciomarine sediment layer is likely to produce a limited groundwater yield.

The sandy gravel layer below the glaciomarine sediment and above the bedrock can function as an aquifer where its thickness is more than a few metres and contains relatively lower fine fractions.

The limestone bedrock provides an extensive aquifer in the South Nation River basin (Ministry of the Environment, 1997). Relatively higher transmissivity is anticipated in the upper-most horizon of the bedrock. Wells screened in this aquifer have a sufficient quantity for domestic uses but not higher yields.

In general, the basal gravelly sand and the upper horizon of bedrock, with its more intense fracturing function, is the zone where there is preferential groundwater flow on a regional basis (Colgrove, 2016).

2.7.3 GROUNDWATER QUALITY

Groundwater in the limestone is sometimes noted as often being highly mineralized, including to a saline condition.

Groundwater in Champlain Sea sediments can be highly mineralized, including to a saline condition. Elevated total dissolved solids, sodium, halogens (chloride, fluoride, iodide) and methane are encountered (Colgrove, 2016).

Bedrock topography may influence the groundwater quality. At locations of thinner overburden due to higher bedrock, fresher quality recharge waters more easily reach the elevated bedrock and mix with overburden groundwater. Where bedrock is at a lower elevation and overburden is correspondingly thicker, chemical processes such as ion exchange, diffusion and porewater expulsion are promoted, which increase ion concentration and alter ion chemistry. Advanced organic decomposition that produces more methane and hydrogen sulphide occurs most strongly in major bedrock depressions capped by thicker glaciomarine clays (Colgrove, 2016).

Some local water supply wells in the MECP water well database report sulphurous odours.

2.8 LOCAL GROUNDWATER SUPPLIES

There are no municipal piped water supplies in the On-Site Study Area and the Off-Site Study Area. Each property is likely serviced by a private supply well, with the possibility of some relying on bottled water. The presence and distribution of groundwater supply wells was assessed using the following two primary sources of information.

- MECP water well database. This database consists of well information as reported by local drilling contractors and as recorded by MECP staff. It contains information on well construction, stratigraphy and other aspects, in varying detail. A copy of the listings is provided in Appendix III.
- Aerial photographic analysis. Water supply wells are assumed to be situated near to occupied buildings that are being supplied, such as a residence or a commercial operation.

The private wells determined by these methods are mapped on Figure 5. This map shows wells located within the On-Site Study Area, the Off-Site Study Area and an area beyond the Off-Site Study Area but where public perception should be considered due to likely being downgradient.

The following distribution of water supply wells was noted within the Off-Site Study Area and the On-Site Study Area. The relative position with respect to the direction of groundwater movement is also provided.

- Within EOWHF Area: 1. Upgradient of waste cells.
- Within Expansion Area: 0 / None
- Western part of Off-Site Study Area: 3. Cross-gradient of expansion area.
- Southern part of Off-Site Study Area: 0 / None
- Southwest and western part of Off-Site Study Area. 1 (One). Upgradient of expansion area.
- Eastern part of Off-Site Study Area. 17. Cross-gradient of expansion area.

- Northern part of Off-Site Study Area. 6. Downgradient.
- Northern area beyond 1.0 km from Off-Site Study Area: 12. Downgradient.

Some of the wells interpreted from the presence of an occupied building(s) may be the same wells as recorded in the MECP database, so are treated as a single location on the map. Based on the above, there are possibly 27 private supply wells in the Off-Site Study Area and approximately 12 wells located further north.

The MECP water well database within the Off-Site Study Area indicated the majority of the wells had a supply purpose – domestic, livestock, irrigation, commercial and/or industrial.

A portion of the Ste. Rose de Prescott Aquifer is mapped as incurring within the northern fringe of the Off-Site Study Area (MECP, 1997).

The above data should be considered a preliminary understanding with uncertain reliability. For example, recently constructed wells in the MECP database include locations measured by a GPS device with more reliable location accuracy, while older wells in the MECP database are sometimes based on a rough hand sketch, so positions have reduced confidence. It is possible that some listed wells may be abandoned or are no longer in use. There may be some more recently constructed wells reported by drillers that are not yet updated to the database by government staff. The assumed placement on occupied properties may be located with different actual locations.

2.8.1 SIGNIFICANCE OF GROUNDWATER RESOURCES

Groundwater resources are significant for providing a number of functions. Groundwater discharge provides baseflow of local watercourses, it provides discharge to regional wetlands, and it replenishes aquifers used as a supply for drinking and for a range of agricultural, industrial and commercial purposes.

The site is within the larger area administered by the Raisin-South Nation Source Protection Region, which is the government agency charged with groundwater protection.

The On-Site Study Area and Off-Site Study Area were reviewed within mapping of sensitive areas of the Source Protection Atlas (2020). Mapping indicates that most of the On-Site Study Area and a significant portion of the Off-Site Study Area south of Highway 417 are classified as a Significant Groundwater Recharge Area with a score of 6. Also, most of the On-Site Study Area and a significant portion of the Off-Site Study Area south of Highway 417 are classified as a Highly Vulnerable Aquifer with a score of 6. Sensitive groundwater areas are shown on Figure 6.

The Raisin-South Nation Conservation Authority was contacted with respect to requirements or restrictions on potential activities due to these classifications. The On-site Study Area has not been identified as a well head protection area (WHPA) or intake protection zone (IPZ). With respect to Source Protection Plans within the Raisin Region Source Protection Area and South Nation Source Protection Area, only WHPAs and IPZs are subject to the prohibition of specific

activities or subject to Risk Management Plans. The designation of On-site and Off-site Study Areas as a Significant Groundwater Recharge Area or a Highly Vulnerable Aquifer do not lead to prohibitions of activities or Risk Management Plans.

2.8.2 USES OF GROUNDWATER RESOURCES

Water supply wells within the Off-Site Study Area include the following categories with typical associated common purposes. Other purposes are possible.

- Domestic: for drinking, cooking, washing
- Commercial: for drinking, washing
- Livestock: for provision of drinking supplies to livestock animals
- Irrigation: for crops
- Industrial: for washing of aggregate, landfill operations, dust suppression

A search for Permits to Take Water in the provincial government database indicated one listing of No. 0431-AHNHVJ, having the purpose of pits and quarries. Its maximum allowable taking of groundwater and surface water is 1,182,816 litres per day.

2.9 SENSITIVE ENVIRONMENTAL FEATURES AND CLASSIFICATIONS

There are no sensitive environmental features mapped as being downgradient of the Off-Site Study Area or On-Site Study Area. The Moose Creek wetland (also known as the Moose Creek bog) that is southwest of the On-Site Study Area is interpreted to be upgradient.

There are no additional Areas of Natural and Scienific Interest (ANSI), Provincially Significant Wetlands (PSWs), undesignated wetlands or undesignated / designated woodlands within the Off-Site Study Area or On-Site Study Area.

The Fraser Drain and the Upper Tayside Drain are tributaries to natural watercourses.

2.10 CLIMATE

The climatic conditions were measured at the climate station located at the St. Albert weather station. The reported values are based on the 30 year monthly averages between 1981 to 2010. The climate station is approximately 11 km to the southwest and has an elevation of approximately 65 masl compared to the site's approximate elevation of 68 masl.

The monthly average temperatures range from -10.2 °C in January to 20.3 °C in July. The monthly average precipitation ranges from 59.8 mm in February to 103.3 mm in September, with an annual total of 1055 mm/year.

3.0 METHODOLOGY

The following describes the methodology and locations of investigation in the field program at the potential expansion area to the east and replacement wells in the EOWHF Area installed during 2020.

3.1 DRILLING

A program of drilling for combined hydrogeological and geotechnical purposes was performed in the potential expansion area to the east between January 21 and February 7, 2020. Replacement monitoring wells and new installations L6, L7, MW96-5AA and MW96-6Ar were completed on the EOWHF between February 10 to 19, 2020 and November 3 to 6, 2020. Monitoring wells to the south of the EOWHF were completed between November 1 and 6, 2020. The drilling contractor and crew were licensed in accordance with the Ontario Water Resources Act R.R.O. 1990, Regulation 903 (Wells), last amendment O. Reg. 389 / 09.

Drilling was performed at eighteen (18) locations with broad distribution across the potential expansion area to the east. Locations are designated as MW20-1 through MW20-12, MW20-15, MW20-17 and MW20-18. Installations at BH20-13, BH20-14 and BH20-16 were boreholes, not completed as monitoring wells. The suffix “S” represents a monitoring well screen completed within shallow clay (e.g., MW20-1S); “C” represents a monitoring well screen completed in deeper clay (e.g., MW20-2C); “T” represents a monitoring well screen completed in till above bedrock (e.g., MW20-1T); and, “D” represents a well screen completed within bedrock (e.g., MW20-1D).

The monitoring wells installed to the south of the EOWHF are designated MW20-19 and MW20-20. At these locations, the “A” horizon represents screens installed within bedrock; the “B” horizon screens are installed within till above the bedrock; the “C” horizon well screens are installed within deeper clay, and the “D” horizon monitoring well screens are installed within shallow clay.

Monitoring wells L6 and L7 were installed at the southern limit of the EOWHF property within shallow silty clay. Replacement monitoring wells, identified by the suffix “R” are screened at the same intervals as the wells that they replace (S1-1A-R, S1-1B-R, S1-3A-R, P1-3B-R). Monitoring wells MW96-5AA and MW96-6A were competed within bedrock adjacent to the existing monitoring wells MW95-5C and MW96-6B/MW96-6D.

Borehole logs for the newly installed monitoring wells are included in Appendix A.

The boreholes were advanced using rotary methods. In overburden, the drill casing was coupled to a drilling bit. Bedrock coring methods are described in Section 3.2. The cuttings produced were transported to the surface by water and left on an adjacent snow-covered field. The water used in drilling was sourced from the on-site supply well that is in the southern part of the EOWHF Area.

Three of the drilling locations had boreholes with no monitoring well; these boreholes were backfilled with bentonite upon completion.

Soil samples were collected, generally at 1.5 m intervals, using a split spoon device. These samples were described, then placed in sealed airtight plastic bags. Descriptions included texture, colour, moisture, and structure. Soil samples were logged in the field by the qualified geo-environmental technician, then confirmed by a Professional Engineer at Terrapex's Ottawa facility.

Soil samples were not collected from the shallower boreholes of well cluster locations, with reliance on soils recorded in the nearby deepest borehole. At some locations, the borehole's purpose was to establish the depths of stratigraphic interfaces by inference of drilling resistance, with no soil samples recovered. The base of glaciomarine sediment / top of till interface was inferred by the marked increased resistance to soil drilling and the top of bedrock was inferred by refusal to the soil drilling.

Standard penetration tests (SPT) were periodically performed while advancing the boreholes in the soils to take representative samples and to measure penetration index (N-values). The N value reflects the number of blows of a standard striking hammer that were required to drive the split spoon sampler down by 300 mm. The values are presented in the borehole records. Additional geotechnical borehole tests were also conducted, which are described in the companion geotechnical report (Terrapex, 2021).

The silty clay unit was also sampled by means of a thin walled tube (Shelby Tube) in the boreholes for MW20-2D, MW20-3D, MW20-8D, MW20-9D, MW20-10D and MW20-11D. This method yields relatively undisturbed samples for laboratory analysis and testing.

3.2 BEDROCK CORING

Bedrock within the Expansion Area to the east was cored at twelve (12) locations using rotary drilling methods with a diamond drill bit of NQ size (i.e., 76 mm outer diameter). Core samples were recovered with an average length of 3.0 m, ranging from 2.5 m to 6.1 m. Bedrock wells were also installed south (MW20-19A) and within (MW96-5AA and MW96-6A1) the EOWHF.

Water required for the rotary drilling equipment was sourced from a water well located in the EOWHF Area. The well is upgradient of the waste fill areas. Water was pumped from the well to a GFL water tanker truck, transferred to a secondary water truck provided by the drilling contractors, then to the borehole.

Rock cores were described in the field by the observing technician for lithology, rock quality designation (RQD), total core recovery (TCR), fractures, weathering, voids and other characteristics. Following description, cores were sealed in wooden core boxes and brought to Terrapex's laboratory in Toronto for review by the Senior Hydrogeologist.

3.3 MONITORING WELL INSTALLATIONS

Monitoring wells were installed for the purposes of testing hydraulic conductivity, for sampling groundwater quality and for measurement of piezometric levels. Monitoring wells within the Expansion Area were installed at fourteen locations over a broad geographic distribution. Most

locations were clusters of monitoring wells with two or three wells, with each well installed in a separate borehole, within approximately 2 m of adjacent wells of the cluster. A few locations consisted of a single well.

The monitoring wells were constructed using 50 mm diameter, Schedule 40, PVC, environmental-grade riser piping with machine slotted (10 slot) screens with an open length of 1.5 m at the bottom. The boreholes were backfilled with sand to approximately 0.3 m above the screened interval and then sealed above with bentonite to surface. The PVC pipe had a j-plug to prevent contamination. The monitoring wells were completed with an above-grade casing protector with locked lid.

The monitoring well screens installed at each location within the Expansion Area were placed in the following vertical pattern, which was based on stratigraphy. See Figure 3 for well locations. The wells were designated in the MW20-# series, with suffix (noted below) indicating the stratigraphic screen position.

- Shallow wells. Designated with an ”S” suffix. Thirteen such wells were installed. Objective was to determine the water table. The bottoms of screens were installed in the range of 3.8 to 4.2 metres below grade (mbg).
- Clay with silt wells: Designated with a ”C” suffix. Seven such wells were installed. Objective was to determine conditions within the glaciomarine deposit at a relatively consistent depth range. The bottoms of screen were installed in the range of 6.9 to 7.6 mbg.
- Sandy Till wells: Designated with a ”T” suffix. Five such wells were installed. Objective was to determine conditions within the till. The bottoms of screen were targeted to provide a vertical set back of a few metres above the bedrock interface, if the till layer was sufficiently thick. The bottoms of screen were installed in the range of 6.0 to 17.0 mbg, which varied with the position of the till / bedrock interface.
- Bedrock wells: Designated with a ”D” suffix. Twelve such wells were installed. Objective was to determine conditions within the bedrock. The bottoms of screen were targeted to have a setback of at least 1 to 2 metres below the overburden to avoid interference by overburden. The bottoms of screen were installed in the range of 9.1 to 25.5 mbg, which varied with the position of the top of bedrock.

This assessment of hydrogeological conditions of the On-Site Study Area also incorporates monitoring wells installed within the EOWHF area. EOWHF wells include clusters in the MW96-# series. The well clusters have the following suffix conventions: A = bedrock well; B = till well; C= clay well; and D = shallow well.

The well components and their relationships to adjacent stratigraphy are shown in the well records provided in Appendix III and their dimensions are reported in Tables 1 and 2.

Monitoring wells in the EOWHF Area should be maintained as part of the long-term monitoring program. Monitoring wells in the Expansion Area should be retained for long-term monitoring of conditions prior to construction and during the operational period of the Expansion Area, once

approved and active. The necessity for retaining monitoring wells should be reviewed on an annual basis by a hydrogeologist and GFL. If one or more monitoring wells are determined to be no longer useful or are damaged, then they must be abandoned by a licensed water well contractor. Damaged wells can be replaced or abandoned, pending discussion with a hydrogeologist and GFL. Abandonment must proceed in accordance with Regulation 903 and amendments issued under the Ontario Water Resources Act.

3.4 MONITORING WELL DEVELOPMENT

Monitoring well development was required to remove standing water in the monitoring wells and to remove the remaining portions of water necessarily injected into the borehole to facilitate drilling. Development was undertaken following Terrapex's Standard Operating procedures. The development proceeded soon after construction, during 25 February to 31 March 2020. Water was pumped using dedicated low density polyethylene (LDPE) tubing, equipped with a LDPE foot valve, for each monitoring well.

The monitoring wells exhibited variations in ability to provide water and the degree of recovery to likely static levels. Some wells were purged of the volume of water in the pipe riser and screen zone plus the estimated amount in the annular sand pack zone. Some wells were purged to a nearly dry condition, then allowed to recover, which was repeated for three cycles. Some wells were purged of one volume to dry but did not recover more than a few centimetres of water.

3.5 WATER LEVEL MEASUREMENTS

Groundwater levels were measured in the MW20-series monitoring wells of the Expansion Area on 26 February, 5 March, 8 April, 13 May and 8 June 2020. The groundwater levels and elevations measured on these dates are presented on Table 5. Levels were measured by an electric sounder device with a graduated tape. Additional measurements were obtained during sampling and for other isolated events.

Groundwater levels at all accessible monitoring wells were measured on 15 November 2020, 10 May and 3 August 2021. The groundwater levels and elevations measured on these dates are presented on Table 6.

3.6 GROUNDWATER SAMPLE COLLECTION

Groundwater sampling events were conducted during 5 to 9 March 2020 and during 8 to 11 June 2020 in the monitoring wells located east of the EOWHF. Groundwater was sampled using “low-flow” methodology with a peristaltic pump in accordance with Terrapex's Standard Operating procedures (SOPs). Groundwater was discharged directly into pre-cleaned, laboratory-supplied bottles, placed in a cooler with ice, and shipped under chain of custody to the Eurofins Experchem Laboratories Inc. (Eurofins) branch in Ottawa, Ontario. The laboratory conducted analysis for a broad spectrum of parameters, generally corresponding to Schedule 5 - Comprehensive List for Groundwater and Leachate from the MECP’s Landfill standards: A guideline on the regulatory and approval requirements for new or expanding landfilling sites (Landfill Guideline). The full list

of parameters analysed in March and June 2020 are shown on the results table presented in Appendix II.

Groundwater samples were collected in the Fall of 2020, Spring of 2021 and Summer of 2021 from all monitoring wells between 25 November and 1 December 2020, between 11 and 13 May 2021 and between 3 and 6 August 2021. Samples were analysed by Eurofins for the parameters identified in "List A" of Schedule "D" of ECA No. A420018, which generally comprise Schedule 5 – Indicator List for Groundwater and Leachate from the Landfill Guideline (with the addition of biological oxygen demand (BOD)). The full list of parameters analysed in November 2020 and in May and August 2021 are shown on the results table presented in Appendix II.

3.7 HYDRAULIC CONDUCTIVITY TESTING

Hydraulic conductivity was assessed using a variety of methods, including single well response tests, the Hazen formula based on grain size analysis, laboratory permeameter tests, and consolidation tests. The wells tested, representative depths and methods are listed on Table 4.

Single well response tests consisted of a bail test, which involved a rapid removal of a volume of water using an elongated bailer, then observing the rising recovery to static level over time. These tests were performed in MW20-1T, MW20-3D, MW20-4D, MW20-4C, MW20-5T, MW20-6D, MW20-6S, MW20-7C, MW20-8C, MW20-8S, MW20-9T, MW20-10D, MW20-11C, MW20-11S, MW20-12S and MW20-15T. Water level measuring dataloggers were used to supplement water level measurements at most test wells. A barometric logger was installed on Site to allow removal of air pressure effects from the levelogger record. Observations were analysed using the Aqtesolv software package by the Bouwer and Rice method.

The Hazen formula method is applicable for soils having a texture that is dominantly silt or coarser. The d_{10} value is used, which is the grain size diameter below which is 10% of the sample, by weight. Sufficiently coarse textured samples for which grain size analyses were conducted include MW20-3D Sample 12, MW20-5D Sample 5B, MW20-5D Sample 7 and MW20-9D Sample 10. Other samples for which grain size analysis was performed were too fine for application of this formula.

Laboratory permeameter testing involves compacting a clayey soil sample into a cylinder, and then passing water through in a prescribed protocol. The tests were conducted by Terrapex's geotechnical laboratory on silty clay from MW20-1D, MW20-4D, MW20-5D, MW20-6D and MW20-9D.

One-dimensional consolidation tests are conducted on thin-walled tube ("Shelby tube") samples of relatively undisturbed samples of silty clay, which yield permeability values that can be converted to hydraulic conductivity values. Such tests were performed on samples from MW20-2D, MW20-3D, MW20-8D, MW20-9D, MW20-10D, and MW20-11D.

3.8 QUALITY ASSURANCE AND QUALITY CONTROL

Field staff assigned to this project were properly trained and equipped. All field equipment was confirmed to be in good working order and properly calibrated, which were documented. Field tasks were conducted in accordance with standard operating procedures (SOPs).

Field reports were reviewed for accuracy by the field technician, the project manager, and by a senior Professional Geoscientist (P.Geo.) or senior Professional Engineer (P.Eng.).

Eurofins Environmental Testing Canada Inc. (Eurofins) is accredited by the Standards Council of Canada (SCC), the Canadian Association for Laboratory Accreditation (CALA), and operates in accordance with ISO 17025:2005. Eurofins is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (License #2318).

Eurofins conducts its own routine internal Quality Assurance/Quality Control (QA/QC) program that consisted of the analysis of laboratory replicates, process and method blanks, process percent recoveries, matrix spikes, method spikes and surrogate percent recoveries, as appropriate for the particular analysis protocol.

Terrapex also submitted four field duplicate samples that were known to Terrapex but not by the laboratory. These were labelled by Terrapex as Dup 1 through to Dup 4 that were duplicates of samples MW20-1T, MW20-7D, MW20-8C and MW20-10S, respectively. The duplicate QA/QC samples were consistent with the results for the original samples.

Trip blanks, field blanks, and trip spikes measured Volatile Organic Compounds (VOC's) were used to confirm that sampling handling and transport did not contaminate the samples. The trip blanks and the field blanks had VOCs indicated concentrations below the method detection limits. The trip spikes recovered concentrations between 59 to 139% of the original concentration, which indicates that VOC concentrations reported by the laboratory are reliable indicators of actual presence in the groundwater, where measured above the detection limit.

3.9 SURVEYING AND LOCATION CONTROL

An elevation and location survey of the MW20-series clusters within the Expansion Area and of nearby EOWHF Area monitoring well clusters (MW96-1, MW96-2A and MW96-3) was conducted on 27 February 2020. The survey instrument used was a Topcon Hiper V GNSS Receiver with centimetre-scale accuracy.

4.0 INTERPRETATION

4.1 TOPOGRAPHY AND SURFACE WATER COURSES

The On-Site Study Area and the Off-Site Study Area occupy a plain descending northward, as discussed in Section 2.4. There are no naturalized surface water courses within the On-Site Study Area. As discussed in Section 2.5, networked systems of anthropogenic drains / ditches are constructed within and adjacent to the On-Site Study Area. These include the named watercourses of the Fraser Drain, the Albert Fahey Award Drain and the Upper Legault Drain that are tributary to the Moose Creek and Scotch River watersheds. The entirety of the EOWHF Area and most of the Expansion Area are part of the Moose Creek watershed. Only a minor portion on the east side of the Expansion Area close to the Upper Legault Drain is part of the Scotch River watershed (Sabourin, 2017).

4.2 WATER TABLE

Groundwater levels observed in monitoring wells are provided on Tables 5 (Spring 2020) and 6 (Fall 2020, Spring 2021 and Summer 2021).

Groundwater contours are presented for the Fall 2020, Spring 2021 and Summer 2021 monitoring events. Piezometric contours are presented on Figures 7A1/7A2/7A3 (Bedrock), Figures 7B1/7B2/7B3 (Silty Clay) and Figures 7C1/7B2/7C3 (Shallow Clay). Because the till is not continuous across the site, piezometric elevations in the till layer are not shown. The till and underlying bedrock are generally hydraulically interconnected.

As shown on Figures 7A1/7A2/7A3, groundwater flow in bedrock is generally northward. Figures 7B1/7B2/7B3 and 7C1/7C2/7C3 illustrate effects of groundwater mounding below the completed landfill. Shallow groundwater below the potential expansion area to the east of the EOWHF does not show mounding effects (refer to Figure 7B1/7B2/7B3).

The water table in the Expansion Area is indicated by groundwater levels observed in the monitoring wells with screens shallower than approximately 4.5 mbg. The observations during April to June 2020 likely reflect static water levels without influence of well development and/or sampling and likely approach the maximum elevation that would occur in an annual cycle, pending long-term observations. The water table depth during the above-noted period ranged from 0.5 mbg to 1.7 mbg, with an average of 1.1 mbg. The shallowest depth was 0.3 mbg in MW20-4 near to the southern boundary of the Expansion Area in January 2020.

Piezometric elevations reflect groundwater pressures at greater depth and may not necessarily correspond to the water table.

Groundwater levels naturally fluctuate in response to seasons, annual variations and major storm events. The range of annual fluctuation in shallow groundwater is also likely to vary by location. Typically, the water table is at the lowest elevation (greatest depth) phase during later summer to early autumn. Typically, the water table is at highest elevation (shallowest depth) phase during

later winter and early spring. Groundwater could rise to slightly higher elevations during a wetter year or season as compared to the observations thus far.

4.3 SUBSURFACE AQUIFERS

An aquifer can be defined as a soil or bedrock horizon capable of providing a useful quantity of water, which is usually a domestic supply. Potential aquifers underlying the On-Site Study Area include the gravelly sand till layer and the upper horizon of bedrock where relatively more fractured. Most local supply wells in the Off-Site Study Area are completed in reported sandy gravel units that likely correspond to the till layer or into bedrock in the On-Site Study Area. Hydraulic continuity between the sandy gravel till and shallow bedrock within the On-Site Study Area and aquifers in the Off-Site Study Area is not established.

The silty clay layer is generally incapable of serving as an aquifer due to its low intrinsic hydraulic conductivity.

The southern portion of the area mapped as the Ste. Rose de Prescott aquifer crosses into the Off-Site Study Area. This aquifer is approximately 800 m beyond the On-Site Study Area, as shown on Figure 6. The aquifer is described as being a confined overburden unit, but no other details were available (MECP, 1997). Selected water well records in the MECP database mapped as within this aquifer tap into the gravelly sand till unit, which is above the bedrock and below the glaciomarine silty clay.

4.4 INTERCONNECTIONS BETWEEN AQUIFERS

The gravelly sand till directly rests on the fractured, more upper portion of underlying bedrock at most locations within the On-Site Study Area. Both horizons offer relatively higher hydraulic conductivity, which will facilitate hydraulic interconnection.

The vertical hydraulic gradient between bedrock and the overlying gravelly sand till was, as measured in 2020, upward at MW96-1, MW96-2, MW20-5 and MW20-9. The magnitude of the upward gradient ranged from 0.001 to 0.015 m/m. The vertical hydraulic gradient varies between being upward and downward at MW20-1 and MW20-6, depending on the date. The magnitude of the gradient at those wells ranges from 0.007 m/m downward to 0.04 m/m upward. These ranges exclude those dates when the monitoring wells were interpreted to be still recovering from development or sampling.

In the contingency that leachate were to migrate through the silty clay layer to reach the underlying more permeable glacial till layer, groundwater would then move horizontally through the till and connected upper bedrock. There could be complex upward and downward exchange between the till layer and the upper fractured bedrock due to variations in hydraulic conductivity of both units and presence of the till.

4.5 GROUNDWATER QUALITY

Laboratory groundwater quality results from the groundwater sampling events conducted in March, June and November/December 2020 and May, August and November 2021 were compared to criteria of the Ontario Drinking Water Quality Standards of Regulation 169/03 under the Safe Drinking Water Act; Ontario Drinking Water Standards, Objectives and Guidelines (June 2006) and the MECP Table 2 SCS in a Potable Ground Water Condition of Regulation 153/04 under the Environmental Protection Act.

Groundwater sampling during the March and June 2020 sampling events took place on the monitoring wells installed in the eastern Expansion Area. The November/December 2020 and May, August and November 2021 groundwater sampling events were conducted across the Expansion Area and EOWHF Area. Concentrations of tested parameters as reported by the laboratory for the samples are provided in Appendix II.

Alkalinity, hardness, total dissolved solids (TDS), chloride and dissolved organic carbon (DOC) are often used as indicator parameters for leachate. The concentrations of these parameters are mapped on Figures 8A1/8A2/8A3/8A4 (Bedrock wells Fall 2020/Spring 2021/Summer 2021/Fall 2021), 8B1/8B2/8B3/8B4 (Silty Clay wells Fall 2020/Spring 2021/Summer 2021/Fall 2021) and 8C1/8C2/8C3/8C4 (Water Table wells Fall 2020/Spring 2021/Summer 2021/Fall 2021) through Figures 12A1/12A2/12A3/12A4, 12B1/12B2/12B3/12B4 and 12C1/12C2/13C3/13C4, respectively.

Alkalinity (Figures 8A1/8A2/8A3/8A4, 8B1/8B2/8B3/8B4 and 8C1/8C2/8C3/8C4). Operational Guideline (ODWO = 500 mg/L)

Elevated alkalinity in bedrock is expected as a background condition within limestone bedrock. Variations in alkalinity concentrations within bedrock are not anticipated to result from landfill operation.

Elevated alkalinity in the deeper silty clay at MW96-3B (Figures 8B1/8B2/8B3/8B4) and shallow silty clay at MW96-3C (Figures 8C1/8C2/8C3/8C4) show continuation of an increasing trend noted by Tetra Tech in 2019 (Tetra Tech 2019 Annual Report). Tetra Tech concluded in their 2020 Annual Report that MW96-3B and MW96-3C do not appear to be impacted by leachate. Tetra Tech further indicates that MW96-1D is likely impacted by surface water infiltration versus direct leachate impacts.

Hardness (Figures 9A1/9A2/9A3/9A4, 9B1/9B2/9B3/9B4 and 9C1/9C2/9C3/9C4) Operational Guideline (ODWO = 80 to 100 mg/L)

Hardness (as $CaCO_3$) is a measure of calcium and magnesium hardness, calculated as:

Hardness (mg/L) = $2.5\ (Ca^{2+}) + 4.1\ (Mg^{2+})$

Elevated hardness in bedrock is expected as a background condition within limestone bedrock. Variations in hardness concentrations within bedrock are not anticipated to result from landfill

operation. As shown on Figures 9A1 through 9A4, with the exception of MW96Ar, hardness is highest at the eastern limit of the potential expansion area to the east of the EOWHF.

Elevated hardness in deeper silty clay (Figures 9B1 through 9B4) and shallow clay (Figures 9C1 through 9C4) shows continued trends from 2019. Previous reports by TetraTech interpreted that these continued trends were not related to leachate impacts, but to historical background values.

The elevated concentrations of alkalinity, hardness, total dissolved solids, chloride and dissolved organic carbon at the southeastern limit of the EOWHF in bedrock in the Summer and Fall 2021 (MW96-6Ar; Figures 8A3/8A4, 9A3/9A4, 10A3/10A4, 11A3/11A4 and 12A3/12A4) appear unrelated to the EOWHF, as these elevated parameters are not evident in the overlying silty clay or shallow wells. These elevated parameters observed in bedrock in MW96-6Ar are reflective that groundwater in the regional limestone aquifer is sometimes noted as often being highly mineralized, including to a saline condition.

Total Dissolved Solids (TDS; Figures 10A1/10A2/10A3/10A4, 10B1/10B2/10B3/10B4 and 10C1/10C2/10C3/10C4). Aesthetic Objective (ODWO = 500 mg/L)

Elevated TDS in bedrock (Figures 10A1 through 10A4) is expected as a background condition within limestone bedrock.

Elevated TDS in the deeper silty clay (Figures 10B1 through 10B4) appears independent of landfill impacts; elevated values are a result of natural variation in the clay, as demonstrated by the highest concentrations observed south and east of the EOWHF.

Elevated TDS within shallow silty clay (Figures 10C1 through 10C4) is influenced by the leachate holding ponds in the north and aeration ponds in the south.

Chloride (Figures 11A1/11A2/11A3/11A4, 11B1/11B2/11B3/11B4 and 11C1/11C2/11C3/11C4). Standard (ODWO = 250 mg/L)

Elevated chloride in bedrock is localized, and likely results from the historic depositional environment. The distribution of chloride in bedrock is unrelated to chloride in deeper silty clay (Figures 11B1 through 11B4) and shallow silty clay (Figures 11C1 through 11C4), both of which demonstrate no significant impact.

Dissolved Organic Carbon (DOC; Figures 12A1/12A2/12A3/12A4, 12B1/12B2/12B3/12B4 and 12C1/12C2/13C3/12D4). Aesthetic Objective (ODWO = 5 mg/L)

Elevated DOC in bedrock (Figures 12A1 through 12A4), and deeper silty clay (Figures 12B1 through 12B4) are expected as a background condition within the lower units. As shown on Figure 12A1 and 12A2, the highest concentrations of DOC in bedrock are located in the east of the Expansion Area. The elevated DOC in the extreme southwest of the EOWHF (MW96-6Ar) in the summer and fall 2021 monitoring rounds is considered anomalous. The overlying and the highest concentrations in deeper silty clay and shallow silty clay (Figures 12B4, 12C4) are east and south of the EOWHF.

4.6 SITE PLANS AND CROSS-SECTIONS OF HYDROGEOLOGICAL CONDITIONS

The current land conditions for the On-Site Study Area are depicted on Figure 2.

Hydrostratigraphic cross sections were prepared, with alignments shown on Figure 13. The sections include two west-east orientations as Figures 14 and 15 and six south-north orientations as Figures 16 to 21.

A discussion of stratigraphy, including aspects of thickness, depth, character and geometry is presented in Section 5.1.

4.7 HYDRAULIC CONDUCTIVITY

The hydraulic conductivity tests conducted in the Expansion Area and interpreted values are summarized in Table 4. The hydraulic conductivity are presented for the shallow and deep silty clay, the till and the bedrock. Ranges are also provided for the EOWHF Area, for each layer (Tetra Tech, 2018).

The hydraulic conductivity for the glaciomarine deposit (silty clay) was assessed using diverse methods. Below are the applied methods and interpreted values.

- By one-dimensional consolidation method. This test assesses relatively undisturbed soil. Range from 4.7×10^{-11} m/s to 1.3×10^{-10} m/s.
- By the laboratory permeameter method. This test assesses the vertical hydraulic conductivity of re-worked soils. In the Expansion Area, the range was from 1.4×10^{-9} to 4.1×10^{-9} m/s for the Expansion Area. For the EOWHF Area, values for the shallow clay and deeper clay were 3×10^{-6} and 4×10^{-10} m/s, respectively.
- By the bail test method, for “S” series wells in shallower weathered silty clay (less than 4.5 mbg). In the Expansion Area, the range was from 6.6×10^{-9} to 5.0×10^{-6} m/s. This test assesses the horizontal hydraulic conductivity of in-situ weathered clay. For the EOWHF Area, no similar tests were performed.
- By the bail test method, for “C” series wells in deeper silty clay (screen depths greater than 5.0 mbg). This test assesses horizontal hydraulic conductivity of in-situ unweathered clay. In the Expansion Area, the range was from 1.8×10^{-9} to 3.4×10^{-8} m/s. The higher part of the range reflects the earlier steeper portion of the recovery curve in monitoring wells MW20-8C and MW20-11C. However, the curves after about four hours indicate values closer to the 10^{-9} m/s range that dominate at a larger scale. These latter values are similar to values observed in monitoring wells MW20-4C and MW20-7C. For the EOWHF Area, no similar tests were performed.

The hydraulic conductivity for the gravelly sand till was estimated using two methods. Below are the applied methods and interpreted values.

- By bail test method. This test assesses horizontal hydraulic conductivity of in-situ till. For the Expansion Area, the range was from 5.9×10^{-7} to 7.9×10^{-6} m/s. For the EOWHF Area,

the range was from 1.7 x 10^{-7} to 8.4 x 10^{-6} m/s, which is similar to the Expansion Area.

- By Hazen formula. This test assesses hydraulic conductivity using the finer soil fraction. Range from 1.5 x 10^{-7} to 3.3 x 10^{-6} m/s. The d_{10} values ranged from 0.0039 to 0.0182 mm.

The hydraulic conductivity for the bedrock was estimated using one method. Below are the applied methods and interpreted values.

- By the bail test method. This test assesses horizontal hydraulic conductivity of adjacent in-situ bedrock. Responsive wells indicate the bulk permeability due to adjacent fractures. In the Expansion Area, for "D" series wells that recovered, values ranged from 7.3 x 10^{-6} to 1.4 x 10^{-5} m/s. However, the following wells were non-responsive: MW20-1D, MW20-11D, MW20-9D, MW20-18D. Non-responsive wells reflect rock with no conductive fractures within proximity. In the EOWHF Area, the range was 1.7 x 10^{-7} to 3.1 x 10^{-5} m/s, which is relatively similar.

Different tests conducted on the same unit may produce a different range of values due to assessing different volumes of soil material, with larger volumes having a greater potential to include soil or bedrock fractures, fine sand seams, or other heterogeneities. The laboratory permeameter method measures vertical hydraulic conductivity whereas a bail / slug test measures horizontal hydraulic conductivity.

Overall for the Expansion Area, the silty clay layer appears to be approximately 100 to 1000 times lower hydraulic conductivity compared to the gravelly sand till layer. The upper 3 m of bedrock is approximately 10 times more conductive compared to the gravelly sand till layer. The hydraulic conductivity of the shallow weathered silty clay compared to the deeper unweathered silty clay is variable. As examples, at MW20-8 the shallower zone of silty clay is 9 times more conductive where at MW20-11 the deeper zone of silty clay is 5 times more conductive.

4.8 WATER BALANCE

Monthly and annual precipitation and temperature data are discussed in Section 2.10. The monthly data were used to estimate the monthly evapotranspiration amount using the method of Thornthwaite and Mather. The resulting long-term average annual evapotranspiration amount is estimated to 582 mm/year, based on the sum of monthly estimates, as presented on Table 7.

The moisture surplus on a monthly basis is estimated by subtracting the evapotranspiration amount from the precipitation amount. The moisture surplus amount is zero when the monthly average temperature falls below the freezing point. The long-term annual moisture surplus is the sum of monthly values, which is estimated to be 473 mm/year.

Moisture surplus is apportioned to become either runoff or infiltration that replenishes the groundwater regime. Using the MECP (1995) method, approximately 50% of the 473 mm/year moisture surplus is infiltrated under current conditions, which is 237 mm/year. This is based on an infiltration factor of 0.50, that is the sum of subfactors of slope at 0.25 for flat land, soil at 0.15 for impervious clay and vegetation at 0.10 for the cultivated condition.

The infiltration values calculated are interpreted to represent an estimate of long-term average conditions using a simplified approach. It must be noted that infiltration processes actually have many complex contributing factors, including soil texture, vertical hydraulic gradient direction, vegetation growth density, rain event duration, antecedent wetting history, snow pack, ground freezing and wind speed, to name a few. There is significant annual variation in meteorological factors.

4.9 CONTAMINANT ATTENUATION CAPABILITIES IN THE EVENT OF LEACHATE RELEASE

The undisturbed silty clay has a vertical hydraulic conductivity range of 4.7×10^{-11} m/s to 1.3×10^{-10} m/s, as indicated by the one-dimensional consolidation method. Thus, the clay should function to attenuate the migration of leachate to groundwater.

We recommend that the landfill designers consider the conditions in the southeast corner of the expansion area in developing the design of the leachate containment system (e.g. reduced thickness of the silty clay layer relative to other parts of the site). The silty clay layer base rises to higher elevation (shallower depth) in the eastern portion of the Expansion Area, as mapped on Figure 22.

5.0 SUMMARY OF EXISTING CONDITIONS

5.1 GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS

The EOWHF Area and the Expansion Area are essentially underlain by a substantially thick package of overburden layers that rests upon bedrock. The stratigraphy, as described below was observed at boreholes in the Expansion Area, in increasing depth from grade. The summarized stratigraphy was consistent across the site, with minor exceptions.

- Topsoil / peat. Comprised of a substantial organic component with wood chips and rootlets. Thickness ranges from 0.3 to 2.1 m, with an average of 1.3 m. The topsoil/peat was absent at two locations. Regional mapping (OGS, 2010) indicates peat, muck and marl.

- Silty clay. Texture is dominantly clay with a minor component that is either silty or with some silt, sometimes with trace sand. The depth to this layer's base ranges from 4.7 to 17.8 mbg, with an average depth of 11.8 mbg. The elevation of the base ranges from 48.7 to 62.5 masl, with an average of 54.8 masl, as shown on Figure 21. This layer is interpreted to be the Champlain Sea glaciomarine deposit. The silty clay layer rests upon the till, except at MW20-8 along the eastern side where the till is absent. Grain size analysis indicates the following ranges: Gravel = 0 to 2%, average 0.3%; Sand = 1 to 8%, average 2.3%; Silt = 11 to 42%, average of 22.5%; clay = 51 to 87%, average of 74.8%.

- Sandy gravel till. Texture is dominantly sandy gravel with some silt. At MW20-5 the texture is silty sandy gravel. The depth to the layer's base ranges from 4.9 to 23.7 mbg, with an average of 12.0 mbg. The thickness of the layer ranges from 0.6 to 10.6 m, with an average of 2.5 m. The till layer is absent at MW20-8 in the east. It is thin (<1.0 m) along the southern and eastern boundaries (MW20-4, MW20-6, MW20-10, and MW20-13) with the exception of MW20-18 where it thickens to 4.4 m.

- Bedrock. The lithology is dominantly limestone, sometimes with shale interbeds. The top of bedrock occurs at depths ranging from 5.7 to 23.7 mbg, with an average depth of 14.4 mbg. The top of bedrock surface elevation is variable, ranging from 44.0 to 61.5 masl, with an average of 52.2 masl, as shown on Figure 23.

The hydrogeological conditions include the water table, hydraulic gradients and hydraulic conductivity.

- Water table. The water table surface elevation declines northward, from approximately 67.0 masl near to Lafleche Road to approximately 64.0 masl near to the intersection of Concession Road 7 / Road 700 and Highway 138. The depth to water table on April 8, 2020 ranged from 0.5 to 1.5 mbg, with an average of 0.9 mbg. The water table in the summer of 2021 ranged from 0.7 to 1.8 mbg. See Figures 7C1/7C2/7C3/7C4 for elevations.

- Gradients. The water table elevations indicate a horizontal hydraulic gradient with shallow groundwater generally moving northward. Similarly, the piezometric elevations in till and in bedrock indicate that a horizontal hydraulic gradient with generally northward movement.

The vertical hydraulic gradient is variable between stratigraphic layers. Refer to Figures 7A1 through 7C4 for maps of piezometric elevations in the till and bedrock.

- Hydraulic conductivity. The silty clay layer ranged from 5×10^{-11} to 5.0×10^{-6} m/s, with values generally below 1×10^{-8} m/s. The sandy gravel till layer ranged from 1.5×10^{-7} to 3.3×10^{-6} m/s. The bedrock ranged from 7.3×10^{-6} to 1.4×10^{-5} m/s, where not fractured. In general, the upper bedrock in the Expansion Area appears to be approximately 10 times more permeable than the overlying sandy gravel till and the silty clay is less permeable than the sandy gravel till, possibly by factors of 10 to 1,000. The hydraulic conductivity range for the gravelly sand overlapped the hydraulic conductivity range for the bedrock, indicating there may be some locations where the sandy gravel till and bedrock exhibit similar hydraulic conductivity values.

Groundwater in limestone with shale and in Champlain Sea sediments is noted for often being highly mineralized. The EOWHF Area, Expansion Area and Study Areas are all located within Champlain Sea sediments underlain by limestone, with shale in places. As a result, mineralized background groundwater conditions are expected below the Expansion Area and EOWHF Area. Groundwater quality for the Expansion Area and EOWHF Area are summarized as follows:

- Eastern Expansion Area: Elevated hardness, dissolved organic carbon (DOC) and total dissolved solids (TDS) are expected as background conditions in bedrock. Elevated TDS in deeper silty clay is independent of landfill impacts. Elevated chloride in bedrock is localized, and likely results from the historic depositional environment.

- EOWHF Area: Elevated alkalinity was observed in the deeper silty clay below the northeastern section of the EOWHF Area (MW96-3B). Elevated hardness in deeper silty clay and shallow clay were present. It was concluded that these do not appear to be related to leachate impacts.

  There are no chloride impacts evident in silty clay/clay below the EOWHF Area. Elevated chloride in bedrock is localized, and likely results from the historic depositional environment.

  Elevated DOC in bedrock is expected as a background condition in bedrock. The DOC concentration of 89 mg/L detected in Summer 2021 and 110 mg/L in Fall 2021 (MW96-6Ar; refer to Figures 12A3 and 12A4) are considered anomalous. Corresponding DOC concentrations in the Fall of 2020 and Spring of 2021 were both 5 mg/L. DOC concentrations in the overlying silty clay are all below 10 mg/L over the Fall 2020 to Fall 2021 monitoring rounds.

5.2 LANDFILL DESIGN PARAMETERS

For the Expansion Area, laboratory permeameter tests, utilizing re-worked samples of native silty clay indicate hydraulic conductivity values that range from 1.4×10^{-9} to 4.1×10^{-9} m/s. The vertical hydraulic conductivity values of undisturbed silty clay samples range from 4.7×10^{-11} m/s to 1.3×10^{-10} m/s.

The till layer and bedrock layer below the native silty clay are too permeable to function as an attenuation layer. The till layer and bedrock are aquifers that are used by private supply wells in the Off-Site Study Area and beyond. Where practical, a suitable thickness of undisturbed silty clay should remain in place.

Given the low hydraulic conductivity of the native silty clay, and the performance of the existing EOWHF in the same hydrogeological regime, the Expansion Area is suitable for the proposed landfill development.

6.0 CLOSURE

This hydrogeological review was prepared in accordance with the terms of reference for this project as agreed upon by GFL Environmental Inc. and generally accepted engineering or environmental consulting practices in this area. The reported information is believed to provide a reasonable representation of the general environmental conditions at the site, however, the data were collected at specific locations and conditions may vary at other locations and over time.

This report has been prepared for the sole uses of GFL Environmental Inc. Terrapex Environmental Ltd. accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than GFL Environmental Inc.

Respectfully submitted,
TERRAPEX ENVIRONMENTAL LTD.

Original Signed By:	***Original Signed By:***
Brian D. Theimer, P.Geo., M.Sc. Senior Hydrogeologist	Steven Ruminsky, P.Eng.,P.Geo. Manager, Hydrogeology

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APPENDIX I

FIGURES

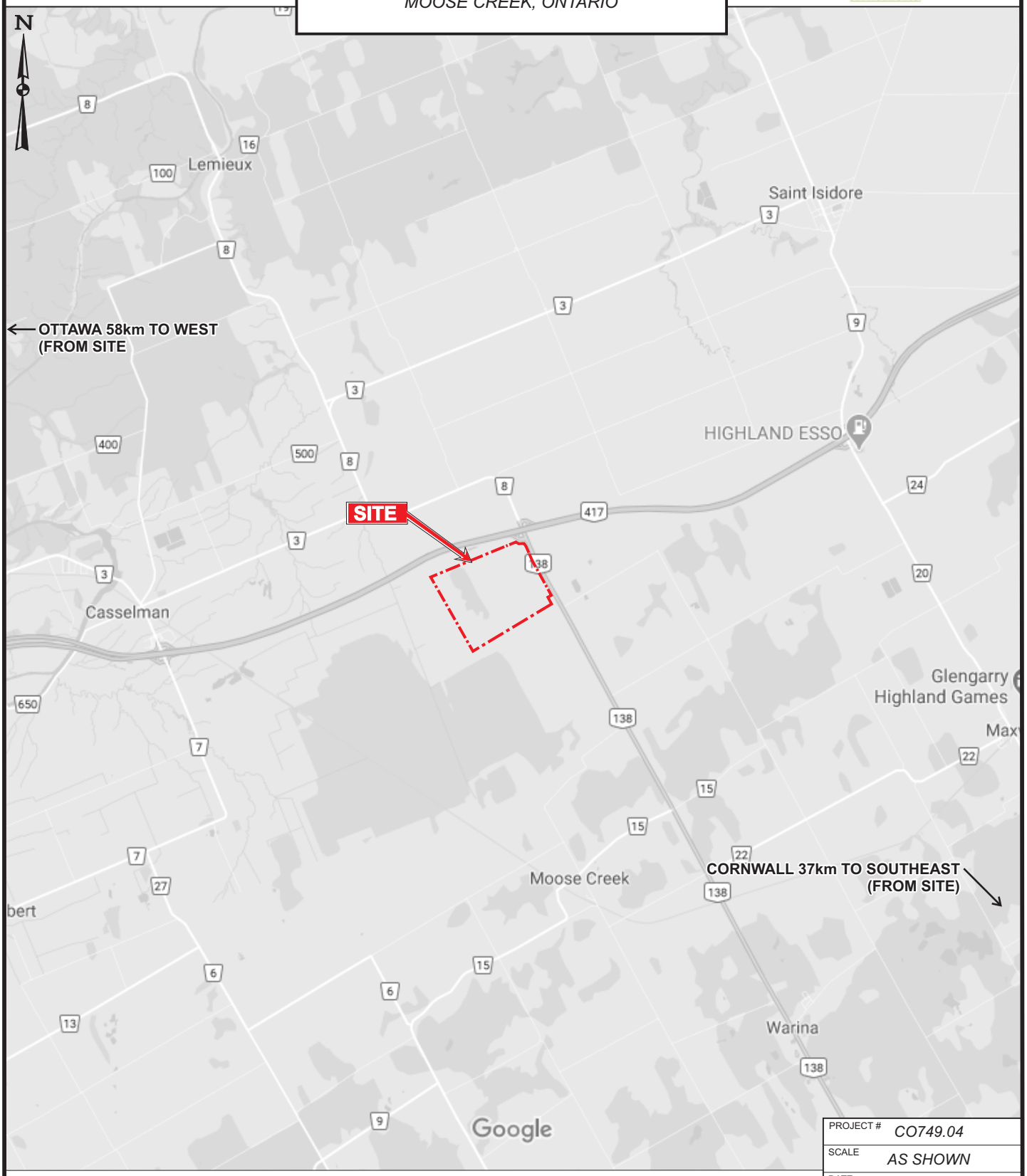
TERRAPEX

SITE LOCATION

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



0 2km 4km

SOURCE: GOOGLE MAPS, 2020.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	AB/SW/JS
CHECKED	SR
DRAWING #	FIGURE 1

TERRAPEX

STUDY AREAS

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

LEGEND

WETLAND

SOURCE: VUMAP FIRST BASE SOLUTIONS 2018 IMAGERY.

NOTE: OFF-SITE STUDY AREA IS 1.0 km RADIUS FROM ON SITE STUDY AREA.

0 500m 1km

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 2

TERRAPEX

LOCATIONS OF INVESTIGATIONS

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

LEGEND

- MONITORING WELL BY TERRAPEX
- BOREHOLE
- MONITORING WELL FOR EOWHF AREA
- BOREHOLE FOR EOWHF AREA
- NORTH LEACHATE POND MONITOR

SOURCE: VU MAP FIRST BASE SOLUTIONS, 2018 IMAGERY.
SCREEN POSITION KEY FOR EXPANSION AREA WELLS: D=DEEP (WITHIN BEDROCK), T=WITHIN TILL, C=WITHIN CLAY, S=SHALLOW

0 250m 500m
(APPROXIMATE)

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 3A

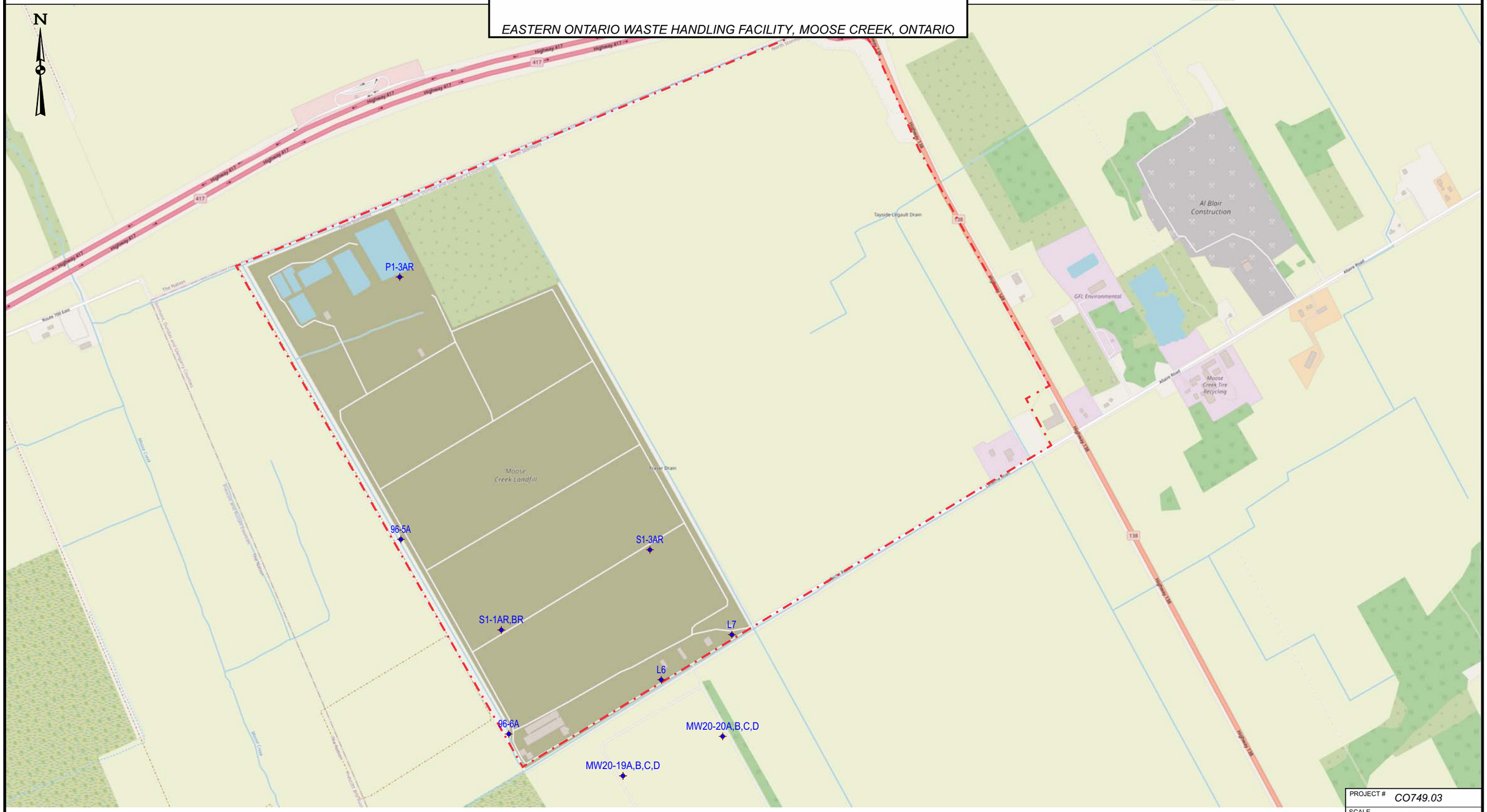
TERRAPEX

2020 REPLACEMENT WELL INSTALLATIONS

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 3B

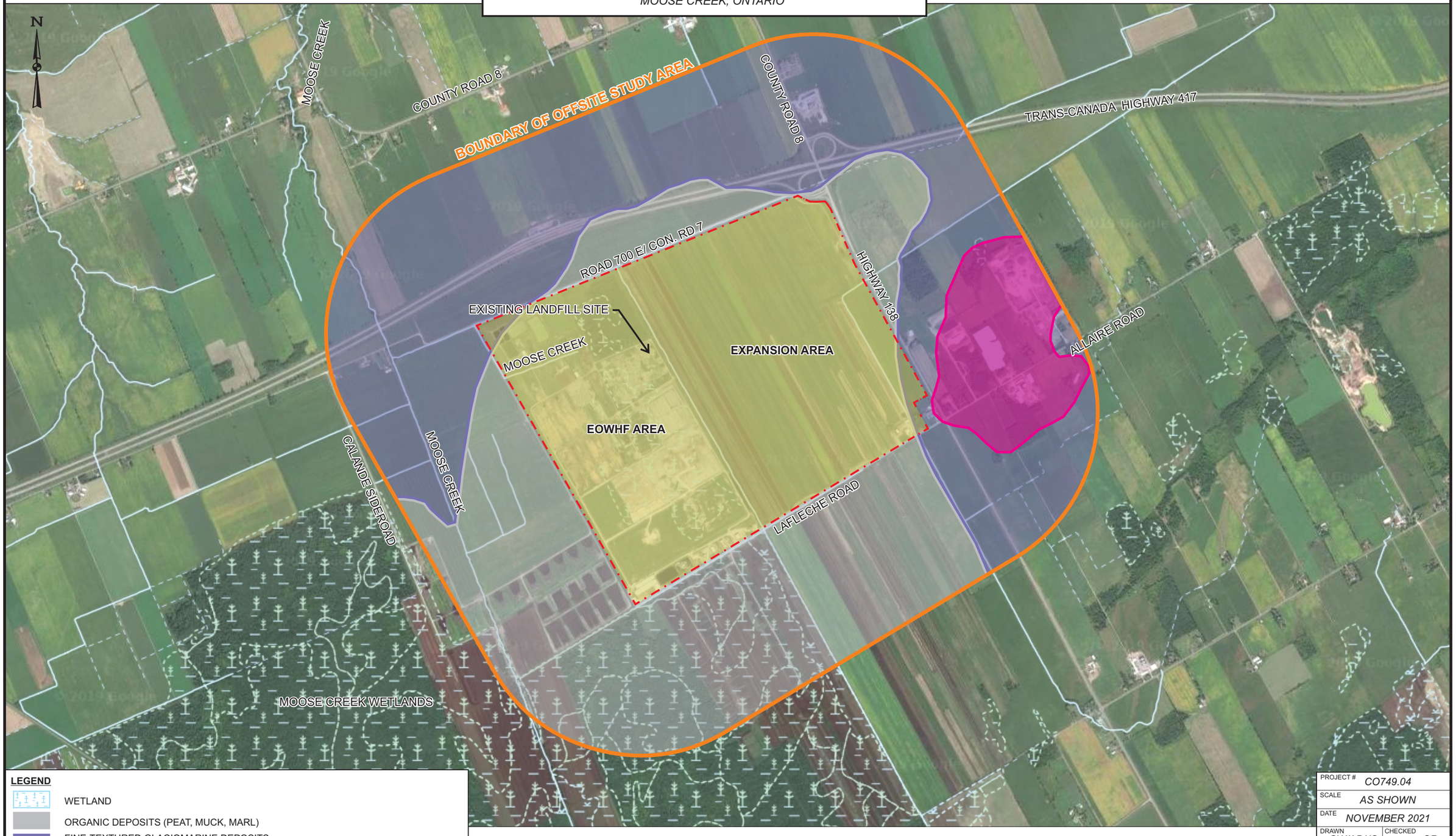
TERRAPEX

SURFICIAL GEOLOGICAL MAP

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- WETLAND
- ORGANIC DEPOSITS (PEAT, MUCK, MARL)
- FINE-TEXTURED GLACIOMARINE DEPOSITS (SILT AND CLAY, MINOR SAND AND GRAVEL; MASSIVE TO WELL LAMINATED)
- PALEOZOIC BEDROCK

0 500m 1km

SOURCE: VUMAP FIRST BASE SOLUTIONS, 2018 IMAGERY.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 4

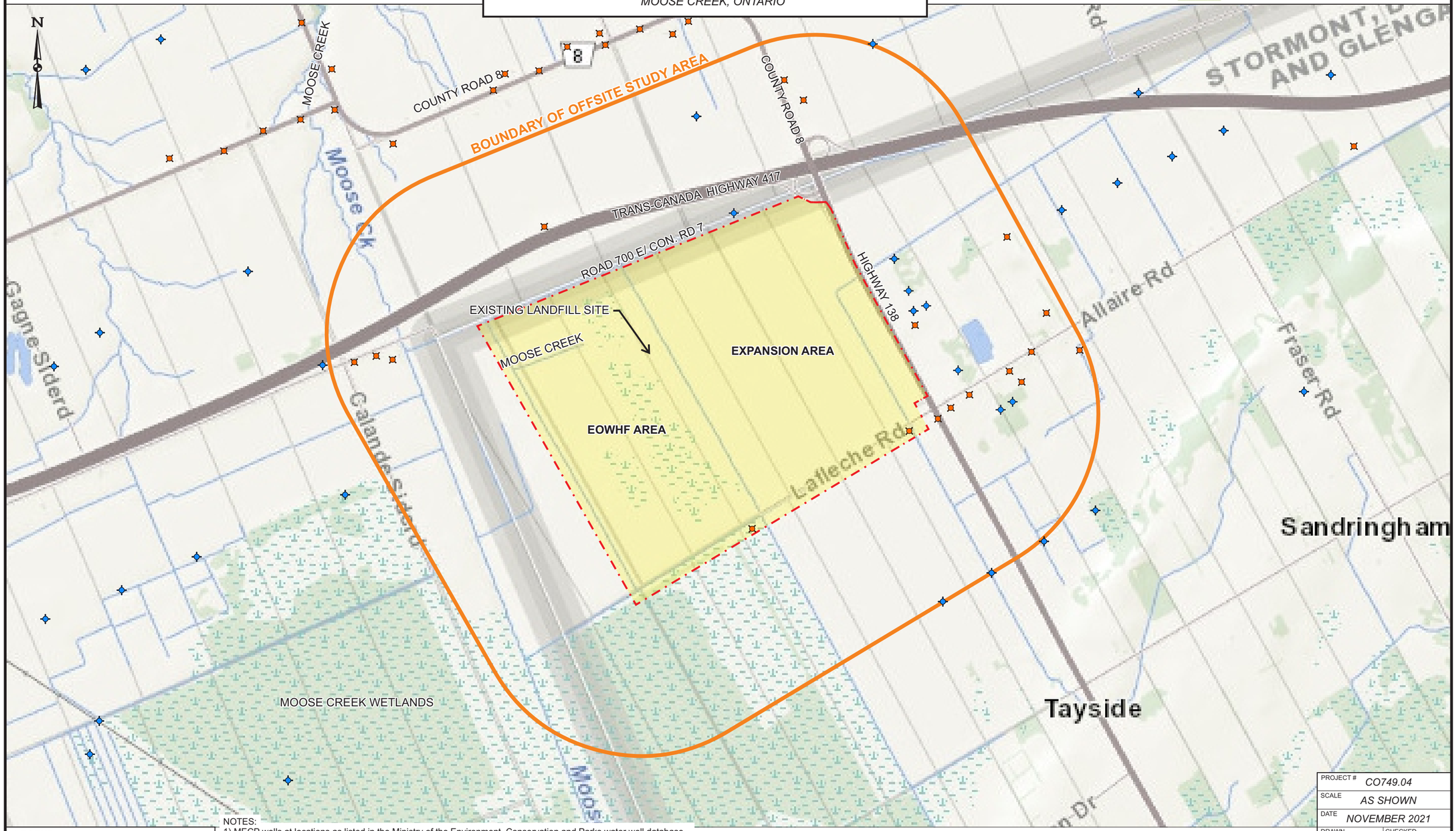
TERRAPEX

OFFSITE SUPPLY WELLS

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- OCCUPIED PROPERTY LIKELY SUPPLIED BY WELL
- MECP WELL

NOTES:
1) MECP wells at locations as listed in the Ministry of the Environment, Conservation and Parks water well database.
2) Occupied properties wells as interpreted from aerial imagery (2016) in Google Earth Pro.
3) If a MECP well and an occupied property occupy same lot, then shown as occupied property.
4) Occupied properties beyond 1.0km and to north shown due to possibly being down gradient.
5) Positions of wells are not verified.

0 500m 1km

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	JO/SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 5

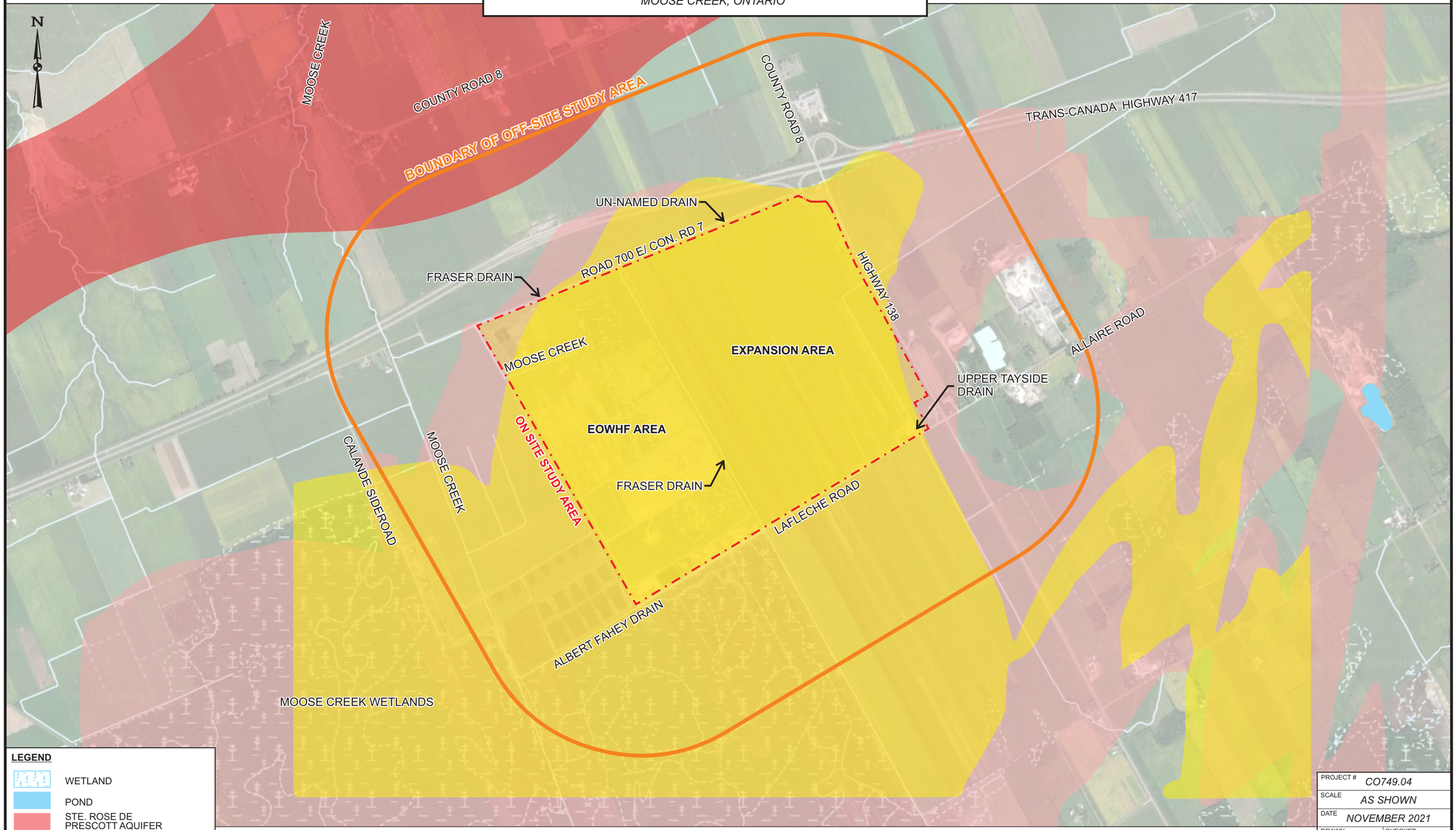
TERRAPEX

SENSITIVE GROUNDWATER AREAS

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- WETLAND
- POND
- STE. ROSE DE PRESCOTT AQUIFER
- HIGHLY VULNERABLE AQUIFER
- SIGNIFICANT GROUNDWATER RECHARGE AREA

SOURCE: VUMAP FIRST BASE SOLUTIONS 2018 IMAGERY.

NOTE: OFF-SITE STUDY AREA IS 1.0 km RADIUS FROM ON SITE STUDY AREA.

0 500m 1km

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 6

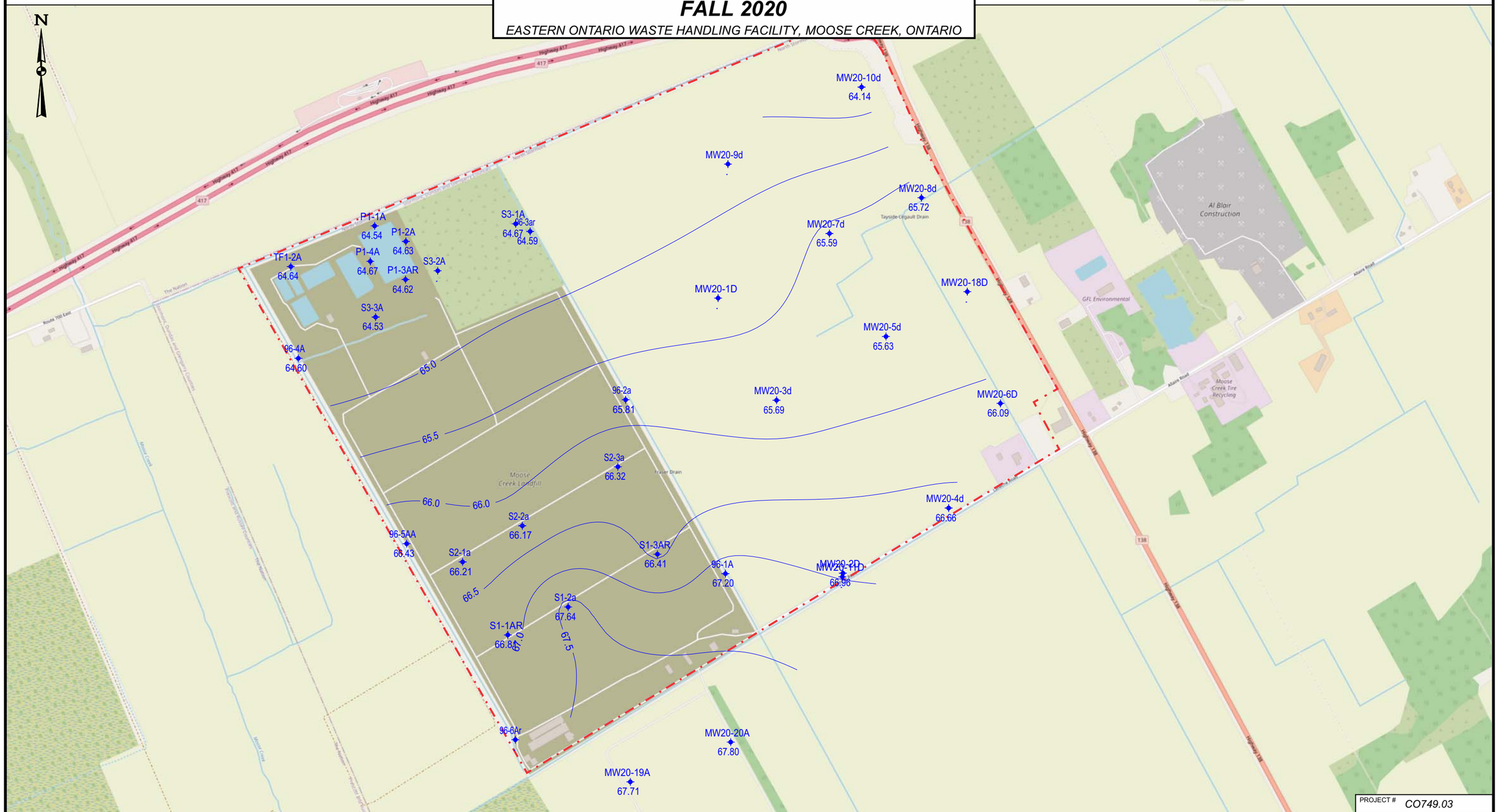
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7A1

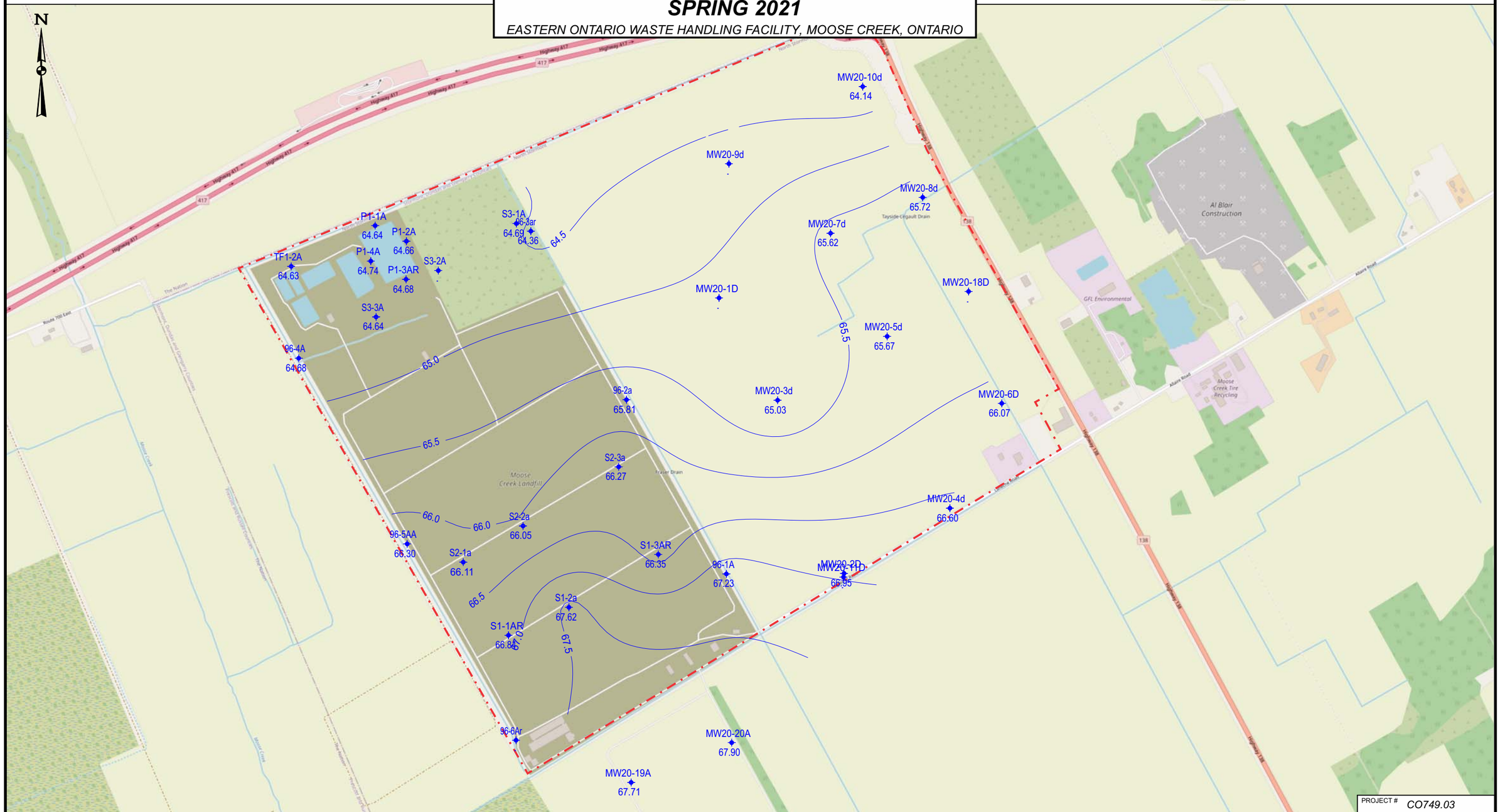
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7A2

TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

N

MW20-10d
63.90

MW20-9d

MW20-8d
65.44

MW20-7d
65.31

MW20-18D

MW20-1D

MW20-5d
65.44

MW20-3d
65.48

MW20-6D
65.92

MW20-4d
66.51

P1-1A
64.54

P1-2A
64.53

P1-4A
64.69

P1-3AR
64.51

TF1-2A
64.59

S3-1A
64.57

S3-3ar
64.55

S3-2A

S3-3A
64.65

96-4A
64.64

96-2a
65.64

S2-3a
66.09

S2-2a
65.92

96-5AA
66.18

S2-1a
65.96

S1-3AR
66.18

96-1A
67.04

MW20-2D
66.78

S1-2a
67.23

S1-1AR
66.44

96-6Ar

MW20-20A
67.56

MW20-19A
67.71

64.5

65.0

65.5

66.0

66.0

65.5

67.0

Moose Creek Landfill

Al Blair Construction

GFL Environmental

Moose Creek Tire Recycling

Tayside-Legault Drain

Fraser Drain

Highway 417

Route 700 East

Alaire Road

138

LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7A3

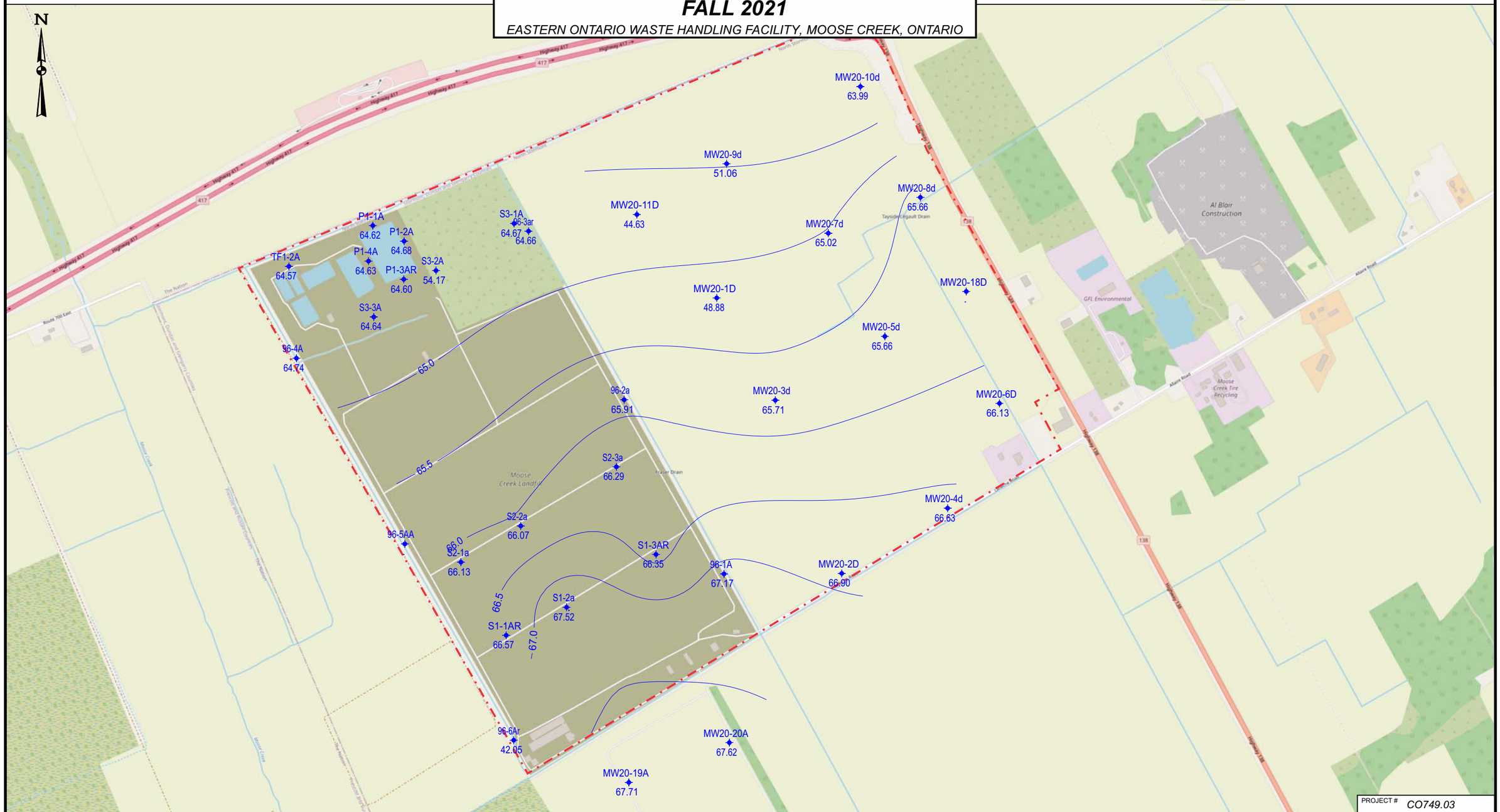
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7A4

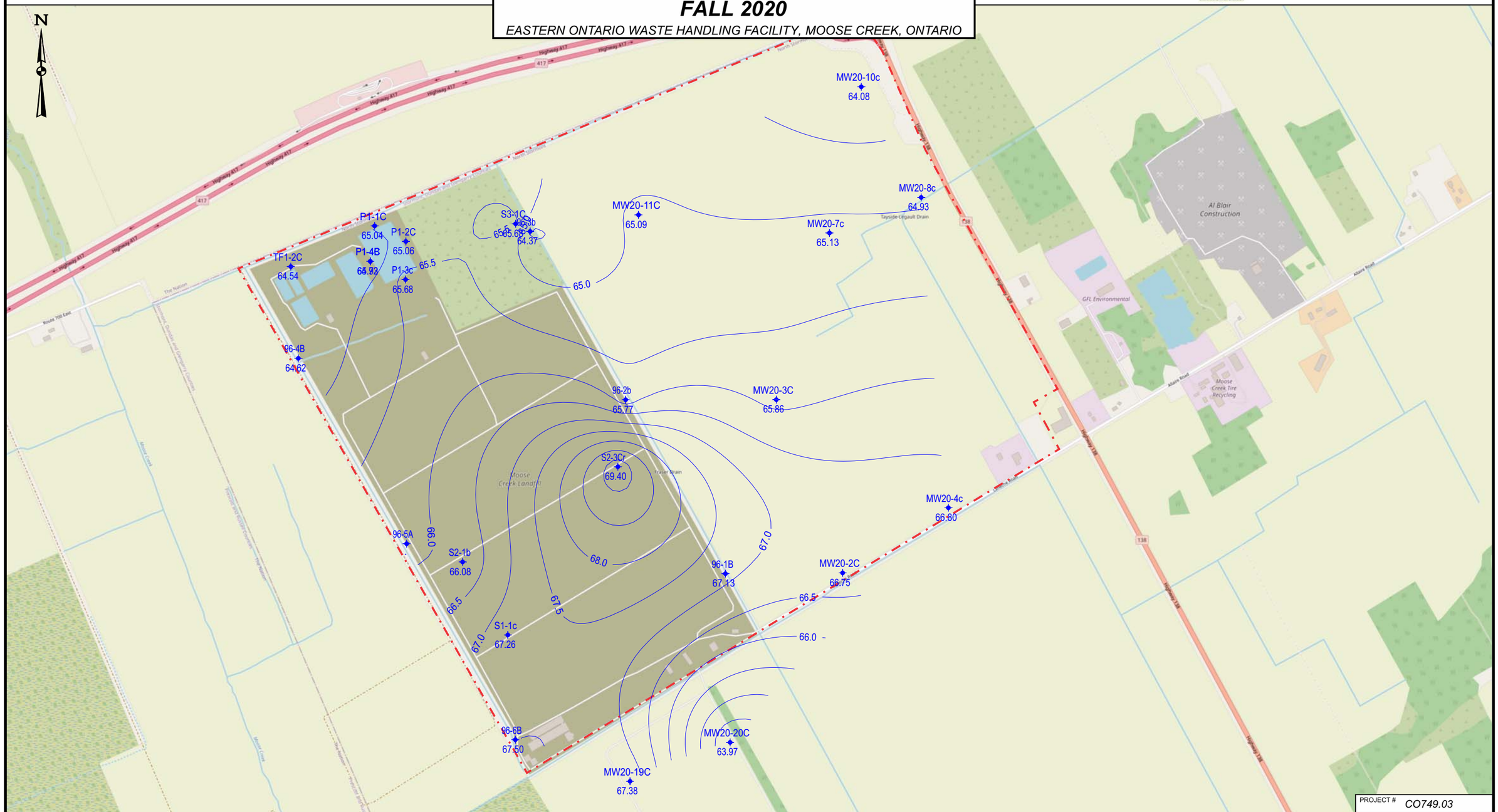
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7B1

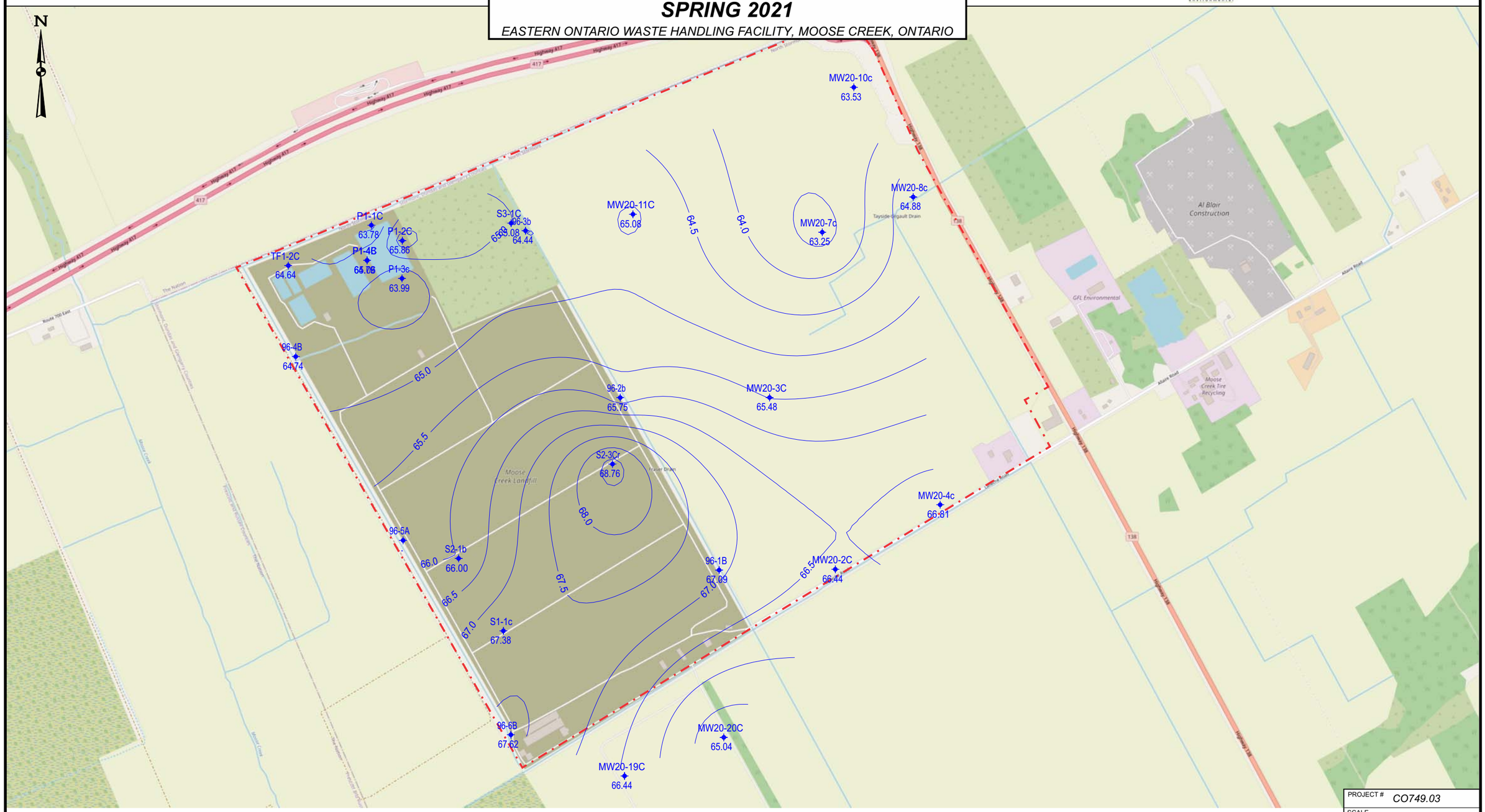
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 7B2

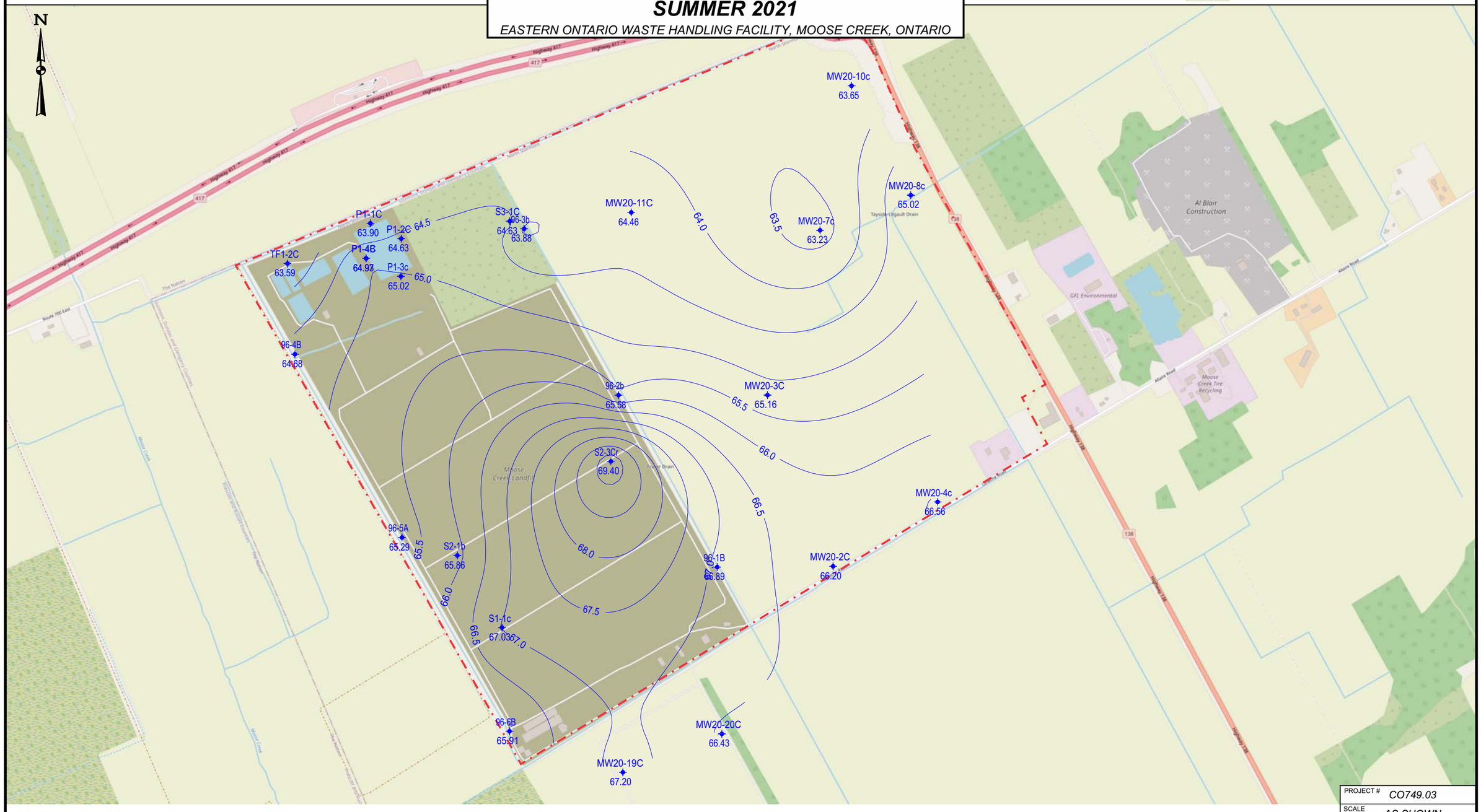
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7B3

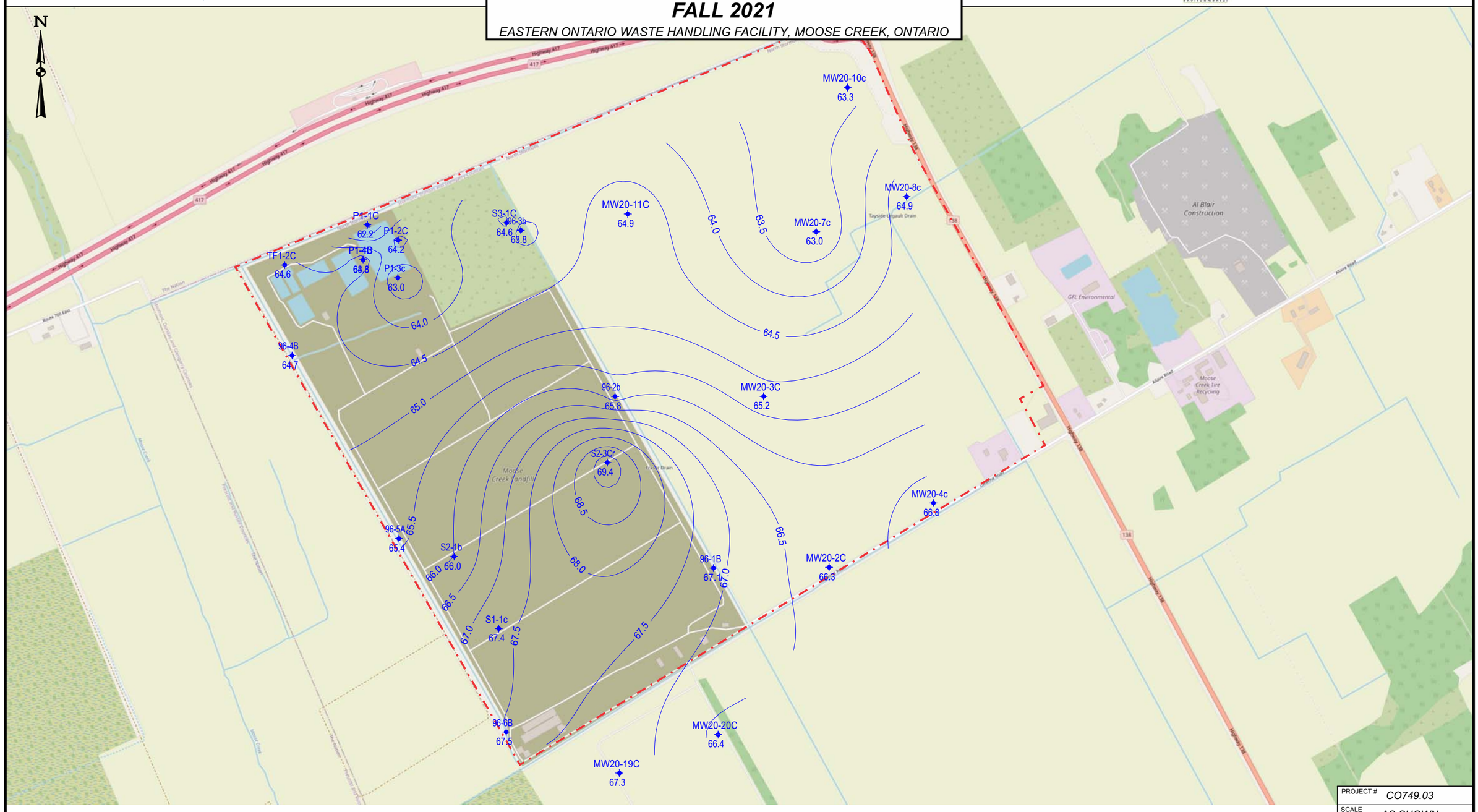
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 7B4

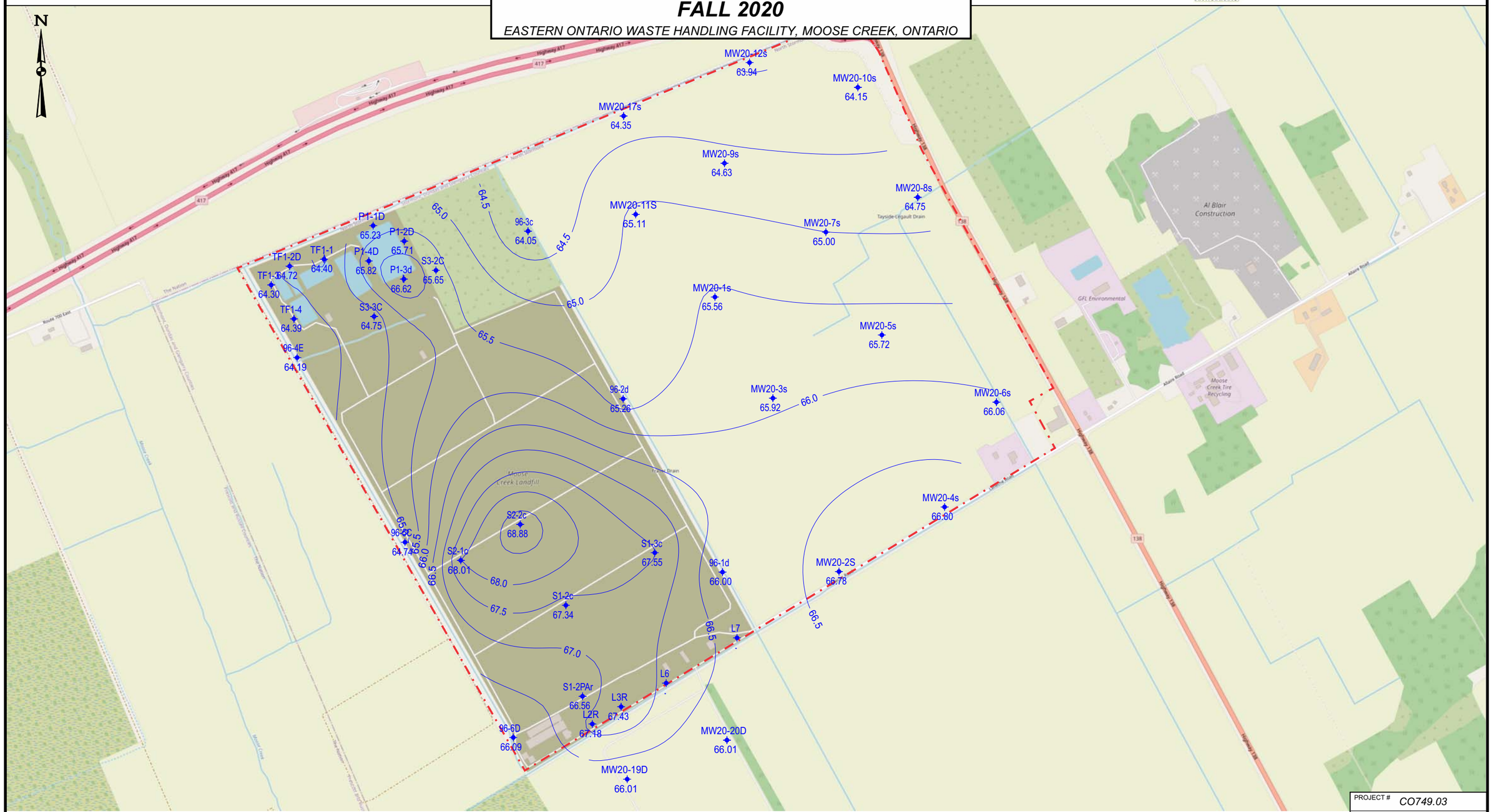
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7C1

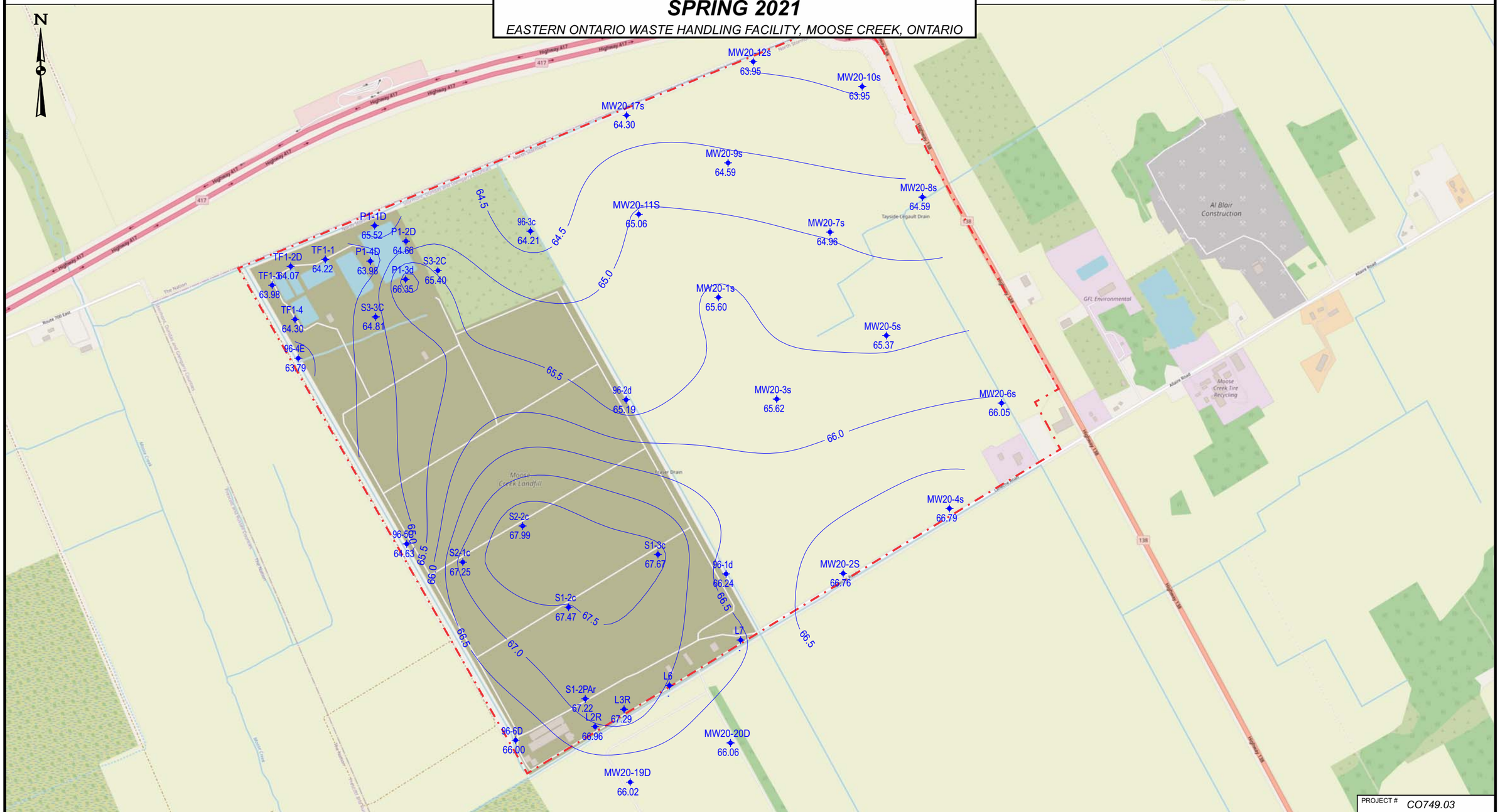
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7C2

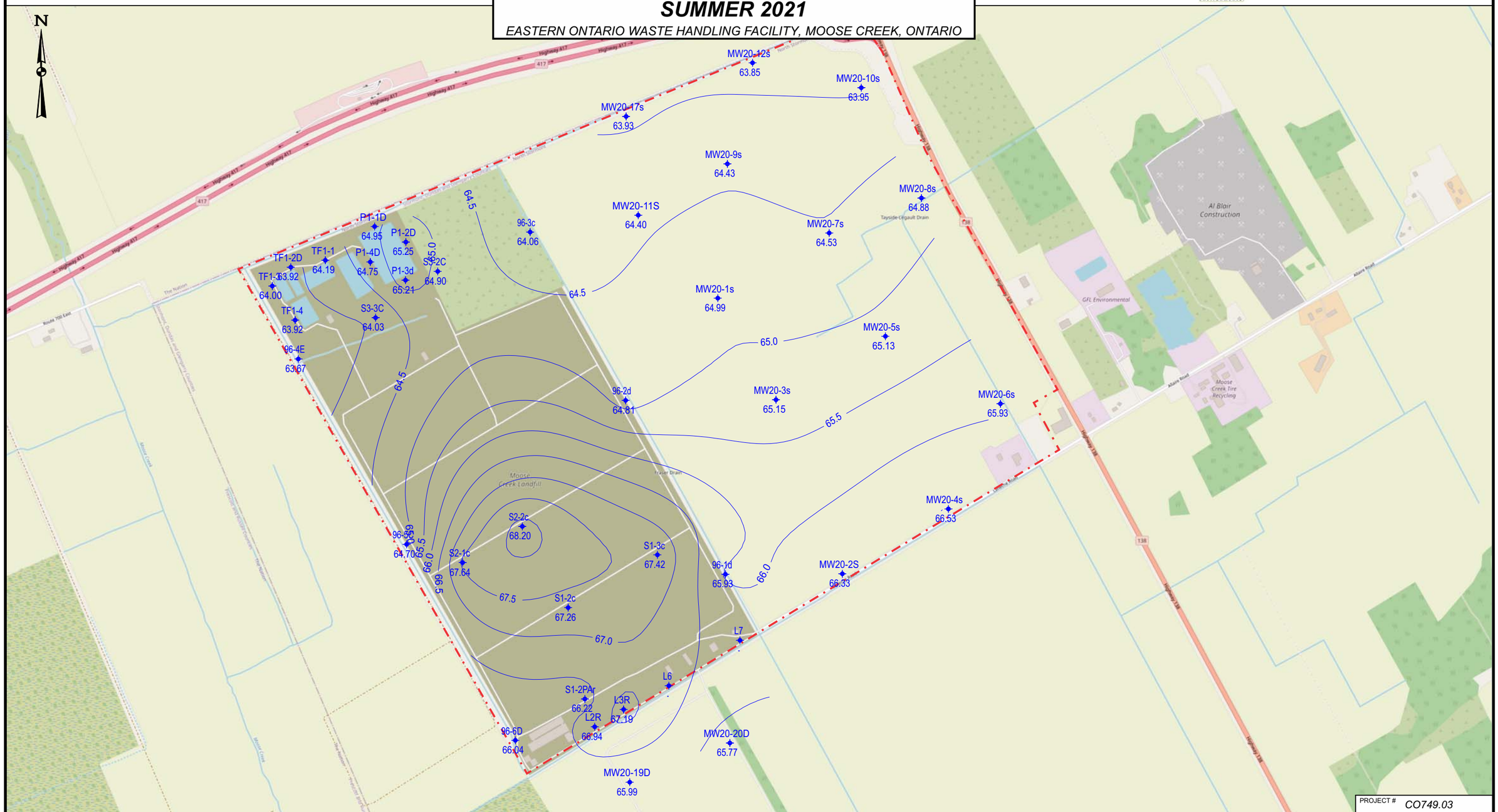
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7C3

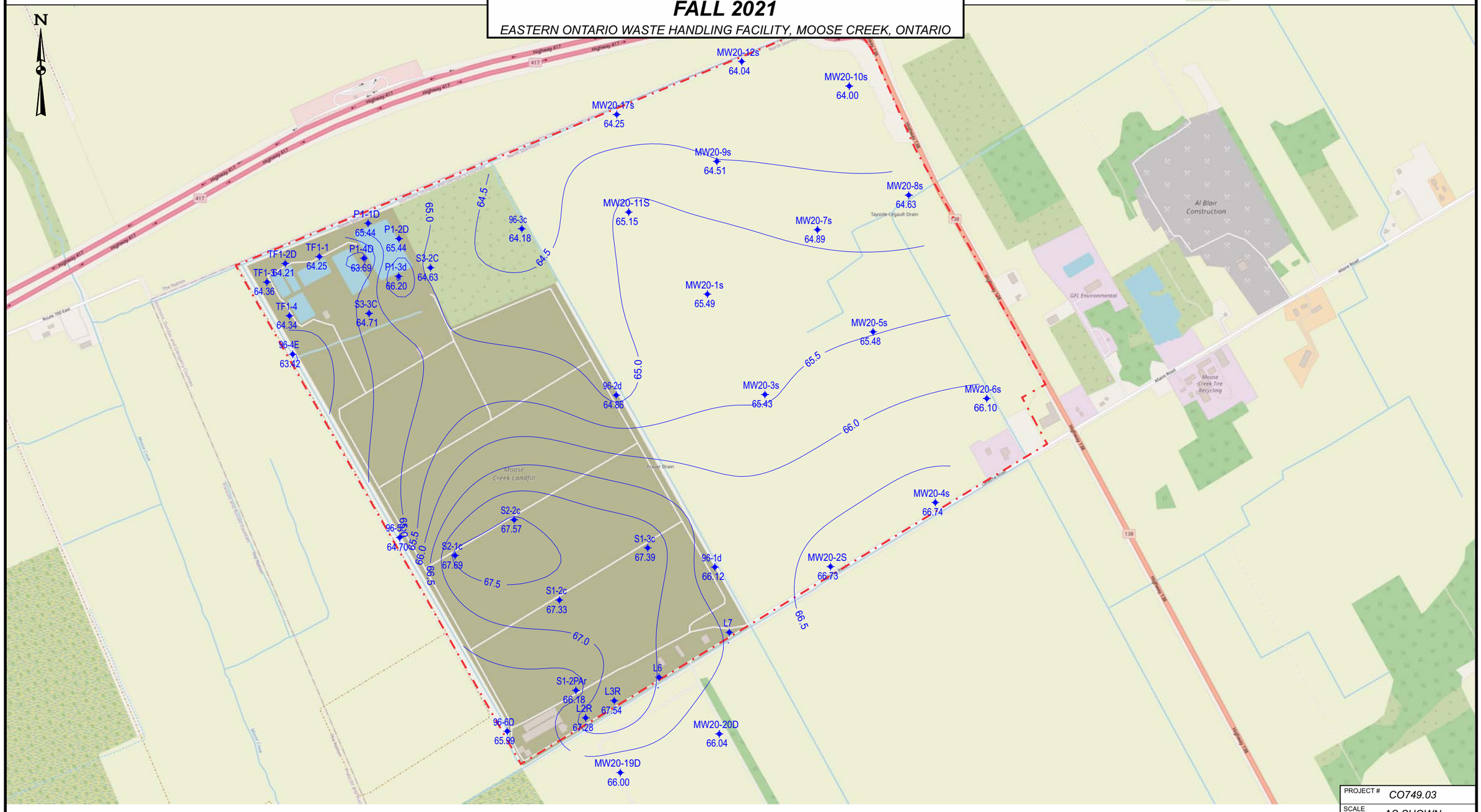
TERRAPEX

INTERPRETED PIEZOMETRIC CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 7C4

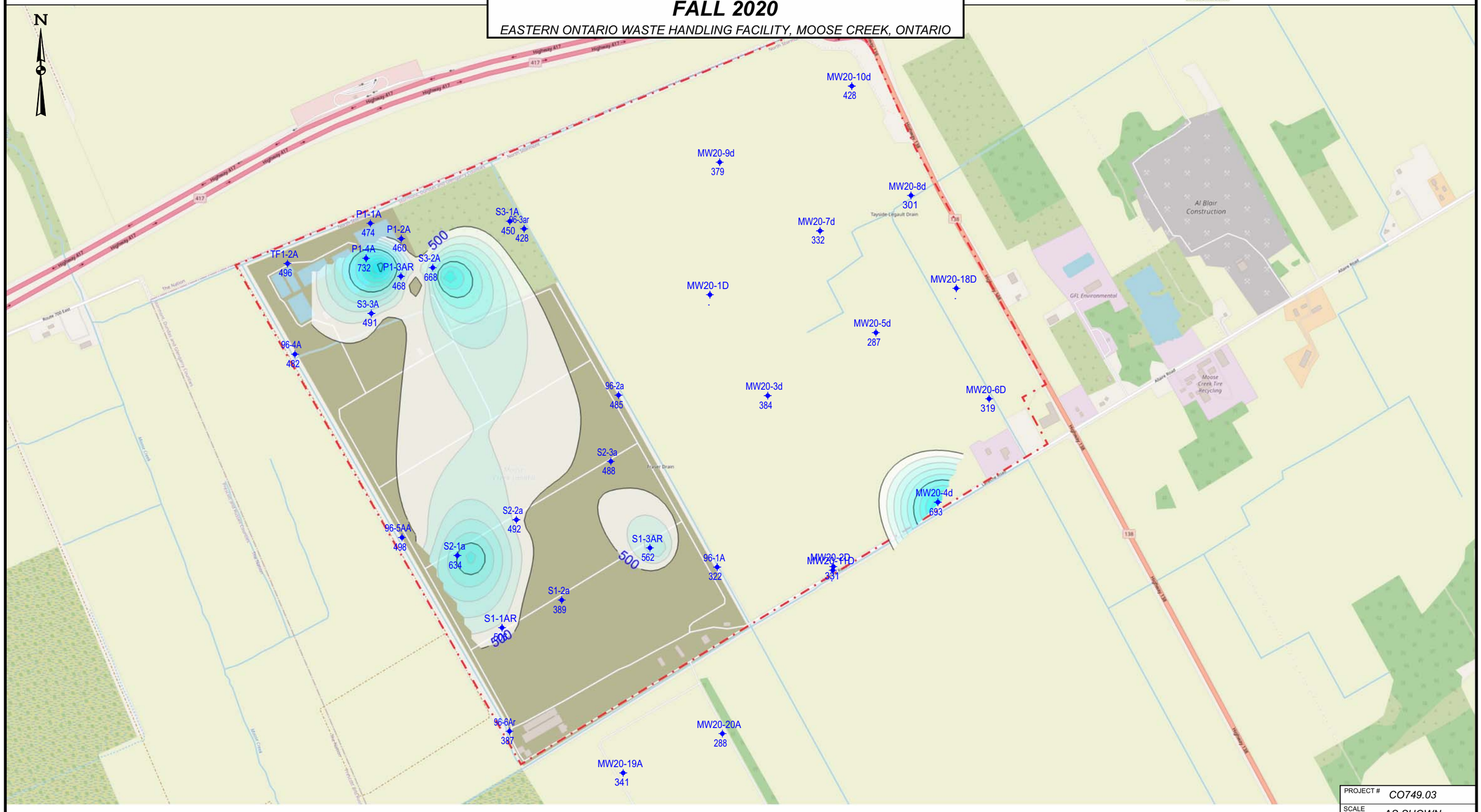
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 8A1

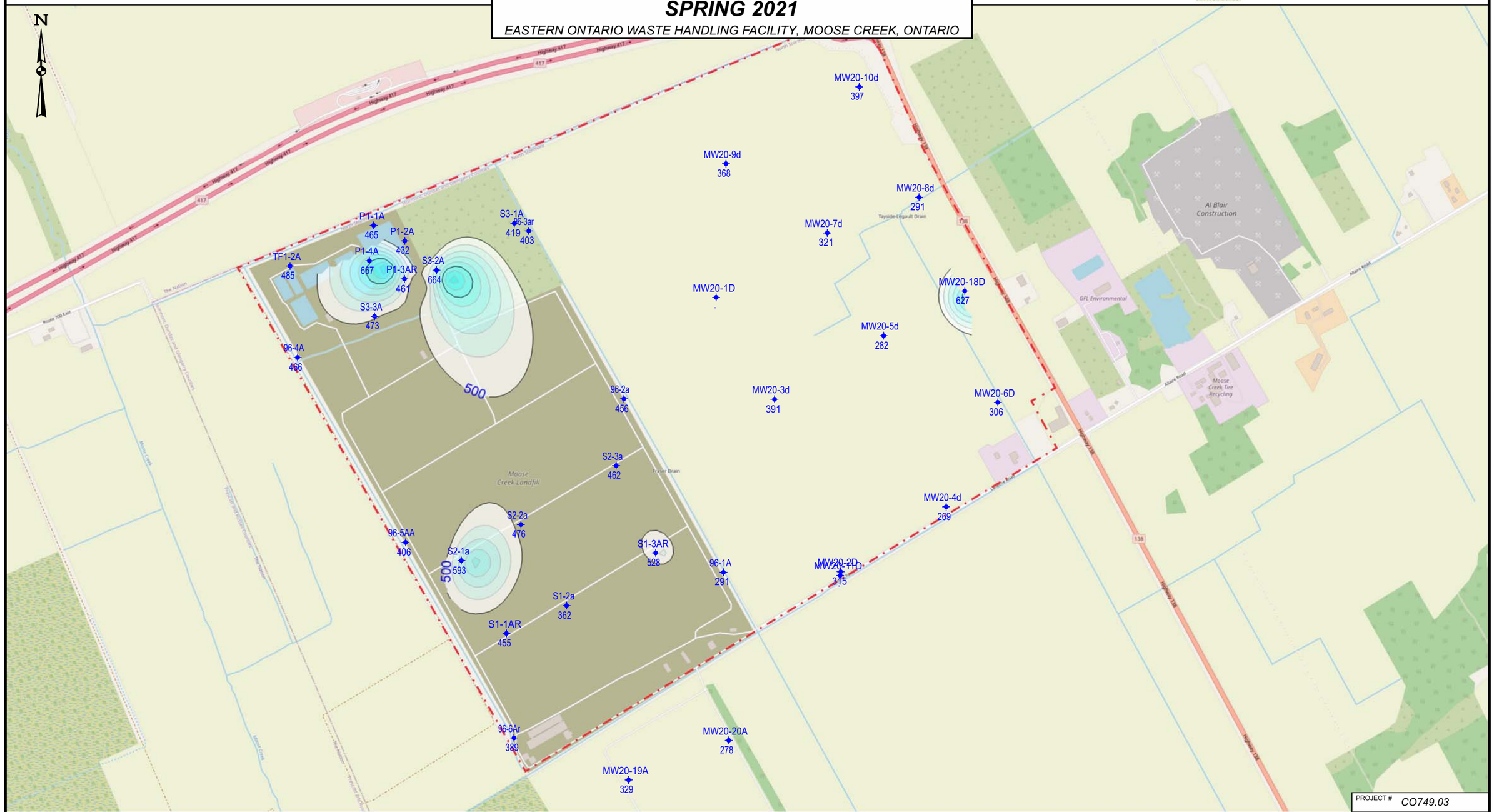
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8A2

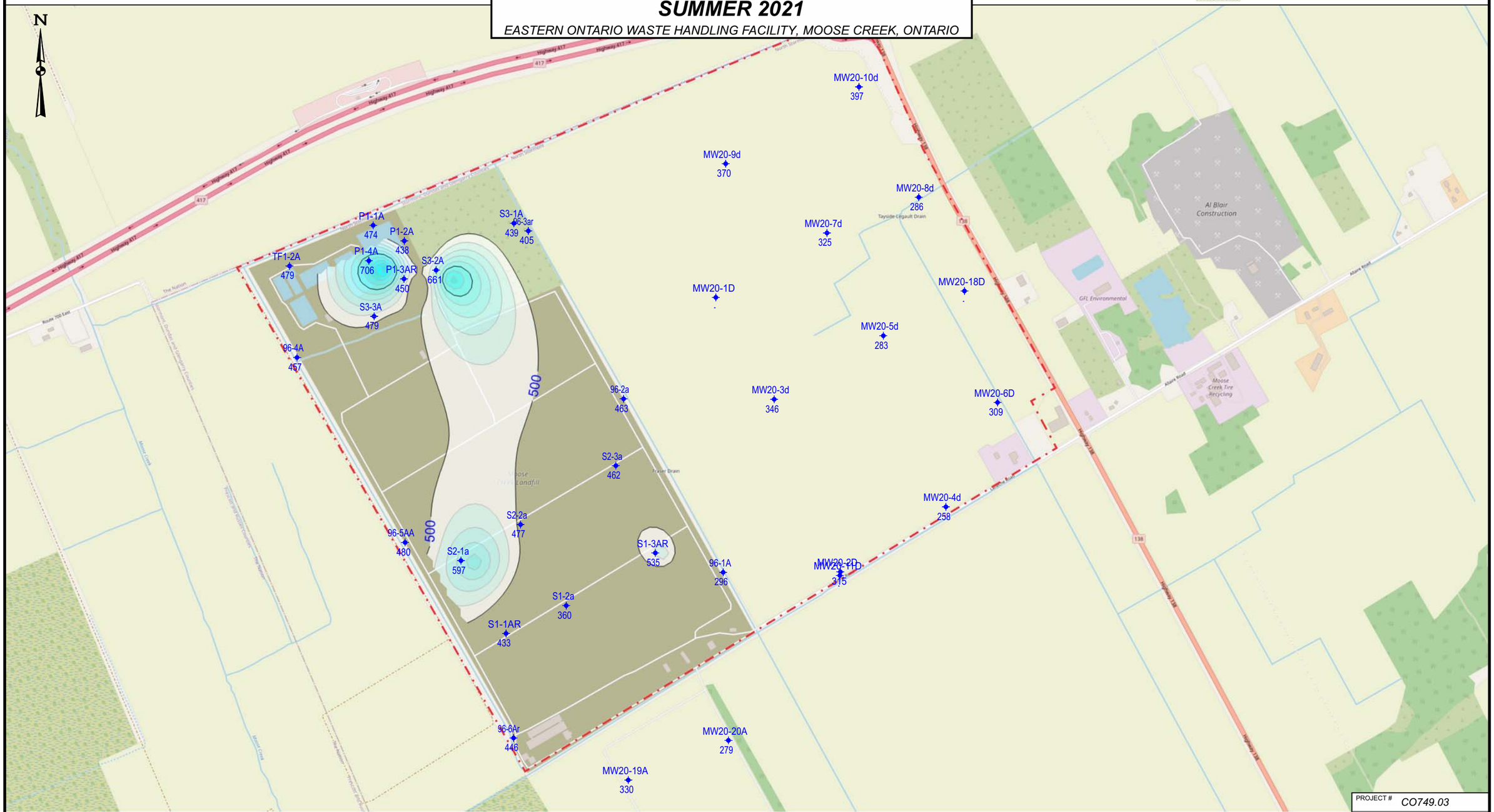
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 8A3

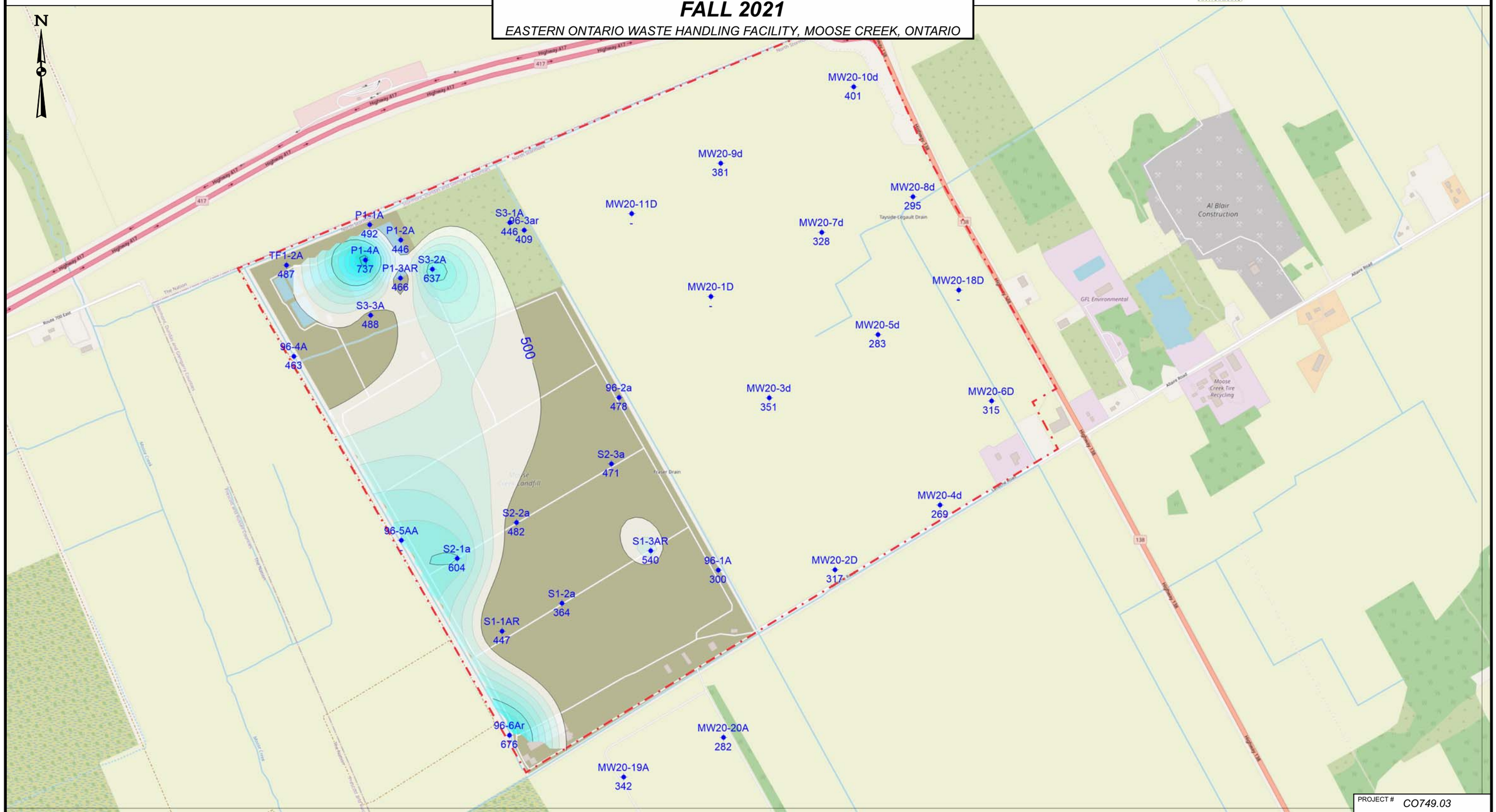
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8A4

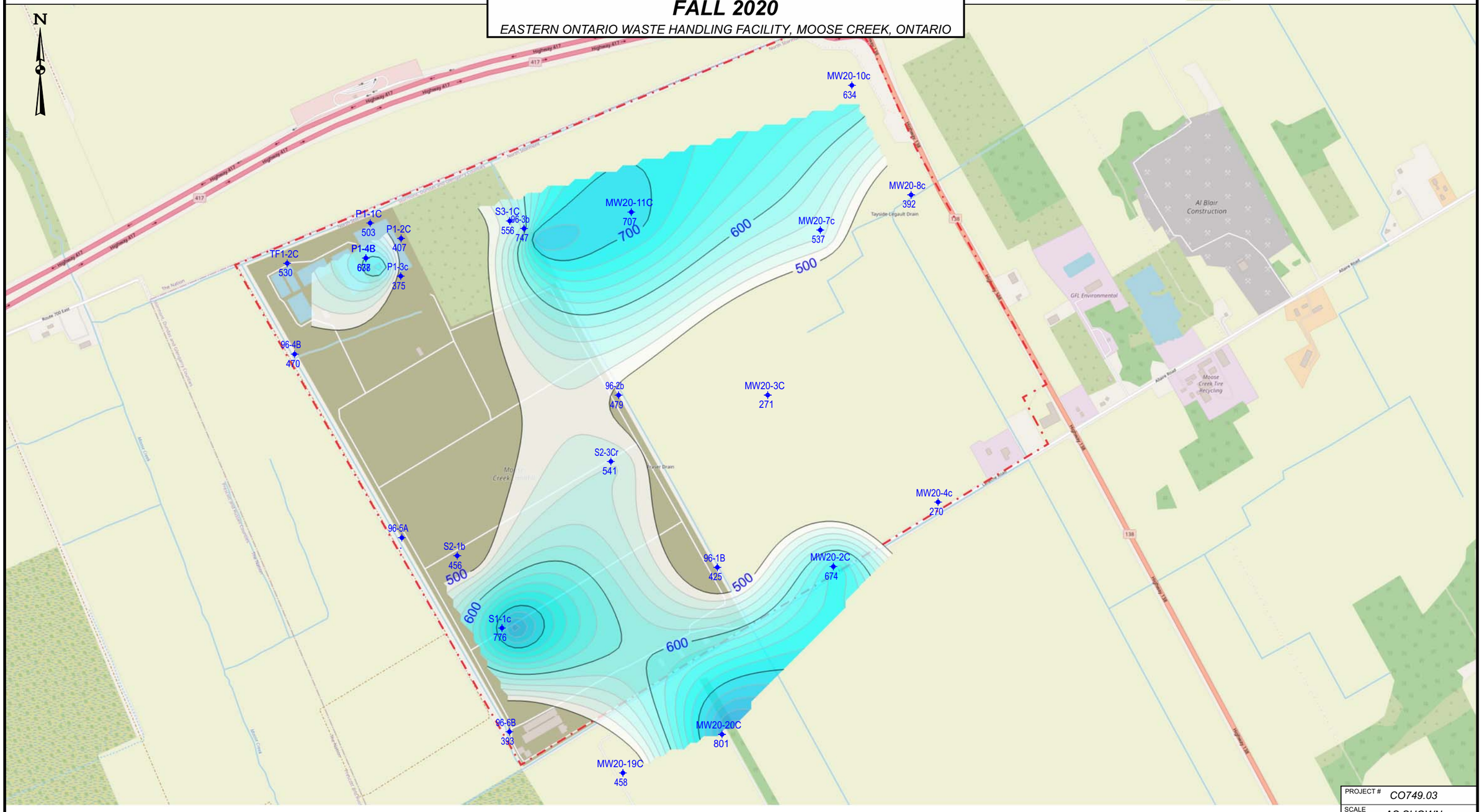
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 8B1

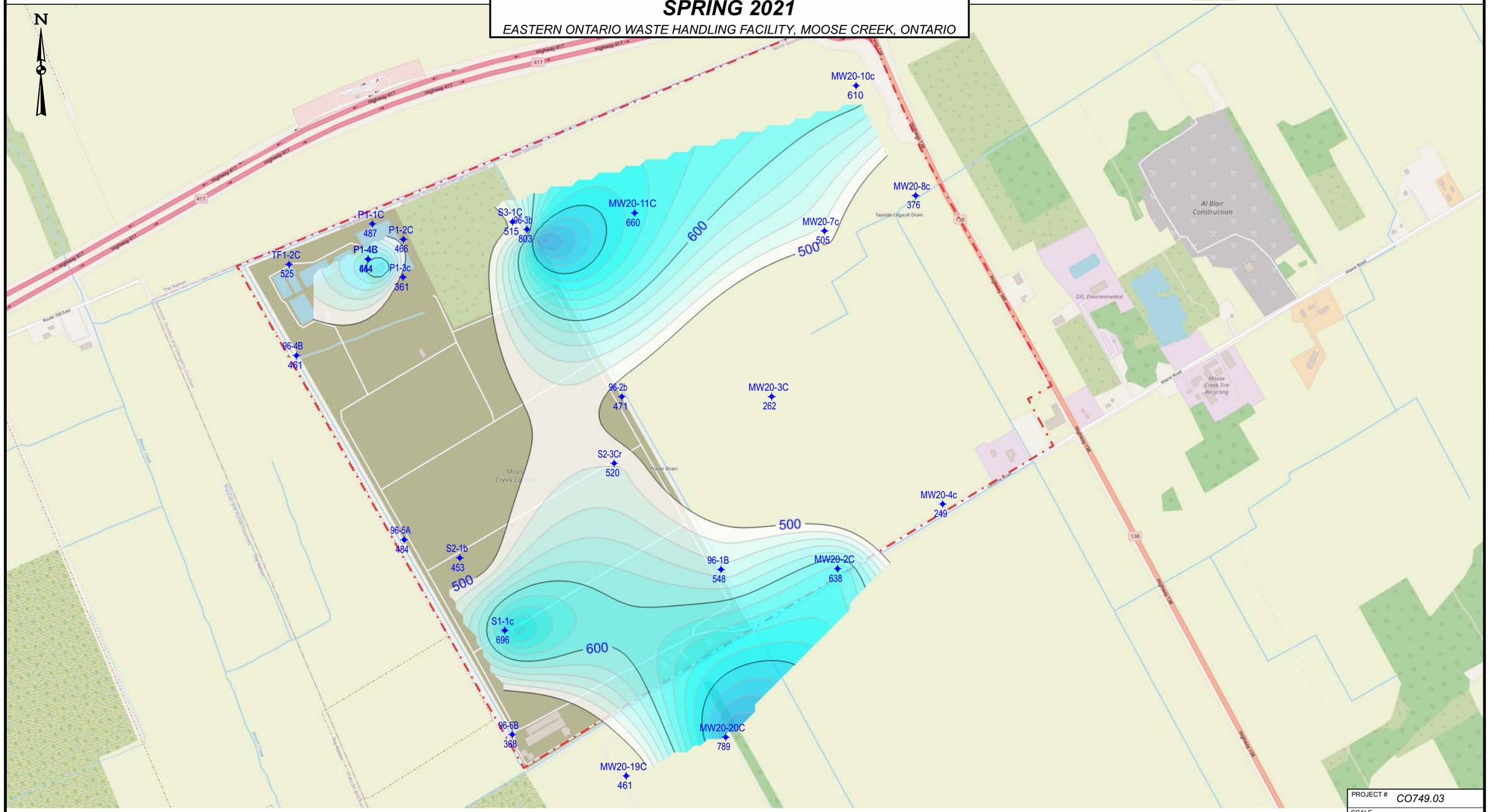
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8B2

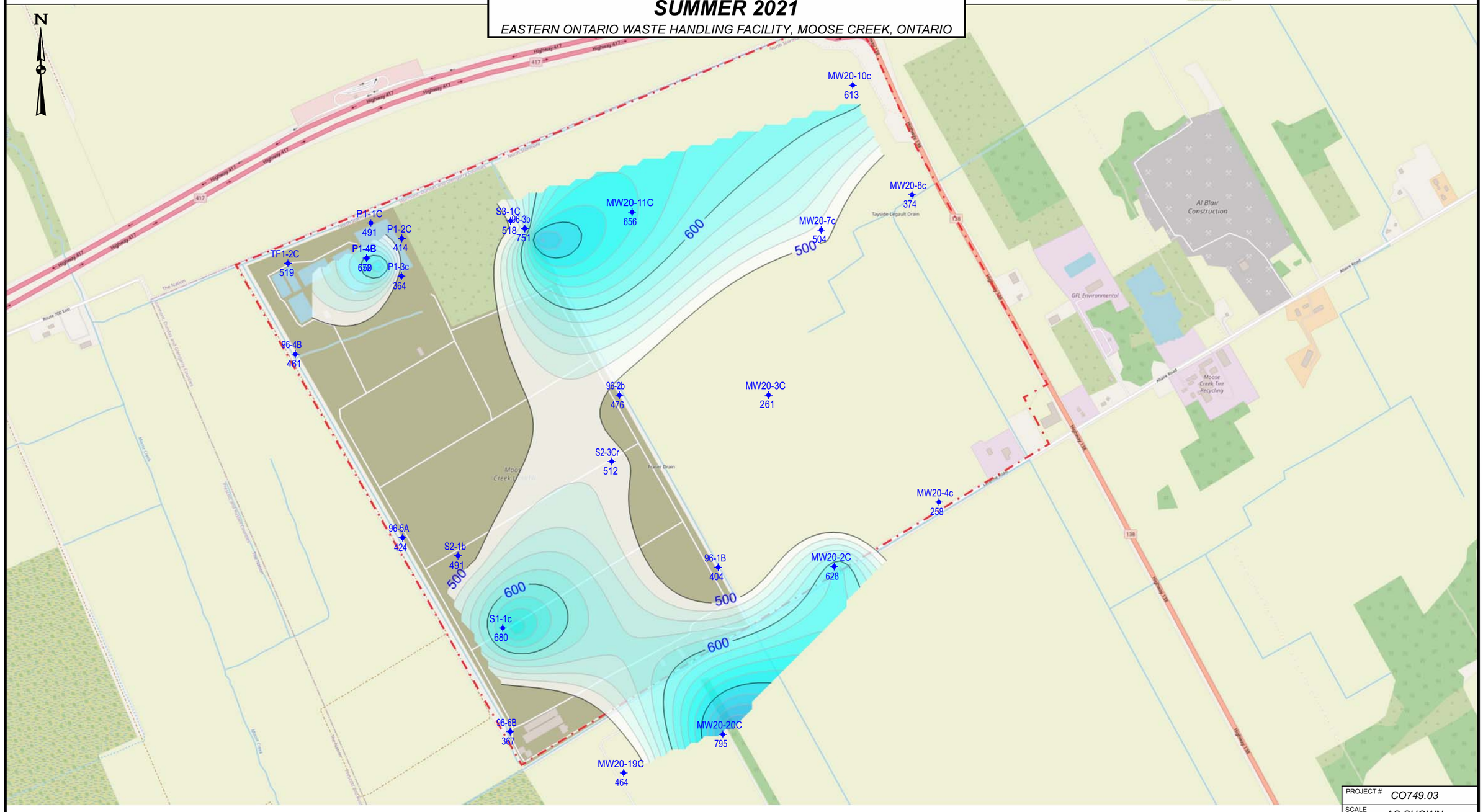
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8B3

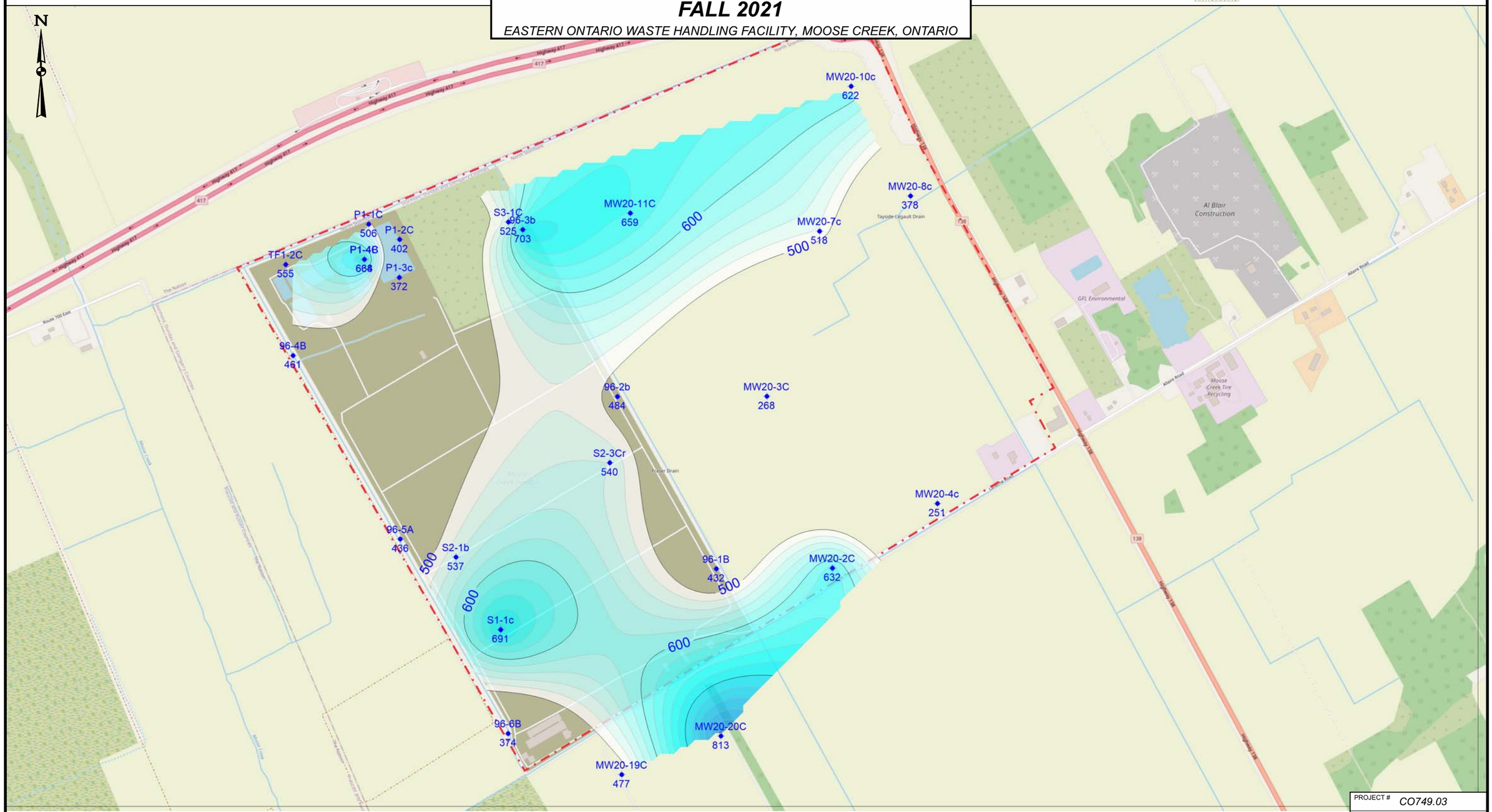
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 8B4

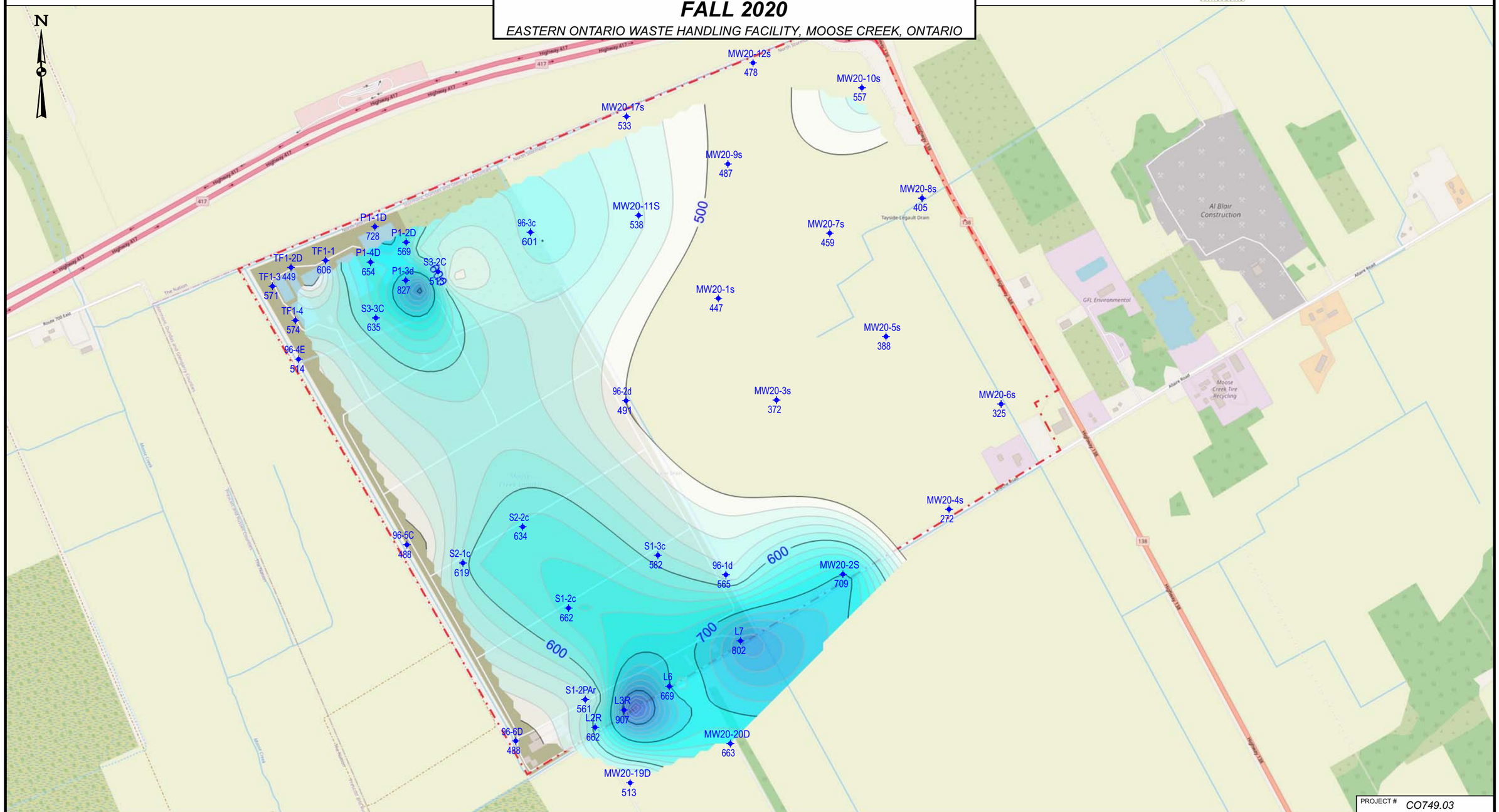
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8C1

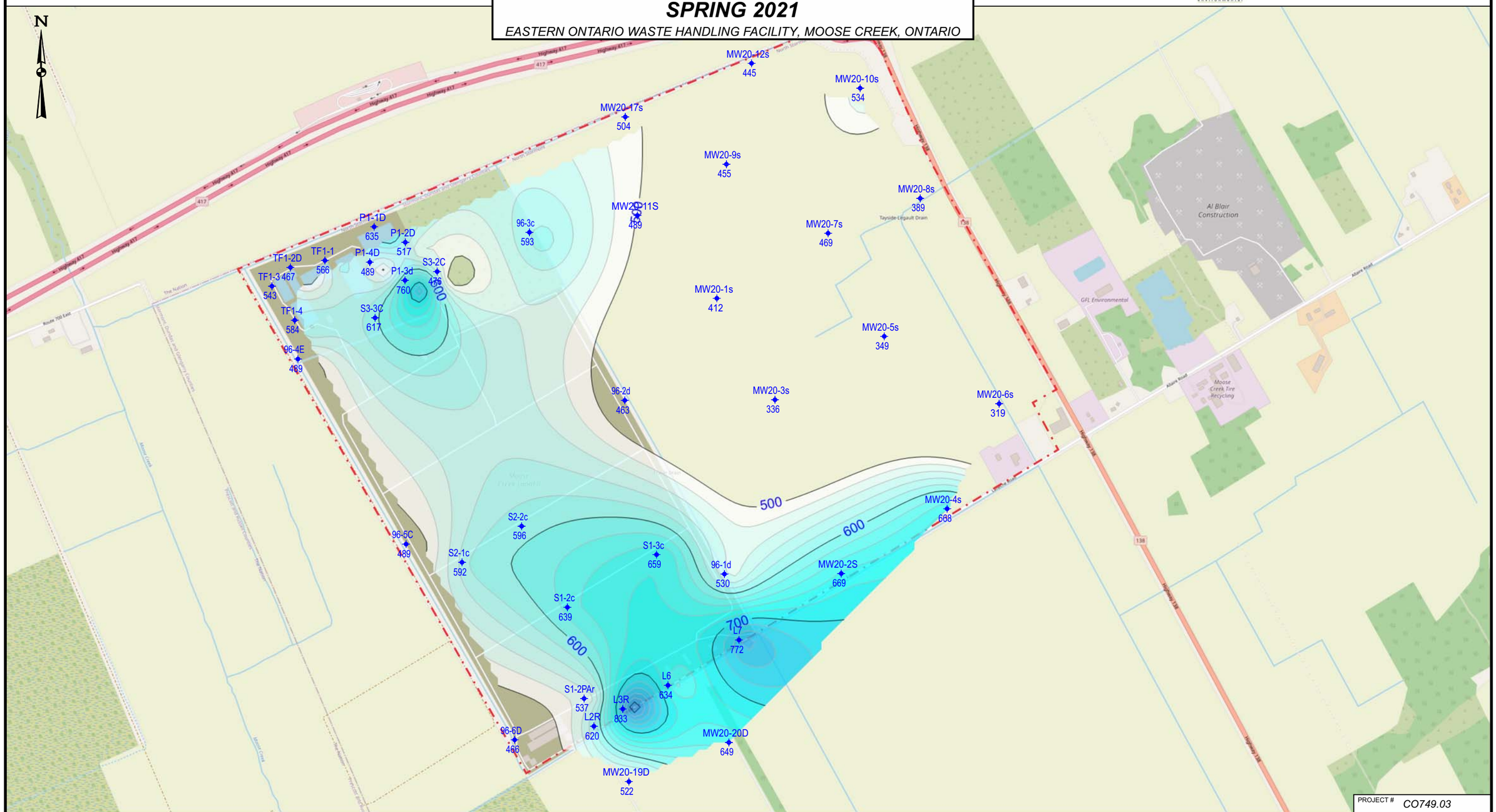
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8C2

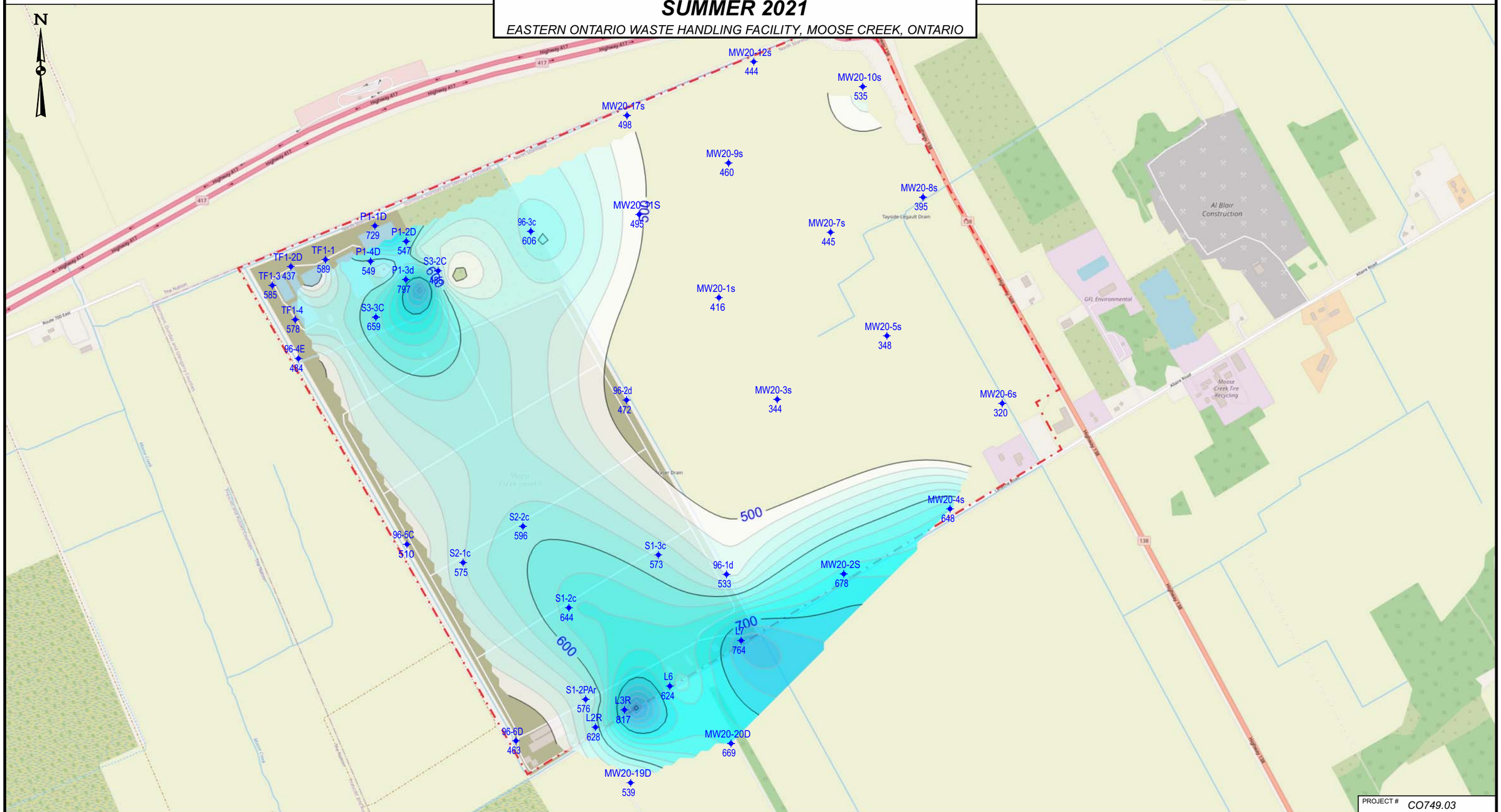
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 8C3

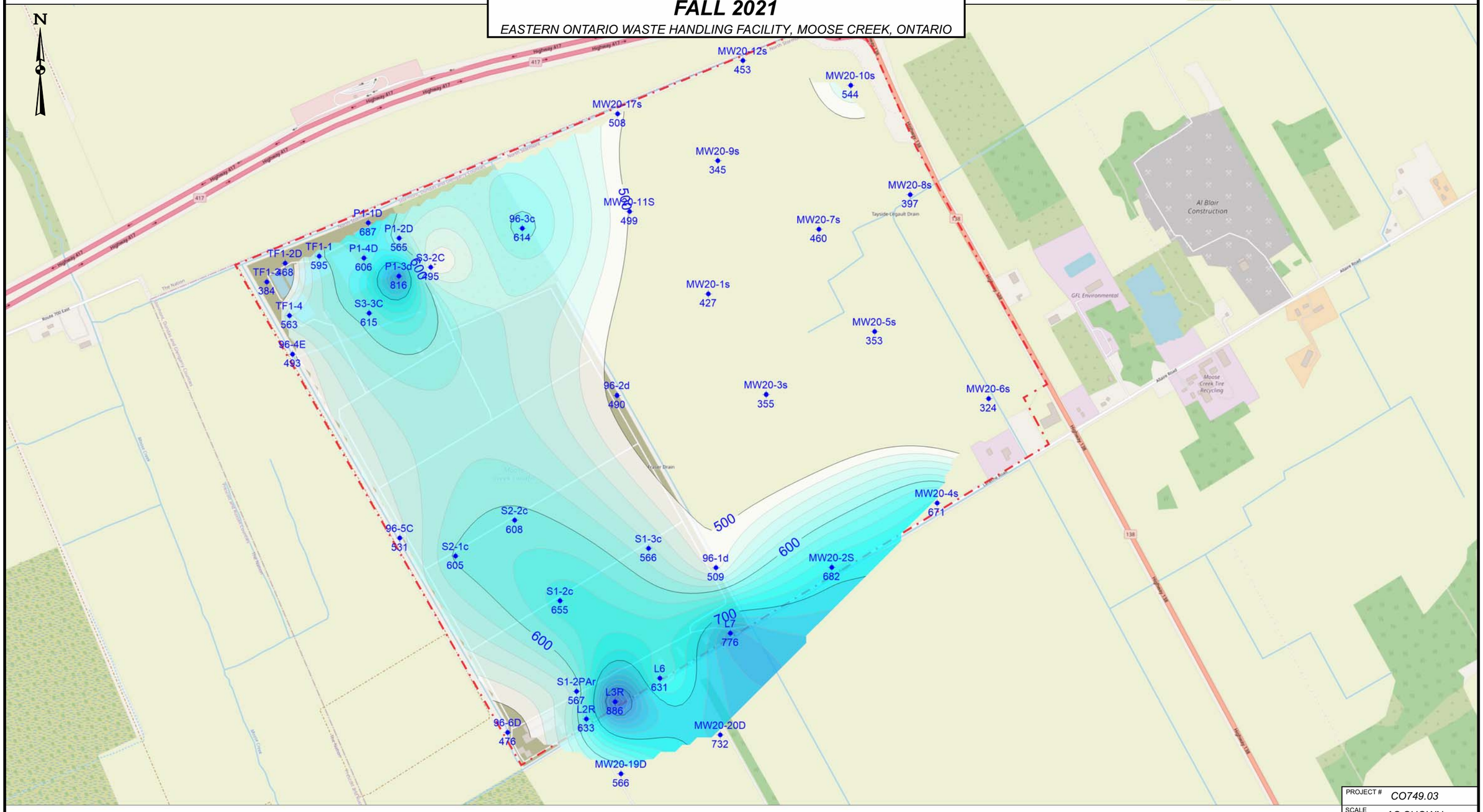
TERRAPEX

INTERPRETED ALKALINITY CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 8C4

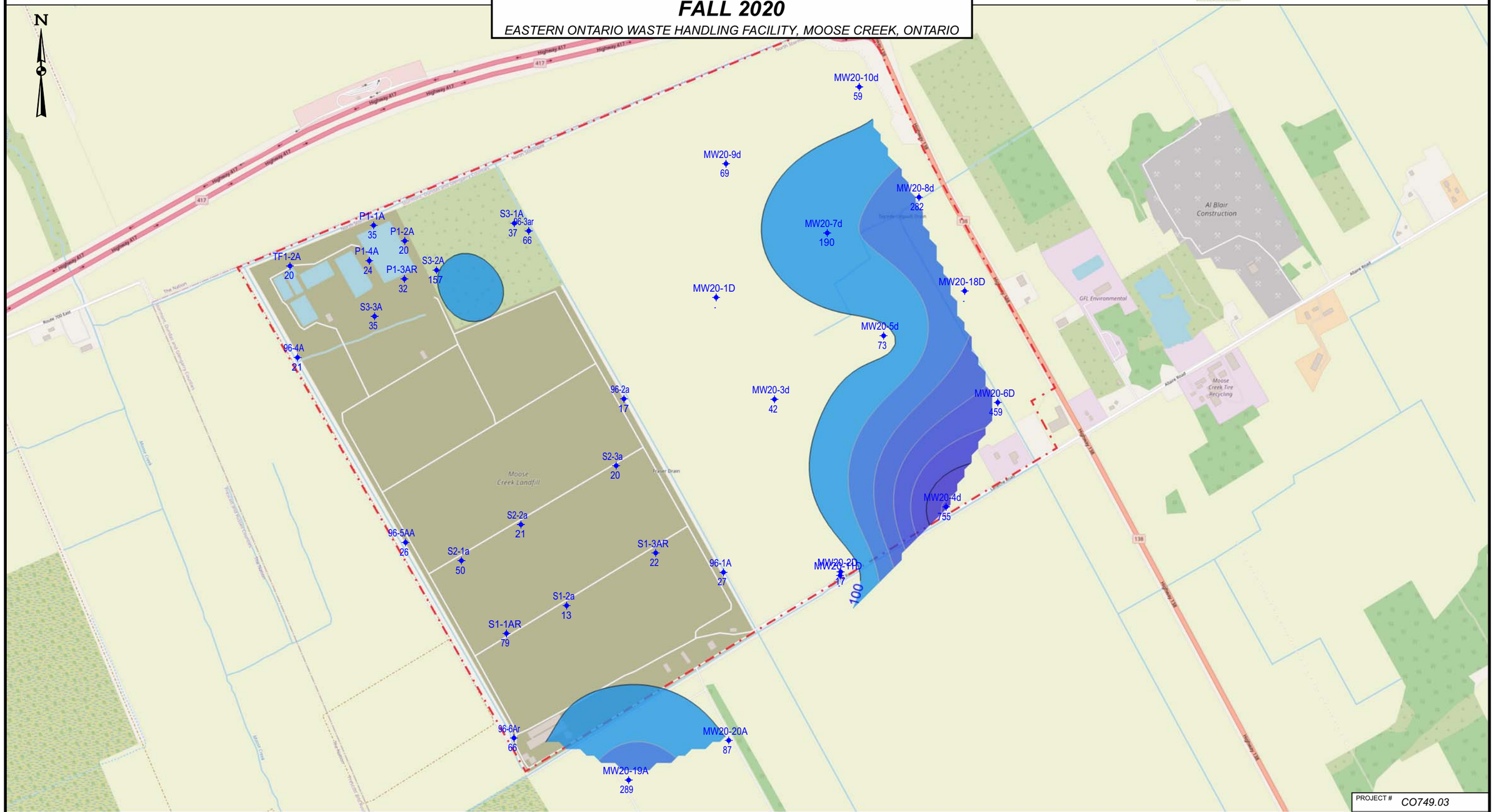
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9A1

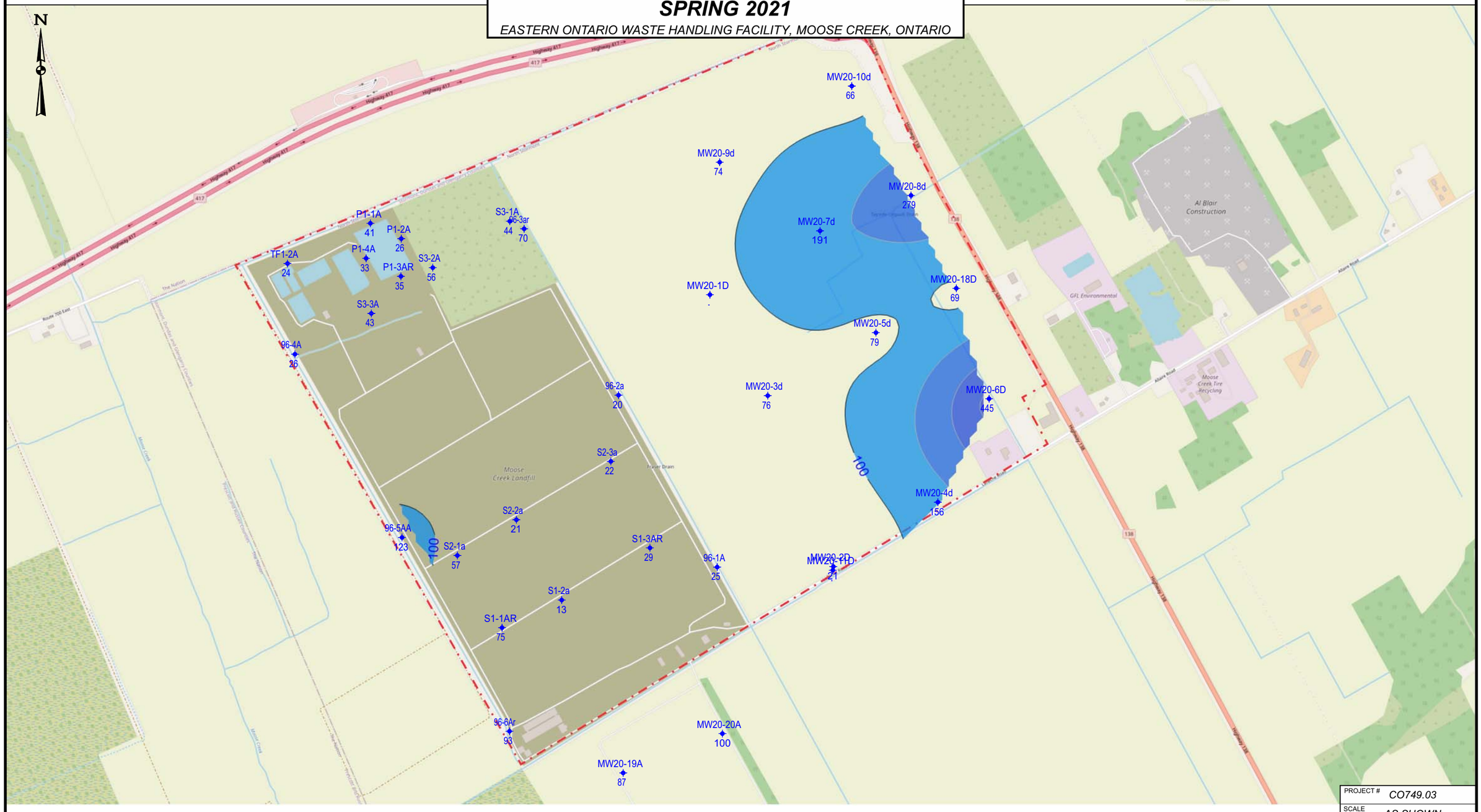
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

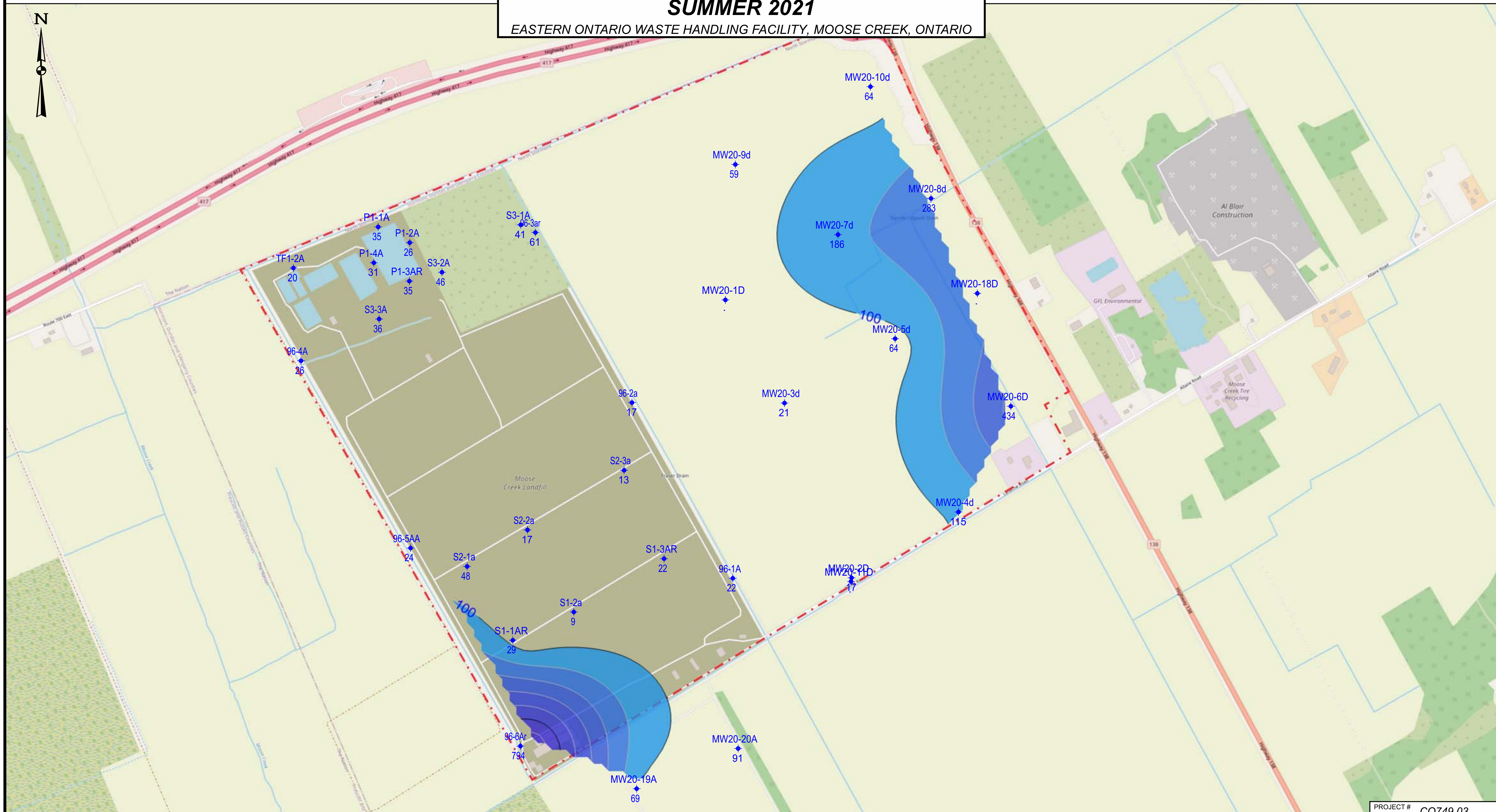
PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9A2

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

TERRAPEX

CLIENT: GFL environmental



N
MW20-10d
64
MW20-9d
59
MW20-8d
283
MW20-7d
186
MW20-18D
MW20-1D
100
MW20-5d
64
MW20-3d
21
MW20-6D
434
MW20-4d
115
MW20-2D
MW20-11D
17
96-1A
22
S1-3AR
22
S2-3a
13
96-2a
17
S3-1A
41
96-3ar
61
P1-1A
35
P1-2A
26
P1-4A
31
P1-3AR
35
S3-2A
46
TF1-2A
20
S3-3A
36
96-4A
26
96-5AA
24
S2-1a
48
S2-2a
17
S1-2a
9
S1-1AR
29
100
96-6Ar
794
MW20-19A
69
MW20-20A
91
Moose Creek Landfill
Al Blair Construction
GFL Environmental
Moose Creek Tire Recycling
Highway 417
Highway 138

LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m (APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9A3

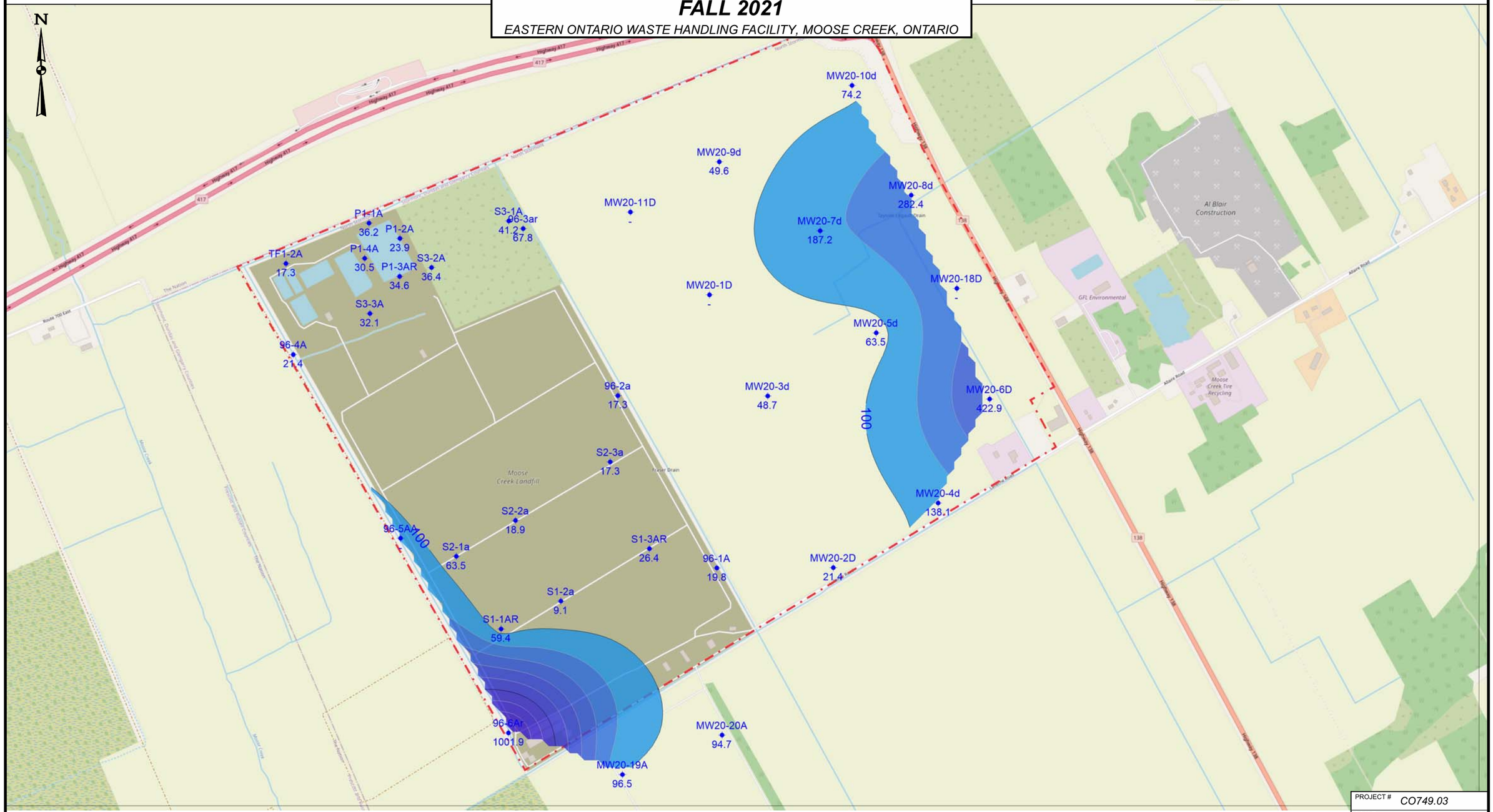
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 9A4

TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9B1

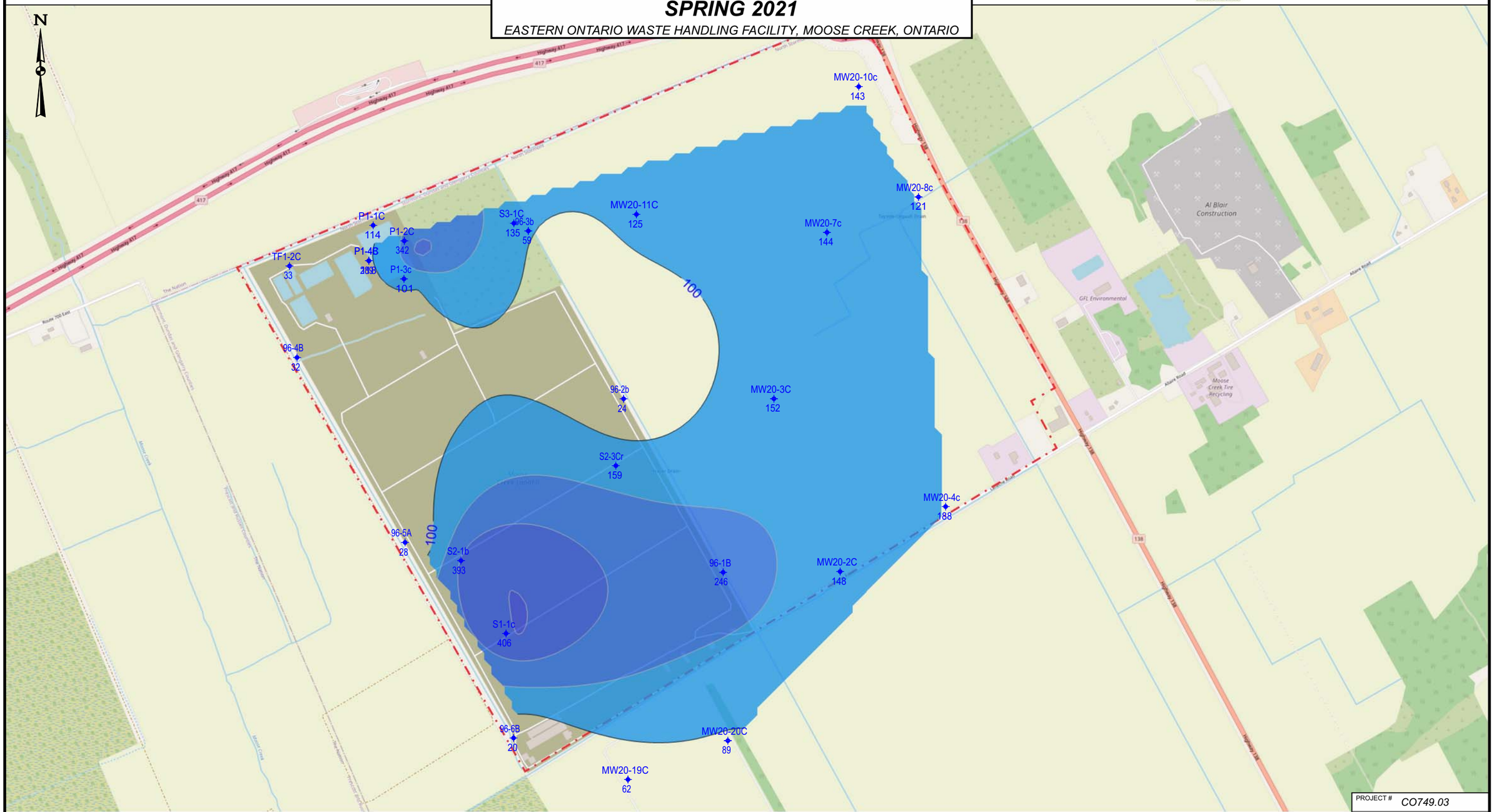
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 9B2

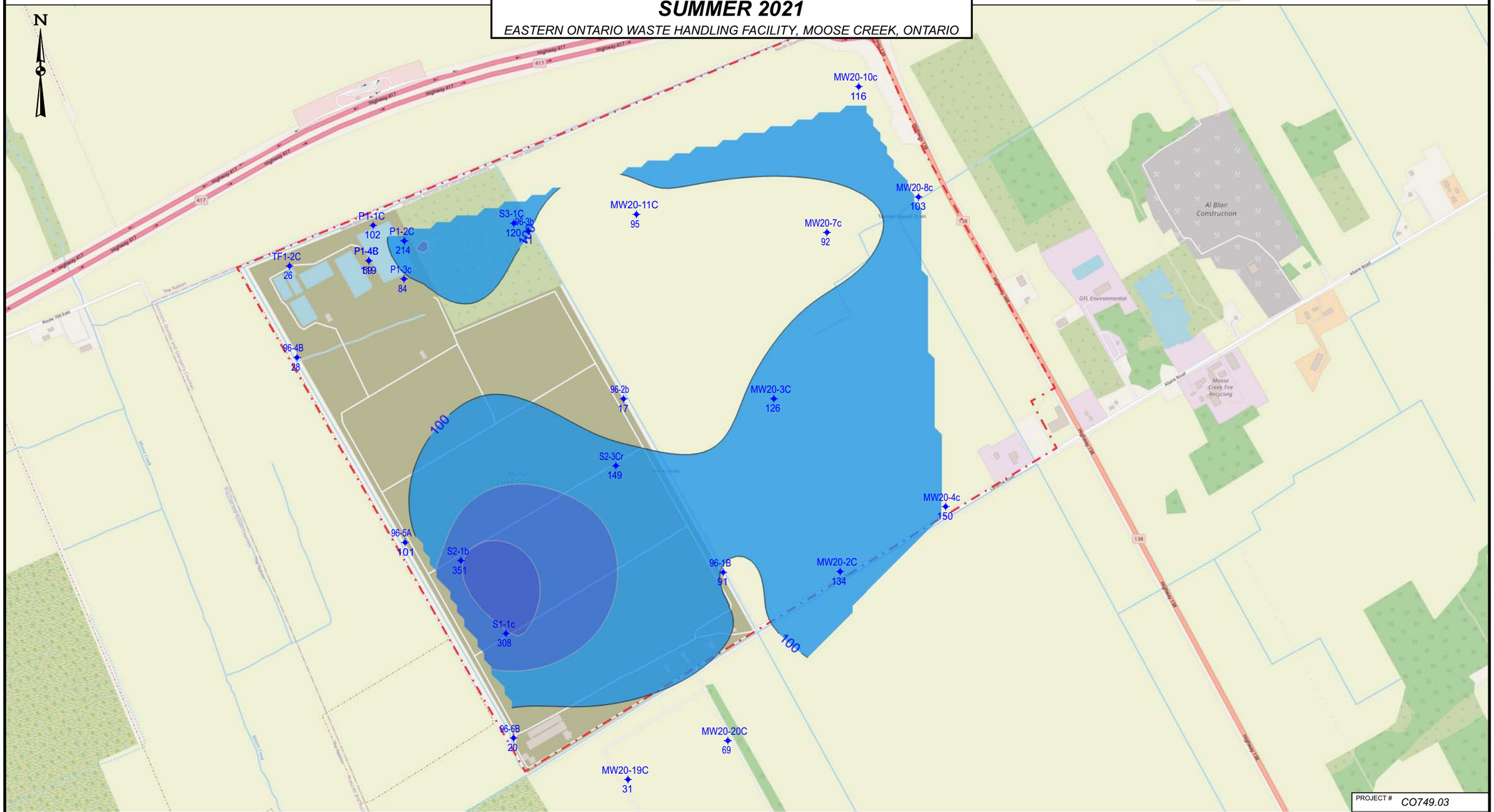
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9B3

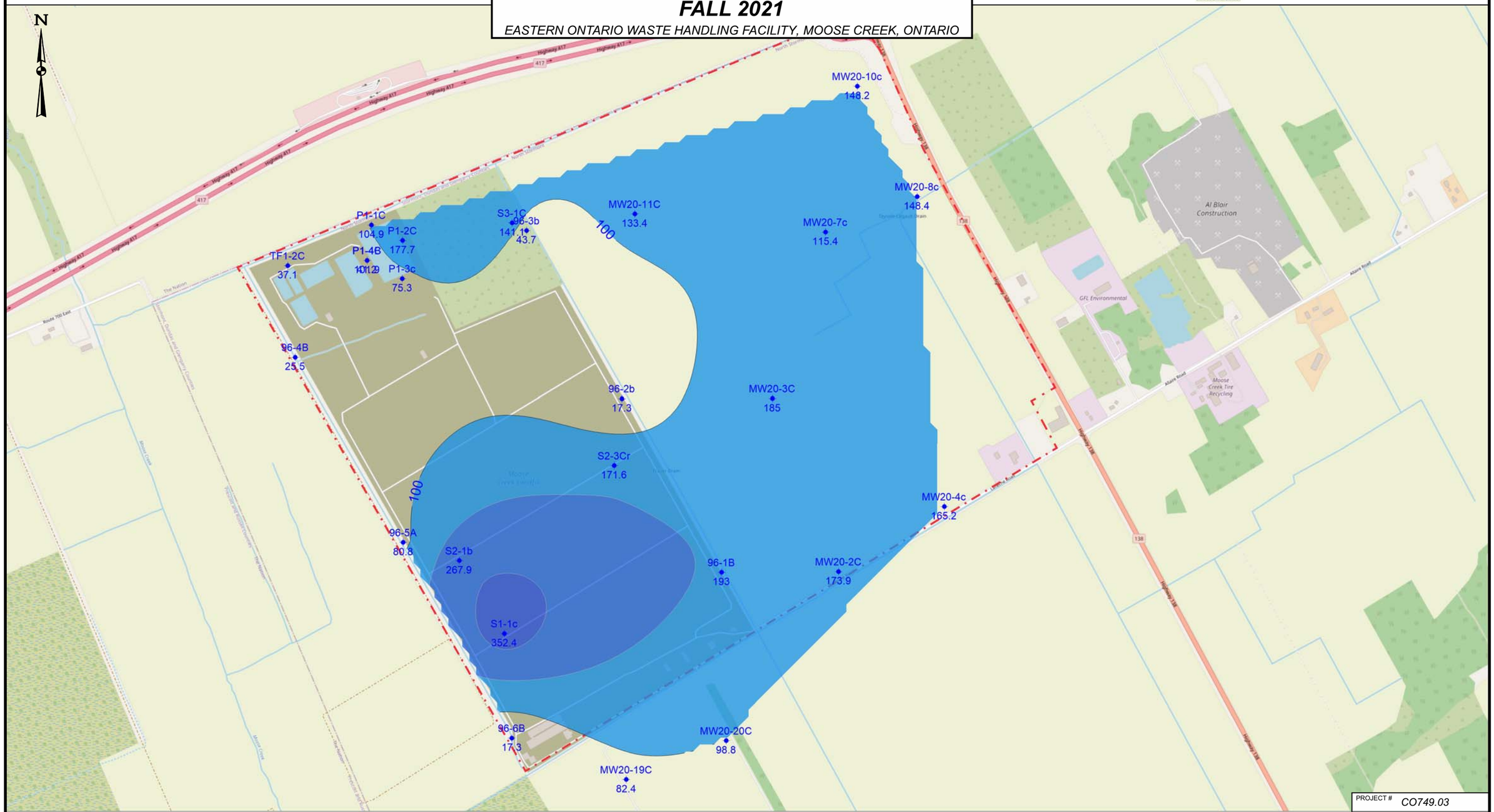
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9B4

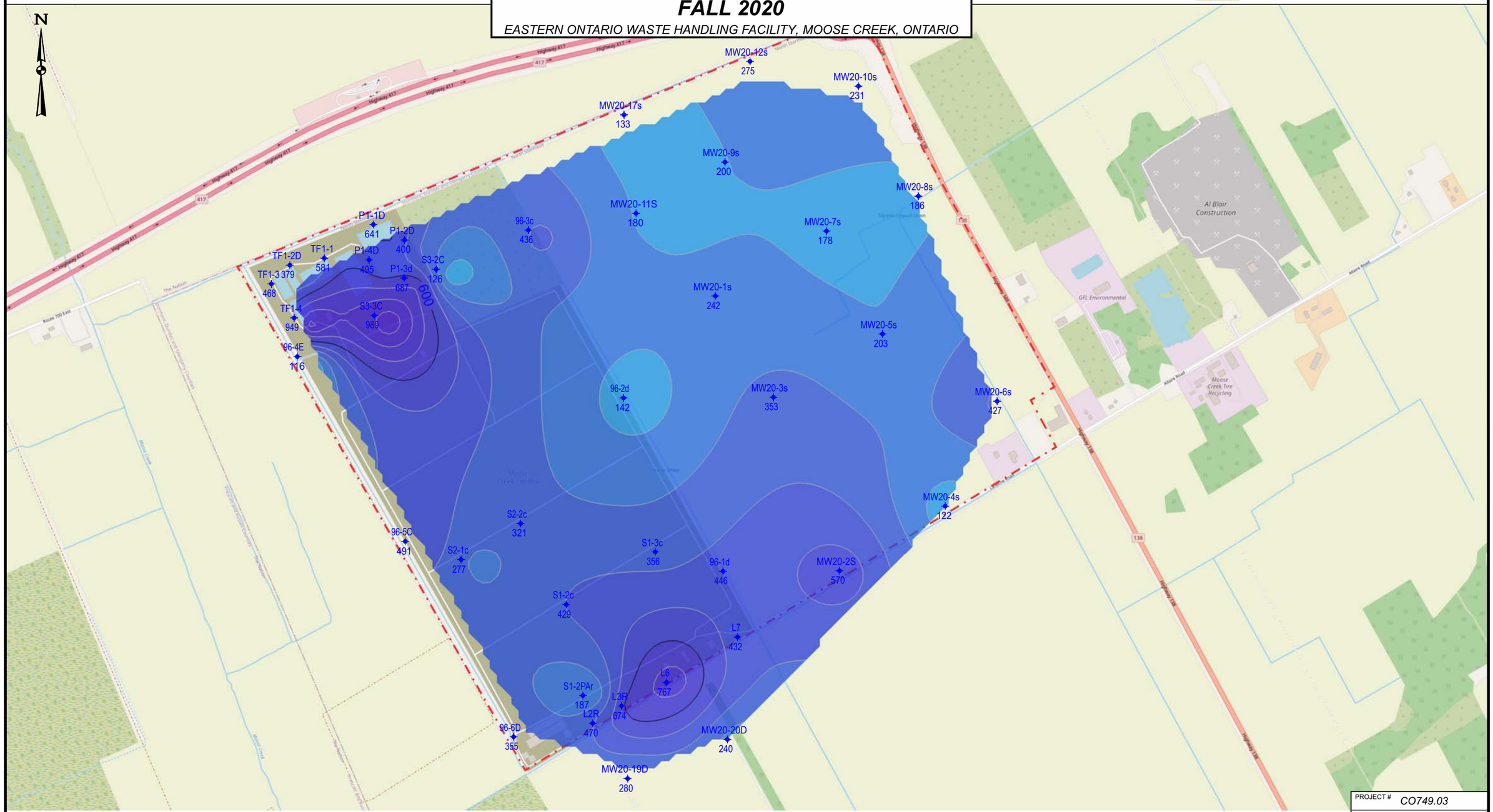
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9C1

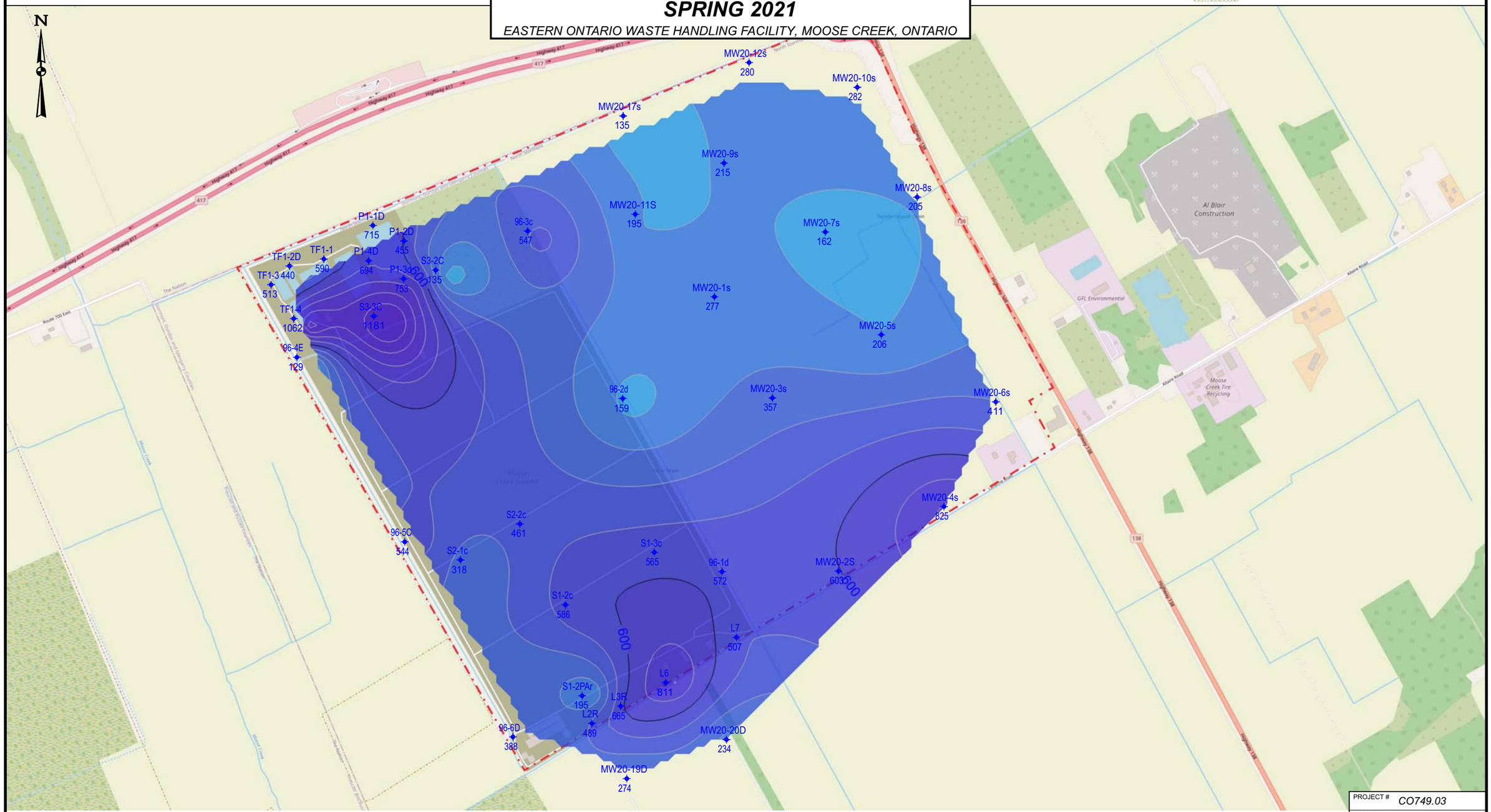
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 9C2

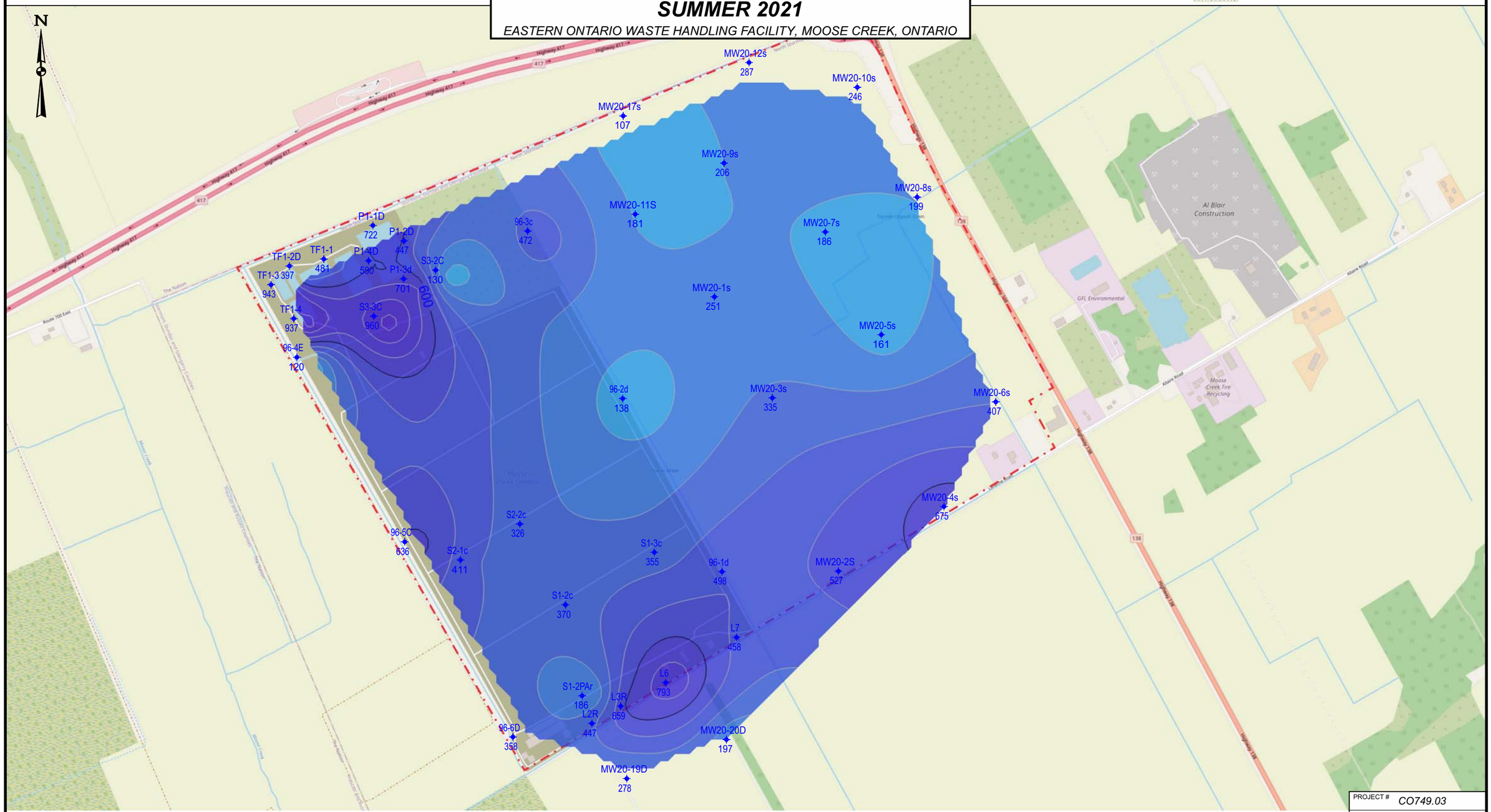
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	*CO749.03*
SCALE	*AS SHOWN*
DATE	*FEBRUARY 2022*
DRAWN *JO*	CHECKED *SR*
DRAWING #	*FIGURE 9C3*

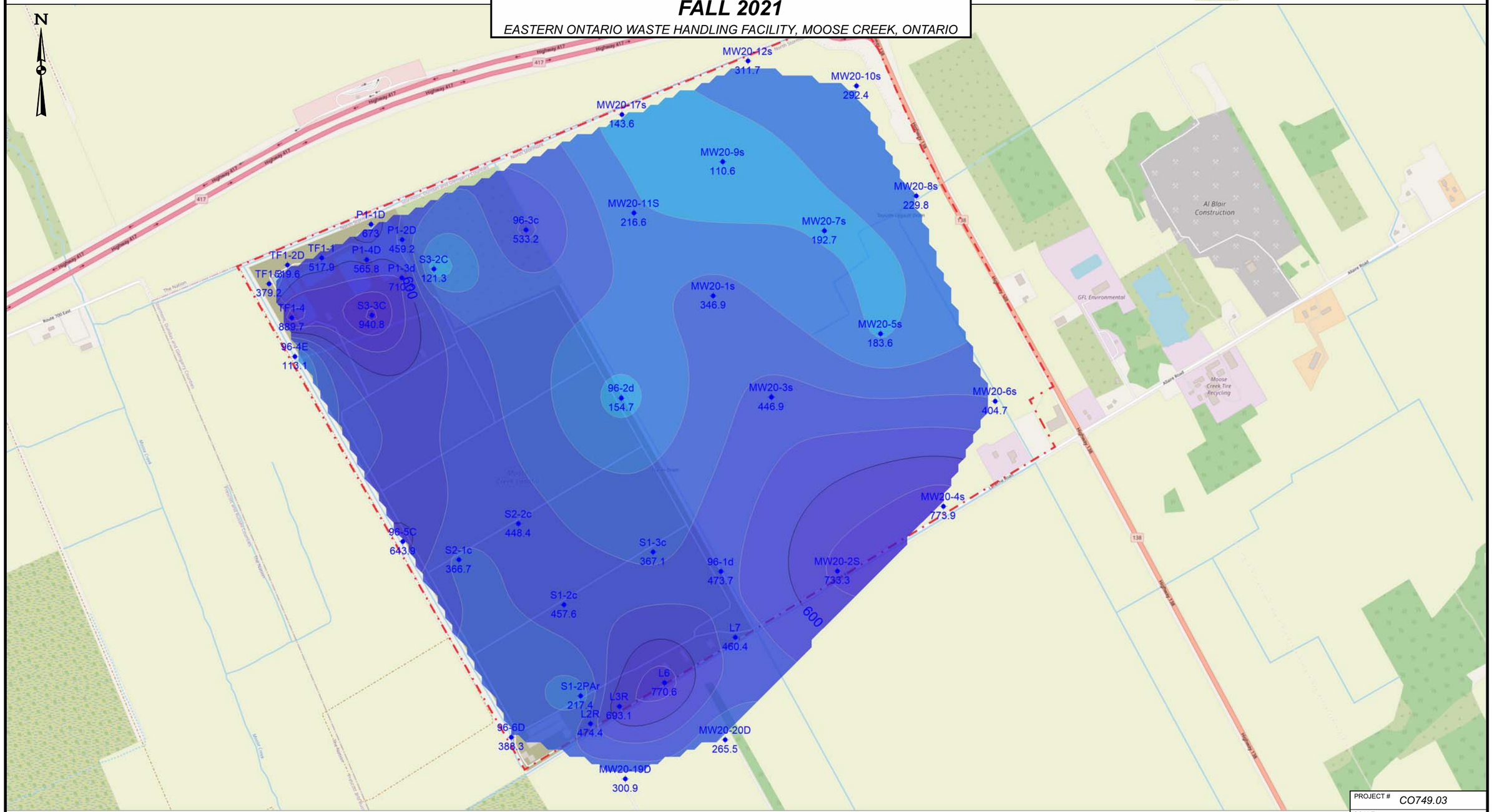
TERRAPEX

INTERPRETED HARDNESS CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 9C4

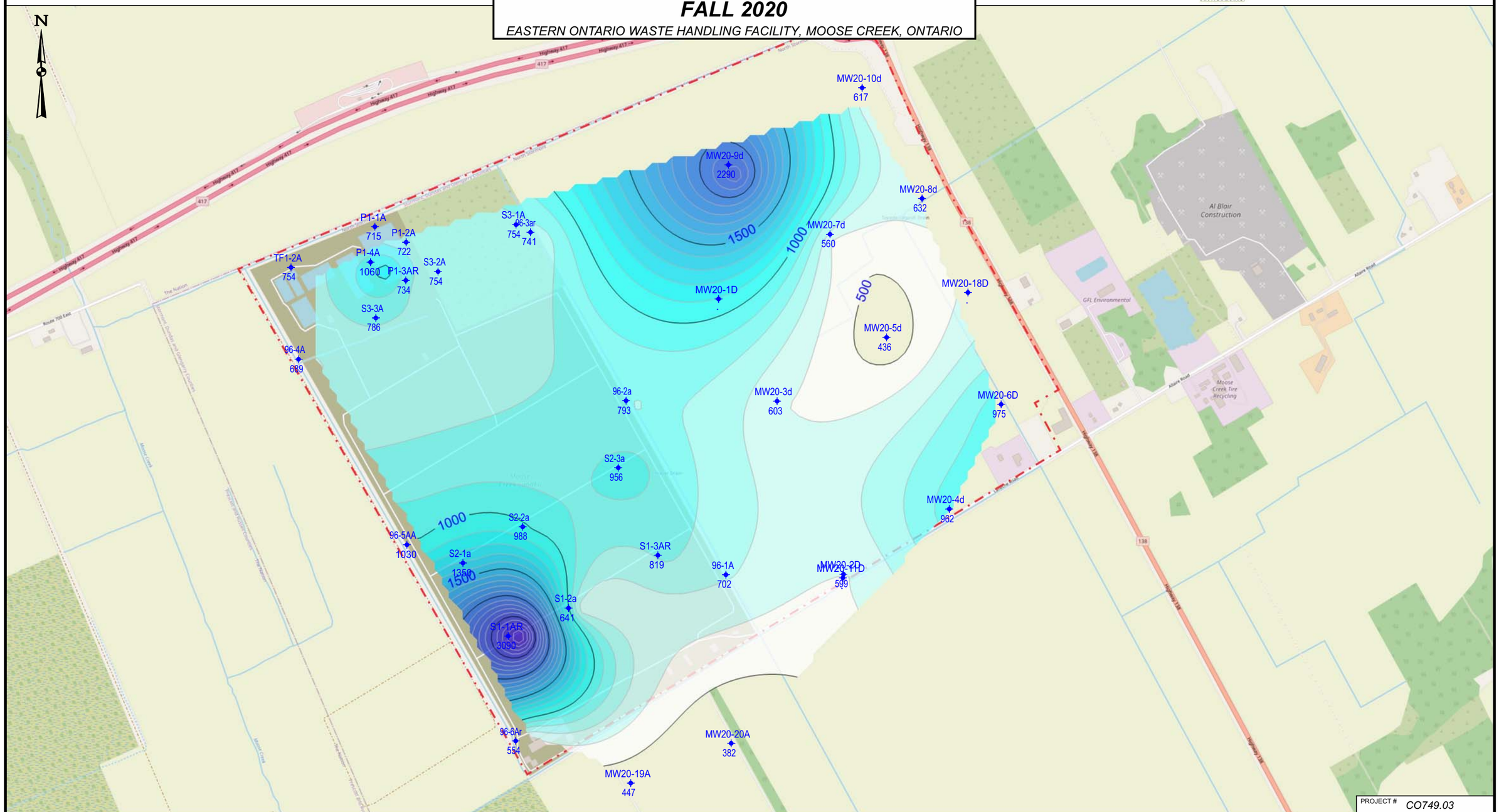
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10A1

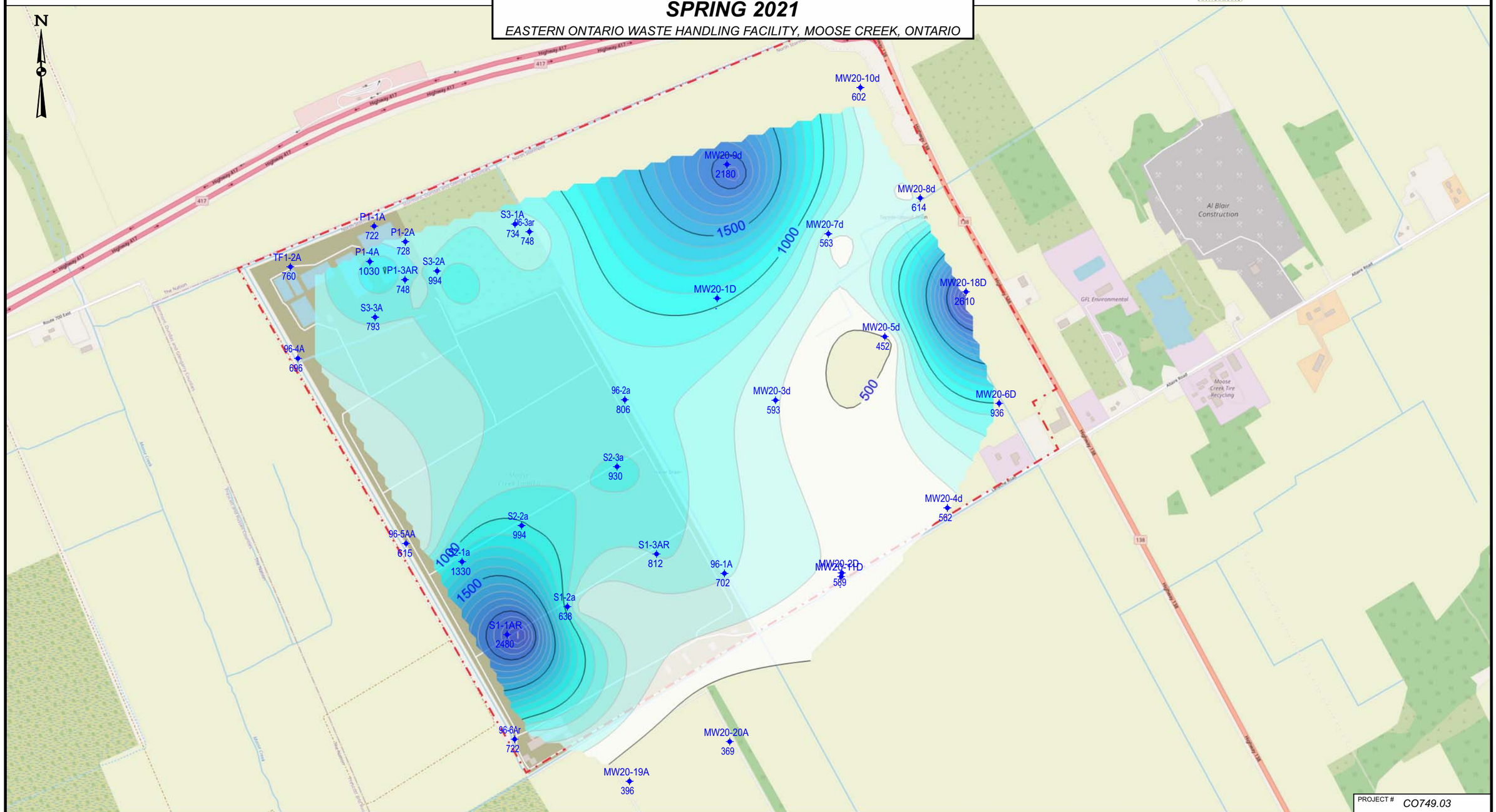
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10A2

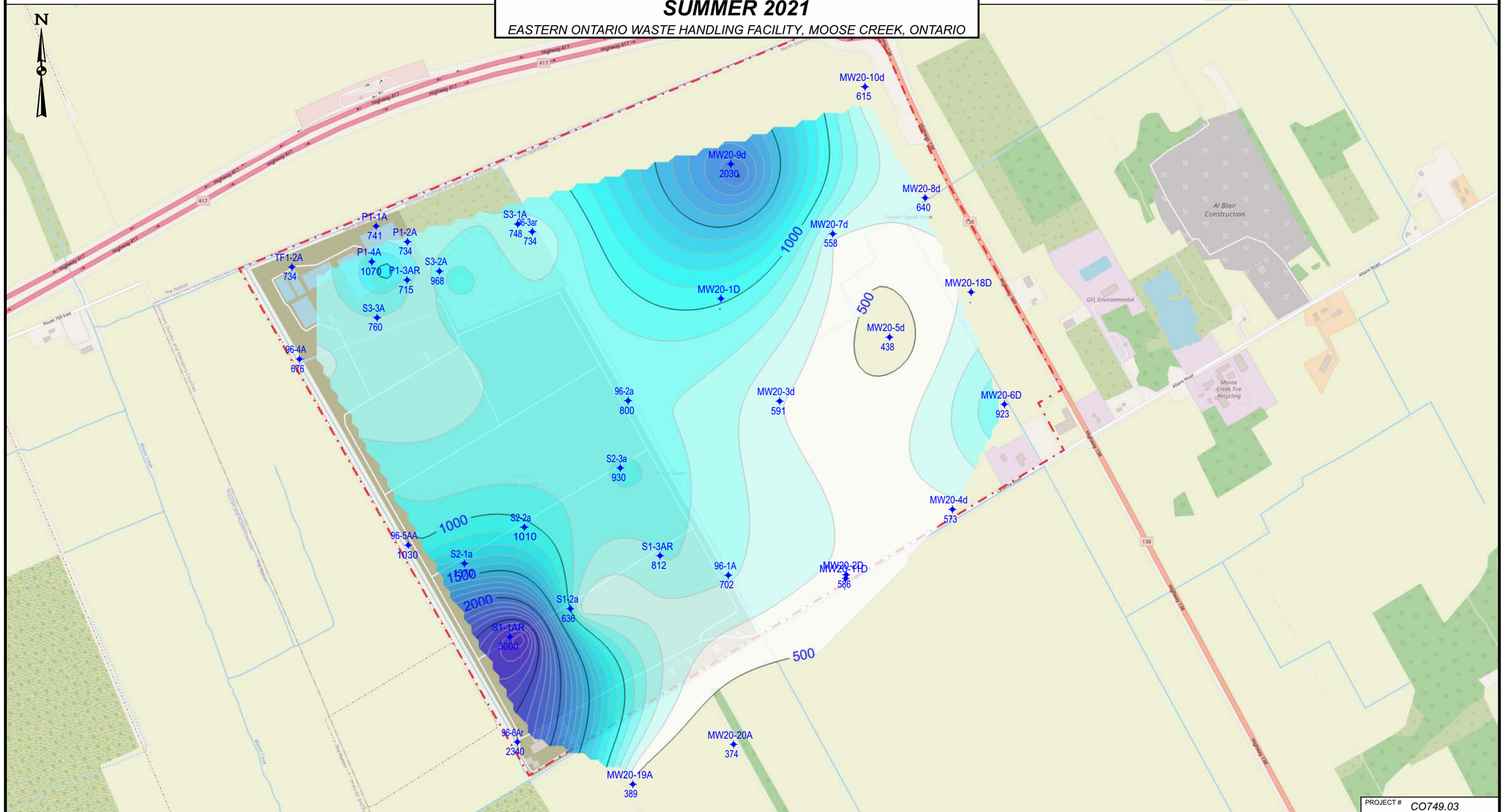
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10A3

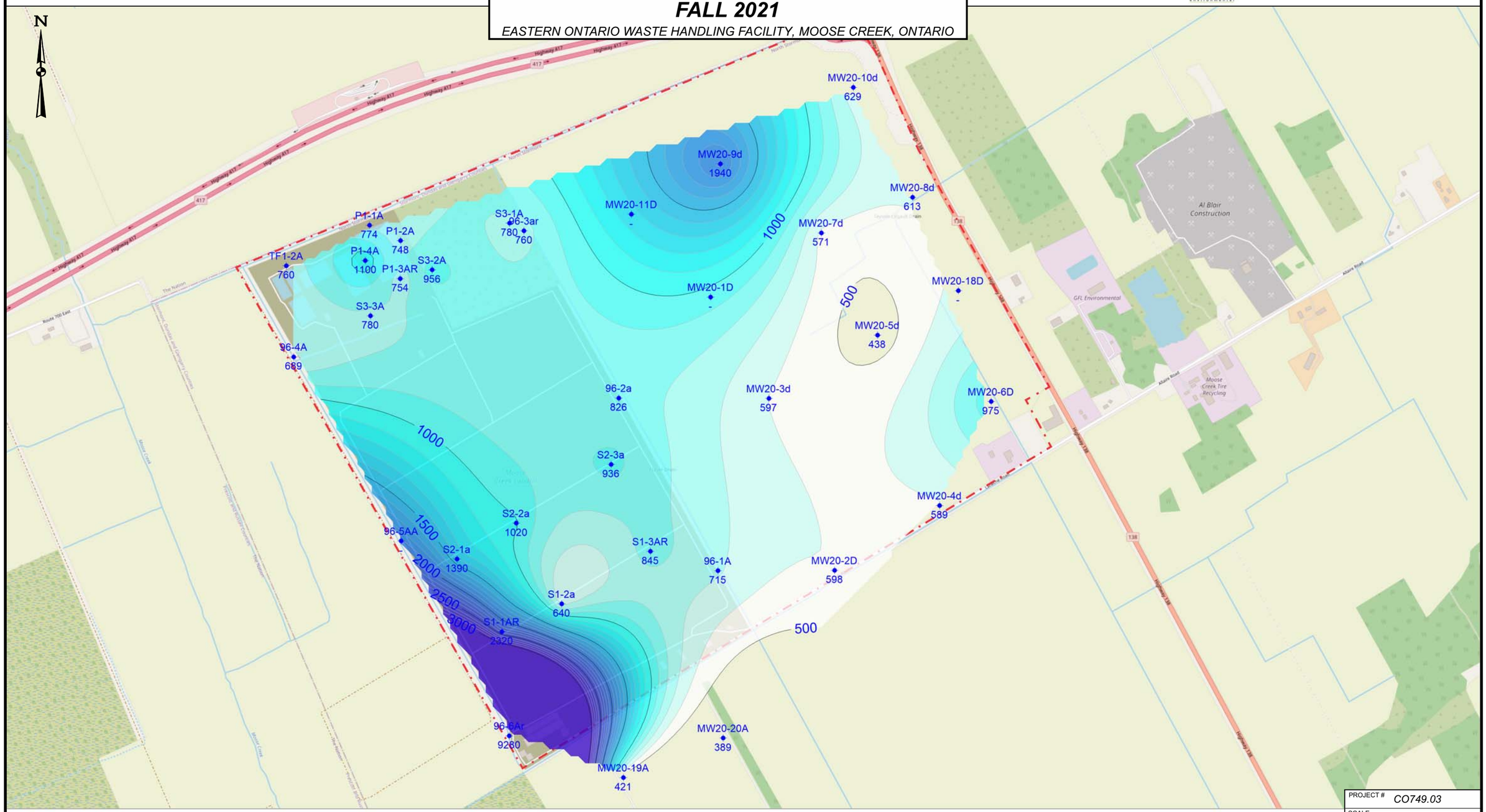
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 10A4

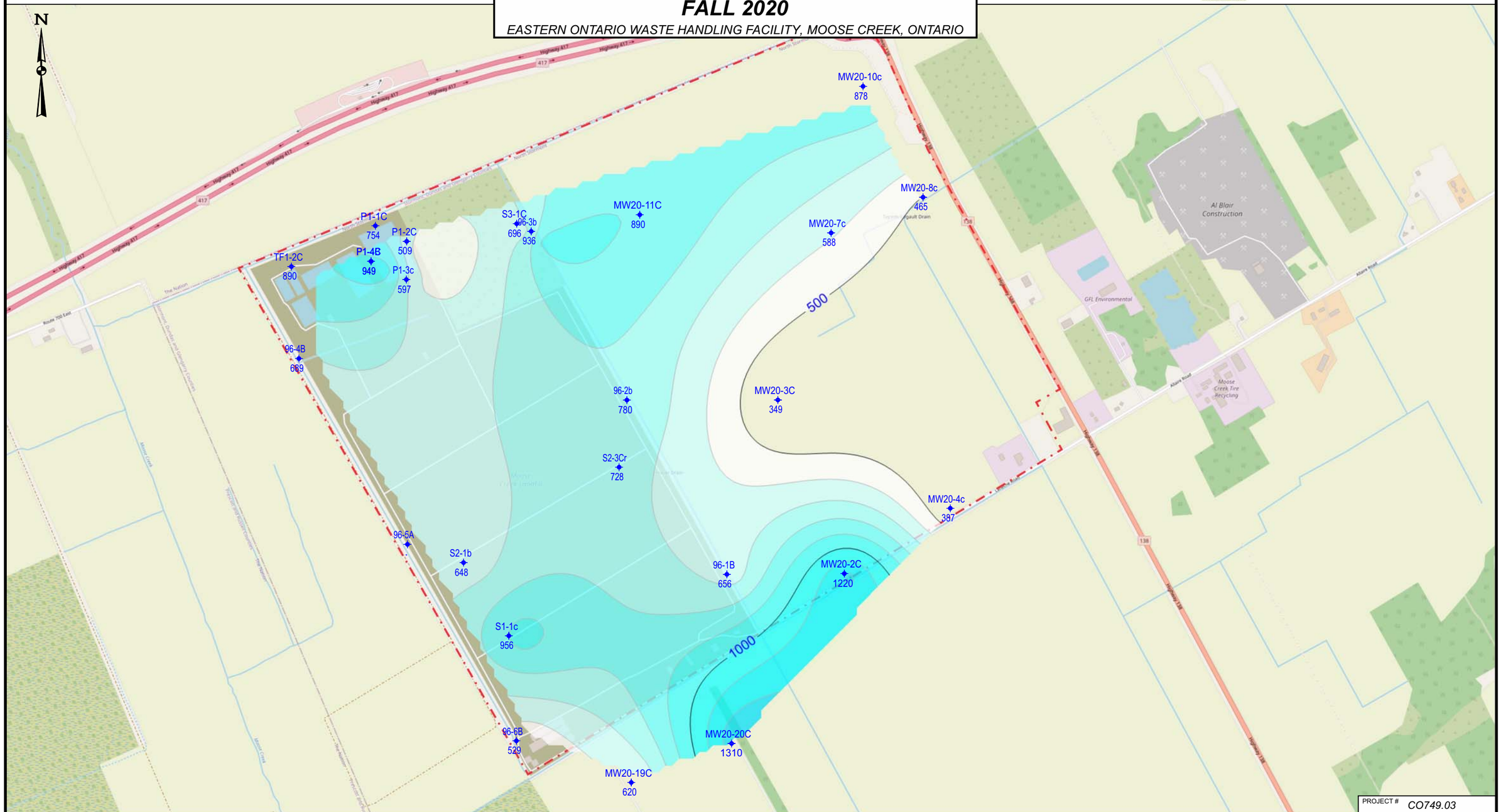
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10B1

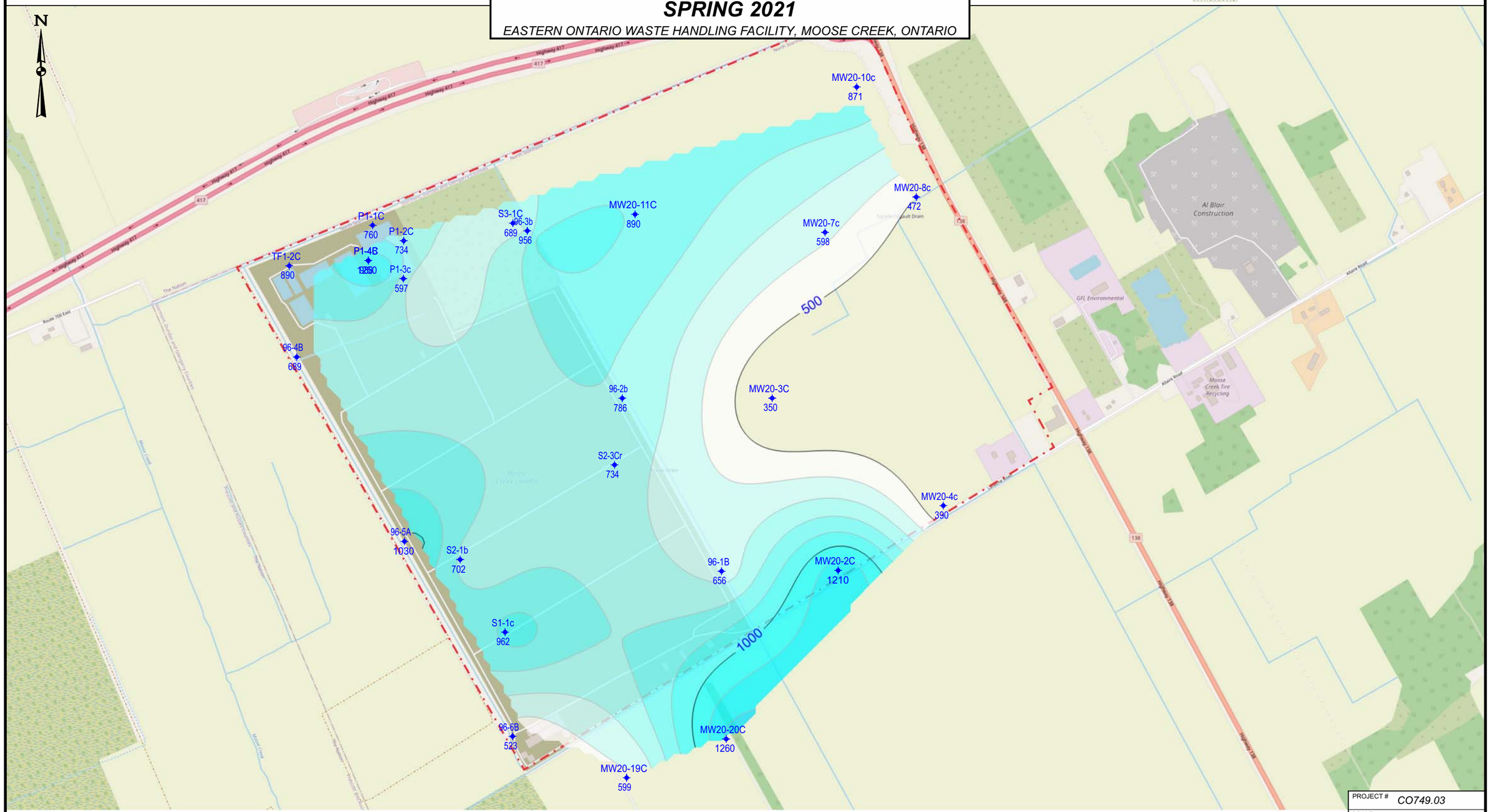
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10B2

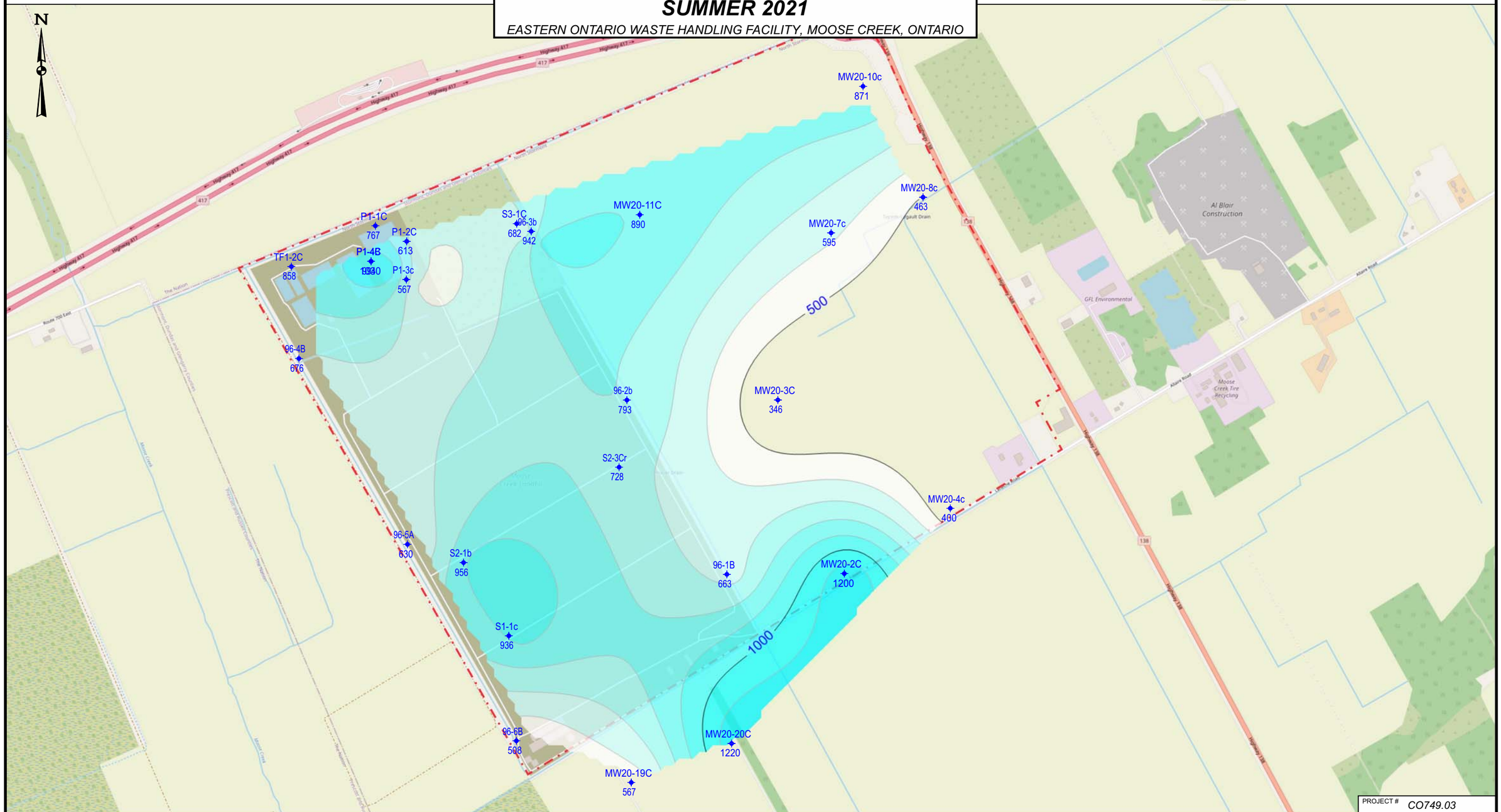
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

⌖ MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 10B3

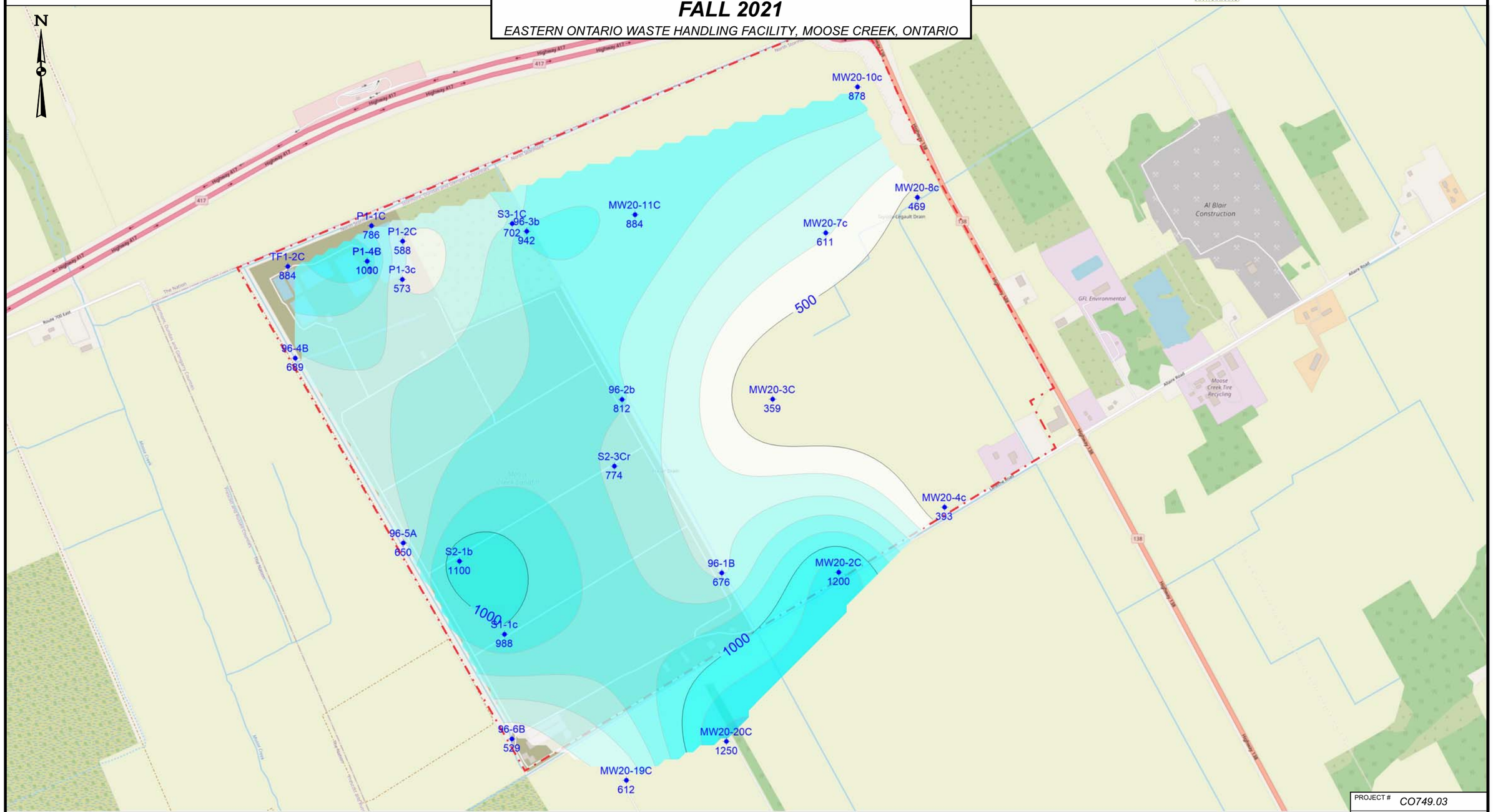
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10B4

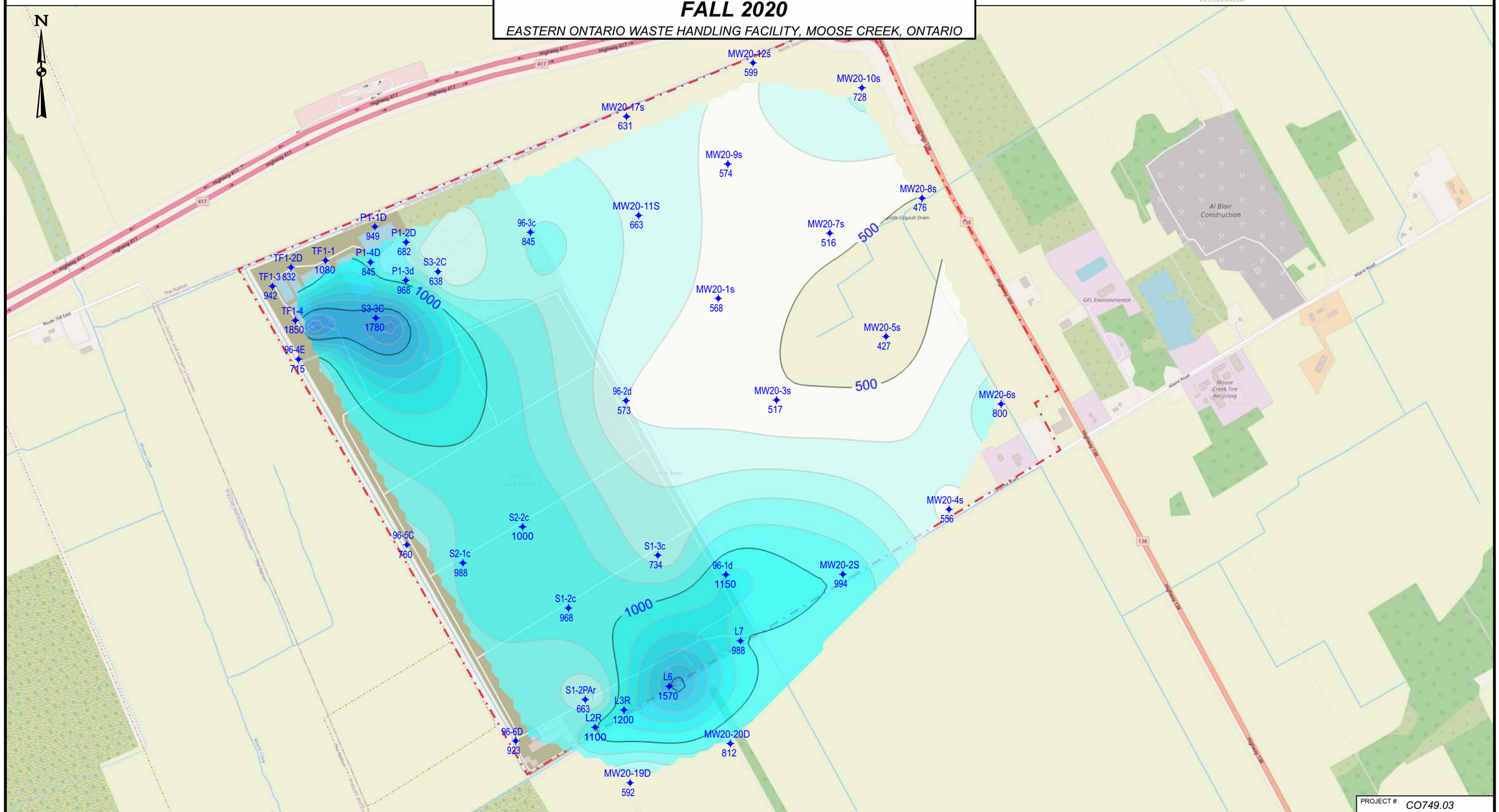
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10C1

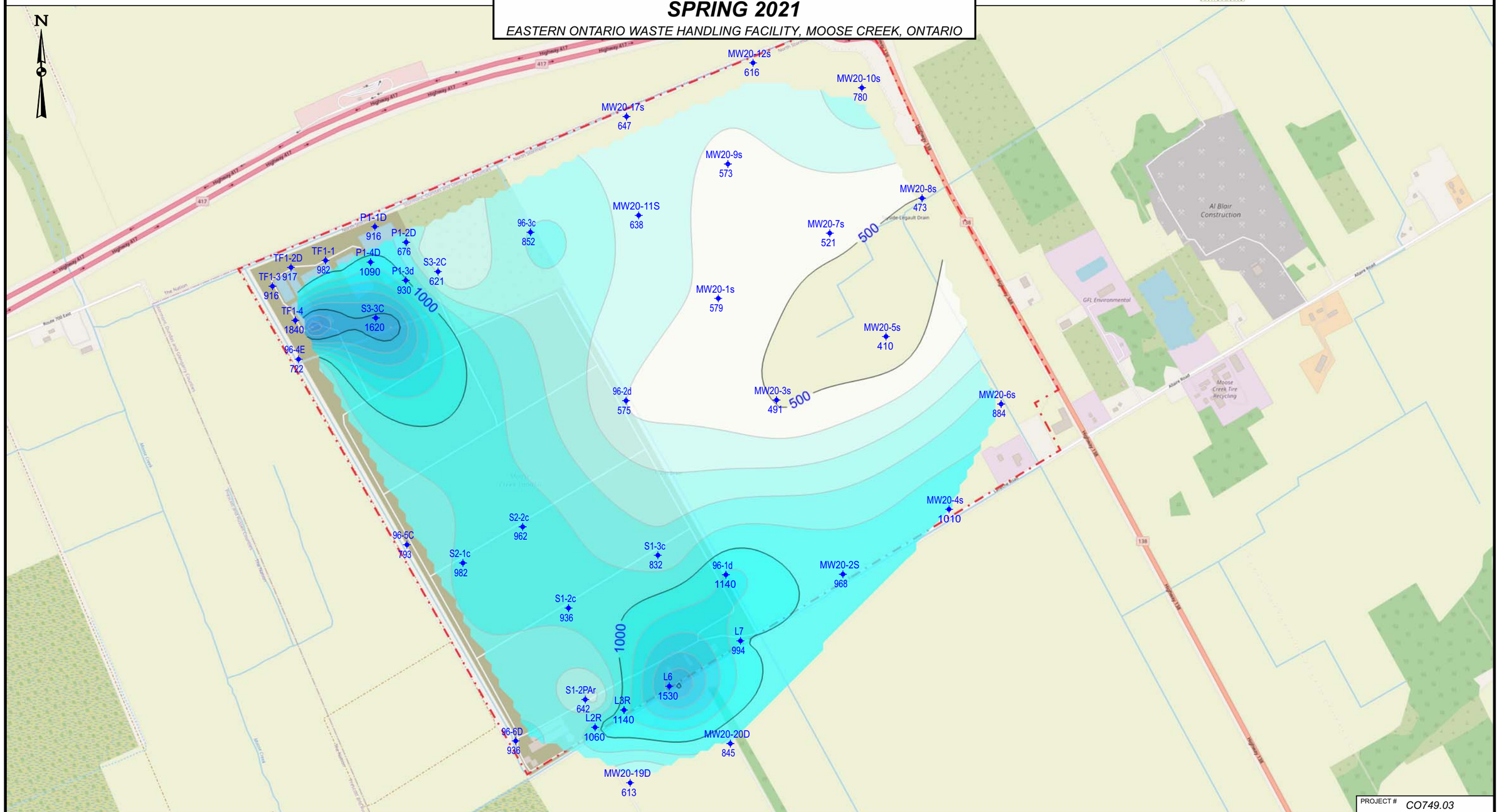
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10C2

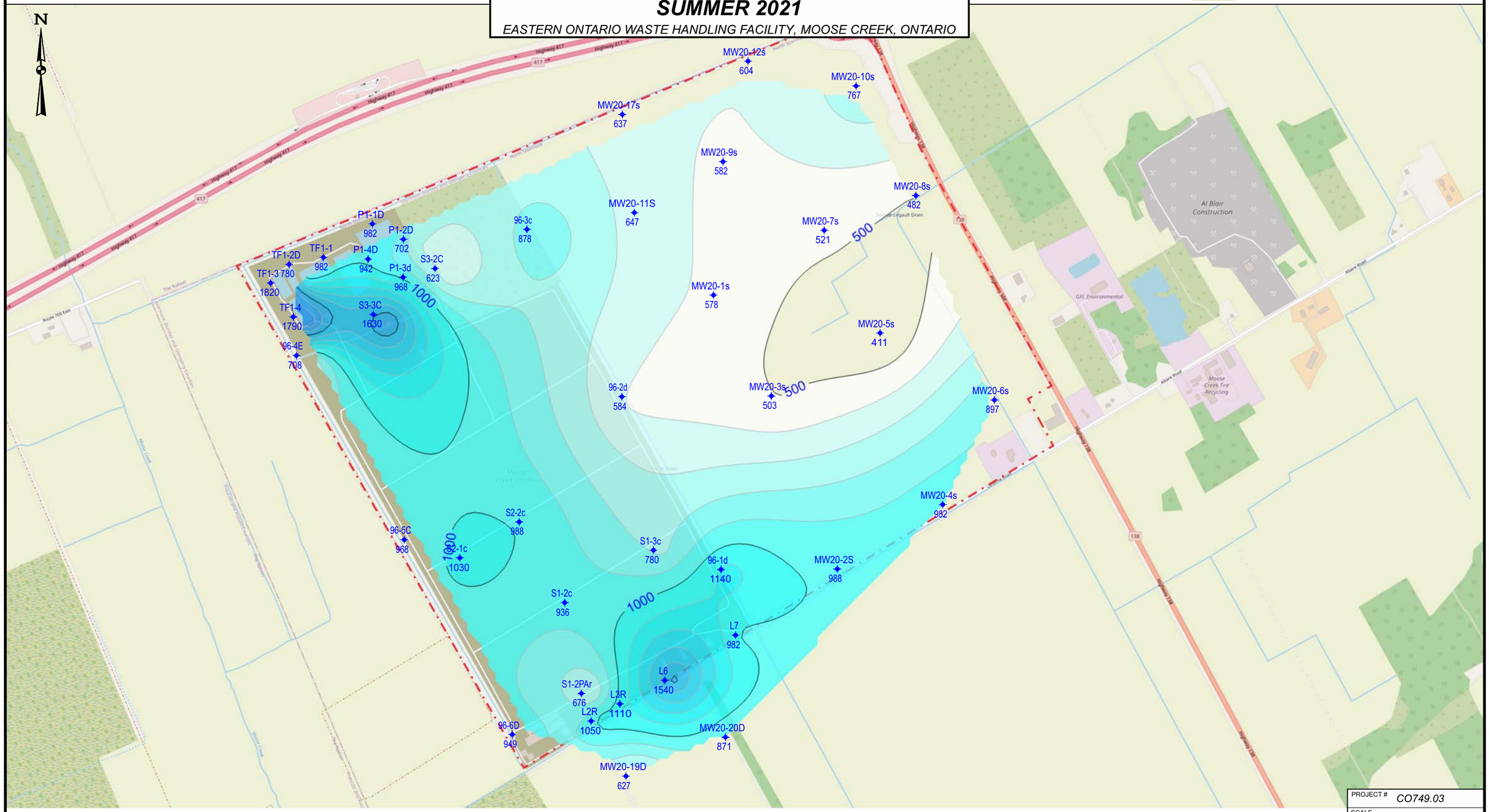
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10C3

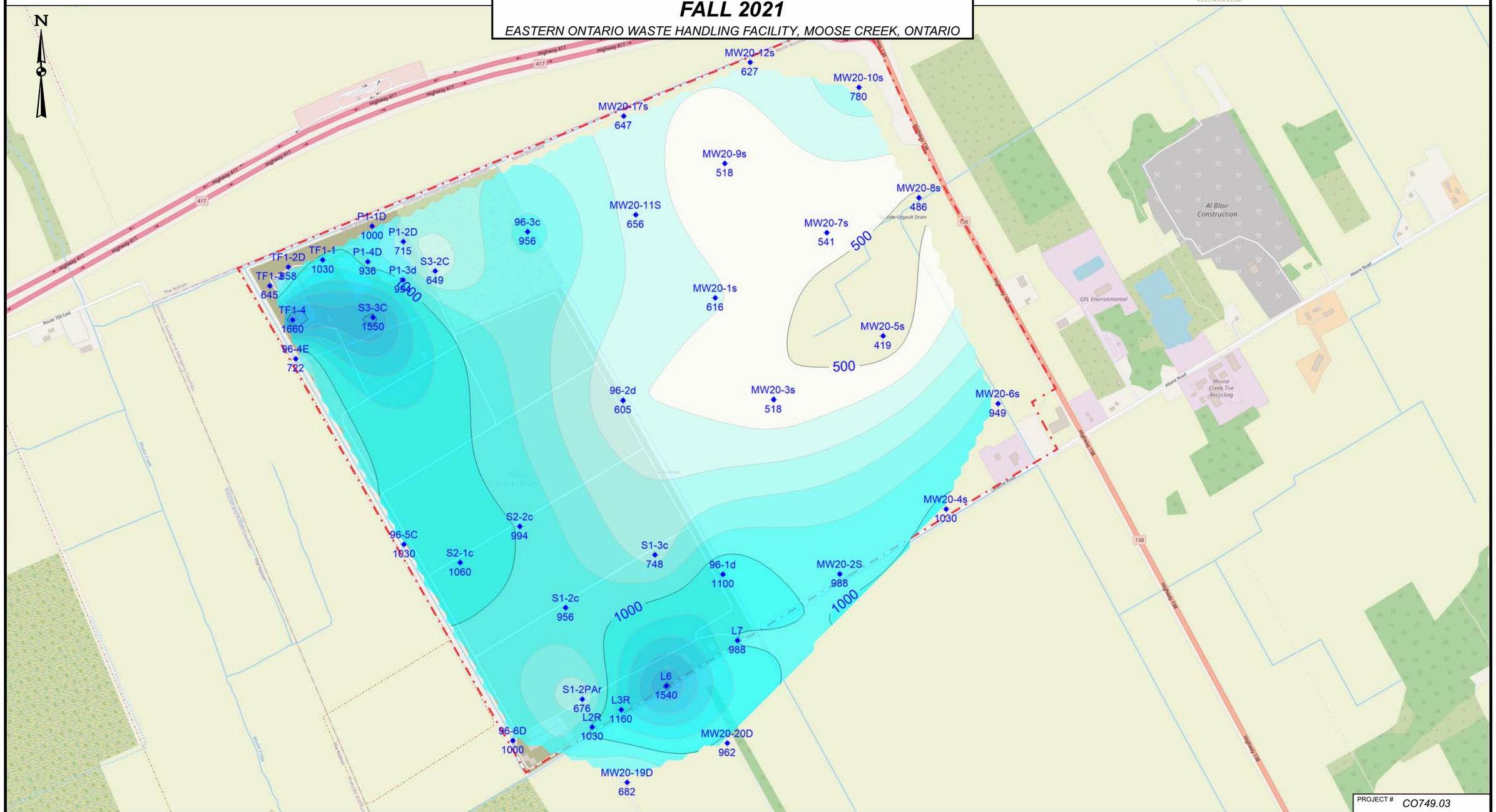
TERRAPEX

INTERPRETED TDS CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 10C4

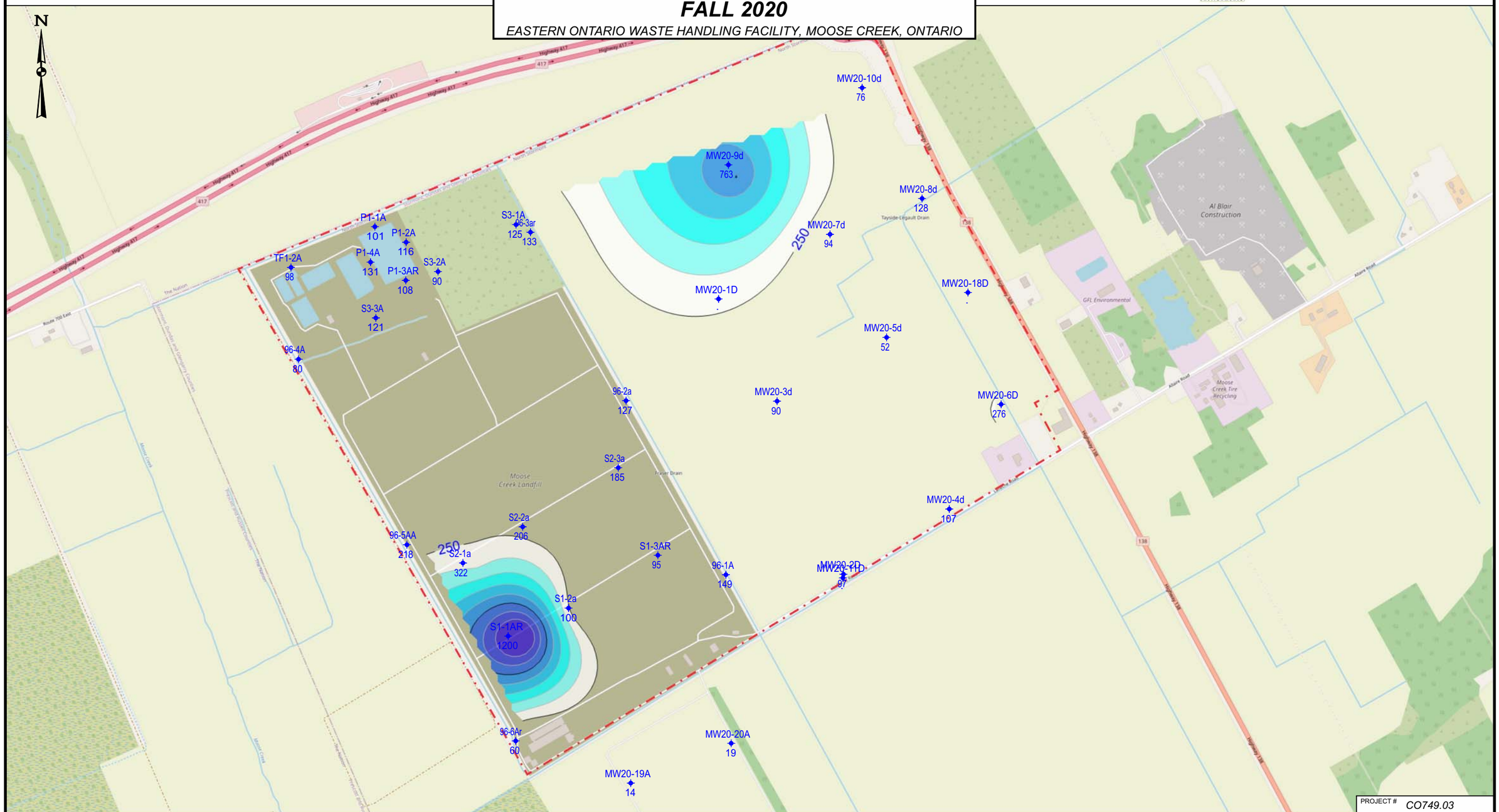
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11A1

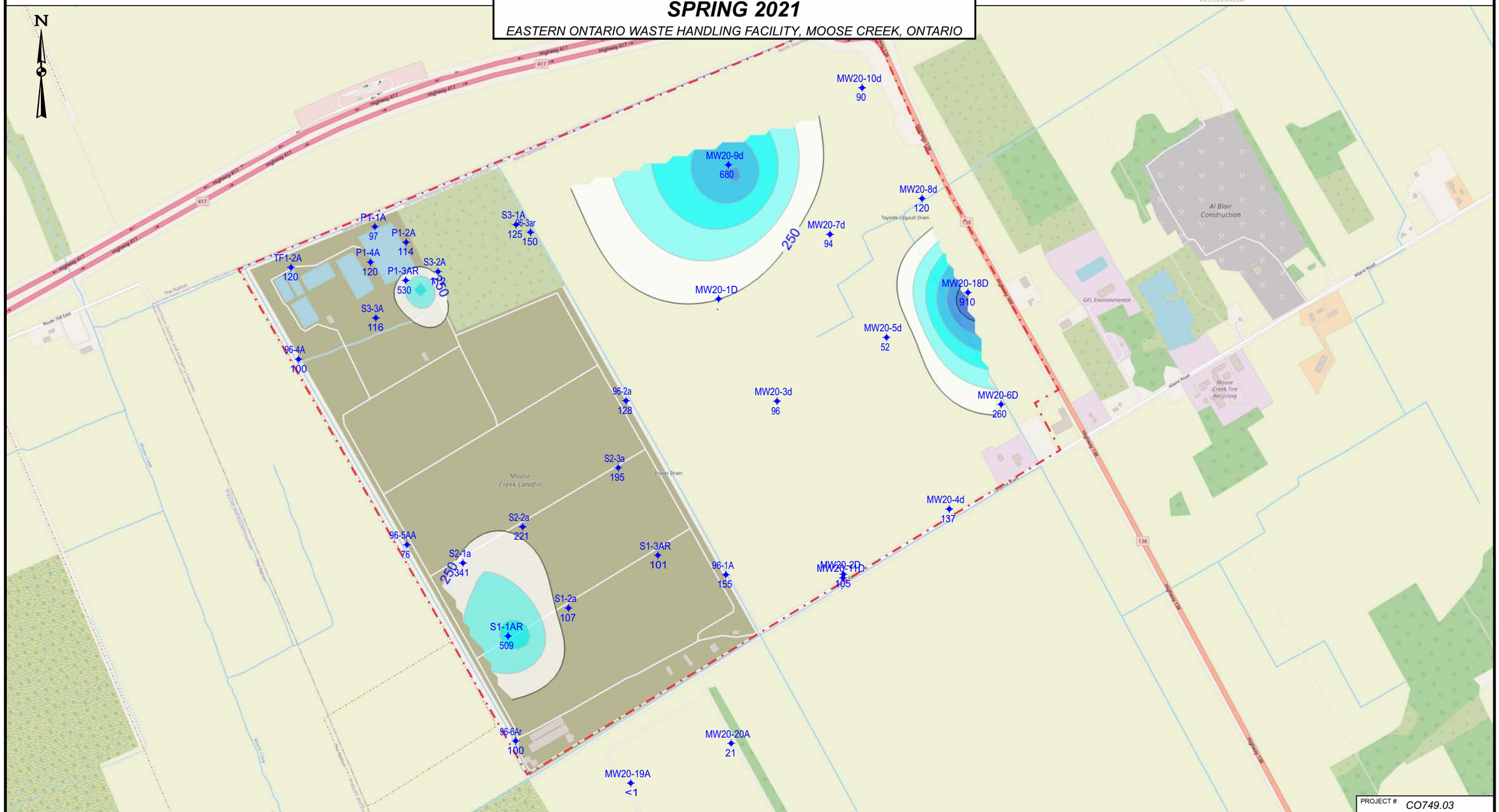
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11A2

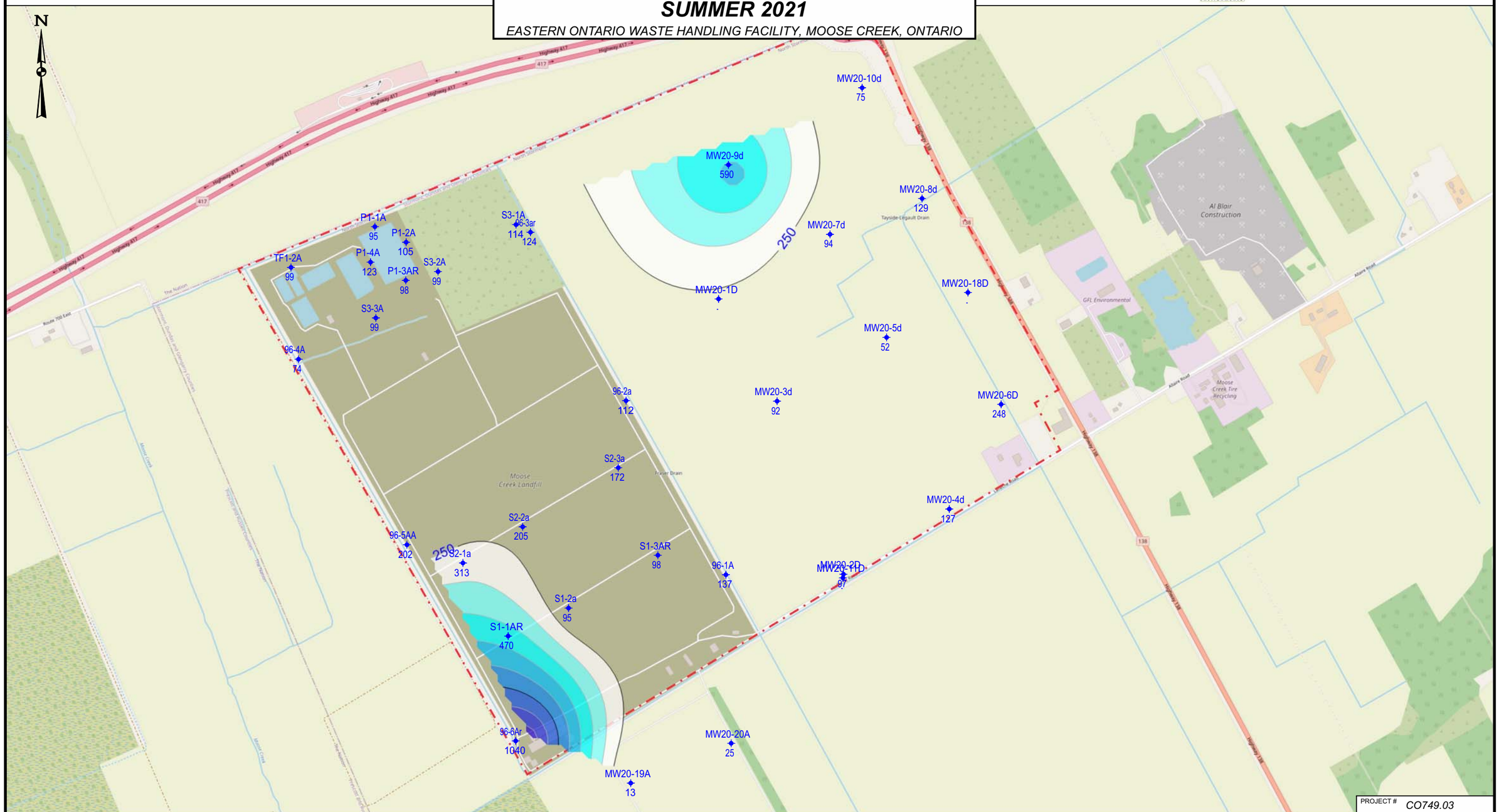
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11A3

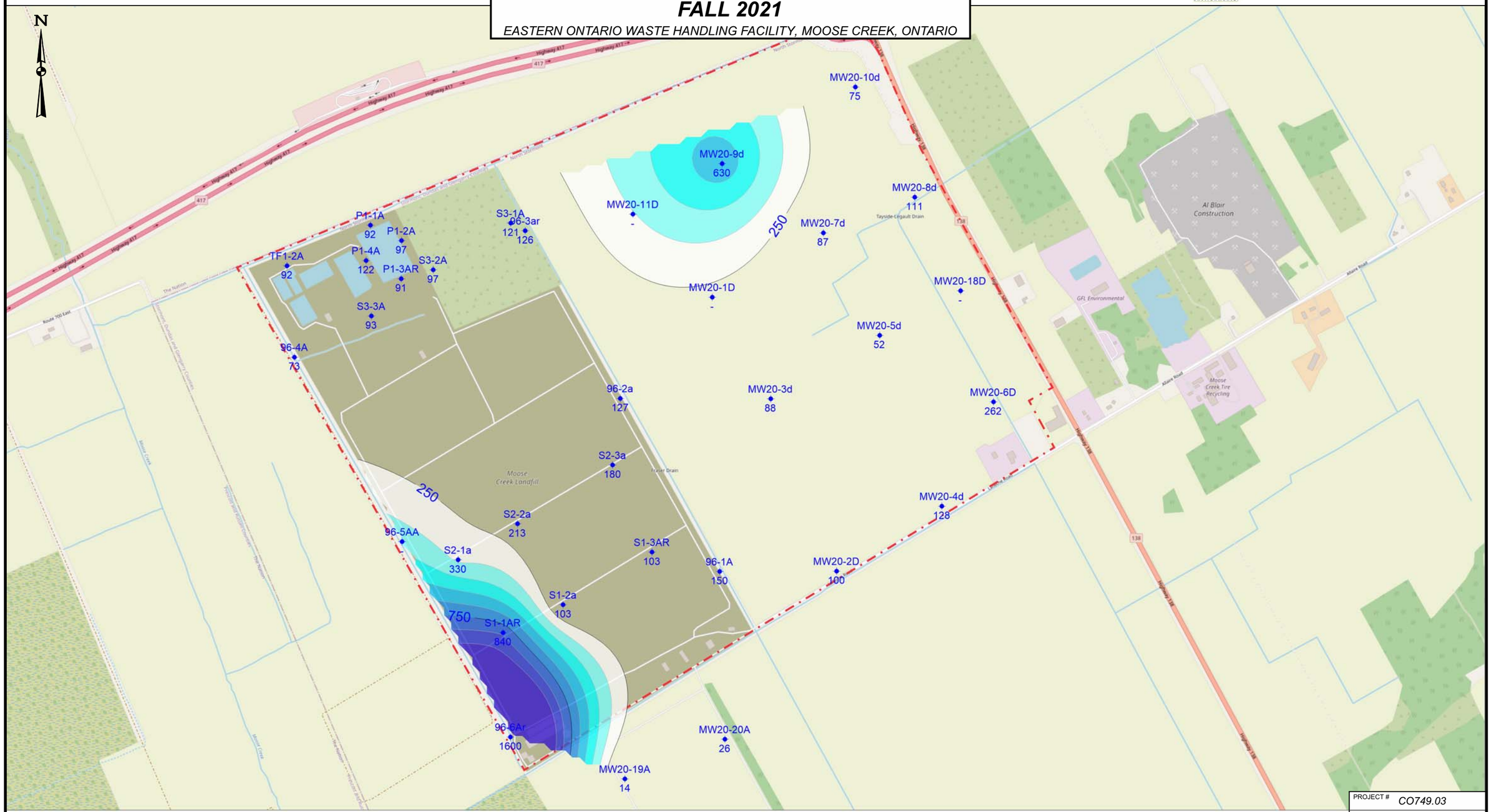
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 11A4

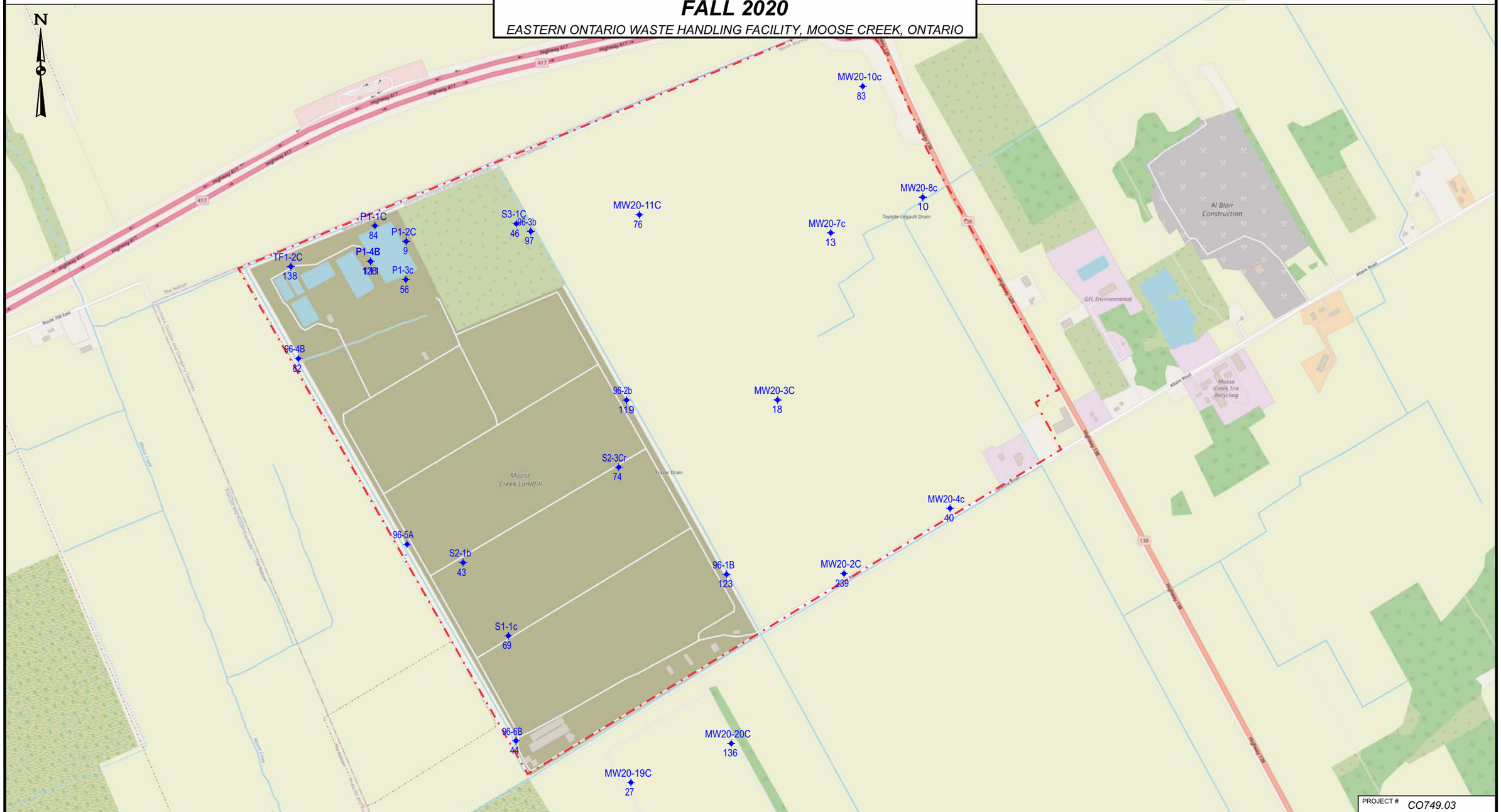
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 11B1

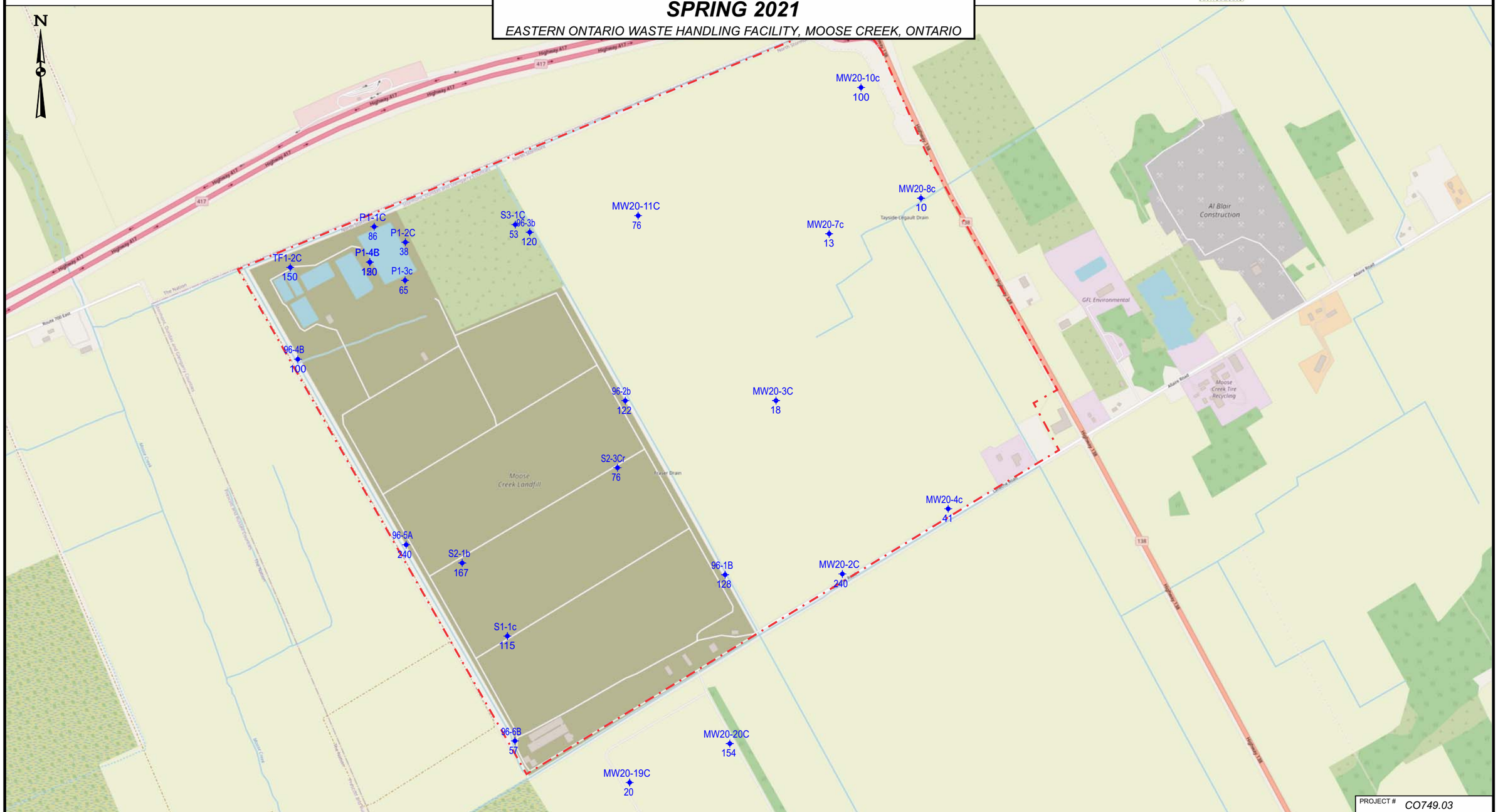
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11B2

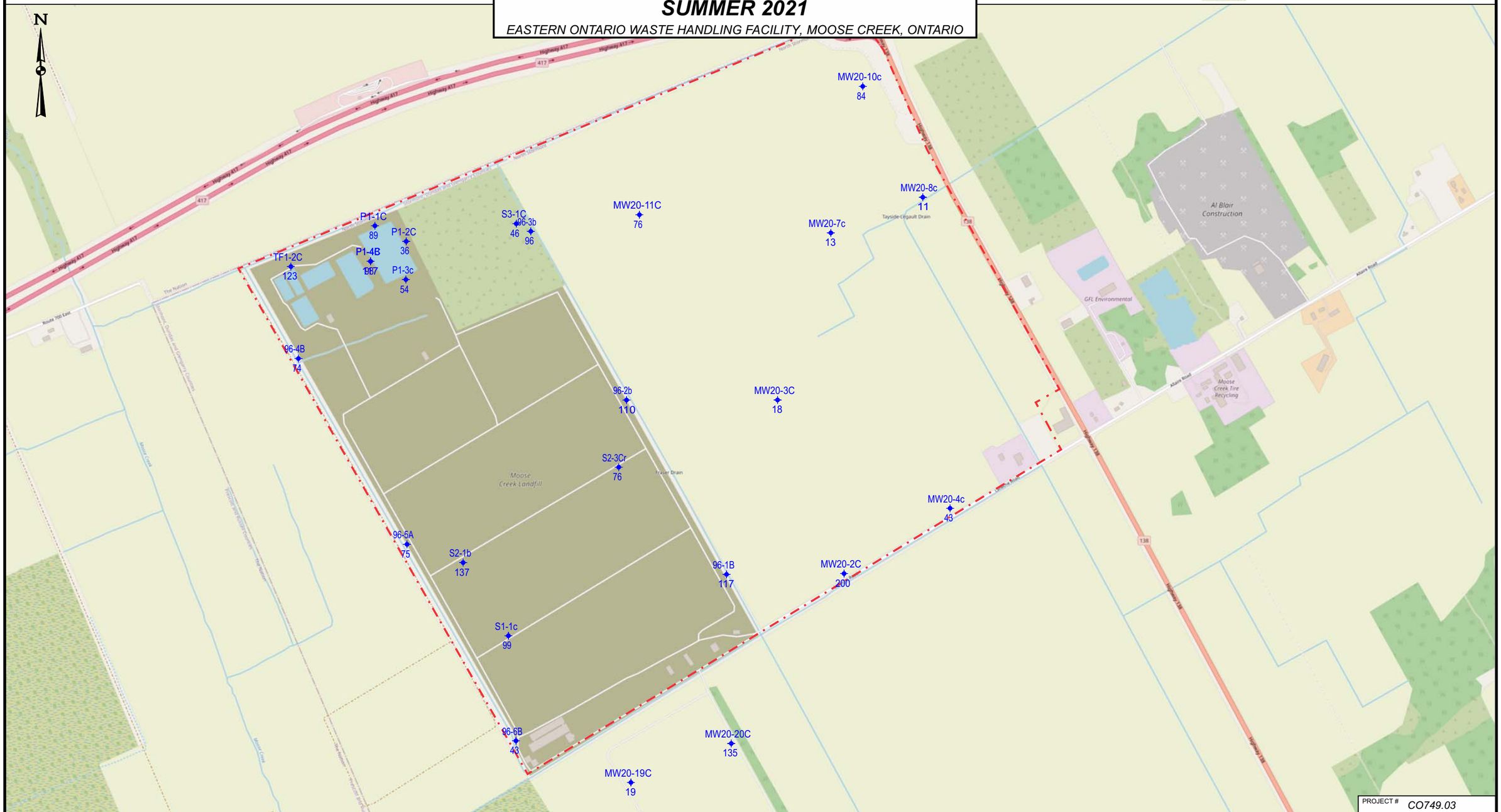
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11B3

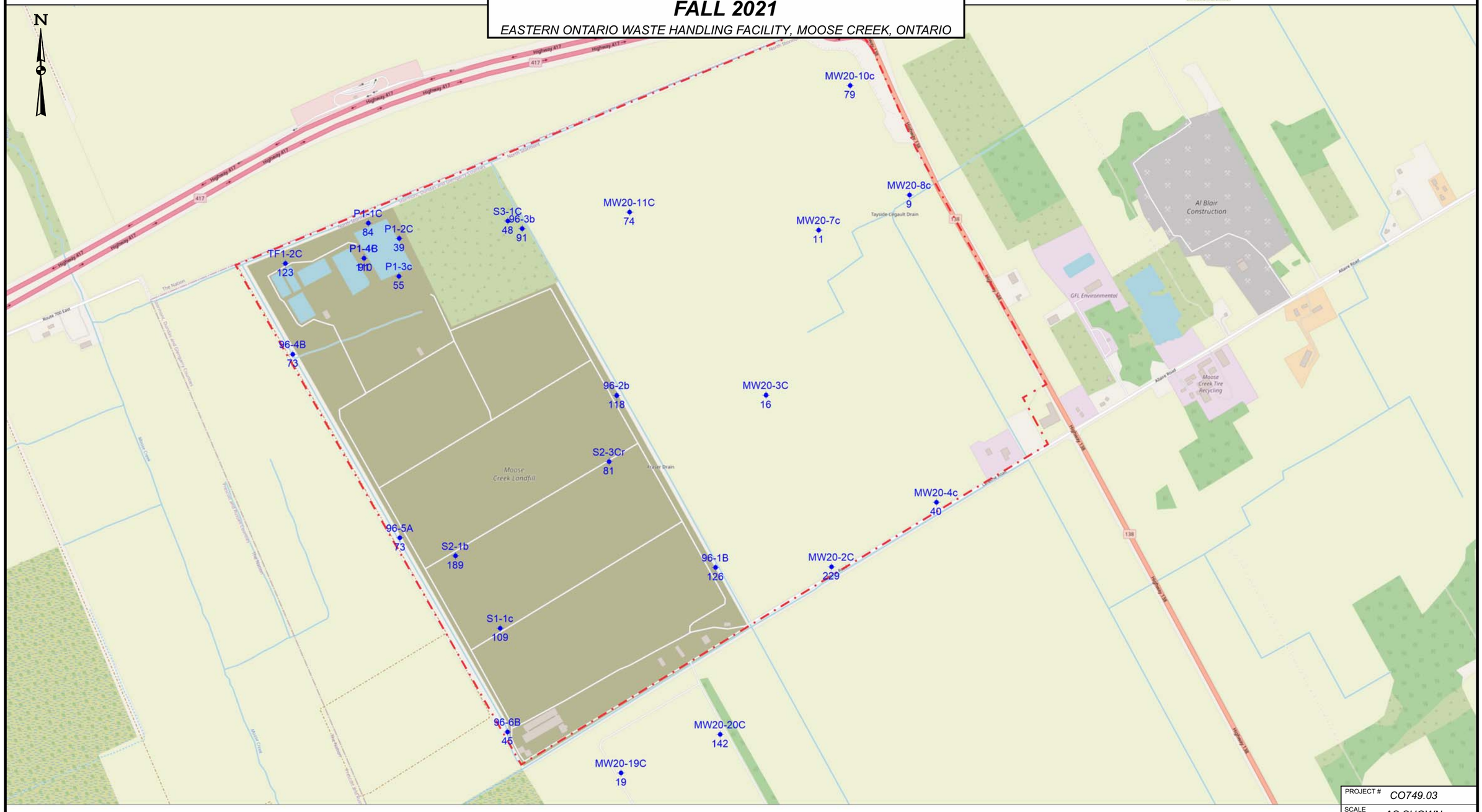
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 11B4

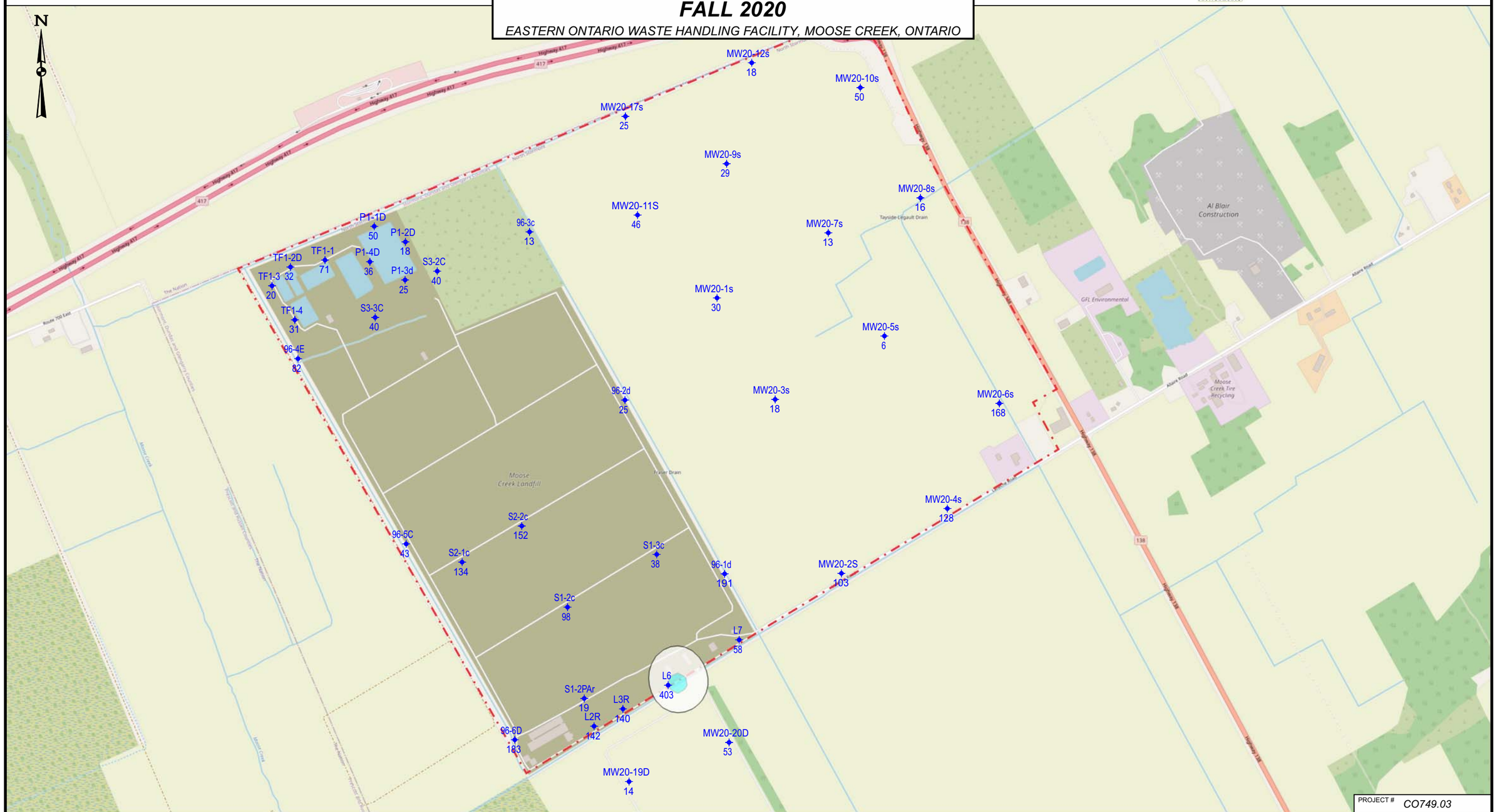
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11C1

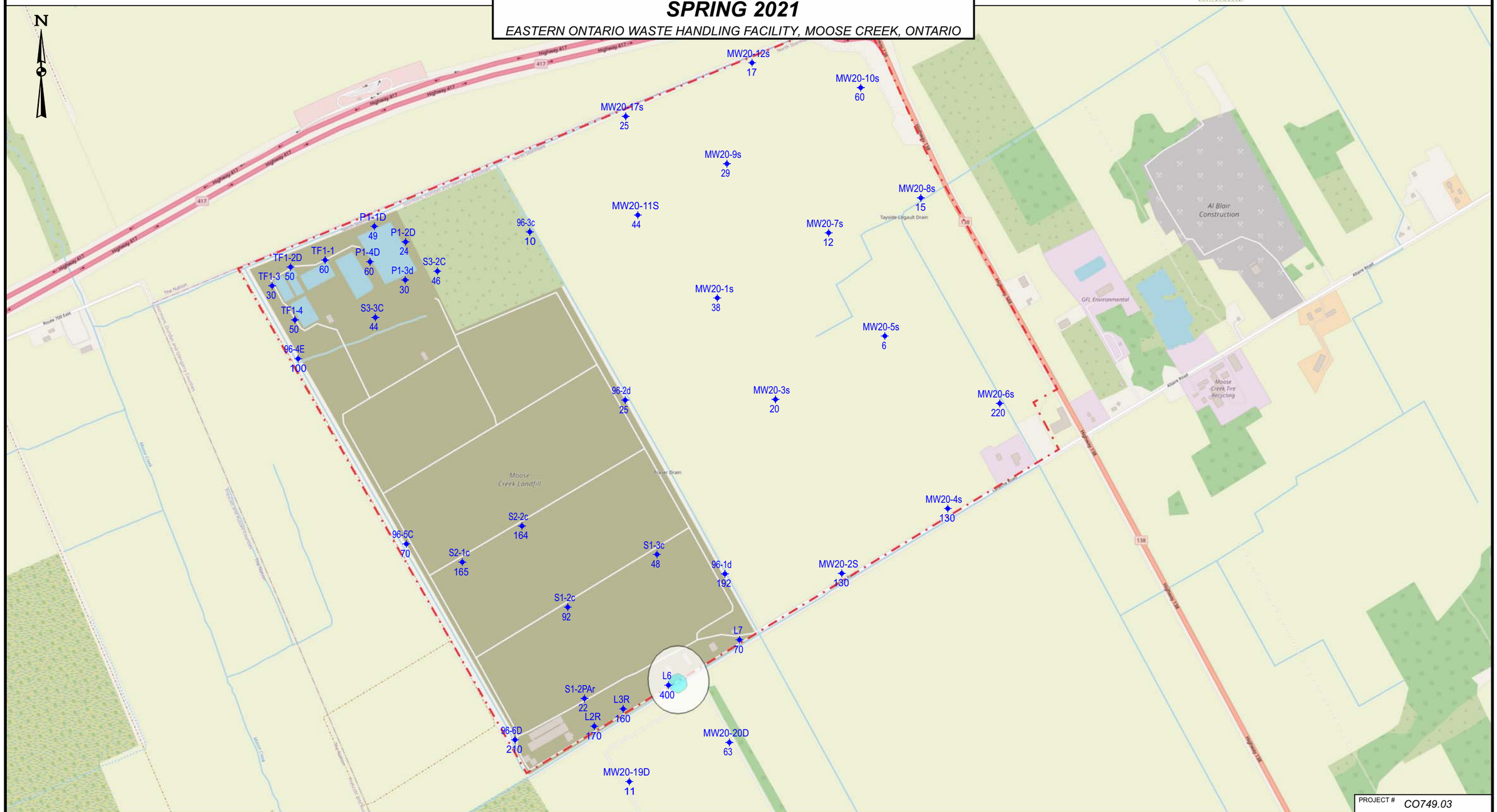
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11C2

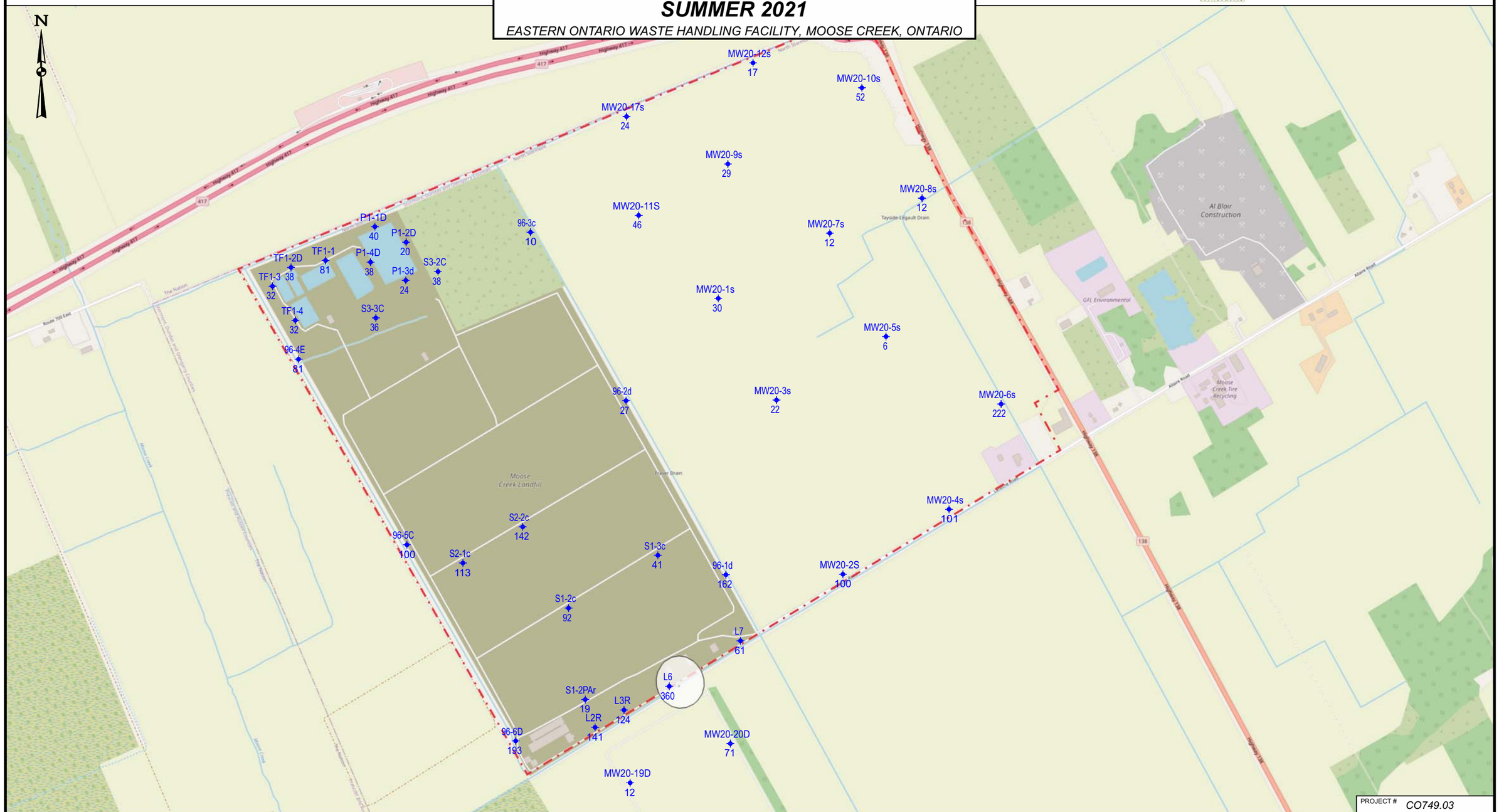
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11C3

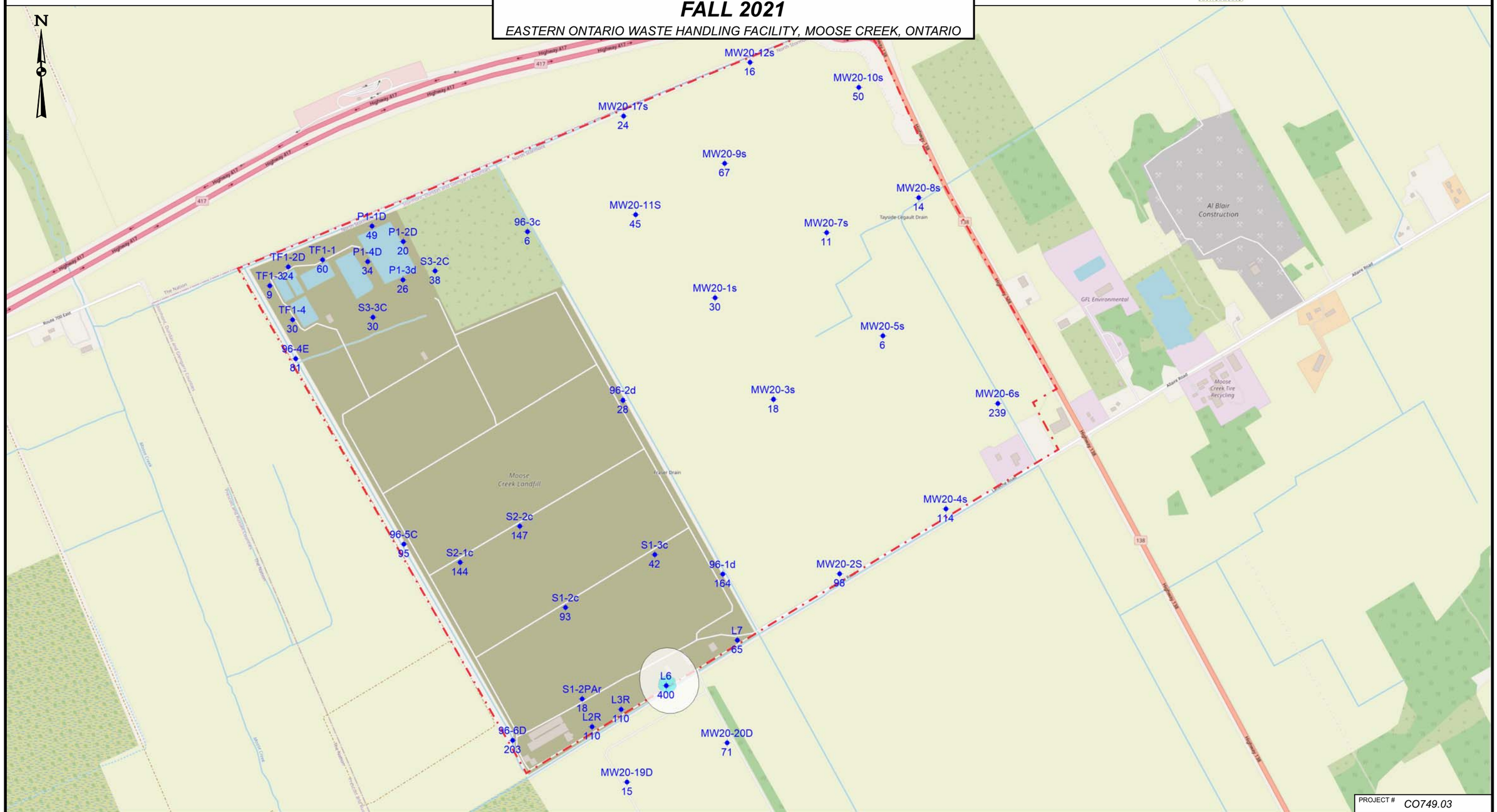
TERRAPEX

INTERPRETED CHLORIDE CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 11C4

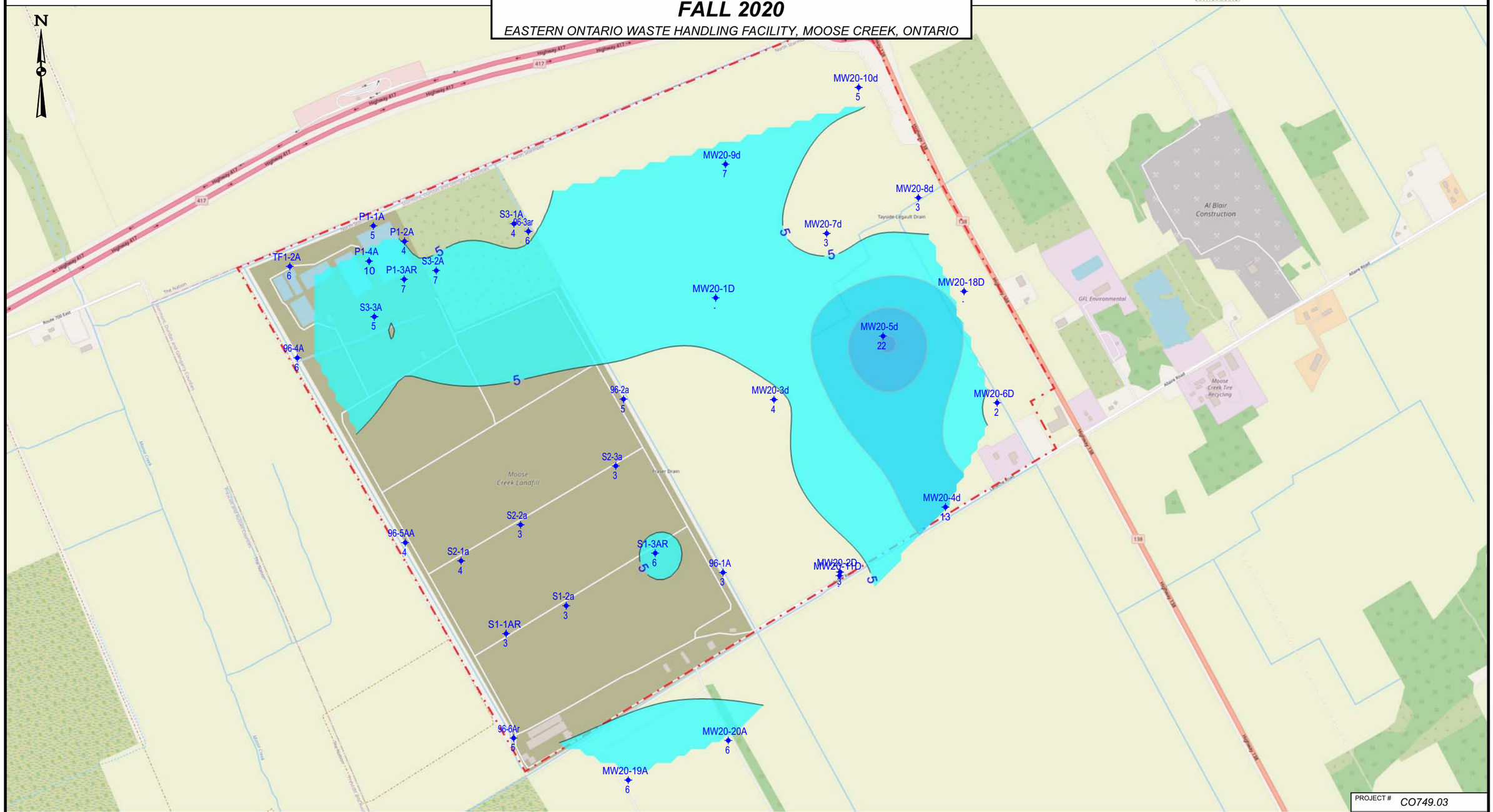
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN BEDROCK FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12A1

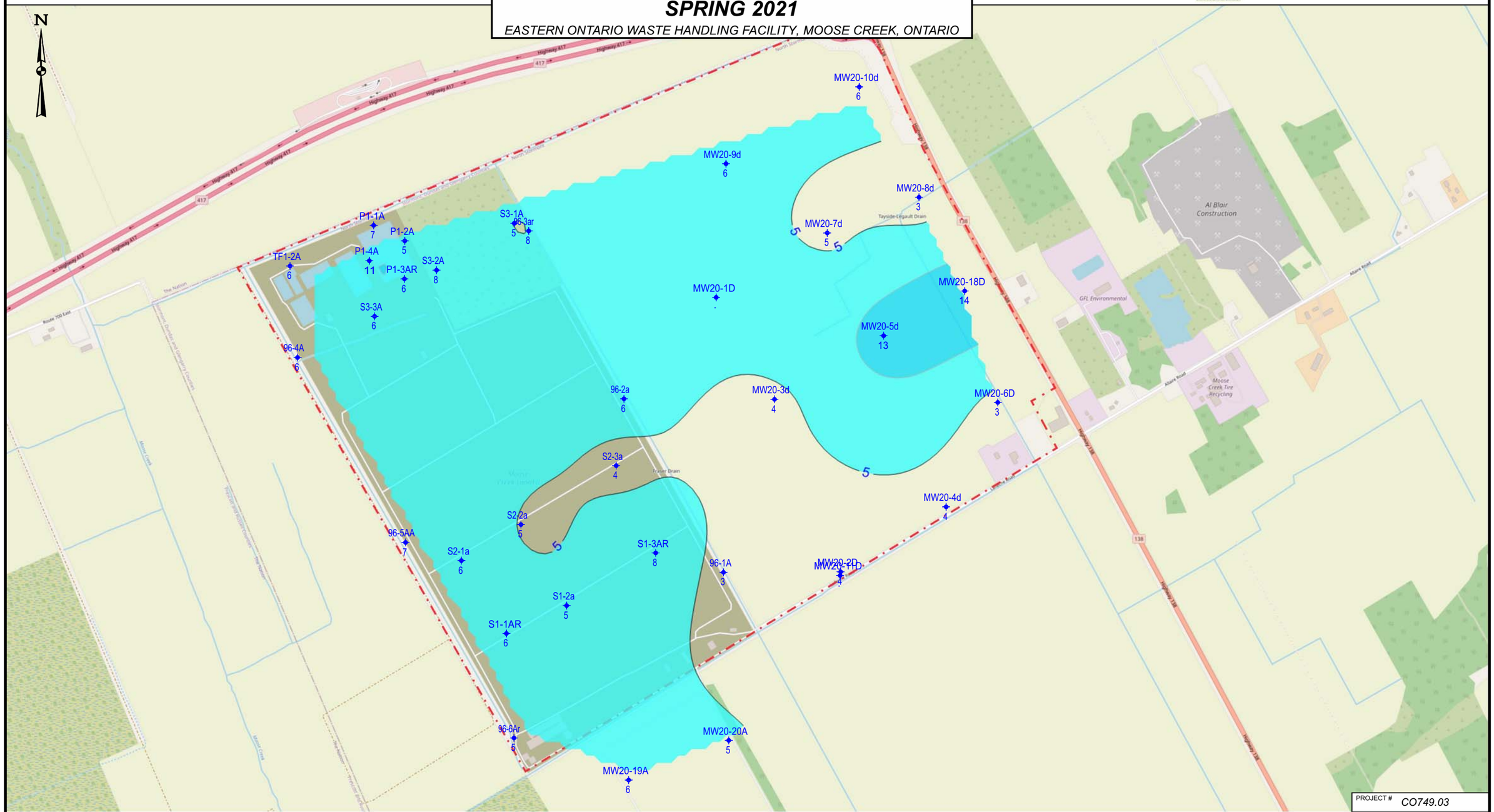
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN BEDROCK SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12A2

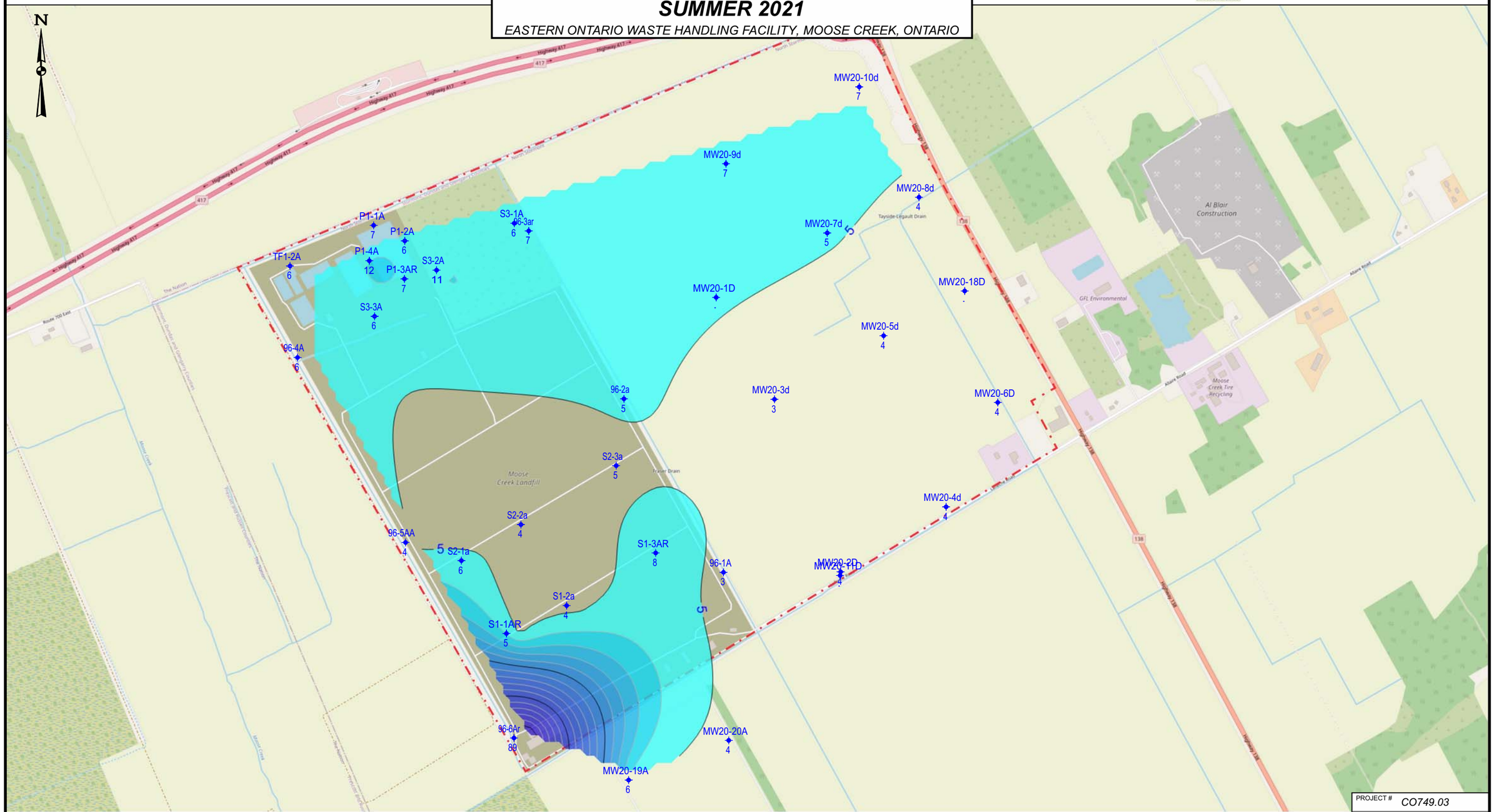
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN BEDROCK SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12A3

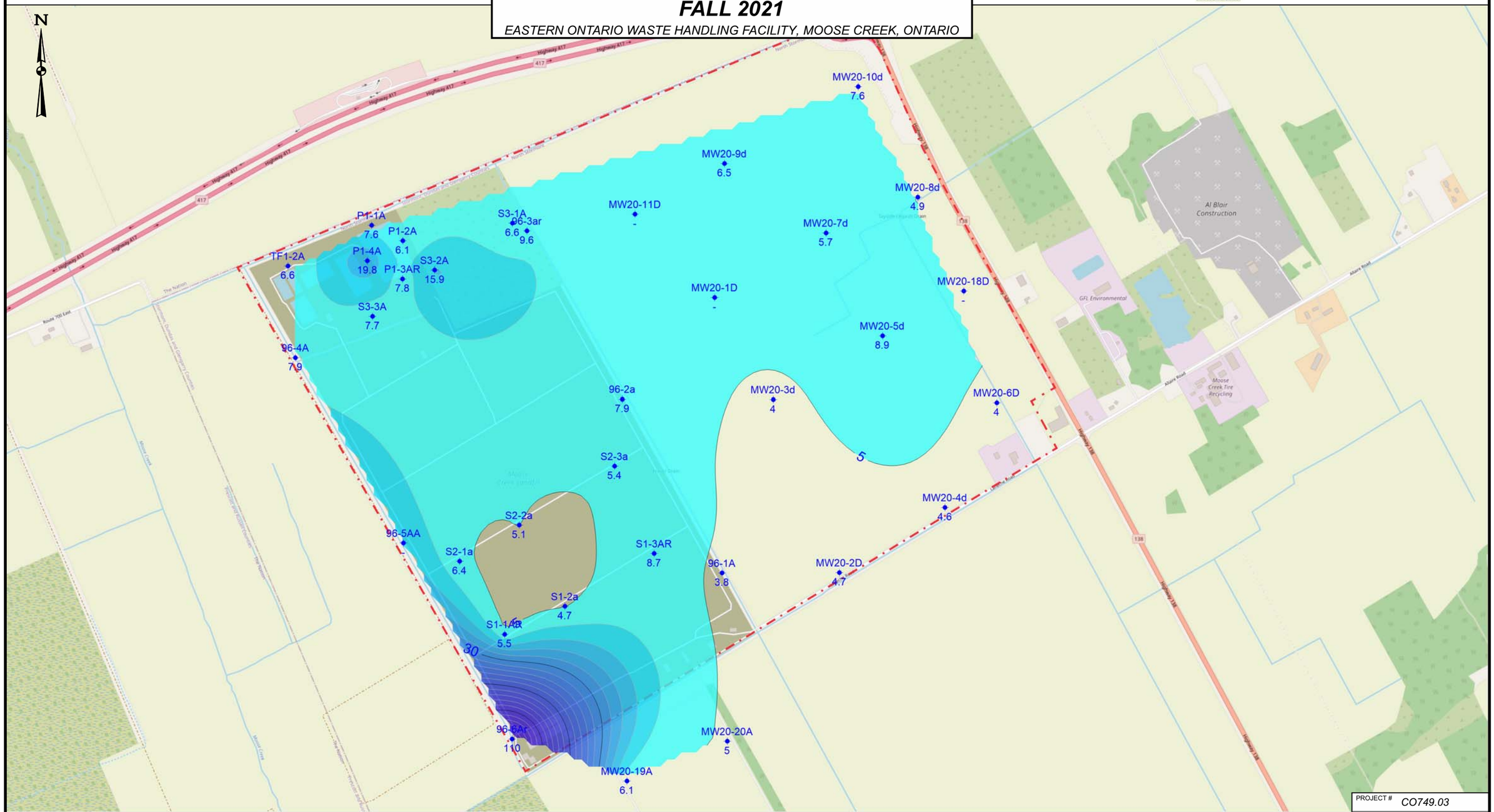
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN BEDROCK FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12A4

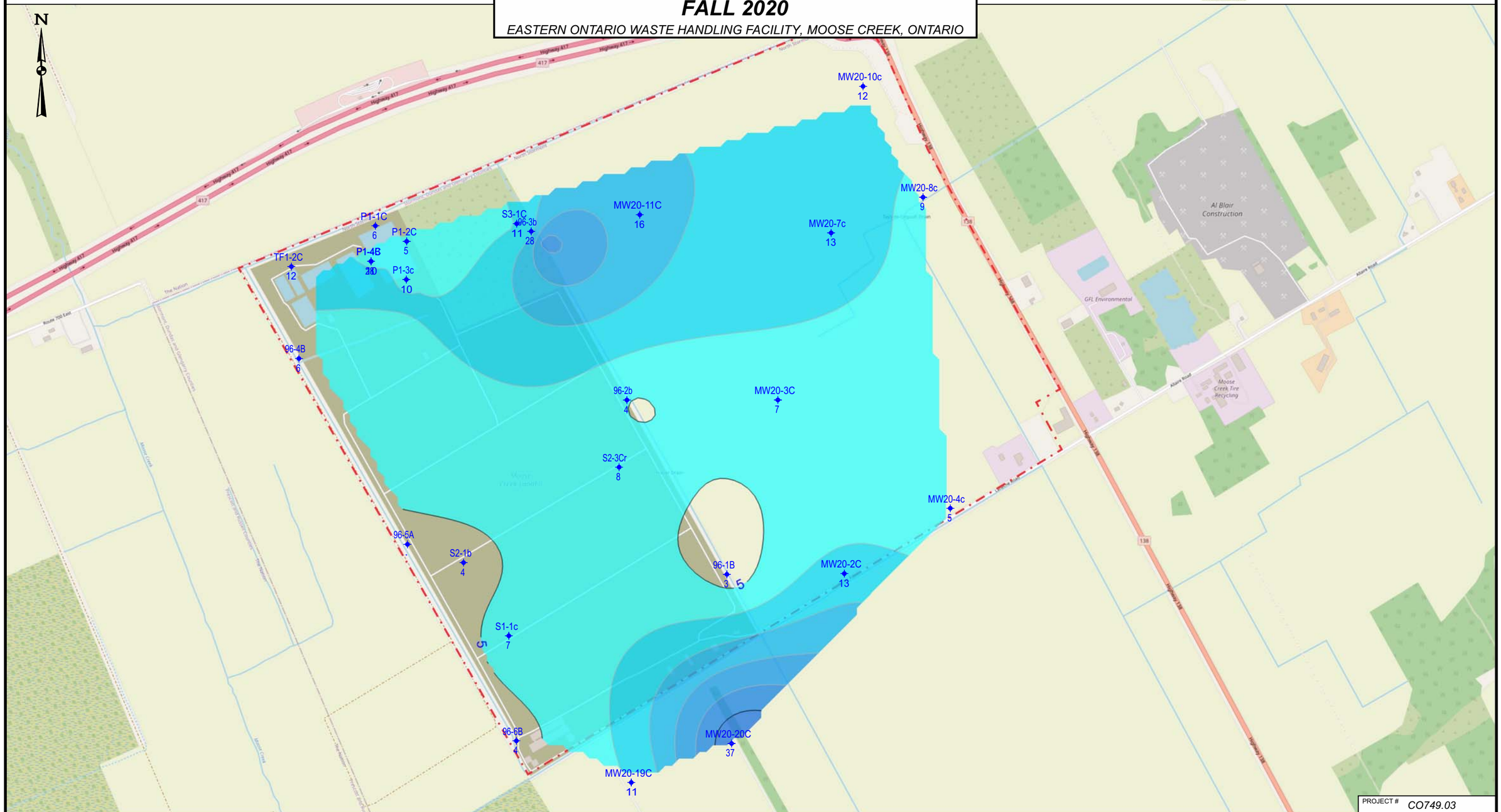
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SILTY CLAY FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 12B1

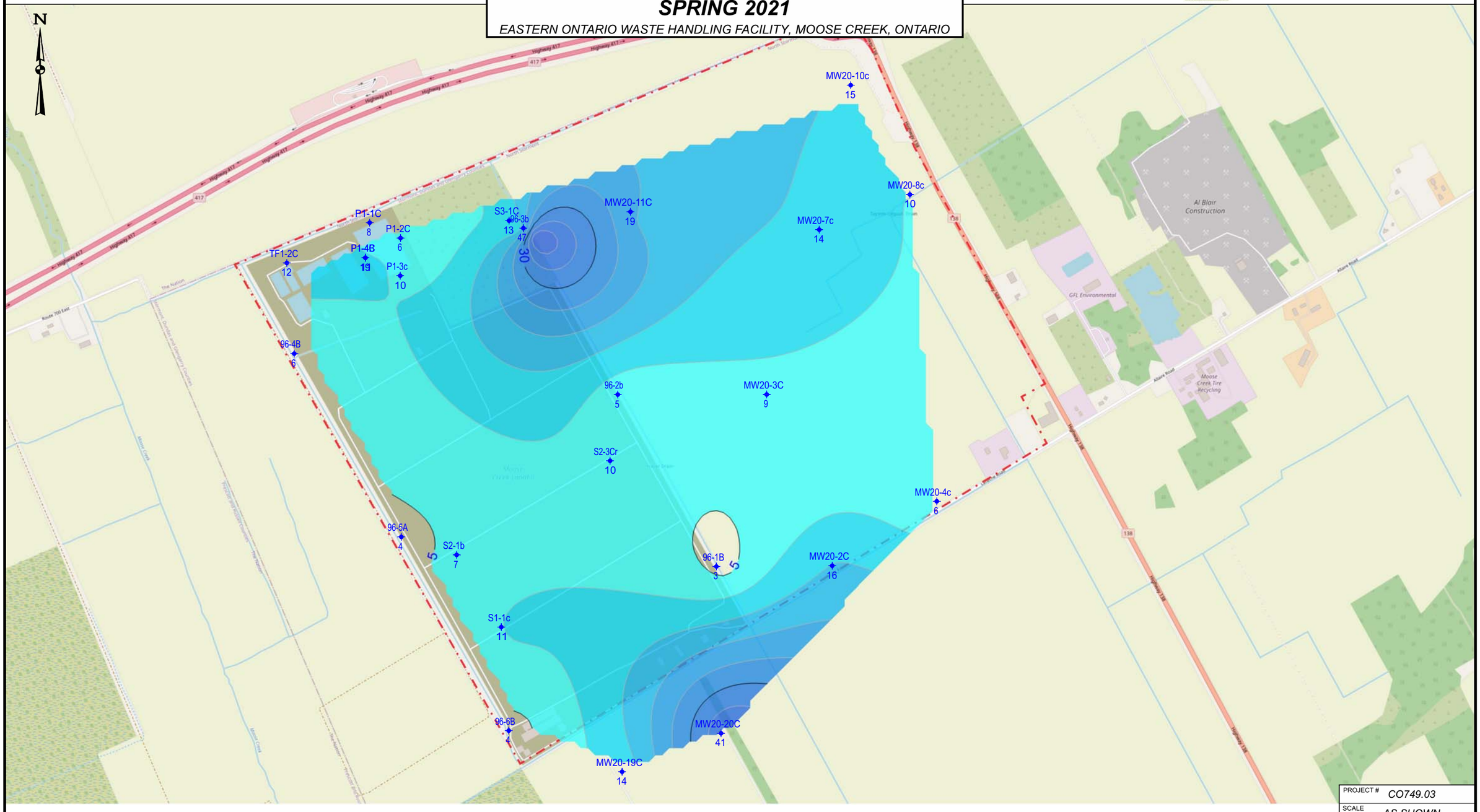
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SILTY CLAY SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12B2

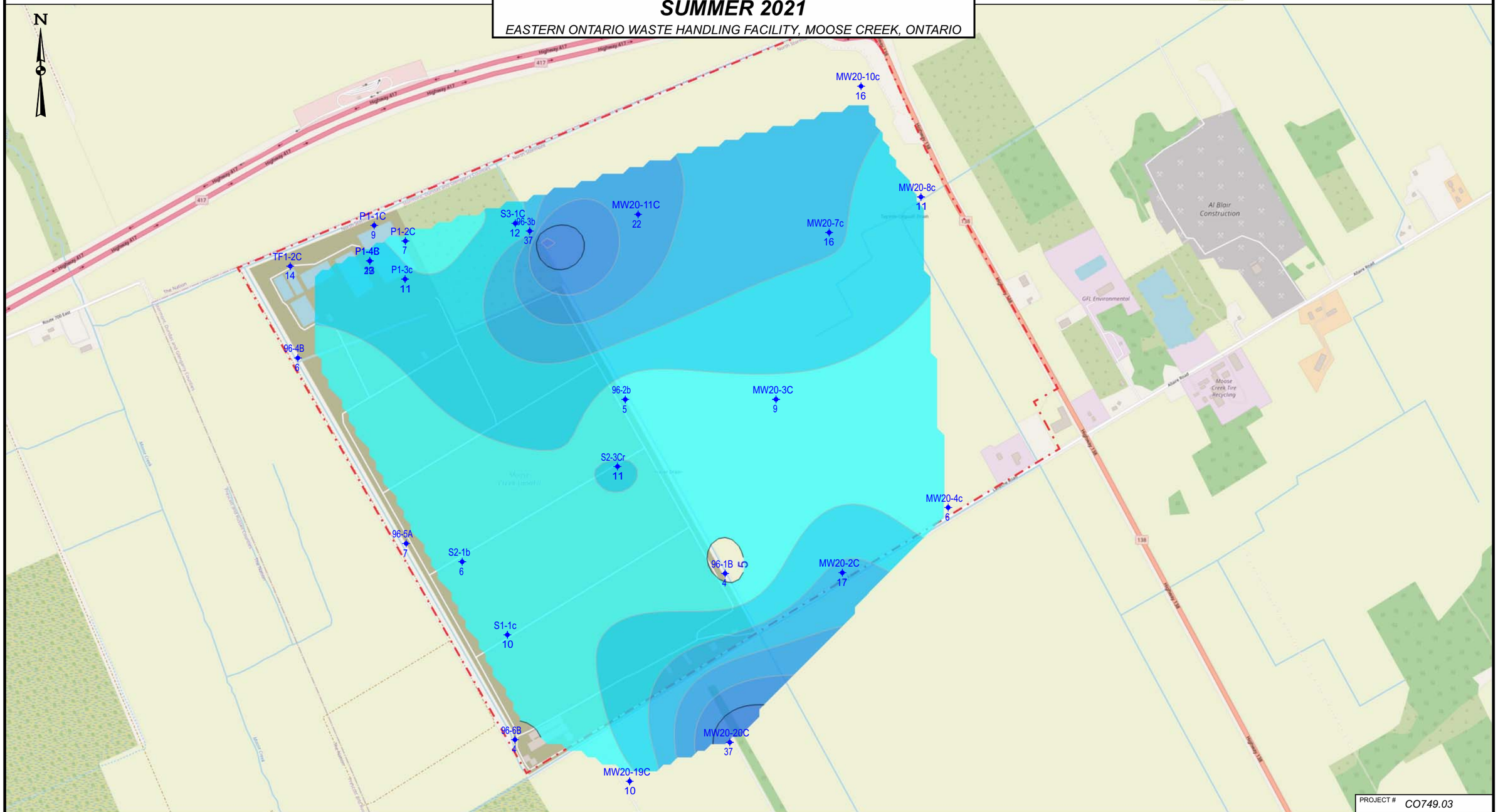
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SILTY CLAY SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12B3

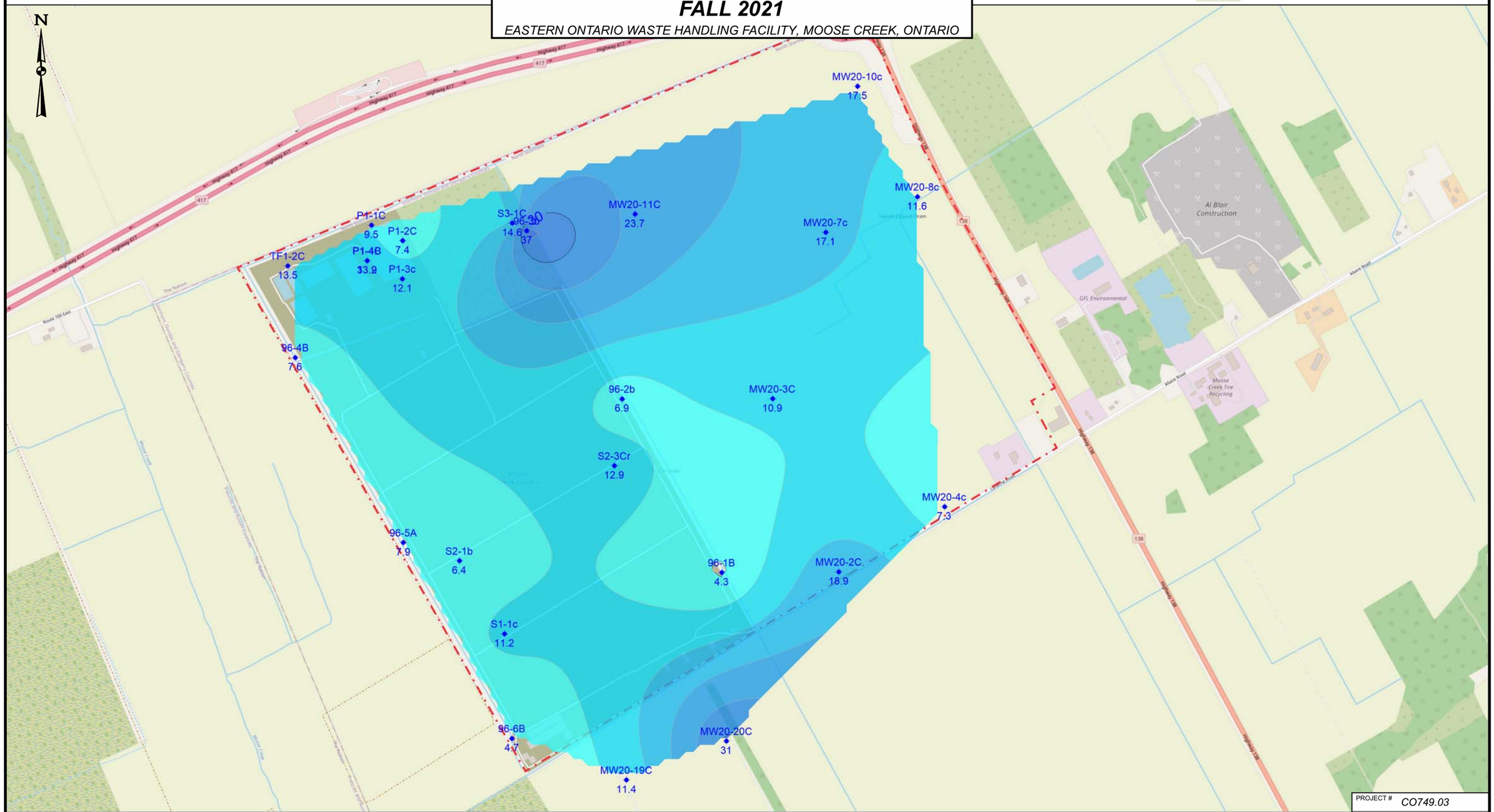
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SILTY CLAY FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12B4

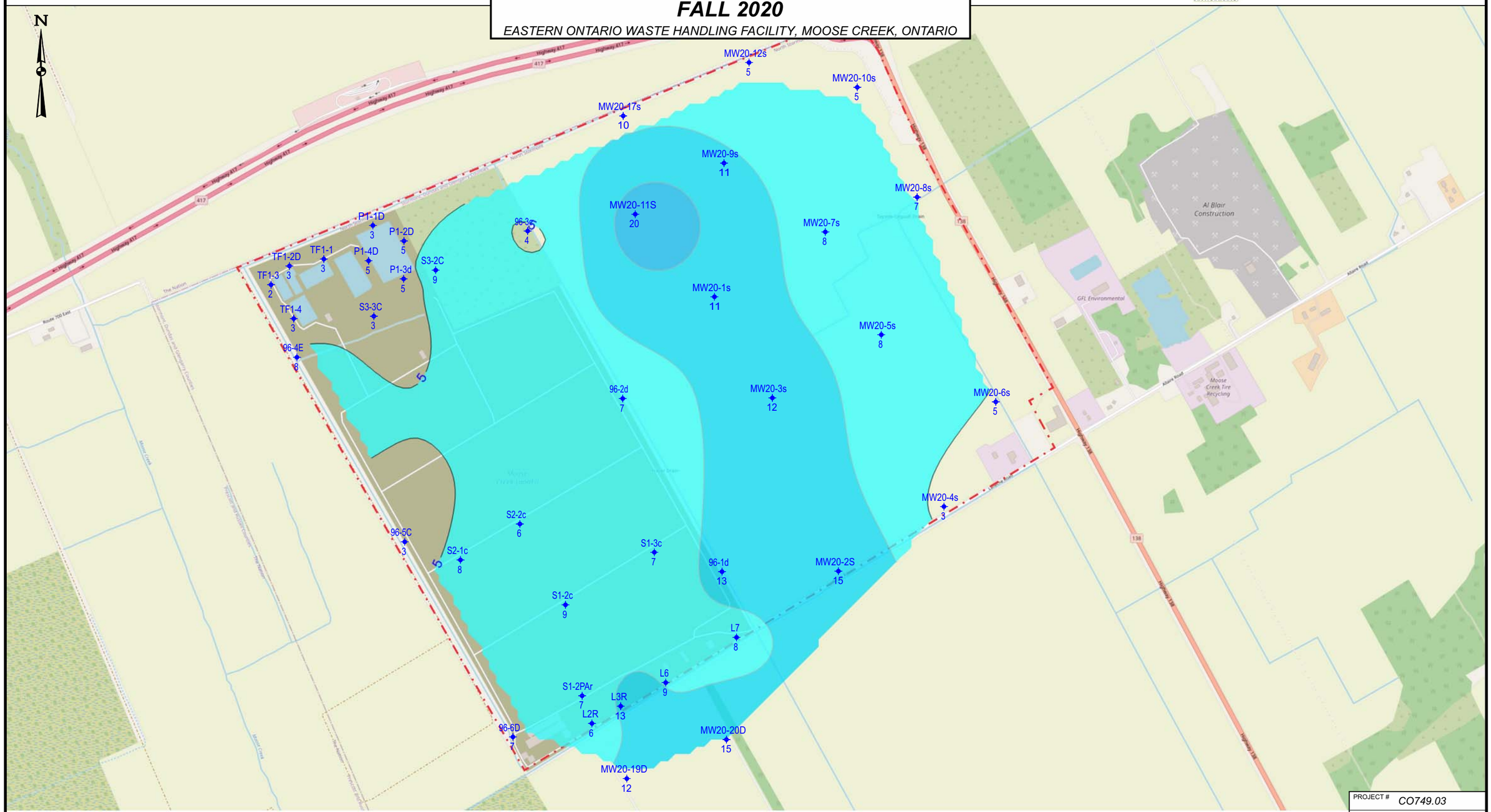
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2020

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12C1

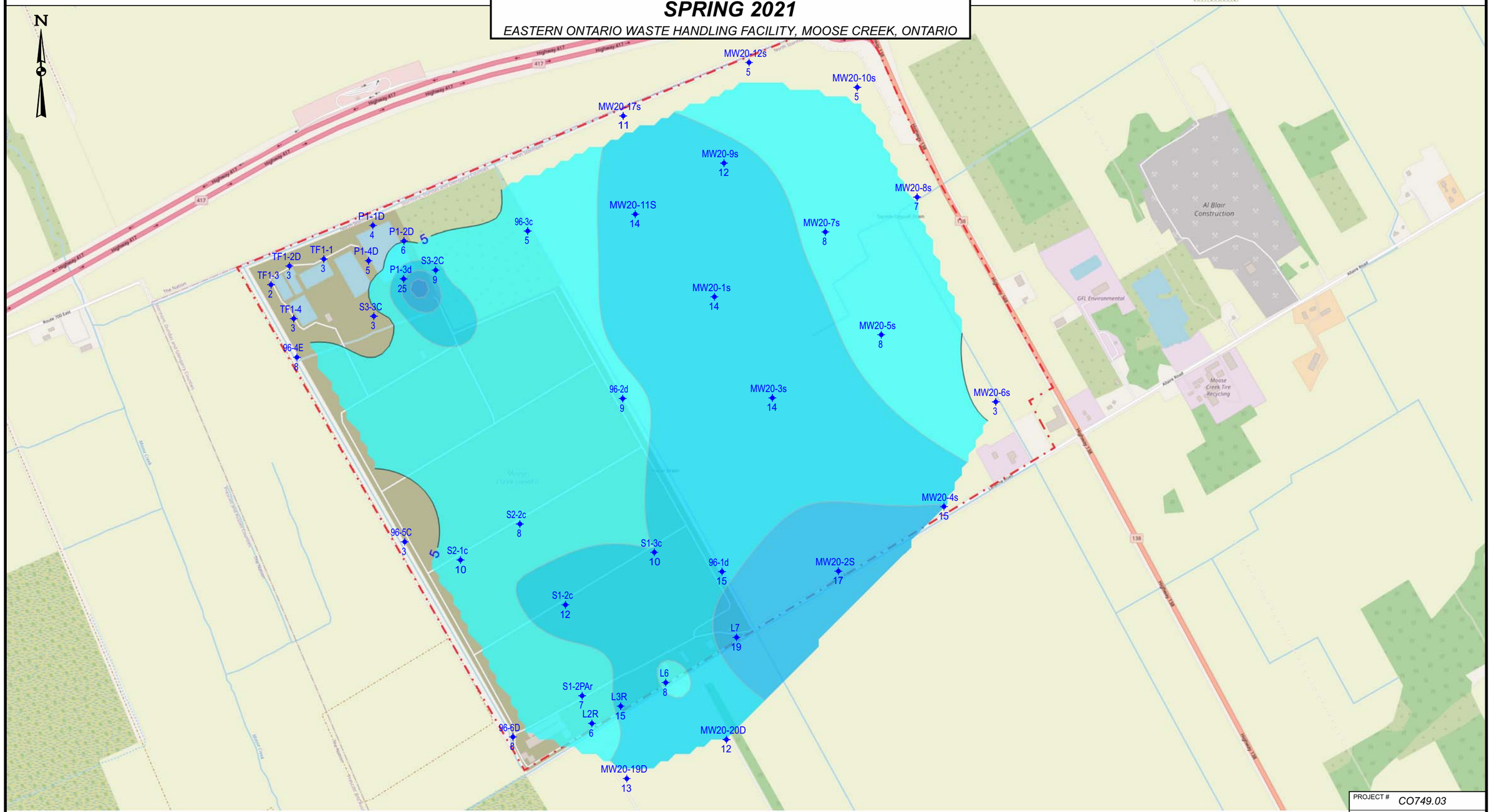
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SHALLOW WELLS SPRING 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN JO	CHECKED SR
DRAWING #	FIGURE 12C2

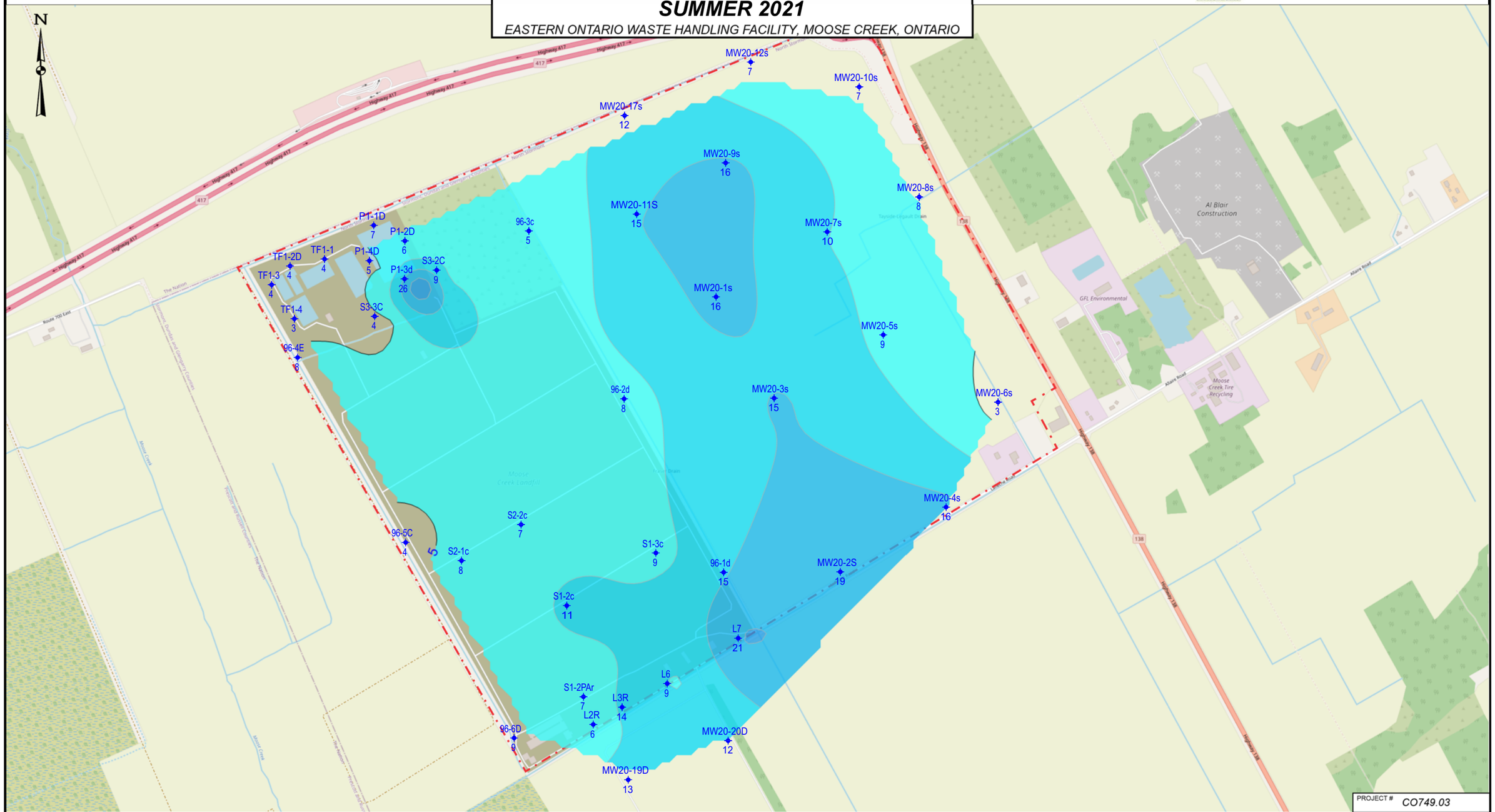
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SHALLOW WELLS SUMMER 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	FEBRUARY 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12C3

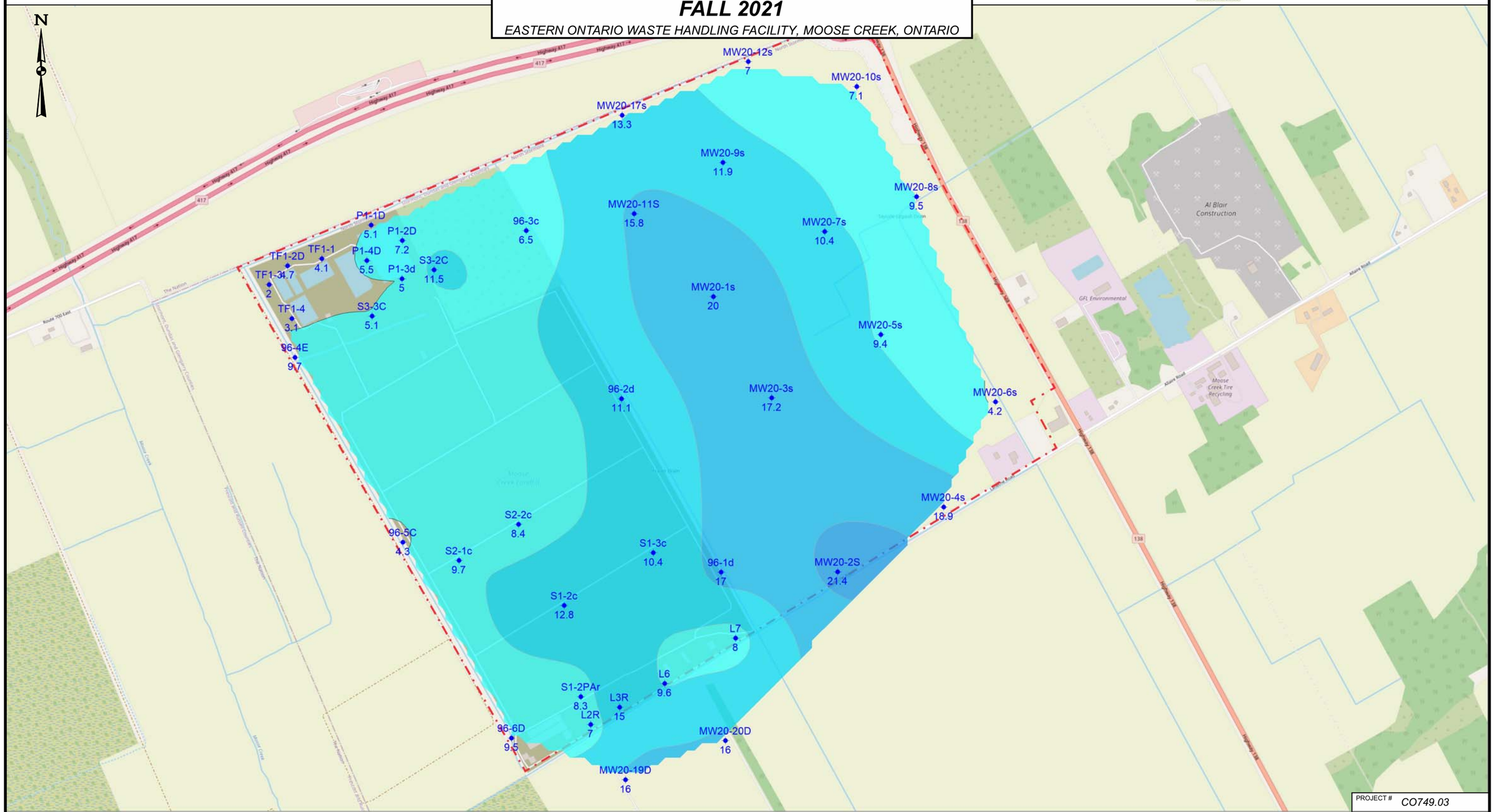
TERRAPEX

INTERPRETED DOC CONCENTRATION CONTOURS IN SHALLOW WELLS FALL 2021

EASTERN ONTARIO WASTE HANDLING FACILITY, MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

MONITORING LOCATION

SOURCE: OPEN STREET MAP

0 500m 1000m

(APPROXIMATE)

PROJECT #	CO749.03
SCALE	AS SHOWN
DATE	APRIL 2022
DRAWN	JO
CHECKED	SR
DRAWING #	FIGURE 12C4

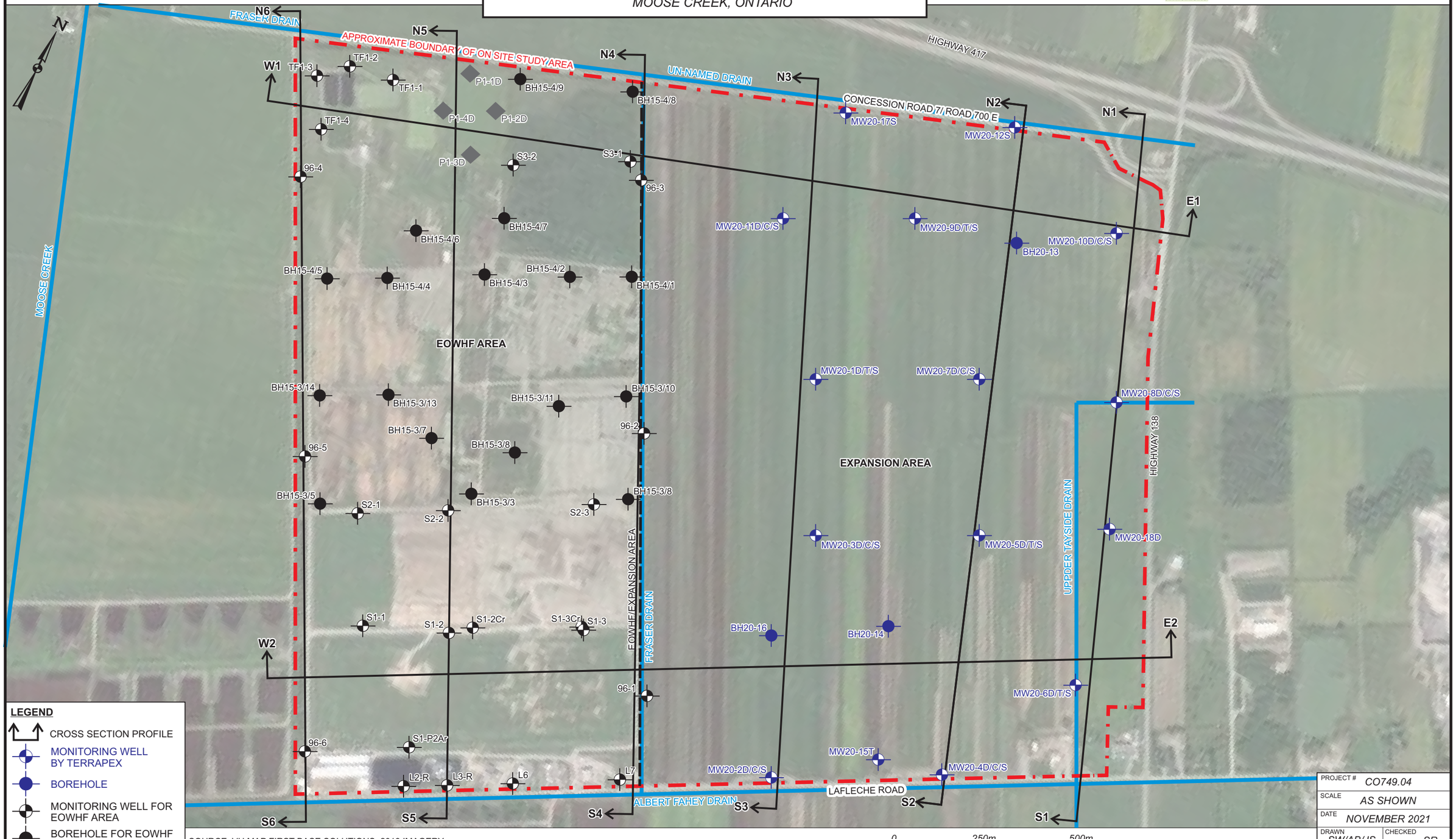
TERRAPEX

CROSS SECTION PLAN

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- CROSS SECTION PROFILE
- MONITORING WELL BY TERRAPEX
- BOREHOLE
- MONITORING WELL FOR EOWHF AREA
- BOREHOLE FOR EOWHF AREA
- NORTH LEACHATE POND MONITOR

SOURCE: VU MAP FIRST BASE SOLUTIONS, 2018 IMAGERY.

NOTES: DEEP WELL INSTALLED IN BEDROCK. SHALLOW WELL INSTALLED IN WEATHERED CLAY. INTERMEDIATE WELL INSTALLED IN CLAY (CL) OR TILL (T).

0 250m 500m
(APPROXIMATE)

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 13

TERRAPEX

CROSS SECTION - WEST TO EAST 1

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

WEST (W1) — **EAST (E1)**

LOOKING NORTH

PROPERTY BOUNDARY — PROPERTY BOUNDARY

HIGHWAY 138

ELEVATION (METRES ABOVE SEA LEVEL)

70m, 68m, 66m, 64m, 62m, 60m, 58m, 56m, 54m, 52m, 50m, 48m, 46m, 44m, 42m, 40m

-TF1-3
CL (SL)
-3.7

-TF1-2
D
CL(SL)
C
-11.1
SA (SL) GR
-12.8
SA (SL) TL
B
-14.3
LS
A
-17.1

-TF1-1
CL (SL)
-3.7

-P1-4
FL
-4.4
D
CL(SL)
C
16.3-16.5
SA (GR) TL
B
LS
A
-19.8

-P1-2
FL
-5.1
D
CL(SL)
C
-9.5
SA (SL, GR) TL
B
-16.5
LS (SH)
A
-20.1

-S3-1
-MW96-3
PE
1.5-
D
CL (SL)
C
12.2-
SA (SL,GR) TL
B
SH 14.8-15.1-
LS
A
17.1-

FRASER DRAIN

GROUND SURFACE

PEAT

PE
-1.3
C
CL (SL)
B
-14.9
SA+GR
-15.6
LS
AR
-19.7

BASE OF CLAY

BEDROCK

-MW20-11
(PROJECTED)
TS
-1.2
S
CL (SL)
C
21.7
LS
D
-23.1

CLAY WITH SILT

-MW20-9
TS 1.1
S
CL (SL)
-13.3
SA(SL,GR) TL
T
-19.1
LS (SH)
D
-22.4

GRAVELLY SAND TILL

-17.5
SA(GR)TL
-18.9

-BH20-13
CL (SL)
-13.7 TL
-14.3

INFERRED STRATIGRAPHY

-MW20-10
TS
-0.8
S
CL(SL)
C
-15.5
-15.8
SA(GR) TL
LS (SH)
D
-19.0

GROUND SURFACE

BEDROCK

LIMESTONE

LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		

MW104 - MONITORING WELL DESIGNATION

STATIC WATER LEVEL-

DEPTH OF SOIL INTERFACE(m bg)- 3.7-

- SCREENED ZONE

- BOREHOLE

HORIZONTAL SCALE:

0 150m 300m

NOTES:
1. SOIL AND GROUNDWATER KNOWN ONLY AT BOREHOLE LOCATIONS.
2. Groundwater levels measured on 8 April 2020 for most wells. February 2020 used for bedrock wells that did not recover.
3. WATER LEVELS ON 8-APR-2020 FOR MW20-# AND ON 7 MAY 2020 FOR MW96-#
4. WATER LEVELS IN EDWHF AREA AS SHOWN BOREHOLE REMOVED

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 14

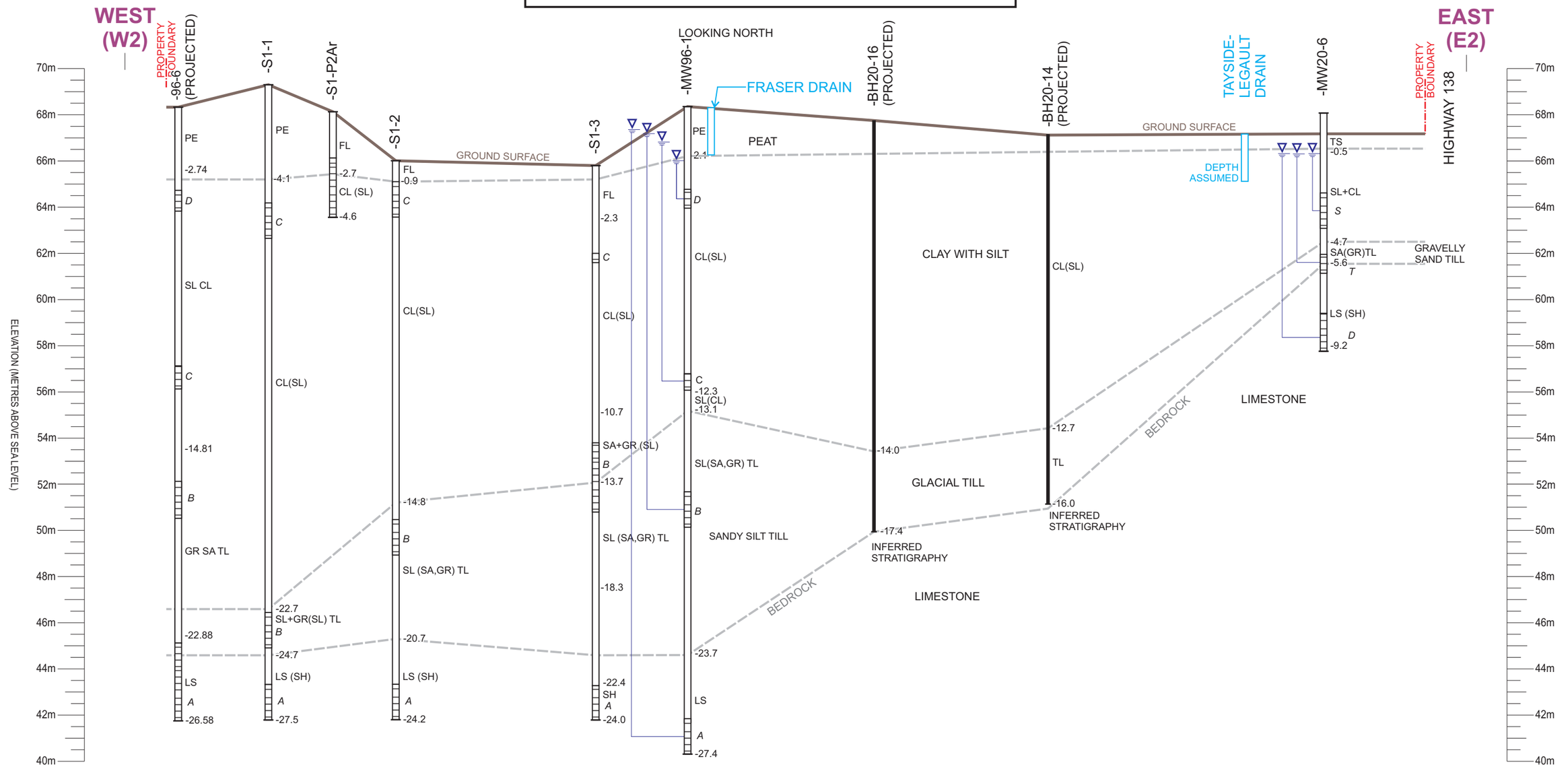
TERRAPEX

CROSS SECTION: WEST TO EAST 2

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		

MW104 - MONITORING WELL DESIGNATION

STATIC WATER LEVEL-

DEPTH OF SOIL INTERFACE(m bg)- 3.7-

- SCREENED ZONE

- BOREHOLE

HORIZONTAL SCALE:

0 150m 300m

NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for MW20-# and on 7 May 2020 for MW96-#.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 15

TERRAPEX

CROSS SECTION: SOUTH TO NORTH 1

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

SOUTH (S1) — **NORTH (N1)**

LOOKING WEST

LAFLECHE ROAD

PROPERTY BOUNDARY

HIGHWAY 417 INTERCHANGE

GROUND SURFACE

TAYSIDE-LEGAULT DRAIN

DEPTH ASSUMED

ELEVATION (METRES ABOVE SEA LEVEL)

70m, 68m, 66m, 64m, 62m, 60m, 58m, 56m, 54m, 52m, 50m, 48m, 46m, 44m, 42m, 40m

MW20-6
- -0.3 TS
- SL+CL
- S
- -4.7
- SA (GR) TL
- T -5.6
- LS (SH)
- T
- -9.2

MW20-18
- CL(SL)
- -5.8
- TL
- -10.3
- LS (SH)
- D
- -14.2

MW20-8
- S
- CL (SL)
- C
- -9.5
- LS (SH)
- D
- -7.5

MW20-10
- S
- C
- SL (CL)
- -15.5
- SA (GR) TL
- -15.8
- LS (SH)
- D
- -18.9

SILTY CLAY

GRAVELLY SAND TILL

LIMESTONE

SILTY CLAY

GRAVELLY SAND TILL

LIMESTONE

LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		

MW104 - MONITORING WELL DESIGNATION

STATIC WATER LEVEL-

DEPTH OF SOIL INTERFACE(m bg)- 3.7-

- SCREENED ZONE

- BOREHOLE

NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for MW20-# and on 7 May 2020 for MW96-#.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

HORIZONTAL SCALE:

0 100m 200m

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/JS
CHECKED	SR
DRAWING #	FIGURE 16

TERRAPEX

CROSS SECTION - SOUTH TO NORTH 2

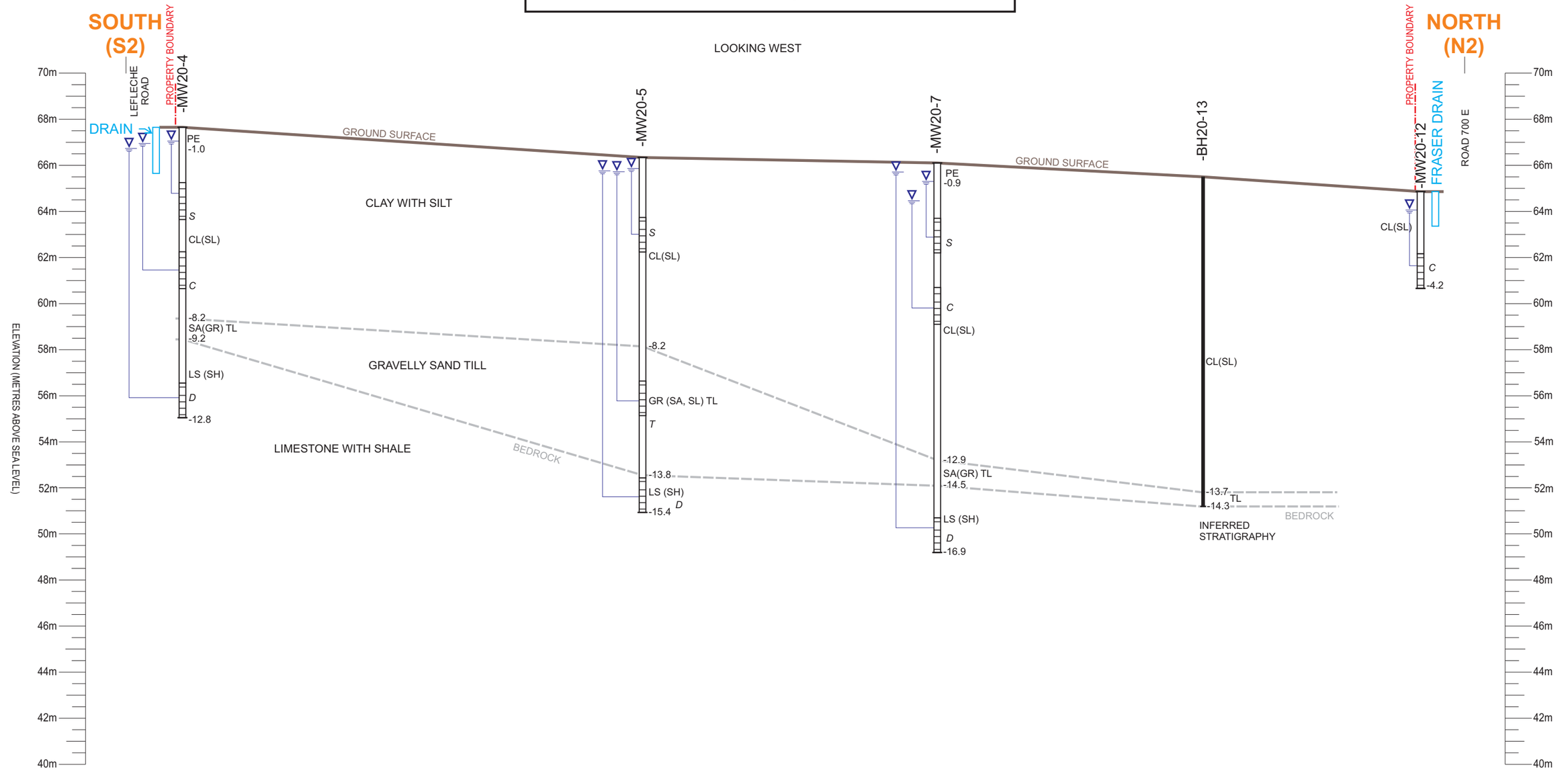
EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental

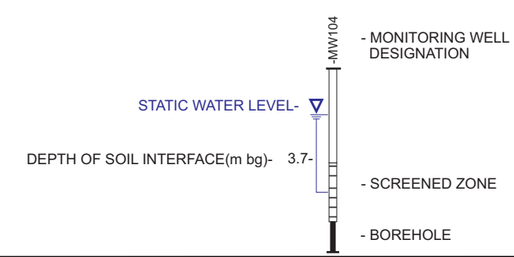
SOUTH (S2) — **NORTH (N2)**

LOOKING WEST



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		



HORIZONTAL SCALE:

0 100m 200m

NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for most wells. February 2020 used for bedrock wells that did not recover.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 17

TERRAPEX

CROSS SECTION - SOUTH TO NORTH 3

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

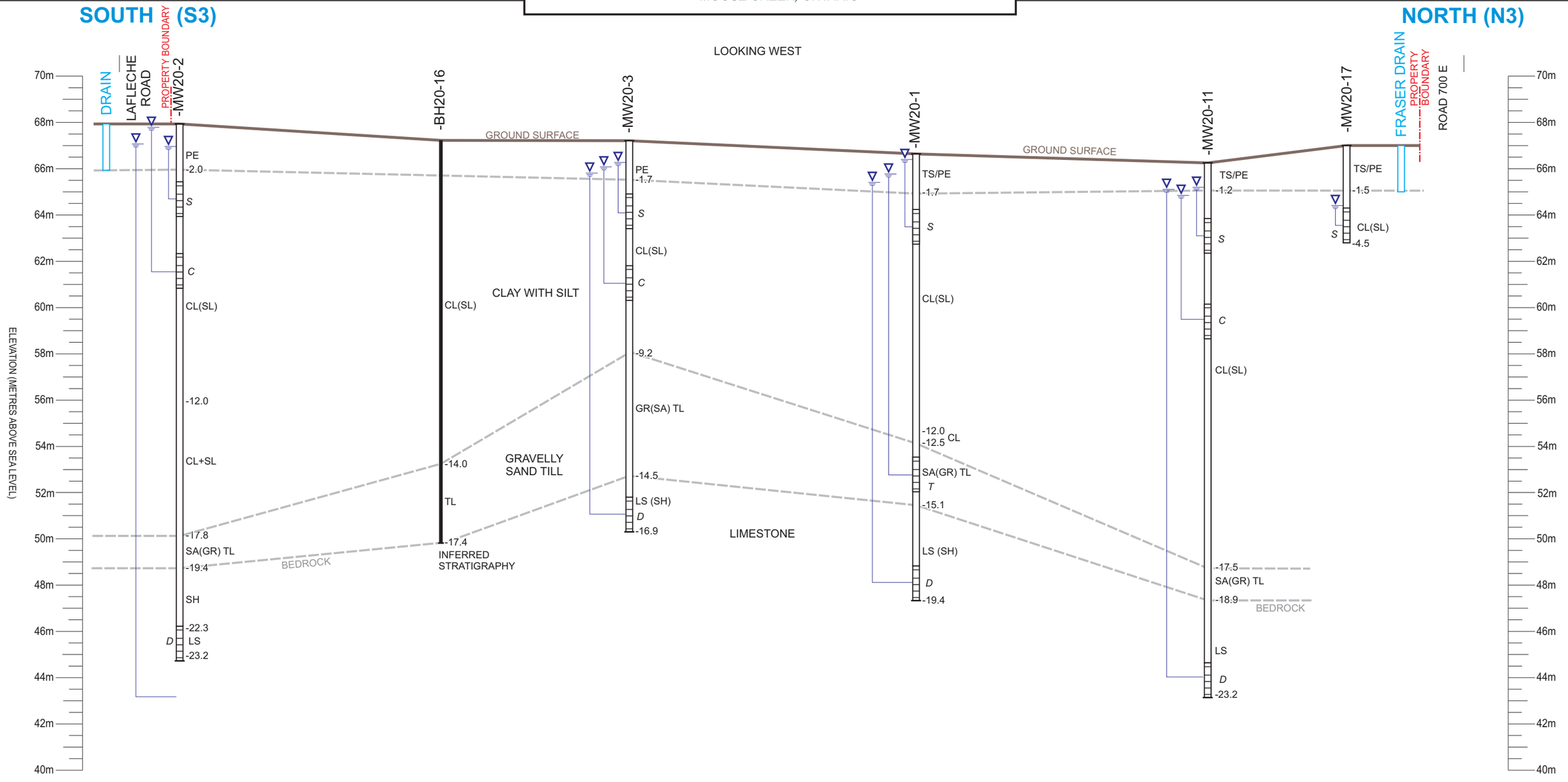
CLIENT

GFL environmental

SOUTH (S3)

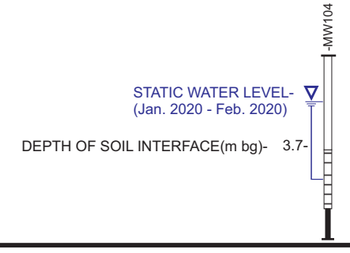
NORTH (N3)

LOOKING WEST



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		



HORIZONTAL SCALE:

0 100m 200m

NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for most wells. February 2020 used for bedrock wells that did not recover.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 18

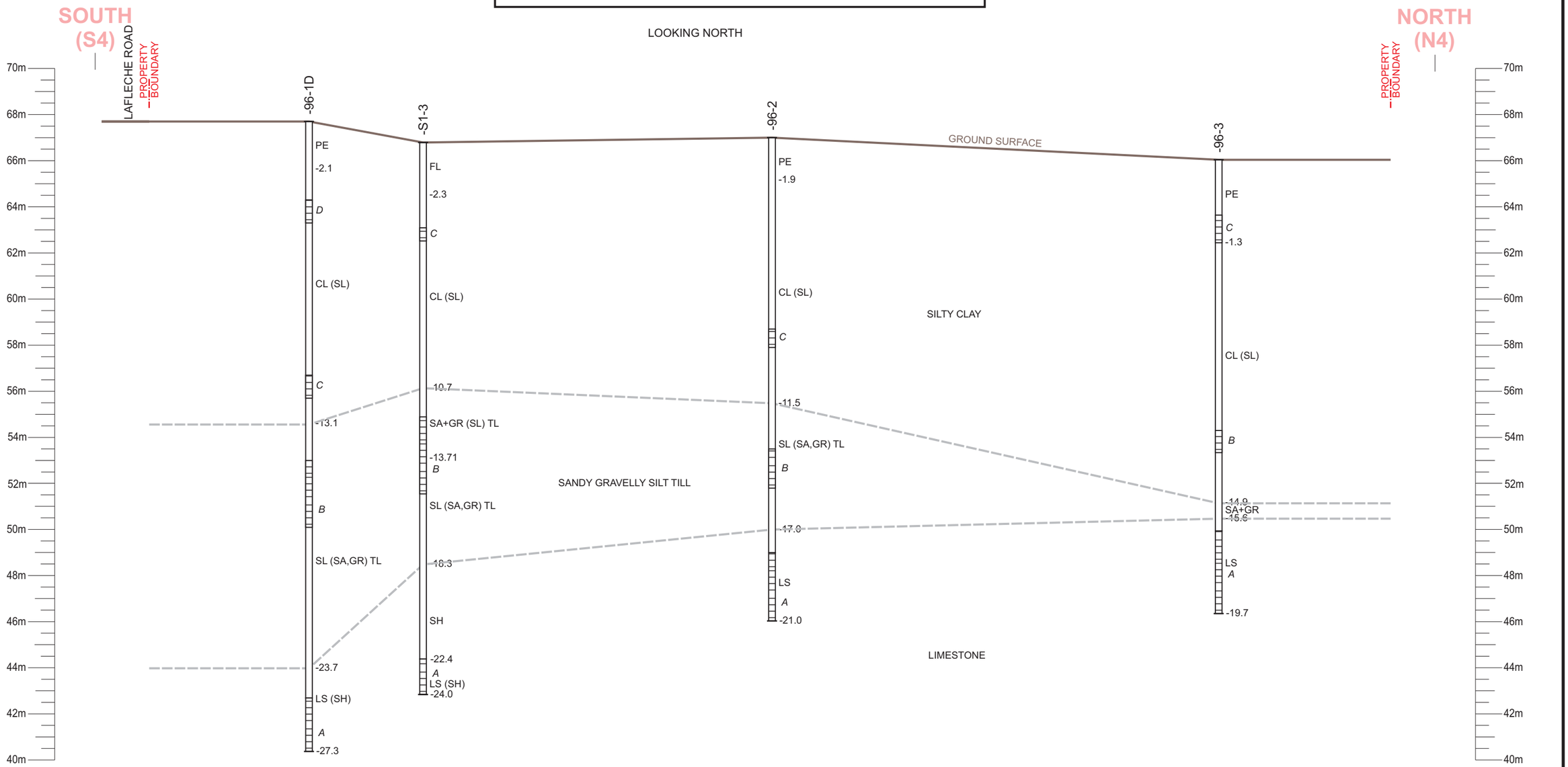
TERRAPEX

CROSS SECTION: SOUTH TO NORTH 4

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

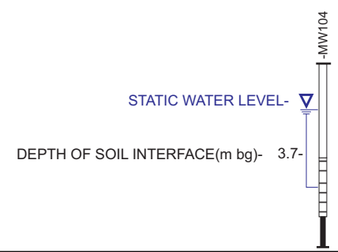
CLIENT

GFL environmental



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		



NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for MW20-# and on 7 May 2020 for MW96-#.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

HORIZONTAL SCALE:

0 100m 200m

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/JS
CHECKED	SR
DRAWING #	FIGURE 19

TERRAPEX

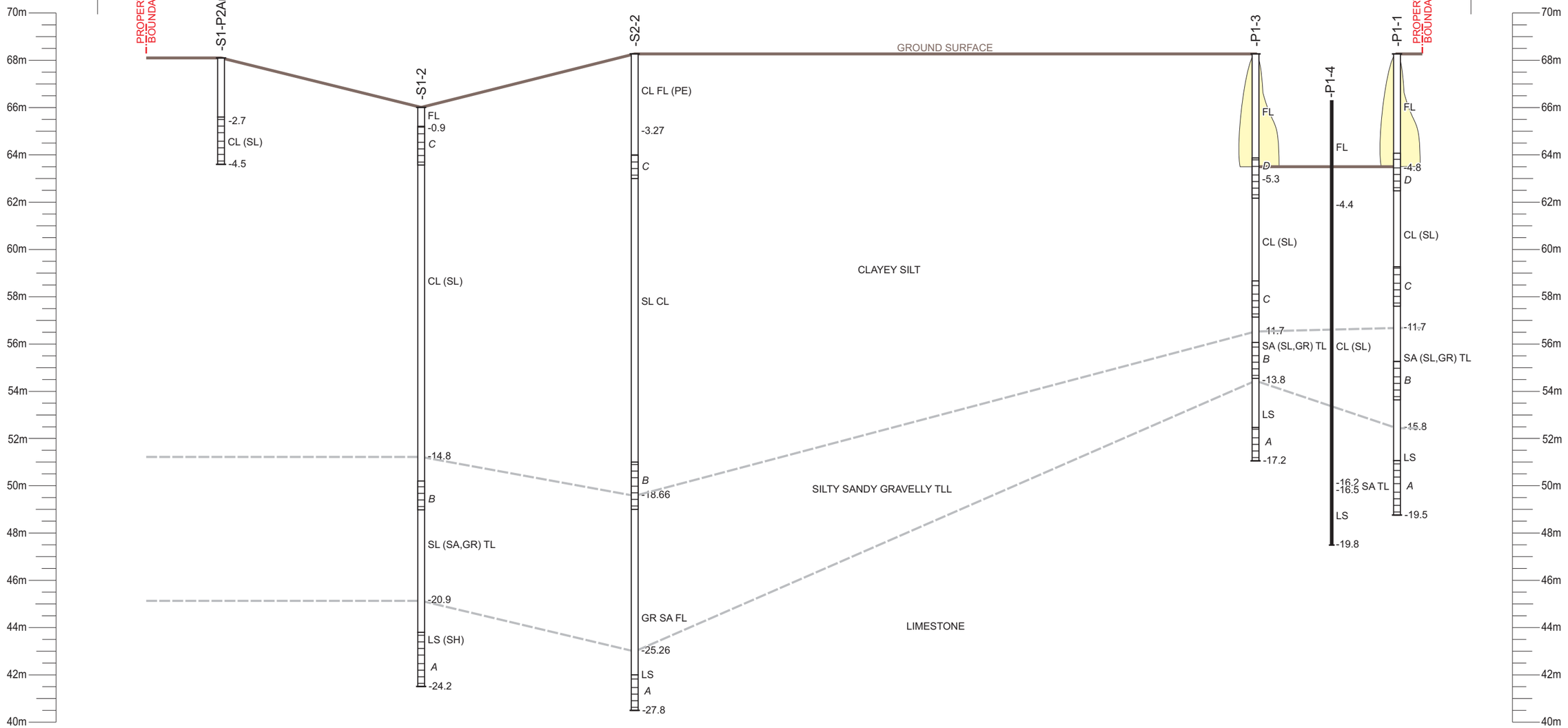
CROSS SECTION: SOUTH TO NORTH 5

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

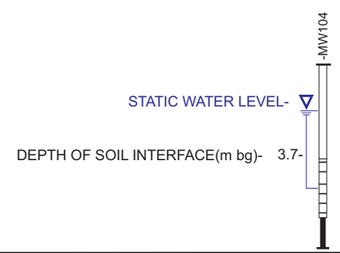
GFL environmental

SOUTH (S5) — LOOKING WEST — **NORTH (N5)**



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND		
SL	SILT		
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		



NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for MW20-# and on 7 May 2020 for MW96-#.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

HORIZONTAL SCALE:

0 100m 200m

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/JS
CHECKED	SR
DRAWING #	FIGURE 20

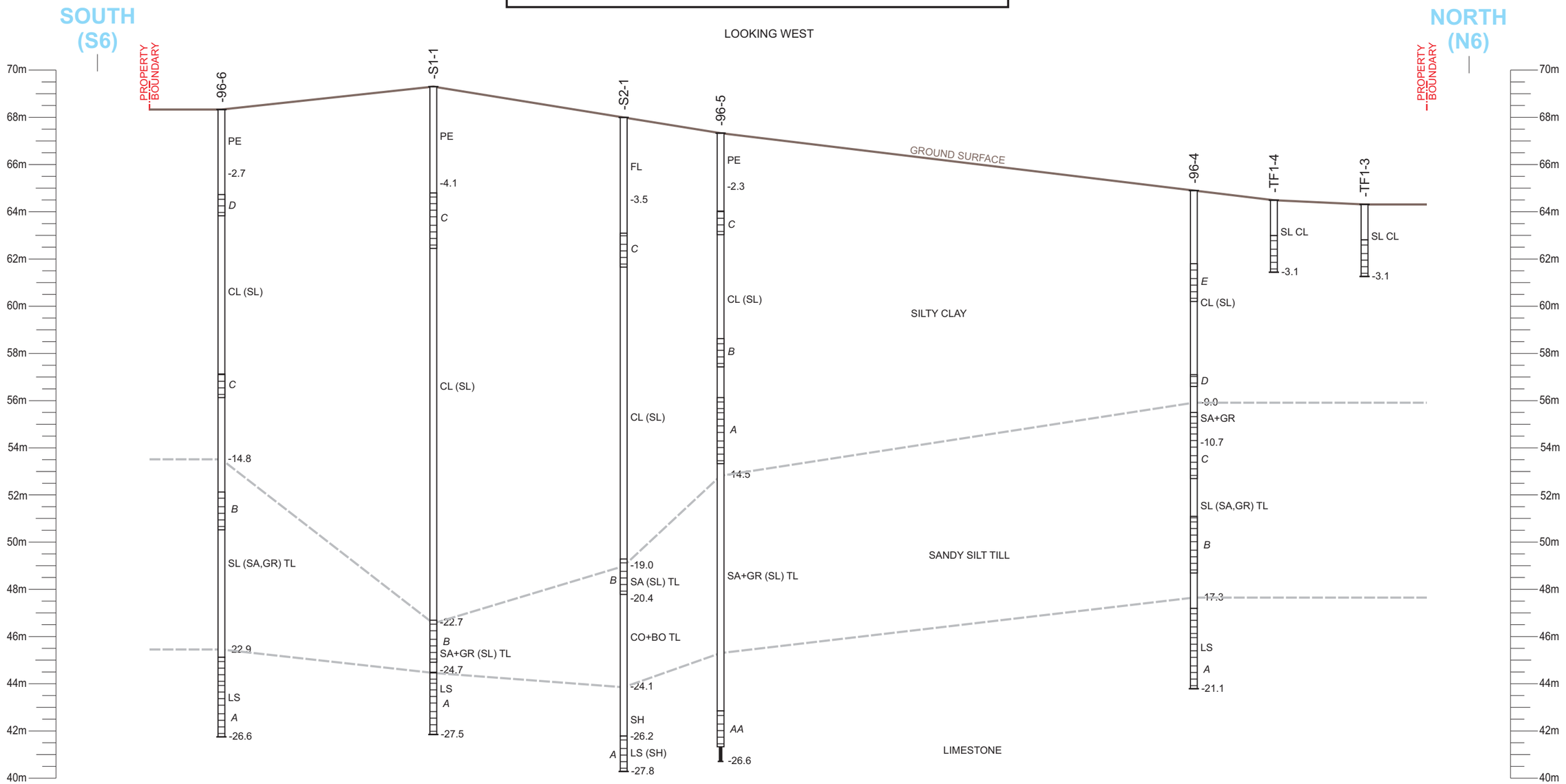
TERRAPEX

CROSS SECTION: SOUTH TO NORTH 6

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

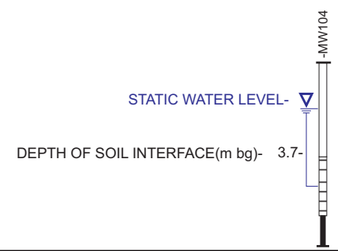
CLIENT

GFL environmental



LEGEND

TS	TOPSOIL	SH	SHALE
GR	GRAVEL	LS	LIMESTONE
SA	SAND	CO	COBBLES
SL	SILT	BO	BOULDERS
CL	CLAY		
FL	FILL		
TL	TILL (GL - GLACIAL)		
PE	PEAT		
X(Y)	X IS A MAIN TEXTURE Y IS A SIGNIFICANT MINOR TEXTURE		



NOTES:
1. Soil and groundwater only known at borehole locations.
2. Upper 0.6 m +/- was frozen at time of drilling
3. Groundwater levels measured on 8 April 2020 for MW20-# and on 7 May 2020 for MW96-#.
4. Monitoring wells are actually in clusters with separate boreholes. Shown here in same pipe for clarity.

HORIZONTAL SCALE:

0 100m 200m

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/JS
CHECKED	SR
DRAWING #	FIGURE 21

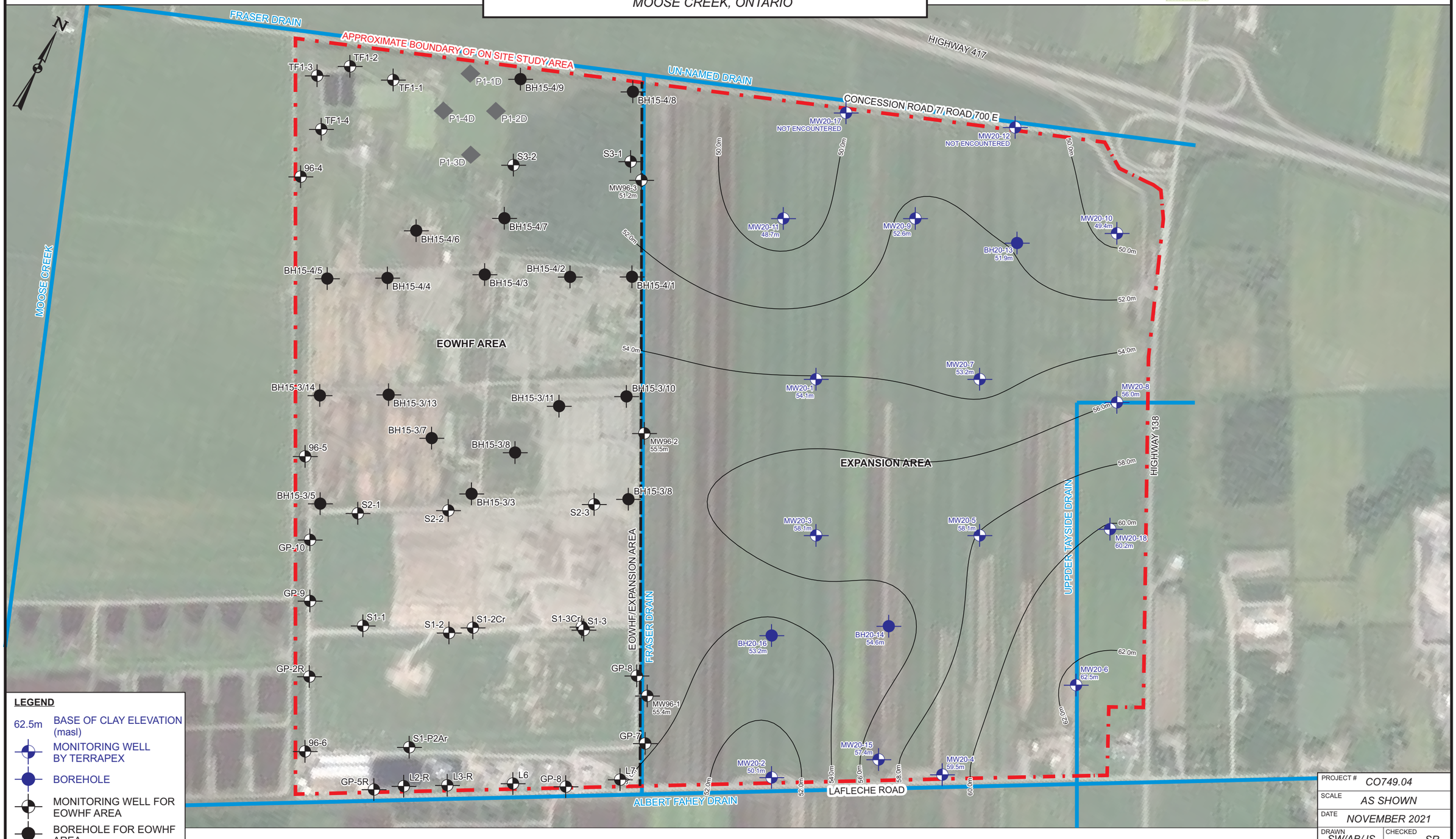
TERRAPEX

CLAY LAYER BASE ELEVATIONS (EXPANSION AREA)

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- 62.5m — BASE OF CLAY ELEVATION (masl)
- MONITORING WELL BY TERRAPEX
- BOREHOLE
- MONITORING WELL FOR EOWHF AREA
- BOREHOLE FOR EOWHF AREA
- NORTH LEACHATE POND MONITOR

NOTES: CONTOURS INTERPRETED USING SURFER SOFTWARE ELEVATIONS ONLY KNOWN AT DRILLING LOCATIONS.

SCREEN POSITION KEY FOR EXPANSION AREA WELLS: D=DEEP (WITHIN BEDROCK), T=WITHIN TILL, C=WITHIN CLAY, S=SHALLOW

0 250m 500m
(APPROXIMATE)

SOURCE: VU MAP FIRST BASE SOLUTIONS, 2018 IMAGERY.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 22

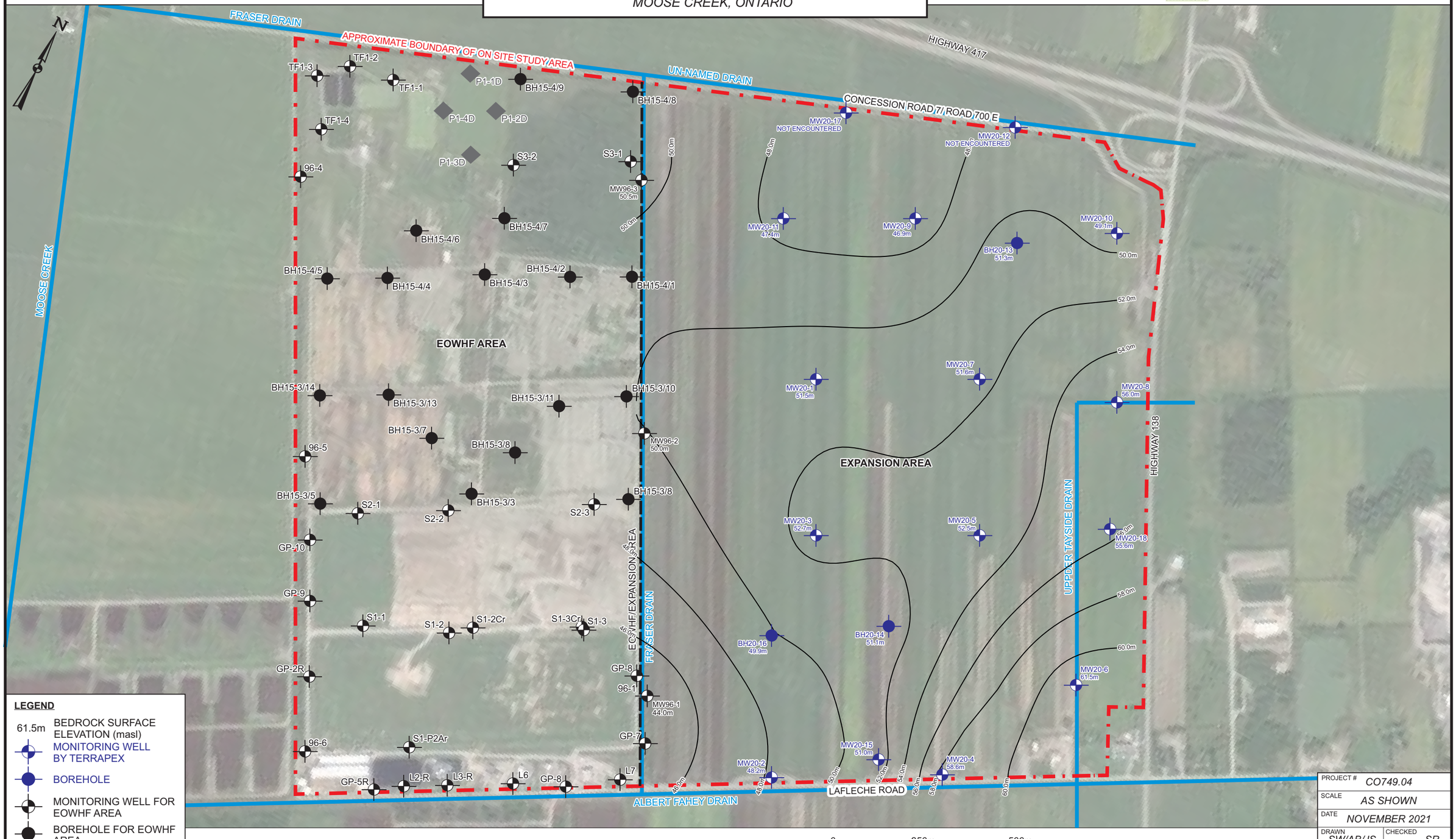
TERRAPEX

BEDROCK SURFACE ELEVATIONS (EXPANSION AREA)

EASTERN ONTARIO WASTE HANDLING FACILITY
MOOSE CREEK, ONTARIO

CLIENT

GFL environmental



LEGEND

- 61.5m — BEDROCK SURFACE ELEVATION (masl)
- MONITORING WELL BY TERRAPEX
- BOREHOLE
- MONITORING WELL FOR EOWHF AREA
- BOREHOLE FOR EOWHF AREA
- NORTH LEACHATE POND MONITOR

NOTES: CONTOURS INTERPRETED USING SURFER SOFTWARE. ELEVATIONS ONLY KNOWN AT DRILLING LOCATIONS.

SCREEN POSITION KEY FOR EXPANSION AREA WELLS: D=DEEP (WITHIN BEDROCK), T=WITHIN TILL, C=WITHIN CLAY, S=SHALLOW

0 250m 500m
(APPROXIMATE)

SOURCE: VU MAP FIRST BASE SOLUTIONS, 2018 IMAGERY.

PROJECT #	CO749.04
SCALE	AS SHOWN
DATE	NOVEMBER 2021
DRAWN	SW/AB/JS
CHECKED	SR
DRAWING #	FIGURE 23

APPENDIX II

TABLES

TABLE 1
Monitoring Well Construction Details - Expansion Area
17125 LAFLECHE ROAD, CASSELMAN, ONTARIO

Position and Depth

Well Desig.	UTM Easting (m)	UTM Northing (m)	Date of Construct	Stick Down/Up (m)	Depth of Borehole (m bg)	Depth to Well Bottom (m bg)	Measured Well Bottom (m bg)	Screen Length (m)	Depth to Screen Bottom (m bg)	Depth to Screen Top (m bg)	Depth to Top Sand (m bg)
MW20-1S	500680	5018055	24-Jan-20	0.64	4.00	3.96	3.95	1.52	3.89	2.37	2.07
MW20-1T	500679	5018054	24-Jan-20	0.65	14.60	14.65	14.65	1.52	14.58	13.06	12.76
MW20-1D	500681	5018053	22-Jan-20	0.72	19.38	19.38	19.38	1.52	19.31	17.79	17.49
MW20-2S	501123	5017078	27-Jan-20	0.90	4.09	4.09	4.09	1.52	4.02	2.50	2.20
MW20-2C	501124	5017079	27-Jan-20	0.77	7.20	7.20	7.20	1.52	7.13	5.61	5.31
MW20-2D	501125	5017078	27-Jan-20	0.80	25.60	25.56	25.56	1.52	25.49	23.97	23.67
MW20-3S	500887	5017695	29-Jan-20	0.70	4.00	3.90	3.90	1.52	3.83	2.31	2.01
MW20-3C	500888	5017693	27-Jan-20	0.71	7.00	7.00	6.96	1.52	6.93	5.41	5.11
MW20-3D	500889	5017691	27-Jan-20	0.81	17.00	16.99	16.99	1.52	16.92	15.40	15.10
MW20-4S	501500	5017308	29-Jan-20	0.95	4.03	4.03	4.03	1.52	3.96	2.44	2.14
MW20-4C	501500	5017310	29-Jan-20	0.99	7.02	7.02	7.02	1.52	6.95	5.43	5.13
MW20-4D	501501	5017309	29-Jan-20	0.90	12.80	12.74	12.74	1.52	12.67	11.15	10.85
MW20-5S	501276	5017920	29-Jan-20	0.38	4.21	4.21	4.21	1.52	4.14	2.62	2.32
MW20-5T	501277	5017918	29-Jan-20	0.72	11.30	11.27	11.27	1.52	11.20	9.68	9.38
MW20-5D	501278	5017917	29-Jan-20	0.74	15.47	15.47	15.47	1.52	15.40	13.88	13.58
MW20-6S	501685	5017681	30-Jan-20	0.91	4.11	4.11	4.11	1.52	4.04	2.52	2.22
MW20-6T	501686	5017681	30-Jan-20	0.92	6.02	6.02	6.02	0.82	5.95	5.13	4.83
MW20-6D	501685	5017680	30-Jan-20	0.90	9.20	9.20	9.18	1.52	9.13	7.61	7.31
MW20-7S	501076	5018286	30-Jan-20	0.63	4.00	4.00	3.96	1.52	3.93	2.41	2.11
MW20-7C	501077	5018284	30-Jan-20	0.55	7.02	7.02	7.02	1.52	6.95	5.43	5.13
MW20-7D	501077	5018282	30-Jan-20	0.70	16.97	16.97	16.97	1.52	16.90	15.38	15.08
MW20-8S	501404	5018410	03-Feb-20	0.72	4.17	4.17	4.17	1.52	4.10	2.58	2.28
MW20-8C	501403	5018410	30-Jan-20	0.76	7.14	7.14	7.14	1.52	7.07	5.55	5.25
MW20-8D	501404	5018409	31-Jan-20	0.75	12.54	12.54	12.54	1.52	12.47	10.95	10.65
MW20-9S	500714	5018531	04-Feb-20	0.58	4.02	4.02	4.02	1.52	3.95	2.43	2.13
MW20-9T	500715	5018530	30-Jan-20	0.81	17.10	17.10	17.04	1.52	17.03	15.51	15.21
MW20-9D	500716	5018528	03-Feb-20	0.81	22.43	22.43	22.43	1.52	22.36	20.84	20.54
MW20-10S	501190	5018801	04-Feb-20	0.81	4.20	4.20	4.20	1.52	4.13	2.61	2.31
MW20-10C	501190	5018802	04-Feb-20	0.88	7.60	7.50	6.94	1.52	7.43	5.91	5.61
MW20-10D	501191	5018801	03-Feb-20	0.80	19.00	19.00	18.89	1.52	18.93	17.41	17.11
MW20-11S	500397	5018349	05-Feb-20	0.57	4.02	4.02	4.02	1.52	3.95	2.43	2.13
MW20-11C	500398	5018348	05-Feb-20	0.85	7.68	7.68	7.68	1.52	7.61	6.09	5.79
MW20-11D	501123	5017065	05-Feb-20	0.75	23.17	23.17	23.17	1.52	23.10	21.58	21.28
MW20-12S	501862	5018908	04-Feb-20	0.72	4.31	4.31	4.31	1.52	4.24	2.72	2.42
MW20-15T	501345	5017257	05-Feb-20	0.98	16.40	13.70	13.70	1.52	13.63	12.11	11.81
MW20-17S	500354	5018699	06-Feb-20	0.97	4.60	4.30	4.11	1.52	4.23	2.71	2.41
MW20-18D	501567	5018076	07-Feb-20	0.86	14.30	14.30	13.99	1.52	14.23	12.71	12.41

TABLE 2
Monitoring Well Construction Details - Expansion Area

17125 LAFLECHE ROAD, CASSELMAN, ON

Key Elevations

Well Desig.	Ground Elev.[2] (m asl)	End of Borehole Elev. (m asl)	Top of Pipe Elev.[2] (m asl)	Screen Bottom Elev. (m asl)	Screen Top Elev. (m asl)
MW20-1S	66.64	62.64	67.28	62.76	64.28
MW20-1T	66.64	52.04	67.29	52.07	53.59
MW20-1D	66.64	47.26	67.36	47.34	48.86
MW20-2S	67.94	63.85	68.84	63.93	65.45
MW20-2C	67.94	60.74	68.71	60.82	62.34
MW20-2D	67.94	42.34	68.74	42.46	43.98
MW20-3S	67.21	63.21	67.91	63.39	64.91
MW20-3C	67.21	60.21	67.92	60.29	61.81
MW20-3D	67.21	50.21	68.02	50.30	51.82
MW20-4S	67.65	63.62	68.60	63.70	65.22
MW20-4C	67.65	60.63	68.64	60.71	62.23
MW20-4D	67.65	54.85	68.55	54.99	56.51
MW20-5S	66.34	62.13	66.72	62.21	63.73
MW20-5T	66.34	55.04	67.06	55.15	56.67
MW20-5D	66.34	50.87	67.08	50.95	52.47
MW20-6S	67.18	63.07	68.09	63.15	64.67
MW20-6T	67.18	61.16	68.10	61.24	62.06
MW20-6D	67.18	57.98	68.08	58.06	59.58
MW20-7S	66.10	62.10	66.73	62.18	63.70
MW20-7C	66.10	59.08	66.65	59.16	60.68
MW20-7D	66.10	49.13	66.80	49.21	50.73
MW20-8S	65.50	61.33	66.22	61.41	62.93
MW20-8C	65.50	58.36	66.26	58.44	59.96
MW20-8D	65.50	52.96	66.25	53.04	54.56
MW20-9S	65.94	61.92	66.52	62.00	63.52
MW20-9T	65.94	48.84	66.75	48.92	50.44
MW20-9D	65.94	43.51	66.75	43.59	45.11
MW20-10S	64.93	60.73	65.74	60.81	62.33
MW20-10C	64.93	57.33	65.81	57.51	59.03
MW20-10D	64.93	45.93	65.73	46.01	47.53
MW20-11S	66.25	62.23	66.82	62.31	63.83
MW20-11C	66.25	58.57	67.10	58.65	60.17
MW20-11D	66.25	43.08	67.00	43.16	44.68
MW20-12S	64.86	60.55	65.58	60.63	62.15
MW20-15T	67.36	50.96	68.34	53.74	55.26
MW20-17S	64.99	60.39	65.96	60.77	62.29
MW20-18D	65.98	51.68	66.84	51.76	53.28

Notes:
*= Installed by others
m asl = metres above sea level
m bg = metres below ground (or grade)
UTM locations measured using Topcon Hyper V accurate to 1 cm

TABLE 3 **GROUNDWATER ANALYTICAL RESULTS - Expansion Area March and June 2020**
17125 Lafleche Road, Moose Creek, Ontario

Sample Name	Units	STANDARDS[1] Table 2 fine/medium	STANDARDS[2] ODWQS	STANDARDS[3] ODWO	STANDARD OR ASTHETIC OBJECTIVE	MW20-1S	MW20-1S	MW20-1T	MW20-1T Field Duplicate (Dup 1)	MW20-1T	MW20-1D	MW20-1D	MW20-2S	MW20-2S	MW20-2C	MW20-2C	MW20-2D	MW20-2D	MW20-3S	MW20-3S	MW20-3C	MW20-3C	MW20-3D	MW20-3D	MW20-4S	MW20-4S	MW20-4C	MW20-4C	MW20-4D
Sampling Date	dd/mmm/yy	-	-	-	-	6-Mar-20	9-Jun-20	6-Mar-20	6-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	9-Mar-20	9-Jun-20	9-Mar-20	9-Jun-20	9-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	9-Mar-20	10-Jun-20	9-Mar-20	10-Jun-20	9-Mar-20
Screened Interval	m bg	-	-	-	-	2.4-3.8	2.4-3.8	13.0-14.6	-	13.0-14.6	17.6-19.2	17.6-19.2	2.5-4.0	2.5-4.0	5.5-7.0	5.5-7.0	23.8-25.3	23.8-25.3	2.5-3.9	2.5-3.9	5.5-7.0	5.5-7.0	15.4-16.9	15.4-16.9	2.5-4.0	2.5-4.0	5.6-7.0	5.6-7.0	11.3-12.7
Analysis Date (on or before)	dd/mmm/yy	-	-	-	-	10-16/Mar/20	2020-06-19	10-16/Mar/20	10-16/Mar/20	2020-06-19	10-16/Mar/20	19-Jun-20	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-22	10-17/Mar/20	2020-06-19	10-17/Mar/20
Certificate of Analysis No.	-	-	-	-	-	1926781	1932105	1926781	1926781	1932105	1926781	1932105	1926822	1932105	1926822	1932105	1926822	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926822	1932105	1926822	1932105	1926822
pH	pH units	-	-	6.5 - 8.5	OG	8.04	8.25	8.71	8.73	8.48	8.29	8.14	7.49	7.79	8.18	8.34	8.74	8.74	8.08	8.05	8.24	8.26	8.36	8.63	7.44	7.73	8.03	8.17	8.2
Conductivity	uS/cm	-	-	-	-	917	875	1090	1100	1110	1600	2970	1470	1490	1700	1790	899	923	742	801	675	576	938	956	1400	1460	684	615	863
Alkalinity	mg/L	-	-	30-500	OG	426	429	545	563	544	-	452	674	681	606	636	337	347	351	358	284	284	324	423	639	654	257	261	278
Hardness	mg/L	-	-	80-100	OG	282	228	50	50	57	66	140	561	608	134	138	22	24	331	379	148	139	32	57	658	708	180	175	124
TDS	mg/L	-	-	500	AO	596	569	708	715	722	1040	2380	956	968	1100	1160	584	600	482	521	439	374	610	621	910	949	445	400	561
BOD_5	mg/L	-	-	-	-	6	4	9	11	4	IS	26	3	2	6	6	6	7	5	9	5	2	44	12	3	4	8	9	4
Calcium	mg/L	-	-	-	-	70	55	5	5	8	18	38	147	161	19	19	2	3	93	109	28	26	3	13	186	201	34	32	25
COD	mg/L	-	-	-	-	51	56	31	28	34	69	209	34	49	34	47	11	25	80	87	43	36	30	149	33	38	20	36	8
DOC	mg/L	-	-	5	AO	16.8	12.4	9.9	9.7	10	20.1	59.5	16.9	17.5	12.8	14.6	3.7	3.7	14.5	14.7	11.6	9.1	7.2	5.2	14.1	13.8	6.7	5.7	4.2
Magnesium	mg/L	-	-	-	-	26	22	9	9	9	5	11	47	50	21	22	4	4	24	26	19	18	6	6	47	50	23	23	15
Ammonia	mg/L	-	-	-	-	0.976	0.893	1.101	1.221	0.733	0.855	0.03	2.25	2.31	0.882	0.975	0.457	0.329	0.301	0.28	0.32	0.585	0.043	0.199	1.175	1.13	0.641	0.83	0.292
Phenols	mg/L	0.89	-	-	STANDARD	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	0.005	0.003	0.003	<0.001	<0.001	<0.001
Phosphorus	mg/L	-	-	-	-	0.012	1.15	0.99	0.991	1.35	-	0.011	0.008	0.308	0.162	1.6	0.422	0.521	0.092	0.244	0.18	1.67	0.24	0.012	0.019	1.74	0.332	1.67	0.092
Potassium	mg/L	-	-	-	-	6	6	10	10	12	8	13	8	8	11	12	7	7	5	5	8	8	23	8	7	8	9	13	6
TKN	mg/L	-	-	-	-	1.88	1.62	1.648	1.577	1.6	0.456	0.901	3.33	4.26	1.83	2.03	0.975	1.09	2.05	1.62	0.837	1.11	1.041	1.58	2.03	1.82	1.07	1.46	0.764
Total Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	35	33	62	62	65	133	181	94	101	208	221	93	96	16	20	29	22	100	92	90	105	48	47	118
Nitrite	mg/L	-	1	-	STANDARD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	0.22	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	0.9	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	51	24	2	2	3	257	870	31	35	6	<5	6	7	49	78	40	14	12	3	46	43	39	16	<1
Arsenic	mg/L	0.025	0.01	-	STANDARD	0.001	0.003	0.002	0.002	0.002	-	0.001	<0.001	<0.001	0.008	0.009	<0.001	<0.001	0.001	<0.001	0.002	0.005	<0.001	<0.001	<0.001	0.001	0.004	0.007	<0.001
Barium	mg/L	1	1	-	STANDARD	0.06	0.05	0.2	0.2	0.18	-	0.09	0.09	0.07	0.06	0.04	0.33	0.34	0.06	0.04	0.04	0.04	***1.43***	***1.5***	0.07	0.08	0.06	0.18	***1.03***
Boron	mg/L	-	5	-	STANDARD	0.41	0.42	0.92	0.92	0.89	-	0.68	0.29	0.28	0.9	1	0.6	0.64	0.13	0.12	0.38	0.37	0.69	0.69	0.2	0.16	0.31	0.31	0.34
Cadmium	mg/L	0.0027	0.005	-	STANDARD	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.027	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	0.014	<0.001
Copper	mg/L	0.087	-	1	STANDARD	<0.001	0.002	<0.001	<0.001	0.002	-	0.009	0.004	0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.001	<0.001	0.003	<0.001	<0.001	0.002	<0.001	<0.001	0.024	<0.001
Iron	mg/L	-	-	0.3	AO	0.32	0.51	0.06	0.04	0.08	-	6.82	0.3	1.64	0.04	0.15	<0.03	<0.03	<0.03	0.03	<0.03	1.43	0.03	<0.03	0.24	5.54	0.04	17.1	0.09
Lead	mg/L	0.01	0.01	-	STANDARD	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.009	<0.001
Manganese	mg/L	-	-	0.05	AO	0.16	0.15	<0.01	<0.01	0.01	-	0.16	0.89	1.02	0.07	0.07	<0.01	<0.01	0.15	0.5	0.06	0.09	<0.01	<0.01	2.19	2	0.1	0.56	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	0.1	-	-	STANDARD	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.008	<0.005	<0.005	0.015	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.022	<0.005
Selenium	mg/L	0.01	0.05	-	STANDARD	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001
Silver	mg/L	0.0015	-	-	STANDARD	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	97	110	219	221	242	356	***659***	101	100	316	367	175	199	34	28	89	74	174	200	43	41	73	65	127
Strontium	mg/L	-	-	-	-	0.35	0.261	0.418	0.415	0.403	-	2.06	0.625	0.623	0.236	0.236	0.458	0.42	0.588	0.633	0.866	0.78	0.646	0.551	1.48	1.33	1.05	1.15	1.22
Zinc	mg/L	1.1	-	5	STANDARD	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	30	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	ug/L	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane	ug/L	25	-	-	STANDARD	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/L	3	200	3	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/L	59	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	ug/L	590	-	1	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	ug/L	5	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	ug/L	5	-	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	ug/L	14	14	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/L	17	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/L	17	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	ug/L	5	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide	ug/L	0.2	-	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	1.1	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	1	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	17	10	-	STANDARD	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,1-	ug/L	200	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/L	5	-	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	ug/L	5	5	-	STANDARD	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trimethylbenzene, 1,3,5-	ug/L	-	-	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylenes (Total)	ug/L	300	90	300	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

[1] Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended)
Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
All Types of Property-Use, Fine- to Medium-Textured Soil

[2] Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)
Schedule 2: Chemical Standards

[3] Aesthetic Objectives and/or Operational Guidelines from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)

AO	Aesthetic Objective
OG	Operational Guideline
-	No standard, not applicable, not analyzed
m bg	meters below grade
RPD	Relative percent difference
Value	Exceeds Table 2 standard
Value	Exceeds ODWQS standard or ODWO objective
Value	Exeeds ODWQS and Table 2
Value	Detection limit exceeds standard

TABLE 3 **GROUNDWATER ANALYTICAL RESULTS - Expansion Area March and June 2020**
17125 Lafleche Road, Moose Creek, Ontario

Sample Name	Units	STANDARDS[1] Table 2 fine/medium	STANDARDS[2] ODWQS	MW20-4D	MW20-4D Field Duplicate (Dup 5)	MW20-5S	MW20-5S	MW20-5T	MW20-5T	MW20-5D	MW20-5D	MW20-6S	MW20-6S	MW20-6T	MW20-6T	MW20-6D	MW20-6D	MW20-7S	MW20-7S	MW20-7C	MW20-7C	MW20-7C Field Duplicate (Dup 7)	MW20-7D	MW20-7D Field Duplicate (Dup 2)	MW20-7D	MW20-8S	MW20-8S	MW20-8C	MW20-8C Field Duplicate (Dup 4)
Sampling Date	dd/mmm/yy	-	-	9-Jun-20	9-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	10-Jun-20	6-Mar-20	6-Mar-20	10-Jun-20	9-Mar-20	10-Jun-20	9-Mar-20	9-Mar-20
Screened Interval	m bg	-	-	11.3-12.7	11.3-12.7	2.4-3.9	2.4-3.9	9.6-11.1	9.6-11.1	13.9-15.4	13.9-15.4	2.7-4.1	2.7-4.1	5.2-6.0	5.2-6.0	7.7-9.2	7.7-9.2	2.4-4.0	2.4-4.0	5.4-6.9	5.4-6.9	5.4-6.9	15.4-16.9	-	15.4-16-.9	2.5-4.0	2.5-4.0	5.5-7.0	-
Analysis Date (on or before)	dd/mmm/yy	-	-	2020-06-19	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	2020-06-19	10-17/Mar/20	10-16/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	10-16/Mar/20
Certificate of Analysis No.	-	-	-	1932105	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1932105	1926781	1926781	1932105	1986822	1932105	1926822	1926822
pH	pH units	-	-	8.25	8.25	8.18	7.93	8.57	8.36	8.34	8.29	8.15	7.8	8.12	7.69	8.08	7.73	8.24	8.29	8.24	8.28	8.31	8.27	8.26	8.11	8.07	8.26	8.22	8.20
Conductivity	uS/cm	-	-	881	879	657	916	670	667	839	744	1480	1420	1520	1470	1500	1490	830	804	972	941	931	980	995	911	807	736	945	947
Alkalinity	mg/L	-	-	283	294	361	410	454	409	312	296	331	322	342	315	334	323	437	449	540	541	539	324	328	326	405	442	377	391
Hardness	mg/L	-	-	127	124	195	349	45	79	62	88	390	404	361	368	430	422	168	171	101	110	107	182	182	171	225	165	128	128
TDS	mg/L	-	-	573	571	427	595	436	434	545	484	962	923	988	956	975	968	540	523	632	612	605	637	647	592	525	478	614	616
BOD_5	mg/L	-	-	5	5	452	313	6	9	45	20	2	2	2	2	3	5	20	14	5	9	9	30	29	42	6	12	10	11
Calcium	mg/L	-	-	26	25	45	92	5	15	10	14	130	132	123	126	141	136	36	37	14	16	15	43	43	42	49	33	20	20
COD	mg/L	-	-	86	107	1470	549	10	44	556	242	7	24	38	7	37	18	58	53	34	123	60	54	58	127	36	35	45	43
DOC	mg/L	-	-	4.1	4	246	194	4.3	7.9	110	73	2.9	3.1	2.8	2.8	2.9	2.9	15.7	14.3	13.3	17.6	16.9	10.8	10.9	31.9	6.8	7.8	14.6	14.4
Magnesium	mg/L	-	-	15	15	20	29	8	10	9	13	16	18	13	13	19	20	19	19	16	17	17	18	18	16	25	20	19	19
Ammonia	mg/L	-	-	0.291	0.186	0.019	0.161	0.311	0.014	<0.01	0.077	0.273	0.273	0.187	0.165	0.132	0.193	0.037	0.182	0.782	0.603	0.541	0.493	0.4	0.084	1.138	0.87	1.139	1.038
Phenols	mg/L	0.89	-	0.002	<0.001	<0.001	0.011	<0.001	<0.001	<0.001	0.001	<0.001	0.004	<0.001	0.004	<0.001	0.001	<0.001	0.002	<0.001	0.011	0.01	<0.001	<0.001	0.005	<0.001	0.001	<0.001	<0.001
Phosphorus	mg/L	-	-	0.006	0.008	0.045	1.43	0.083	0.788	0.04	0.082	0.007	1.53	0.006	0.541	0.003	0.153	0.061	0.838	0.301	0.76	0.728	0.012	0.011	0.114	0.092	0.066	1.04	0.997
Potassium	mg/L	-	-	8	8	5	9	7	12	8	9	3	4	3	3	5	6	6	6	9	12	12	9	9	10	7	10	12	12
TKN	mg/L	-	-	3.22	3.2	0.518	1.44	0.919	1.03	0.733	0.761	0.674	0.943	0.671	0.746	0.482	0.773	0.437	1.2	1.797	1.75	1.53	1.256	1.315	0.732	2.12	2.58	1.71	1.84
Total Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	124	123	9	4	16	14	83	57	253	241	267	238	261	274	25	16	22	15	15	110	111	100	29	18	20	21
Nitrite	mg/L	-	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.21	0.19
Sulfate	mg/L	-	-	2	2	12	2	<1	<1	11	<1	47	46	46	45	37	38	4	<1	11	4	2	34	38	5	14	4	107	106
Arsenic	mg/L	0.025	0.01	<0.001	<0.001	0.002	0.005	0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.006	0.002	0.01	0.01	<0.001	<0.001	<0.001	0.003	0.004	0.004	0.004
Barium	mg/L	1	1	0.95	0.96	0.03	0.06	0.21	0.23	0.71	***1.4***	***1.47***	***1.5***	***2.43***	***2.4***	***2.91***	***3***	0.06	0.05	0.07	0.05	0.05	0.8	0.82	***1.2***	0.04	0.06	0.02	0.02
Boron	mg/L	-	5	0.38	0.38	0.37	0.4	0.73	0.73	0.58	0.6	0.08	0.08	0.09	0.08	0.1	0.13	0.53	0.5	0.83	0.8	0.81	0.3	0.3	0.31	0.48	0.57	0.7	0.68
Cadmium	mg/L	0.0027	0.005	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.001	<0.001	<0.001	<0.001	<0.001	0.009	<0.001	<0.001
Copper	mg/L	0.087	-	<0.001	<0.001	0.001	0.002	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.002	<0.001	<0.001	0.001	0.001	0.002	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001
Iron	mg/L	-	-	0.16	0.15	0.06	0.38	0.05	0.1	0.17	0.32	2.65	2.35	3.87	3.77	2.05	2.65	<0.03	0.1	0.04	0.64	0.54	0.56	0.56	0.45	0.04	4.49	<0.03	<0.03
Lead	mg/L	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001
Manganese	mg/L	-	-	<0.01	<0.01	0.12	0.37	<0.01	<0.01	0.04	0.02	0.25	0.26	0.22	0.22	0.21	0.2	0.1	0.12	0.1	0.11	0.11	0.02	0.02	0.02	0.13	0.18	0.04	0.04
Mercury	mg/L	0.001	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	0.1	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.009	0.009	<0.005	<0.005	<0.005	<0.005	0.009	<0.005	<0.005
Selenium	mg/L	0.01	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	mg/L	0.0015	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	138	138	74	87	129	141	146	140	137	128	152	154	121	139	124	126	182	192	194	129	132	126	92	107	164	163
Strontium	mg/L	-	-	0.985	0.989	0.224	0.328	0.551	0.501	0.936	1.27	0.96	0.888	0.856	0.777	1.41	1.85	0.245	0.229	0.248	0.166	0.165	1.4	1.42	1.33	0.384	0.287	0.32	0.329
Zinc	mg/L	1.1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Benzene	ug/L	5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	30	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane	ug/L	25	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/L	3	200	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/L	59	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/L	1	5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	ug/L	590	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	ug/L	5	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	ug/L	14	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	ug/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	2.4	140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide	ug/L	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	ug/L	50	50	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	1.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	17	10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	ug/L	24	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,1-	ug/L	200	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	ug/L	5	5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Trichlorofluoromethane	ug/L	150	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trimethylbenzene, 1,3,5-	ug/L	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Vinyl Chloride	ug/L	1.7	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylenes (Total)	ug/L	300	90	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

[1] Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended)
Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
All Types of Property-Use, Fine- to Medium-Textured Soil

[2] Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)
Schedule 2: Chemical Standards

[3] Aesthetic Objectives and/or Operational Guidelines from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)

AO Aesthetic Objective
OG Operational Guideline
- No standard, not applicable, not analyzed
m bg meters below grade
RPD Relative percent difference
Value Exceeds Table 2 standard
Value Exceeds ODWQS standard or ODWO objective
Value Exeeds ODWQS and Table 2
Value Detection limit exceeds standard

TABLE 3 **GROUNDWATER ANALYTICAL RESULTS - Expansion Area March and June 2020**
17125 Lafleche Road, Moose Creek, Ontario

Sample Name	Units	STANDARDS[1] Table 2 fine/medium	STANDARDS[2] ODWQS	MW20-8C	MW20-8D	MW20-9S	MW20-9S	MW20-9T	MW20-9T	MW20-9T Field Duplicate (Dup 6)	MW20-9D	MW20-9D	MW20-10S	MW20-10S Field Duplicate (Dup 3)	MW20-10S	MW20-10C	MW20-10D	MW20-10D	MW20-10D Field Duplicate (Dup 8)	MW20-11S	MW20-11C	MW20-11C	MW20-11D	MW20-11S	MW20-12S	MW20-12S	MW20-15T	MW20-15T	MW20-17S
Sampling Date	dd/mmm/yy	-	-	10-Jun-20	10-Jun-20	6-Mar-20	10-Jun-20	6-Mar-20	10-Jun-20	10-Jun-20	6-Mar-20	10-Jun-20	9-Mar-20	9-Mar-20	10-Jun-20	10-Jun-20	9-Mar-20	10-Jun-20	10-Jun-20	5-Mar-20	5-Mar-20	9-Jun-20	5-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	6-Mar-20	9-Jun-20	6-Mar-20
Screened Interval	m bg	-	-	5.5-7.0	10.95-12.5	2.4-3.9	2.4-3.9	15.5-17.1	15.5-17.1	15.5-17.1	20.9-22.4	20.9-22.4	2.5-4.1	2.5-4.1	2.5-4.1	6.0-7.5	17.5-19.0	17.5-19.0	17.5-19.0	2.4-4.0	6.1-7.6	6.1-7.6	21.3-22.9	2.4-4.0	2.6-4.1	2.6-4.1	12.2-13.7	12.2-13.7	2.7-4.3
Analysis Date (on or before)	dd/mmm/yy	-	-	2020-06-19	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	10-16/Mar/20	2020-06-19	2020-06-19	10-17/Mar/20	19-Jun-20	19-Jun-20	10-17/Mar/20	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	2020-06-22	10-17/Mar/20	2020-06-19	10-17/Mar/20
Certificate of Analysis No.	-	-	-	1932105	1932105	1926781	1932105	1926781	1932105	1932105	1926781	1932105	1926822	1926822	1932105	1932105	1926822	1932105	1932105	1926781	1926781	1932105	1926781	1932105	1926781	1932105	1926781	1932105	1926781
pH	pH units	-	-	8.07	7.91	8.26	8.31	8.45	8.5	8.36	8.13	8.11	8.21	8.12	8.28	8.27	8.49	8.36	8.37	8.06	8.38	8.4	8.04	8.28	8.33	8.09	8.60	8.23	8.34
Conductivity	uS/cm	-	-	756	1090	927	878	854	783	781	2370	4080	1120	1110	1070	1320	940	948	945	984	1400	1380	1710	1020	1000	920	1170	1260	985
Alkalinity	mg/L	-	-	399	297	460	454	326	354	332	341	345	532	520	511	582	425	429	419	482	681	680	688	531	468	447	987	712	513
Hardness	mg/L	-	-	106	386	222	181	72	90	90	92	83	245	245	200	108	50	64	62	179	88	98	100	191	297	272	69	59	129
TDS	mg/L	-	-	491	708	603	571	555	509	508	1660	2860	728	722	696	858	611	616	614	640	910	897	1110	663	650	598	760	819	640
BOD_5	mg/L	-	-	11	3	4	4	4	10	8	43	36	2	3	4	5	6	7	7	22	6	14	IS	24	3	8	12	14	4
Calcium	mg/L	-	-	16	130	56	41	9	13	13	22	15	47	47	34	12	7	11	10	42	9	11	27	42	63	58	11	7	22
COD	mg/L	-	-	69	<5	92	99	57	15	22	195	113	31	27	16	39	21	22	16	336	307	60	982	131	17	35	55	109	33
DOC	mg/L	-	-	10.6	2.7	13.3	11.7	4.2	4.8	4.4	38.8	22.1	6.1	5.6	6	12.9	6.3	6.1	6.1	70	19.7	20	202	30.8	5.7	5.8	15.8	19.1	11.6
Magnesium	mg/L	-	-	16	15	20	19	12	14	14	9	11	31	31	28	19	8	9	9	18	16	17	8	21	34	31	10	10	18
Ammonia	mg/L	-	-	0.779	0.396	0.368	0.661	0.568	0.544	0.545	<0.01	0.067	0.492	0.507	0.624	0.754	0.853	0.679	0.694	<0.01	0.503	0.782	<0.01	0.06	0.17	0.262	1.141	0.463	0.3
Phenols	mg/L	0.89	-	<0.001	<0.001	<0.001	0.002	<0.002	<0.001	<0.001	<0.001	0.011	<0.001	<0.001	<0.001	0.003	<0.001	0.002	<0.001	<0.001	<0.002	0.005	<0.001	0.003	<0.001	0.002	<0.001	0.003	<0.001
Phosphorus	mg/L	-	-	3.17	0.145	0.024	0.75	0.042	0.244	0.293	0.085	0.571	0.017	0.018	2.43	1.2	0.899	1.23	0.98	0.064	0.604	0.301		1.03	0.016	1.88	0.787	0.188	0.101
Potassium	mg/L	-	-	14	6	6	7	10	11	11	11	16	7	7	9	11	9	11	11	5	9	13	12	6	8	8	10	11	6
TKN	mg/L	-	-		0.928	1.131	1.41	1.543	1.32	1.23	1.165	1.43	1.11	1.14	1.57	1.74	1.27	1.4	1.35	1.06	2.89	1.91	0.903	1.82	0.632	1.15	1.649	3.48	0.852
Total Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.163	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	12	154	38	34	84	72	73	306	***820***	51	53	54	88	70	75	74	52	73	76	147	48	29	22	60	64	26
Nitrite	mg/L	-	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10
Sulfate	mg/L	-	-	25	40	12	5	7	<1	<1	380	417	54	56	32	35	4	3	3	5	5	<1	281	<1	77	54	120	157	28
Arsenic	mg/L	0.025	0.01	0.003	0.004	0.001	0.005	0.001	<0.001	<0.001	0.001	0.005	0.001	0.001	0.002	0.006	<0.001	<0.001	<0.001	0.004	0.009	0.017	-	0.014	0.002	0.003	0.006	0.002	0.002
Barium	mg/L	1	1	0.02	0.57	0.11	0.07	0.3	0.3	0.29	0.24	0.08	0.06	0.06	0.04	0.05	0.17	0.18	0.18	0.08	0.03	0.03	-	0.07	0.07	0.04	0.28	0.28	0.06
Boron	mg/L	-	5	0.72	0.1	0.43	0.49	0.51	0.48	0.47	0.57	0.64	0.33	0.32	0.33	0.58	0.58	0.62	0.6	0.37	0.84	0.77	-	0.36	0.39	0.38	0.85	0.93	0.64
Cadmium	mg/L	0.0027	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	<0.001	0.014	0.002	0.003	<0.001	<0.001	0.002	<0.001	<0.001	0.002	0.002	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	0.002	<0.001	<0.001	<0.001	0.003
Iron	mg/L	-	-	0.18	1.11	<0.03	0.15	0.06	0.1	0.1	0.04	<0.03	0.29	0.27	<0.03	0.26	0.46	<0.03	<0.03	0.05	<0.03	0.06	-	0.5	<0.03	0.39	<0.03	0.09	0.05
Lead	mg/L	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	0.09	0.1	0.16	<0.01	<0.01	<0.01	0.1	0.04	0.09	0.09	0.06	0.04	0.04	<0.01	<0.01	0.30	0.02	0.02	-	0.29	0.14	0.17	<0.01	0.01	0.18
Mercury	mg/L	0.001	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	0.1	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium	mg/L	0.01	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	mg/L	0.0015	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	138	99	124	138	148	142	139	437	***856***	160	162	182	272	188	196	197	146	307	302	365	172	106	109	232	273	175
Strontium	mg/L	-	-	0.248	0.961	0.332	0.221	0.893	0.848	0.832	1.13	1.3	0.353	0.352	0.291	0.242	0.416	0.406	0.408	0.26	0.153	0.149	-	0.247	0.518	0.416	0.522	0.449	0.193
Zinc	mg/L	1.1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	30	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane	ug/L	25	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/L	3	200	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/L	59	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/L	1	5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	ug/L	590	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	ug/L	5	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	ug/L	14	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	ug/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	2.4	140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2
Ethylene dibromide	ug/L	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	ug/L	50	50	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	1.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	17	10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	ug/L	24	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4
Trichloroethane, 1,1,1-	ug/L	200	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	ug/L	5	5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Trichlorofluoromethane	ug/L	150	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trimethylbenzene, 1,3,5-	ug/L	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Vinyl Chloride	ug/L	1.7	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylenes (Total)	ug/L	300	90	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.1

[1] Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended)
Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
All Types of Property-Use, Fine- to Medium-Textured Soil

[2] Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)
Schedule 2: Chemical Standards

[3] Aesthetic Objectives and/or Operational Guidelines from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)

AO Aesthetic Objective
OG Operational Guideline
- No standard, not applicable, not analyzed
m bg meters below grade
RPD Relative percent difference
Value Exceeds Table 2 standard
Value Exceeds ODWQS standard or ODWO objective
Value Exeeds ODWQS and Table 2
Value Detection limit exceeds standard

TABLE 3 **GROUNDWATER ANALYTICAL RESULTS - Expansion Area March and June 2020**
17125 Lafleche Road, Moose Creek, Ontario

Sample Name	Units	STANDARDS[1] Table 2 fine/medium	STANDARDS[2] ODWQS	MW20-17S	MW20-18D	MW20-18D	Trip Blank	Trip Blank	Trip Blank	Trip Spike	Trip Spike	Field Blank
Sampling Date	dd/mmm/yy	-	-	9-Jun-20	9-Mar-20	9-Jun-20	6-Mar-20	9-Mar-20	4-Jun-20	9-Mar-20	4-Jun-20	9-Mar-20
Screened Interval	m bg	-	-	2.7-4.3	12.8-14.3	12.8-14.3	-	-	-	-	-	-
Analysis Date (on or before)	dd/mmm/yy	-	-	2020-06-19	10-17/Mar/20	2020-06-19	10-17/Mar/20	10-17/Mar/20	2020-06-15	10-17/Mar/20	2020-06-14	10-17/Mar/20
Certificate of Analysis No.	-	-	-	1932105	1926822	1932105	1926781	1926822	1932105	1926822	1932105	1926822
pH	pH units	-	-	8.25	8.35	8.18	-	-	-	-	-	-
Conductivity	uS/cm	-	-	1050	2230	4800	-	-	-	-	-	-
Alkalinity	mg/L	-	-	525	478	601	-	-	-	-	-	-
Hardness	mg/L	-	-	120	41	110	-	-	-	-	-	-
TDS	mg/L	-	-	682	1450	3600	-	-	-	-	-	-
BOD_5	mg/L	-	-	5	IS	21	-	-	-	-	-	-
Calcium	mg/L	-	-	20	10	26	-	-	-	-	-	-
COD	mg/L	-	-	36	40	123	-	-	-	-	-	-
DOC	mg/L	-	-	11.5	5.4	40.8	-	-	-	-	-	-
Magnesium	mg/L	-	-	17	4	11	-	-	-	-	-	-
Ammonia	mg/L	-	-	0.273	0.234	0.013	-	-	-	-	-	-
Phenols	mg/L	0.89	-	<0.001	<0.001	0.002	-	-	-	-	-	-
Phosphorus	mg/L	-	-	0.371	-	0.202	-	-	-	-	-	-
Potassium	mg/L	-	-	7	7	13	-	-	-	-	-	-
TKN	mg/L	-	-	1.2	0.871	1.02	-	-	-	-	-	-
Total Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	26	432	***962***	-	-	-	-	-	-
Nitrite	mg/L	-	1	<0.10	<0.10	<0.10	-	-	-	-	-	-
Nitrate	mg/L	-	10	<0.10	<0.10	<0.10	-	-	-	-	-	-
Sulfate	mg/L	-	-	39	66	504	-	-	-	-	-	-
Arsenic	mg/L	0.025	0.01	0.01	-	*0.012*	-	-	-	-	-	-
Barium	mg/L	1	1	0.04	-	0.12	-	-	-	-	-	-
Boron	mg/L	-	5	0.62	-	0.65	-	-	-	-	-	-
Cadmium	mg/L	0.0027	0.005	<0.0001	-	<0.0001	-	-	-	-	-	-
Chromium	mg/L	-	0.05	<0.001	-	<0.001	-	-	-	-	-	-
Copper	mg/L	0.087	-	<0.001	-	<0.001	-	-	-	-	-	-
Iron	mg/L	-	-	0.46	-	0.13	-	-	-	-	-	-
Lead	mg/L	0.01	0.01	<0.001	-	<0.001	-	-	-	-	-	-
Manganese	mg/L	-	-	0.24	-	0.1	-	-	-	-	-	-
Mercury	mg/L	0.001	0.001	<0.0001	-	<0.0001	-	-	-	-	-	-
Nickel	mg/L	0.1	-	<0.005	-	<0.005	-	-	-	-	-	-
Selenium	mg/L	0.01	0.05	<0.001	-	<0.001	-	-	-	-	-	-
Silver	mg/L	0.0015	-	<0.0001	-	<0.0001	-	-	-	-	-	-
Sodium	mg/L	490	-	208	419	***1070***	-	-	-	-	-	-
Strontium	mg/L	-	-	0.176	-	2.11	-	-	-	-	-	-
Zinc	mg/L	1.1	-	<0.01	-	<0.01	-	-	-	-	-	-
Benzene	ug/L	5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	95%	114%	<0.5
Bromodichloromethane	ug/L	16	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	86%	122%	<0.3
Bromoform	ug/L	25	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	76%	110%	<0.4
Bromomethane	ug/L	0.89	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	78%	112%	<0.5
Carbon Tetrachloride	ug/L	5	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	88%	102%	<0.2
Chlorobenzene	ug/L	30	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	82%	115%	<0.5
Chloroethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	127%	95%	<0.2
Chloroform	ug/L	22	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	91%	112%	<0.5
Chloromethane	ug/L	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	80%	124%	<0.2
Dibromochloromethane	ug/L	25	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	83%	121%	<0.3
Dichlorobenzene, 1,2-	ug/L	3	200	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	85%	109%	<0.4
Dichlorobenzene, 1,3-	ug/L	59	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	82%	98%	<0.4
Dichlorobenzene, 1,4-	ug/L	1	5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	82%	135%	<0.4
Dichlorodifluoromethane	ug/L	590	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	75%	-	<0.5
Dichloroethane, 1,1-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	69%	114%	<0.4
Dichloroethane, 1,2-	ug/L	5	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	88%	127%	<0.2
Dichloroethylene, 1,1-	ug/L	14	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	85%	107%	<0.5
Dichloroethylene, 1,2-cis-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	89%	111%	<0.4
Dichloroethylene, 1,2-trans-	ug/L	17	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	92%	97%	<0.4
Dichloropropane, 1,2-	ug/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	90%	121%	<0.5
Ethylbenzene	ug/L	2.4	140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	87%	135%	<0.5
Ethylene dibromide	ug/L	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	81%	122%	<0.2
Methylene Chloride	ug/L	50	50	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	91%	128%	<4.0
Styrene	ug/L	5.4	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	92%	115%	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	1.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	89%	113%	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	56%	88%	<0.5
Tetrachloroethylene	ug/L	17	10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	88%	97%	<0.3
Toluene	ug/L	24	60	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	88%	123%	<0.5
Trichloroethane, 1,1,1-	ug/L	200	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	73%	106%	<0.4
Trichloroethane, 1,1,2-	ug/L	5	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	81%	117%	<0.4
Trichloroethylene	ug/L	5	5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	104%	139%	<0.3
Trichlorofluoromethane	ug/L	150	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	59%	97%	<0.5
Trimethylbenzene, 1,3,5-	ug/L	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	86%	102%	<0.3
Vinyl Chloride	ug/L	1.7	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	91%	114%	<0.2
Xylenes (Total)	ug/L	300	90	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	131%	-	<0.5

[1] Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended)
Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
All Types of Property-Use, Fine- to Medium-Textured Soil

[2] Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)
Schedule 2: Chemical Standards

[3] Aesthetic Objectives and/or Operational Guidelines from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended)

AO	Aesthetic Objective
OG	Operational Guideline
-	No standard, not applicable, not analyzed
m bg	meters below grade
RPD	Relative percent difference
Value	Exceeds Table 2 standard
Value	Exceeds ODWQS standard or ODWO objective
Value	Exeeds ODWQS and Table 2
Value	Detection limit exceeds standard

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	96-1A	96-1A	96-1A	96-1A	96-1B	96-1B	96-1B	96-1B	96-1D	96-1D	96-1D	96-1D	96-2A	96-2A	96-2A	96-2A
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	26.0 - 27.5	26.0 - 27.5	26.0 - 27.5	26.0 - 27.5	16.0 - 17.5	16.0 - 17.5	16.0 - 17.5	16.0 - 17.5	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3	19.5 - 21.0	19.5 - 21.0	19.5 - 21.0	19.5 - 21.0
pH	pH units	-	-	6.5 - 8.5	OG	8.38	8.3	8.22	8.17	8.82	8.69	8.66	8.62	7.73	7.63	7.44	7.37	8.8	8.65	8.59	8.53
Alkalinity	mg/L	-	-	30 - 500	OG	322	291	296	300	425	548	404	432	565	530	533	509	485	456	463	478
Hardness	mg/L	-	-	80 - 100	OG	27	25	22	20	102	246	91	193	446	572	498	474	17	20	17	17
TDS	mg/L	-	-	500	AO	702	702	702	715	656	656	663	676	1150	1140	1140	1100	793	806	800	826
DOC	mg/L	-	-	5	AO	2.5	2.8	3.1	3.8	2.7	3.3	3.5	4.3	12.9	14.6	15.2	17	4.6	5.7	5.3	7.9
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.003	-	<0.0010	<0.004	0.003	0.006	<0.0010	0.005	0.003	-	<0.0010	<0.004	0.003
Chloride	mg/L	790	-	250	STANDARD	149	155	137	150	123	128	117	126	191	192	162	164	127	128	112	127
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	27	28	8	11	5	6	7	7	141	174	152	159	<5	<5	<1	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	0.002	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.34	0.33	0.31	0.35
Boron	mg/L	-	5	-	STANDARD	0.61	0.66	0.56	0.62	0.66	0.69	0.6	0.69	1.1	0.92	0.9	1	0.81	0.88	0.76	0.88
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	0.004	0.001	-	<0.001	0.001	<0.001
Iron	mg/L	-	-	0.3	AO	<0.03	<0.03	<0.03	<0.03	<0.03	0.2	<0.03	0.49	3.38	2.52	2.24	5.09	0.06	0.07	0.09	<0.03
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.02	-	0.54	0.49	0.46	-	<0.01	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	218	346	275	231	209	240	263	226	193	217	229	205	283	347	334	313
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	96-2B	96-2B	96-2B	96-2B	96-2D	96-2D	96-2D	96-2D	96-3AR	96-3AR	96-3AR	96-3AR	96-3B	96-3B	96-3B	96-3B
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	12-May-21	3-Aug-21	9-Nov-21	27-Nov-20	12-May-21	3-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	13.5 - 15.0	13.5 - 15.0	13.5 - 15.0	13.5 - 15.0	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6	18.0 - 19.5	18.0 - 19.5	18.0 - 19.5	18.0 - 19.5	12.0 - 12.9	12.0 - 12.9	12.0 - 12.9	12.0 - 12.9
pH	pH units	-	-	6.5 - 8.5	OG	8.69	8.57	8.61	8.47	8.16	8	7.83	7.76	8.31	8.34	8.19	8.08	8.27	8.29	8.2	8.13
Alkalinity	mg/L	-	-	30 - 500	OG	479	471	476	484	491	463	472	490	428	403	405	409	747	803	751	703
Hardness	mg/L	-	-	80 - 100	OG	17	24	17	17	142	159	138	155	66	70	61	68	44	59	41	44
TDS	mg/L	-	-	500	AO	780	786	793	812	573	575	584	605	741	748	734	760	936	956	942	942
DOC	mg/L	-	-	5	AO	4.2	5.2	5.3	6.9	7.2	9.2	8.4	11.1	5.7	7.7	6.8	9.6	27.5	46.6	37.4	37
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.003	-	<0.0010	<0.004	0.002	-	<0.0010	<0.004	0.002	-	<0.0010	0.01	0.002
Chloride	mg/L	790	-	250	STANDARD	119	122	110	118	25	25	27	28	133	150	124	126	97	120	96	91
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.10	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<0.50	0.18	<0.50	0.12	<0.50	<0.10	<0.10	<0.50	<1.0	<0.10	<0.50	<0.50	<1.0	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	<5	<5	<1	<5	4	<5	2	<1	<5	<10	<1	<5	7	<10	2	3
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	0.001	0.001	0.002	-	<0.001	<0.001	<0.001	-	0.006	0.006	0.005
Barium	mg/L	1	1	-	STANDARD	0.23	0.23	0.22	0.25	0.04	0.03	0.03	0.04	0.03	0.04	0.03	0.03	0.04	0.06	0.03	0.05
Boron	mg/L	-	5	-	STANDARD	0.84	0.85	0.78	0.88	0.48	0.45	0.42	0.5	0.38	0.63	0.57	0.62	1.1	1.2	1.2	1
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.004	<0.001	0.002
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	0.001	<0.001	-	0.001	0.003	0.002	-	<0.001	0.001	<0.001	-	0.005	0.007	0.006
Iron	mg/L	-	-	0.3	AO	0.04	0.05	0.06	0.04	0.38	0.27	0.47	1.2	0.03	0.07	0.21	0.07	0.28	3.23	0.11	1.13
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	<0.01	-	0.09	0.05	0.08	-	0.02	0.02	0.03	-	0.1	0.03	0.06
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	286	339	325	314	153	167	183	171	232	245	237	245	373	357	393	355
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	96-3C	96-3C	96-3C	96-3C	96-4A	96-4A	96-4A	96-4A	96-4B	96-4B	96-4B	96-4B	96-4E	96-4E	96-4E	96-4e
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	12-May-21	3-Aug-21	9-Nov-21	26-Nov-20	12-May-21	3-Aug-21	9-Nov-21	26-Nov-20	12-May-21	3-Aug-21	9-Nov-21	26-Nov-20	12-May-21	3-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	3.0 - 3.6	3.0 - 3.6	3.0 - 3.6	3.0 - 3.6	19.5 - 21.0	19.5 - 21.0	19.5 - 21.0	19.5 - 21.0	14.5 - 16.0	14.5 - 16.0	14.5 - 16.0	14.5 - 16.0	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6
pH	pH units	-	-	6.5 - 8.5	OG	7.79	7.97	7.55	7.44	8.8	8.7	8.53	8.48	8.83	8.67	8.49	8.41	8.26	8.32	7.91	7.92
Alkalinity	mg/L	-	-	30 - 500	OG	601	593	606	614	482	466	457	463	470	461	461	461	514	489	484	493
Hardness	mg/L	-	-	80 - 100	OG	436	547	472	533	21	26	26	21	28	32	28	26	116	129	120	113
TDS	mg/L	-	-	500	AO	845	852	878	956	689	696	676	689	689	689	676	689	715	722	708	722
DOC	mg/L	-	-	5	AO	4.2	5.3	5.2	6.5	6.3	6.1	6.4	7.9	6.3	6.2	6.4	7.6	7.8	8.1	8.1	9.7
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.002	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	0.003	-	<0.0010	<0.004	0.003
Chloride	mg/L	790	-	250	STANDARD	13	10	10	6	80	100	74	73	82	100	74	73	82	100	81	81
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<1.0	<0.10	<0.50	<0.10	<1.0	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	177	180	177	240	<1	<10	<1	<1	<1	<10	<1	<1	2	<10	<1	<1
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	0.001
Barium	mg/L	1	1	-	STANDARD	0.05	0.05	0.05	0.06	0.39	0.38	0.33	0.38	0.39	0.39	0.35	0.43	0.02	0.02	0.01	0.01
Boron	mg/L	-	5	-	STANDARD	0.5	0.42	0.42	0.52	0.83	0.92	0.82	0.88	0.84	0.95	0.83	0.85	0.83	0.82	0.72	0.84
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	0.002	0.002	-	<0.001	0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.14	<0.03	0.04	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.04	<0.03	0.51	0.81	0.79	0.62
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	0.09	0.09	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.04	0.03	0.04
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	131	140	146	144	230	286	291	241	226	284	280	239	208	247	234	221
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	96-5A	96-5A	96-5A	96-5AA	96-5AA	96-5AA	96-5AA 96-5ar	96-5B	96-5B	96-5B	96-5C	96-5C	96-5C	96-5C
Sampling Date	DD/mmm/yy	-	-	-	-	12-May-21	3-Aug-21	8-Nov-21	30-Nov-20	14-May-21	3-Aug-21	8-Nov-21	14-May-21	3-Aug-21	8-Nov-21	25-Nov-20	12-May-21	3-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	12.8 - 14.0	12.8 - 14.0	12.8 - 14.0	22.4 - 23.8	22.4 - 23.8	22.4 - 23.8	22.4 - 23.8	9.3 - 10.0	9.3 - 10.0	9.3 - 10.0	3.9 - 4.5	3.9 - 4.5	3.9 - 4.5	3.9 - 4.5
pH	pH units	-	-	6.5 - 8.5	OG	8.73	7.94	8.15	8.74	8.13	8.59	8.62	8.23	7.81	7.97	7.93	8.01	7.33	7.58
Alkalinity	mg/L	-	-	30 - 500	OG	484	424	436	498	406	480	489	586	586	595	488	489	510	531
Hardness	mg/L	-	-	80 - 100	OG	28	101	81	26	123	24	24	69	72	63	491	544	636	644
TDS	mg/L	-	-	500	AO	1030	630	650	1030	615	1030	1040	800	793	819	760	793	968	1030
DOC	mg/L	-	-	5	AO	4.1	7	7.9	3.6	7.3	4.2	4.8	18.3	14.3	16	3.1	2.8	4.1	4.3
Phenols	mg/L	0.89	-	-	STANDARD	<0.0010	<0.004	0.002	-	<0.0010	<0.004	<0.001	<0.0010	0.018	0.002	-	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	240	75	73	218	76	202	219	73	65	66	43	70	100	95
Nitrite	mg/L	-	1	-	STANDARD	<1.0	<0.10	<0.10	-	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	-	<1.0	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<1.0	<0.10	0.1	<0.50	<0.10	<0.10	<0.50	<0.10	<0.10	1.08	<0.10	<1.0	0.11	<0.50
Sulfate	mg/L	-	-	500	AO	<10	<1	<1	<5	<1	<1	<5	<1	1	1	125	140	201	221
Arsenic	mg/L	0.025	0.01	-	STANDARD	<0.001	<0.001	0.001	-	<0.001	<0.001	<0.001	0.003	0.005	0.004	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.15	0.28	0.26	0.1	0.26	0.14	0.15	0.02	0.02	0.03	0.07	0.08	0.08	0.09
Boron	mg/L	-	5	-	STANDARD	1.1	0.76	0.8	0.9	0.77	1.1	1.01	1.3	1.3	1.1	0.41	0.34	0.41	0.42
Cadmium	mg/L	0.0027	0.005	-	STANDARD	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.002	<0.001	0.002	-	0.005	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	<0.001	0.001	<0.001	-	0.001	0.001	<0.001	0.003	0.004	0.002	-	0.009	0.003	0.003
Iron	mg/L	-	-	0.3	AO	<0.03	0.1	0.05	<0.03	0.36	<0.03	<0.03	0.85	0.33	1.08	<0.03	2.49	<0.03	0.16
Lead	mg/L	0.01	0.01	-	STANDARD	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	<0.01	0.01	<0.01	-	0.02	<0.01	<0.01	0.04	0.04	0.05	-	0.14	0.06	0.04
Mercury	mg/L	0.001	0.001	-	STANDARD	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	398	204	205	344	222	395	340	316	329	278	82	87	107	96
Zinc	mg/L	1.1	-	5	STANDARD	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	96-6AR	96-6AR	96-6AR	96-6AR	96-6B	96-6B	96-6B	96-6B	96-6D	96-6D	96-6D	96-6D	L2R	L2R	L2R	L2R
Sampling Date	DD/mmm/yy	-	-	-	-	2-Dec-20	12-May-21	3-Aug-21	8-Nov-21	26-Nov-20	12-May-21	3-Aug-21	8-Nov-21	25-Nov-20	12-May-21	3-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	25.0 - 26.5	25.0 - 26.5	25.0 - 26.5	25.0 - 26.5	16.2 - 17.7	16.2 - 17.7	16.2 - 17.7	16.2 - 17.7	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6	4.0 - 4.6	2.3 - 2.8	2.3 - 2.8	2.3 - 2.8	2.3 - 2.8
pH	pH units	-	-	6.5 - 8.5	OG	8.46	8.14	7.78	7.75	8.64	8.48	8.36	8.31	7.89	8.04	7.58	7.57	7.53	7.79	7.39	7.26
Alkalinity	mg/L	-	-	30 - 500	OG	387	389	446	676	393	368	367	374	488	466	463	476	662	620	628	633
Hardness	mg/L	-	-	80 - 100	OG	66	93	794	1002	20	20	20	17	355	388	358	388	470	489	447	474
TDS	mg/L	-	-	500	AO	554	722	2340	9280	529	523	508	529	923	936	949	1000	1100	1060	1050	1030
DOC	mg/L	-	-	5	AO	4.8	5	89	110	4.2	3.9	4.2	4.7	7	8.1	8.5	9.5	6.3	5.6	6.3	7
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	0.008	0.002	-	<0.0010	<0.004	<0.001	<0.001	<0.0010	<0.004	<0.001	<0.001	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	60	100	***1040***	***1600***	44	57	43	45	183	210	193	203	142	170	141	110
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<10	-	<0.50	<0.10	<0.10	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<1.0	0.17	<10	<0.10	<0.50	<0.10	<0.10	0.11	<1.0	<0.10	<0.50	0.49	<1.0	0.25	<0.50
Sulfate	mg/L	-	-	500	AO	17	30	3180	4200	<1	<5	<1	<1	7	<10	6	8	120	130	104	90
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.001	<0.005	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.1	0.1	0.08	<0.05	0.14	0.12	0.1	0.11	0.06	0.05	0.05	0.05	0.1	0.09	0.1	0.08
Boron	mg/L	-	5	-	STANDARD	0.66	0.66	0.8	0.97	0.76	0.82	0.81	0.84	0.68	0.62	0.6	0.65	0.84	0.62	0.77	0.74
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0005	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.006	0.006	<0.005	-	<0.001	0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.004	0.003	0.004
Iron	mg/L	-	-	0.3	AO	<0.03	<0.03	<0.03	<0.2	0.45	<0.03	<0.03	<0.03	1.35	0.49	1.71	1.22	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	0.12	0.99	-	<0.01	<0.01	<0.01	-	0.14	0.13	0.13	-	0.45	0.39	0.04
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0005	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0002
Sodium	mg/L	490	-	200	STANDARD	172	227	***2690***	***2600***	179	193	192	189	163	178	185	187	208	203	205	246
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.05	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	L3R	L3R	L3R	L3R	L6	L6	L6	L6	L7	L7	L7	L7	MW20-1S	MW20-1S	MW20-1S	MW20-1S
Sampling Date	DD/mmm/yy	-	-	-	-	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	2.4 - 3.5	2.4 - 3.5	2.4 - 3.5	2.4 - 3.5	2.8 - 4.2	2.8 - 4.2	2.8 - 4.2	2.8 - 4.2	2.4 - 3.8	2.4 - 3.8	2.4 - 3.8	2.4 - 3.8
pH	pH units	-	-	6.5 - 8.5	OG	7.31	7.61	7.11	7.04	7.7	7.89	7.25	7.32	7.66	7.92	7.29	7.34	7.96	7.97	7.62	7.69
Alkalinity	mg/L	-	-	30 - 500	OG	907	833	817	886	669	634	624	631	802	772	764	776	447	412	416	427
Hardness	mg/L	-	-	80 - 100	OG	674	665	659	693	767	811	793	771	432	507	458	460	242	277	251	347
TDS	mg/L	-	-	500	AO	1200	1140	1110	1160	1570	1530	1540	1540	988	994	982	988	568	579	578	616
DOC	mg/L	-	-	5	AO	13.4	15	13.7	15	8.9	8	9.4	9.6	7.6	19.1	20.5	8	11.2	14.1	16.1	20
Phenols	mg/L	0.89	-	-	STANDARD	0.007	<0.0010	0.005	<0.001	<0.010	<0.0010	<0.004	0.001	-	<0.0010	<0.004	<0.001	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	140	160	124	110	403	400	360	400	58	70	61	65	30	38	30	30
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<1.0	-	<1.0	<0.10	<0.50	-	<0.50	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<1.0	<0.10	<0.50	<0.10	<1.0	<0.10	<1.0	0.31	<1.0	0.24	0.75	0.1	<0.50	0.18	0.12
Sulfate	mg/L	-	-	500	AO	14	<10	1	5	82	80	80	70	42	50	38	29	33	29	24	54
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.001	0.002	0.002	-	<0.001	0.001	<0.001	-	<0.001	0.001	<0.001	-	0.004	0.002	0.001
Barium	mg/L	1	1	-	STANDARD	0.11	0.11	0.12	0.12	0.09	0.08	0.09	0.09	0.08	0.07	0.07	0.06	0.04	0.09	0.04	0.04
Boron	mg/L	-	5	-	STANDARD	0.49	0.36	0.43	0.36	0.63	0.53	0.56	0.57	0.66	0.48	0.53	0.56	0.49	0.43	0.46	0.49
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.007	0.002	0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	0.001	0.002	<0.001	-	<0.001	0.001	0.003	-	0.009	0.003	0.002
Iron	mg/L	-	-	0.3	AO	6.77	11.3	9.54	10.3	0.48	1.02	1.81	0.24	0.08	0.49	0.96	0.15	0.05	9.05	1.19	0.76
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	1.59	1.6	2.37	-	0.68	0.57	0.66	-	0.33	0.2	0.3	-	0.42	0.08	0.1
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	0.0002	-	<0.0001	<0.0001	0.0002	-	<0.0001	<0.0001	0.0004	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	159	170	148	188	211	221	209	225	188	190	189	189	97	111	115	128
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.02	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-1T	MW20-1T	MW20-1T	MW20-1T	MW20-2C	MW20-2C	MW20-2C	MW20-2C	MW20-2D	MW20-2D	MW20-2D	MW20-2D	MW20-2S	MW20-2S	MW20-2S	MW20-2S
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	13.0 - 14.6	13.0 - 14.6	13.0 - 14.6	13.0 - 14.6	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0	23.8 - 25.3	23.8 - 25.3	23.8 - 25.3	23.8 - 25.3	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0
pH	pH units	-	-	6.5 - 8.5	OG	8.56	8.54	8.17	8.21	8.33	8.21	7.95	7.96	8.7	8.73	8.58	8.64	7.79	7.42	7.13	7.23
Alkalinity	mg/L	-	-	30 - 500	OG	556	502	495	554	674	638	628	632	331	315	315	317	709	669	678	682
Hardness	mg/L	-	-	80 - 100	OG	90	66	49	180	144	148	134	174	17	21	17	21	570	603	527	733
TDS	mg/L	-	-	500	AO	689	696	682	702	1220	1210	1200	1200	599	589	586	598	994	968	988	988
DOC	mg/L	-	-	5	AO	6.9	7.5	8	9.4	13.1	15.7	17.2	18.9	3	3.5	4.1	4.7	14.7	16.6	19.3	21.4
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	64	64	69	64	239	240	200	229	97	105	97	100	103	130	100	98
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<1.0	<0.10	<0.50	-	<0.50	<0.10	<0.10	-	<1.0	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	0.14	<0.10	<0.10	0.15	<0.50	<1.0	0.13	<0.50	<0.10	<0.50	<0.10	0.12	<0.50	<1.0	0.23	<0.50
Sulfate	mg/L	-	-	500	AO	3	2	<1	2	<5	<10	2	<5	5	<5	5	5	31	30	27	25
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.001	0.002	-	0.008	0.006	0.006	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.22	0.25	0.22	0.18	0.04	0.06	0.04	0.03	0.32	0.36	0.31	0.33	0.07	0.07	0.08	0.07
Boron	mg/L	-	5	-	STANDARD	0.93	0.96	0.92	0.9	1	1	0.99	1.02	0.64	0.63	0.65	0.65	0.4	0.31	0.34	0.36
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	0.005	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.002	0.002	0.001	-	0.003	0.001	0.001	-	<0.001	<0.001	<0.001	-	0.002	0.003	0.003
Iron	mg/L	-	-	0.3	AO	0.07	1.12	0.2	0.07	0.1	4.63	0.04	0.07	<0.03	<0.03	<0.03	<0.03	<0.03	0.74	2.72	2.05
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.08	0.01	<0.01	-	0.21	0.01	0.02	-	<0.01	<0.01	<0.01	-	0.98	0.93	0.88
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	212	262	238	236	370	423	427	383	175	200	201	244	104	110	108	132
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-3C	MW20-3C	MW20-3C	MW20-3C	MW20-3D	MW20-3D	MW20-3D	MW20-3D	MW20-3S	MW20-3S	MW20-3S	MW20-3S	MW20-4C	MW20-4C	MW20-4C	MW20-4C
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	30-Nov-20	11-May-21	6-Aug-21	10-Nov-21	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0	15.4 - 16.9	15.4 - 16.9	15.4 - 16.9	15.4 - 16.9	2.5 - 3.9	2.5 - 3.9	2.5 - 3.9	2.5 - 3.9	5.6 - 7.0	5.6 - 7.0	5.6 - 7.0	5.6 - 7.0
pH	pH units	-	-	6.5 - 8.5	OG	8.21	8.08	7.83	7.9	8.67	8.6	8.5	8.57	8.08	7.87	7.57	7.64	8.33	8.14	7.9	7.95
Alkalinity	mg/L	-	-	30 - 500	OG	271	262	261	268	384	391	346	351	372	336	344	355	270	249	258	251
Hardness	mg/L	-	-	80 - 100	OG	141	152	126	185	42	76	21	49	353	357	335	447	173	188	150	165
TDS	mg/L	-	-	500	AO	349	350	346	359	603	593	591	597	517	491	503	518	387	390	400	393
DOC	mg/L	-	-	5	AO	7.4	8.6	8.8	10.9	3.8	4.2	3.3	4	12.3	13.9	15.3	17.2	5	6.1	6	7.3
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	18	18	18	16	90	96	92	88	18	20	22	18	40	41	43	40
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.50	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	0.39	0.84	0.95	0.37	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	10	6	6	7	2	<5	2	1	59	60	77	59	16	10	7	11
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.004	0.003	0.003	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001	-	0.007	0.004	0.003
Barium	mg/L	1	1	-	STANDARD	0.02	0.02	0.03	0.02	***1.24***	***1.3***	***1.55***	***1.7***	0.04	0.04	0.04	0.03	0.05	0.22	0.07	0.05
Boron	mg/L	-	5	-	STANDARD	0.37	0.37	0.39	0.38	0.7	0.71	0.74	0.73	0.14	0.13	0.14	0.14	0.34	0.33	0.36	0.37
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.01	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	0.001	0.001	-	<0.001	<0.001	<0.001	-	0.005	0.002	0.002	-	0.015	0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.05	0.04	<0.03	0.08	<0.03	<0.03	0.05	0.4	0.03	0.54	0.04	<0.03	0.06	20.6	0.47	0.11
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.01	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.05	0.02	0.03	-	<0.01	<0.01	0.02	-	0.32	0.25	0.4	-	0.88	0.06	0.06
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	63	73	65	85	181	203	186	245	29	33	30	38	64	75	57	60
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.07	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

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3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-4D	MW20-4D	MW20-4D	MW20-4D	MW20-4S	MW20-4S	MW20-4S	MW20-4S	MW20-5D	MW20-5D	MW20-5D	MW20-5D	MW20-5S	MW20-5S	MW20-5S	MW20-5S
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	11.3 - 12.7	11.3 - 12.7	11.3 - 12.7	11.3 - 12.7	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0	13.9 - 15.4	13.9 - 15.4	13.9 - 15.4	13.9 - 15.4	2.4 - 3.9	2.4 - 3.9	2.4 - 3.9	2.4 - 3.9
pH	pH units	-	-	6.5 - 8.5	OG	7.78	8.18	7.91	7.99	8.3	7.57	7.16	7.37	8.38	8.27	8.13	8.16	8.19	8.1	7.77	7.93
Alkalinity	mg/L	-	-	30 - 500	OG	693	269	258	269	272	668	648	671	287	282	283	283	388	349	348	353
Hardness	mg/L	-	-	80 - 100	OG	755	156	115	138	122	825	675	774	73	79	64	64	203	206	161	184
TDS	mg/L	-	-	500	AO	962	562	573	589	556	1010	982	1030	436	452	438	438	427	410	411	419
DOC	mg/L	-	-	5	AO	12.9	3.9	4.1	4.6	3.2	15.4	16.4	18.9	21.6	12.7	3.6	8.9	8	7.7	8.6	9.4
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	107	137	127	128	128	130	101	114	52	52	52	52	6	6	6	6
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.10	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	0.39	<0.50	<0.10	<0.10	<0.10	0.73	0.35	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	48	<5	<1	<1	<1	50	44	48	<1	<1	<1	<1	3	2	<1	2
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.005	0.004	0.005
Barium	mg/L	1	1	-	STANDARD	0.06	1	***1.21***	0.94	0.89	0.07	0.09	0.06	***1.18***	***1.3***	***1.47***	***1.09***	0.02	0.03	0.04	0.03
Boron	mg/L	-	5	-	STANDARD	0.25	0.38	0.4	0.41	0.39	0.19	0.22	0.25	0.64	0.63	0.72	0.68	0.42	0.4	0.45	0.49
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.002
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	0.002	0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	0.001
Iron	mg/L	-	-	0.3	AO	0.53	0.08	0.17	0.09	0.08	0.18	0.51	0.76	0.1	0.13	0.13	0.1	0.38	0.44	0.12	0.95
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	0.01	<0.01	-	1.86	1.92	1.56	-	<0.01	<0.01	<0.01	-	0.12	0.06	0.1
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	41	150	141	132	139	47	40	41	125	149	122	121	79	90	78	78
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-5t	MW20-5T	MW20-5T	MW20-5T	MW20-6D	MW20-6D	MW20-6D	MW20-6D	MW20-6S	MW20-6S	MW20-6S	MW20-6S	MW20-6t	MW20-6T	MW20-6T	MW20-6T
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	6-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	9.6 - 11.1	9.6 - 11.1	9.6 - 11.1	9.6 - 11.1	7.7 - 9.2	7.7 - 9.2	7.7 - 9.2	7.7 - 9.2	2.7 - 4.1	2.7 - 4.1	2.7 - 4.1	2.7 - 4.1	5.2 - 6.0	5.2 - 6.0	5.2 - 6.0	5.2 - 6.0
pH	pH units	-	-	6.5 - 8.5	OG	8.36	8.5	8.23	8.31	7.86	7.89	7.7	7.64	7.94	7.93	7.84	7.79	7.87	7.84	7.71	7.64
Alkalinity	mg/L	-	-	30 - 500	OG	385	363	362	337	319	306	309	315	325	319	320	324	322	308	307	322
Hardness	mg/L	-	-	80 - 100	OG	79	119	41	48	459	445	434	423	427	411	407	405	371	382	380	390
TDS	mg/L	-	-	500	AO	415	420	419	423	975	936	923	975	800	884	897	949	910	910	910	1040
DOC	mg/L	-	-	5	AO	4.4	4.9	4.8	7	2.4	3	3.5	4	4.7	3.2	3.3	4.2	2.6	3	3.2	3.8
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	15	16	18	17	276	260	248	262	168	220	222	239	236	250	225	283
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	<0.10	<0.50	0.12	<0.10	<0.50	7.48	0.1	0.97	<0.50	<0.50	0.2	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	<1	<1	<1	<1	38	40	39	36	56	50	48	45	44	50	47	44
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.2	0.24	0.23	0.2	***3.56***	***3.4***	***2.2***	***4.2***	***1.08***	0.9	***1.03***	1	***1.87***	***1.8***	***2***	***2.4***
Boron	mg/L	-	5	-	STANDARD	0.72	0.76	0.79	0.8	0.09	0.08	0.1	0.1	0.1	0.08	0.07	0.08	0.11	0.09	0.09	0.09
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	0.002	-	<0.001	<0.001	0.001
Iron	mg/L	-	-	0.3	AO	0.03	0.14	<0.03	0.04	<0.03	0.11	0.85	0.1	0.55	0.05	0.03	0.28	<0.03	0.09	1.91	0.33
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	<0.01	-	0.24	0.24	0.19	-	0.17	0.15	0.1	-	0.25	0.19	0.15
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	138	158	135	131	119	144	126	126	89	146	138	132	144	171	151	159
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-7C	MW20-7C	MW20-7C	MW20-7C	MW20-7D	MW20-7D	MW20-7D	MW20-7D	MW20-7S	MW20-7S	MW20-7S	MW20-7S	MW20-8C	MW20-8C	MW20-8C	MW20-8C
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	5.4 - 6.9	5.4 - 6.9	5.4 - 6.9	5.4 - 6.9	15.4 - 16.9	15.4 - 16.9	15.4 - 16.9	15.4 - 16.9	2.4 - 4.0	2.4 - 4.0	2.4 - 4.0	2.4 - 4.0	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0	5.5 - 7.0
pH	pH units	-	-	6.5 - 8.5	OG	8.31	8.28	8.18	8.04	8.21	8.15	8.11	7.93	8.16	8.16	8.1	7.9	8.44	8.11	7.95	7.99
Alkalinity	mg/L	-	-	30 - 500	OG	537	505	504	518	332	321	325	328	459	469	445	460	392	376	374	378
Hardness	mg/L	-	-	80 - 100	OG	101	144	92	115	190	191	186	187	178	162	186	193	102	121	103	148
TDS	mg/L	-	-	500	AO	588	598	595	611	560	563	558	571	516	521	521	541	465	472	463	469
DOC	mg/L	-	-	5	AO	12.6	14	15.6	17.1	3.4	4.5	5.1	5.7	7.5	8.4	9.7	10.4	8.5	9.5	10.7	11.6
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	13	13	13	11	94	94	94	87	13	12	12	11	10	10	11	9
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	0.1	<0.10	0.14	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.19	<0.10	<0.10	0.26
Sulfate	mg/L	-	500	AO	2	3	1	2	3	3	2	6	<1	2	<1	3	13	13	9	11
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.009	0.009	0.007	-	<0.001	<0.001	<0.001	-	0.004	0.003	0.002	-	0.003	0.003	0.005
Barium	mg/L	1	1	-	STANDARD	0.03	0.03	0.02	0.02	***1.14***	***1.2***	***1.4***	***1.5***	0.03	0.05	0.04	0.03	0.02	0.02	0.03	0.08
Boron	mg/L	-	5	-	STANDARD	0.88	0.85	0.92	0.95	0.33	0.3	0.36	0.34	0.61	0.5	0.56	0.59	0.74	0.7	0.76	0.71
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.006	<0.001	0.001	-	0.003	0.004	0.024
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	<0.001	0.002	-	<0.001	<0.001	<0.001	-	0.003	<0.001	0.001	-	0.002	0.002	0.013
Iron	mg/L	-	-	0.3	AO	0.8	0.55	0.18	0.14	0.15	0.74	0.45	0.3	0.14	5.42	0.11	0.76	0.04	1.27	1.93	20.1
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001	-	<0.001	<0.001	0.006
Manganese	mg/L	-	-	0.05	AO	-	0.06	0.04	0.02	-	0.02	0.02	0.01	-	0.2	0.04	0.05	-	0.06	0.08	0.43
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	190	225	192	199	111	135	119	111	125	138	128	128	135	149	138	168
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.01	<0.01	<0.01	-	<0.01	<0.01	0.05
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-8D	MW20-8D	MW20-8D	MW20-8D	MW20-8S	MW20-8S	MW20-8S	MW20-8S	MW20-9D	MW20-9D	MW20-9D	MW20-9D	MW20-9S	MW20-9S	MW20-9S	MW20-9S
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	10.95 - 12.5	10.95 - 12.5	10.95 - 12.5	10.95 - 12.5	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0	2.5 - 4.0	20.9 - 22.4	20.9 - 22.4	20.9 - 22.4	20.9 - 22.4	2.4 - 3.9	2.4 - 3.9	2.4 - 3.9	2.4 - 3.9
pH	pH units	-	-	6.5 - 8.5	OG	8.11	8.01	7.9	7.73	8.23	8.16	8.05	7.93	8.42	8.28	8.18	8.01	8.13	8.15	8.02	8.19
Alkalinity	mg/L	-	-	30 - 500	OG	301	291	286	295	405	389	395	397	379	368	370	381	487	455	460	345
Hardness	mg/L	-	-	80 - 100	OG	282	279	283	282	186	205	199	230	69	74	59	50	200	215	206	111
TDS	mg/L	-	-	500	AO	632	614	640	613	476	473	482	486	2290	2180	2030	1940	574	573	582	518
DOC	mg/L	-	-	5	AO	2.7	3.4	4	4.9	6.6	7.1	8.4	9.5	7	6	6.8	6.5	11.4	12.1	16.3	11.9
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	128	120	129	111	16	15	12	14	763	680	590	630	29	29	29	67
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<1.0	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	0.23	<0.10	0.18	0.12	<0.10	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	28	26	30	21	7	7	<1	6	287	230	140	180	6	5	1	<1
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	0.004	0.005	0.004	-	0.003	0.002	0.001	-	0.005	0.003	<0.001
Barium	mg/L	1	1	-	STANDARD	0.6	0.64	0.71	0.63	0.03	0.03	0.06	0.03	0.06	0.06	0.06	0.05	0.04	0.04	0.03	0.34
Boron	mg/L	-	5	-	STANDARD	0.1	0.09	0.11	0.1	0.72	0.61	0.7	0.71	0.67	0.71	0.72	0.71	0.52	0.51	0.54	0.53
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	0.01	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	0.007	0.001	-	<0.001	<0.001	<0.001	-	0.003	0.001	<0.001
Iron	mg/L	-	-	0.3	AO	<0.03	<0.03	<0.03	<0.03	0.1	0.21	4.87	0.33	<0.03	<0.03	<0.03	0.05	0.52	2.12	0.22	0.05
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	0.002	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.11	0.12	0.12	-	0.06	0.17	0.05	-	0.03	0.02	0.01	-	0.12	0.06	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	95	111	100	127	100	113	101	123	***795***	***746***	***701***	***616***	135	148	142	138
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-9t	MW20-9T	MW20-9T	MW20-9T	MW20-10C	MW20-10C	MW20-10C	MW20-10C	MW20-10D	MW20-10D	MW20-10D	MW20-10D	MW20-10S	MW20-10S	MW20-10S	MW20-10S
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	15.5 - 17.1	15.5 - 17.1	15.5 - 17.1	15.5 - 17.1	6.0 - 7.5	6.0 - 7.5	6.0 - 7.5	6.0 - 7.5	17.5 - 19.0	17.5 - 19.0	17.5 - 19.0	17.5 - 19.0	2.5 - 4.1	2.5 - 4.1	2.5 - 4.1	2.5 - 4.1
pH	pH units	-	-	6.5 - 8.5	OG	8.32	8.35	8.25	7.82	8.48	8.34	8.3	8.07	8.36	8.43	8.31	8.16	8.23	8.15	8.06	7.9
Alkalinity	mg/L	-	-	30 - 500	OG	332	345	315	471	634	610	613	622	428	397	397	401	557	534	535	544
Hardness	mg/L	-	-	80 - 100	OG	99	135	89	206	115	143	116	148	59	66	64	74	231	282	246	292
TDS	mg/L	-	-	500	AO	497	505	499	602	878	871	871	878	617	602	615	629	728	780	767	780
DOC	mg/L	-	-	5	AO	9.9	11.8	8.2	15.5	11.8	14.6	16.2	17.5	5.2	6.3	7.1	7.6	5	5.3	6.5	7.1
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	69	68	70	32	83	100	84	79	76	90	75	75	50	60	52	50
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	0.24	<0.10	<1.0	<0.10	<0.10	0.22	<1.0	<0.10	0.25	0.41	<1.0	<0.10	0.37
Sulfate	mg/L	-	-	500	AO	<1	<1	<1	6	30	20	17	19	3	<10	2	3	42	40	42	57
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	0.003	-	0.007	0.007	0.006	-	<0.001	<0.001	<0.001	-	0.003	0.002	0.002
Barium	mg/L	1	1	-	STANDARD	0.32	0.34	0.38	0.03	0.04	0.03	0.03	0.03	0.2	0.19	0.2	0.19	0.03	0.06	0.04	0.03
Boron	mg/L	-	5	-	STANDARD	0.49	0.51	0.53	0.58	0.66	0.66	0.69	0.63	0.63	0.62	0.67	0.61	0.43	0.35	0.41	0.43
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.008	0.002	0.002
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.009	0.003	0.003
Iron	mg/L	-	-	0.3	AO	0.03	0.06	<0.03	0.18	<0.03	<0.03	0.04	<0.03	0.15	<0.03	<0.03	<0.03	<0.03	6.31	1.09	0.9
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	0.06	-	0.02	0.02	0.02	-	<0.01	<0.01	<0.01	-	0.26	0.06	0.06
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	139	155	143	137	300	318	301	291	198	207	195	240	180	204	187	234
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.02	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-11C	MW20-11C	MW20-11C	MW20-11C	MW20-11S	MW20-11S	MW20-11S	MW20-11S	MW20-12S	MW20-12S	MW20-12S	MW20-12S	MW20-15t	MW20-15T	MW20-15T	MW20-15T
Sampling Date	DD/mmm/yy	-	-	-	-	2-Dec-20	11-May-21	5-Aug-21	10-Nov-21	2-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21
Screened Interval	m bg	-	-	-	-	6.1 - 7.6	6.1 - 7.6	6.1 - 7.6	6.1 - 7.6	2.4 - 4.0	2.4 - 4.0	2.4 - 4.0	2.4 - 4.0	2.6 - 4.1	2.6 - 4.1	2.6 - 4.1	2.6 - 4.1	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7
pH	pH units	-	-	6.5 - 8.5	OG	8.5	8.49	8.41	8.06	8.34	8.11	8.06	7.9	8.23	8.14	8.05	7.83	8.51	8.64	8.49	8.44
Alkalinity	mg/L	-	-	30 - 500	OG	707	660	656	659	538	489	495	499	478	445	444	453	524	828	502	578
Hardness	mg/L	-	-	80 - 100	OG	115	125	95	133	180	195	181	217	275	280	287	312	71	350	32	36
TDS	mg/L	-	-	500	AO	890	890	890	884	663	638	647	656	599	616	604	627	640	613	593	586
DOC	mg/L	-	-	5	AO	16.3	19.3	21.5	23.7	19.8	13.6	15.4	15.8	4.7	5.3	6.7	7	10.6	12.8	12.4	13
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	790	-	250	STANDARD	76	76	76	74	46	44	46	45	18	17	17	16	50	48	48	48
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	0.2	<0.10	0.18
Sulfate	mg/L	-	-	500	AO	<1	<1	1	<1	<1	<1	<1	<1	58	73	55	70	50	30	22	17
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.01	0.008	0.009	-	0.004	0.004	0.003	-	0.002	0.001	0.001	-	0.002	<0.001	0.001
Barium	mg/L	1	1	-	STANDARD	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.03	0.04	0.05	0.04	0.03	0.2	0.41	0.25	0.24
Boron	mg/L	-	5	-	STANDARD	0.7	0.79	0.8	0.8	0.32	0.37	0.36	0.4	0.48	0.39	0.4	0.52	0.92	0.94	0.9	0.94
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001	-	0.002	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.08	0.06	<0.03	0.12	1.22	0.75	1.33	0.5	0.06	0.11	0.04	0.06	0.03	4.11	0.05	0.68
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.01	0.01	0.01	-	0.1	0.13	0.09	-	0.13	0.09	0.08	-	0.2	<0.01	0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	305	331	310	315	165	176	181	216	111	119	118	117	216	222	206	250
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-17S	MW20-17S	MW20-17S	MW20-17S	MW20-18D	MW20-19A	MW20-19A	MW20-19A	MW20-19A	MW20-19B	MW20-19B	MW20-19B	MW20-19B
Sampling Date	DD/mmm/yy	-	-	-	-	1-Dec-20	11-May-21	5-Aug-21	10-Nov-21	11-May-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21
Screened Interval	m bg	-	-	-	-	2.7 - 4.3	2.7 - 4.3	2.7 - 4.3	2.7 - 4.3	12.8 - 14.3	16.7 - 18.2	16.7 - 18.2	16.7 - 18.2	16.7 - 18.2	11.9 - 13.5	11.9 - 13.5	11.9 - 13.5	11.9 - 13.5
pH	pH units	-	-	6.5 - 8.5	OG	8.39	8.25	8.23	8.01	8.29	8.55	8.42	8.28	8.33	8.46	8.3	8.22	8.31
Alkalinity	mg/L	-	-	30 - 500	OG	533	504	498	508	627	341	329	330	342	365	433	341	351
Hardness	mg/L	-	-	80 - 100	OG	133	135	107	144	69	289	87	69	97	308	239	80	101
TDS	mg/L	-	-	500	AO	631	647	637	647	2610	447	396	389	421	530	410	395	416
DOC	mg/L	-	-	5	AO	9.6	11.1	12.1	13.3	13.8	6.1	5.9	5.5	6.1	10.6	7.1	5.9	6.8
Phenols	mg/L	0.89	-	-	STANDARD	-	-	-	-	-	<0.001	<0.0010	<0.004	0.003	<0.001	<0.0010	<0.004	0.002
Chloride	mg/L	790	-	250	STANDARD	25	25	24	24	***910***	14	<1	13	14	16	14	14	14
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	28	26	22	22	120	37	<1	1	1	81	<1	<1	<1
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.008	0.007	0.007	0.012	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.03	0.02	0.03	0.03	0.46	0.52	0.31	0.35	0.28	0.34	0.49	0.51	0.44
Boron	mg/L	-	5	-	STANDARD	0.73	0.66	0.67	0.73	0.69	0.82	0.7	0.7	0.73	0.7	0.68	0.65	0.71
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	0.003	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	0.003	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.18	0.27	0.4	1.71	<0.03	6.32	0.08	0.84	0.39	0.08	0.3	0.05	0.16
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.08	0.07	0.08	0.04	-	<0.01	0.03	0.02	-	0.02	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	201	216	214	249	***930***	140	137	119	127	166	142	120	125
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	-	-	-	-	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	-	-	-	-	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	-	-	-	-	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	-	-	-	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	-	-	-	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-19C	MW20-19C	MW20-19C	MW20-19C	MW20-19D	MW20-19D	MW20-19D	MW20-19D	MW20-20A	MW20-20A	MW20-20A	MW20-20A	MW20-20B	MW20-20B	MW20-20B	MW20-20B
Sampling Date	DD/mmm/yy	-	-	-	-	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21
Screened Interval	m bg	-	-	-	-	8.6 - 10.1	8.6 - 10.1	8.6 - 10.1	8.6 - 10.1	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	18.1 - 19.6	18.1 - 19.6	18.1 - 19.6	18.1 - 19.6	14.8 - 16.0	14.8 - 16.0	14.8 - 16.0	14.8 - 16.0
pH	pH units	-	-	6.5 - 8.5	OG	8.41	8.15	7.94	8.17	7.82	7.93	7.29	7.46	8.55	8.12	8.16	8.24	8.6	8.07	8.29	8.24
Alkalinity	mg/L	-	-	30 - 500	OG	458	461	464	477	513	522	539	566	288	278	279	282	301	371	296	299
Hardness	mg/L	-	-	80 - 100	OG	117	62	31	82	280	274	278	301	87	100	91	95	65	493	75	110
TDS	mg/L	-	-	500	AO	620	599	567	612	592	613	627	682	382	369	374	389	499	450	401	404
DOC	mg/L	-	-	5	AO	11.2	13.8	9.9	11.4	12.1	13	13	16	5.8	5.2	4.4	5	6.8	7.6	4.8	5.7
Phenols	mg/L	0.89	-	-	STANDARD	0.003	<0.0010	<0.004	0.002	0.002	0.001	0.005	0.002	<0.001	<0.0010	<0.004	0.002	0.001	<0.0010	<0.004	0.002
Chloride	mg/L	790	-	250	STANDARD	27	20	19	19	14	11	12	15	19	21	25	26	31	26	30	28
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	0.83	0.53	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	45	2	12	11	9	11	7	10	16	<1	<1	<1	64	39	15	5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.01	0.007	0.006	-	0.007	0.006	0.004	-	<0.001	<0.001	<0.001	-	0.001	0.003	<0.001
Barium	mg/L	1	1	-	STANDARD	0.14	0.08	0.03	0.03	0.06	0.25	0.12	0.06	0.34	0.53	0.59	0.5	0.2	0.32	0.24	0.25
Boron	mg/L	-	5	-	STANDARD	0.97	1.1	1	1	0.74	0.79	0.8	1.05	0.58	0.58	0.57	0.61	0.65	0.62	0.64	0.64
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	0.0003	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	0.007	0.001	0.002	-	0.014	0.023	<0.001	-	<0.001	<0.001	<0.001	-	0.004	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.008	0.003	0.002	-	0.05	0.016	<0.001	-	0.001	<0.001	<0.001	-	0.003	0.004	<0.001
Iron	mg/L	-	-	0.3	AO	16.6	7.44	0.63	1.53	1.4	24.8	20.5	0.71	<0.03	<0.03	<0.03	<0.03	0.06	5.92	0.12	0.08
Lead	mg/L	0.01	0.01	-	STANDARD	-	0.003	<0.001	<0.001	-	0.007	0.005	<0.001	-	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.23	0.05	0.07	-	1.3	0.41	0.15	-	<0.01	<0.01	<0.01	-	0.47	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	216	248	211	233	125	165	131	141	103	115	95	100	151	152	116	112
Zinc	mg/L	1.1	-	5	STANDARD	-	0.02	<0.01	<0.01	-	0.06	0.03	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

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2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	MW20-20C	MW20-20C	MW20-20C	MW20-20C	MW20-20D	MW20-20D	MW20-20D	MW20-20D	P1-1A	P1-1A	P1-1A	P1-1A	P1-1B	P1-1B	P1-1B	P1-1B
Sampling Date	DD/mmm/yy	-	-	-	-	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	25-Nov-20	14-May-21	4-Aug-21	11-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	7.4 - 8.9	7.4 - 8.9	7.4 - 8.9	7.4 - 8.9	1.4 - 2.9	1.4 - 2.9	1.4 - 2.9	1.4 - 2.9	18.0 - 19.5	18.0 - 19.5	18.0 - 19.5	18.0 - 19.5	13.1 - 14.5	13.1 - 14.5	13.1 - 14.5	13.1 - 14.5
pH	pH units	-	-	6.5 - 8.5	OG	8.61	8.24	8.08	8.1	8.03	7.96	7.49	7.69	8.39	8.23	8.41	8.44	8.36	8.24	8.34	8.33
Alkalinity	mg/L	-	-	30 - 500	OG	801	789	795	813	663	649	669	732	474	465	474	492	504	497	477	475
Hardness	mg/L	-	-	80 - 100	OG	101	89	69	99	240	234	197	266	35	41	35	36	45	113	91	35
TDS	mg/L	-	-	500	AO	1310	1260	1220	1250	812	845	871	962	715	722	741	774	728	715	722	754
DOC	mg/L	-	-	5	AO	36.6	41	37	31	14.5	12.2	11.9	16	5	7.3	7.2	7.6	5	5.8	6.6	6.8
Phenols	mg/L	0.89	-	-	STANDARD	0.004	<0.0010	0.007	0.002	0.01	0.002	0.005	0.002	-	0.001	<0.004	0.001	-	0.001	<0.004	0.001
Chloride	mg/L	790	-	250	STANDARD	136	154	135	142	53	63	71	71	101	97	95	92	103	97	99	90
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	2.19	1.61	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	100	56	37	25	6	2	<1	2	<5	<1	<1	<5	<5	2	<1	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.014	0.01	0.009	-	0.008	0.007	0.005	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.04	0.02	0.03	0.02	0.06	0.06	0.06	0.06	0.25	0.21	0.23	0.22	0.26	0.2	0.2	0.17
Boron	mg/L	-	5	-	STANDARD	1.5	1.8	2	1.7	0.97	0.96	1.3	1.1	0.88	0.89	0.9	0.92	0.86	0.88	1	0.9
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	0.001	0.002	<0.001	-	0.002	<0.001	0.003	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.002	0.007	0.002	-	0.002	0.001	0.003	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.34	0.28	0.6	0.18	0.64	1.76	0.32	1.72	0.04	0.07	0.05	0.07	0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.08	0.08	0.05	-	0.22	0.14	0.15	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	458	***576***	462	475	234	320	276	273	239	312	276	271	245	303	264	259
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	P1-1C	P1-1C	P1-1C	P1-1C	P1-1D	P1-1D	P1-1D	P1-1D	P1-2A	P1-2A	P1-2A	P1-2A	P1-2B	P1-2B	P1-2B	P1-2B
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	9.4 - 10.9	9.4 - 10.9	9.4 - 10.9	9.4 - 10.9	4.2 - 5.7	4.2 - 5.7	4.2 - 5.7	4.2 - 5.7	18.5 - 20.0	18.5 - 20.0	18.5 - 20.0	18.5 - 20.0	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7
pH	pH units	-	-	6.5 - 8.5	OG	8.23	8.11	8.18	8.19	7.39	7.42	7.18	7.5	8.39	8.29	8.45	8.41	7.94	7.82	8.06	8.06
Alkalinity	mg/L	-	-	30 - 500	OG	503	487	491	506	728	635	729	687	460	432	438	446	609	473	468	462
Hardness	mg/L	-	-	80 - 100	OG	101	114	102	105	641	715	722	673	20	26	26	24	426	288	200	127
TDS	mg/L	-	-	500	AO	754	760	767	786	949	916	982	1000	722	728	734	748	1070	793	780	722
DOC	mg/L	-	-	5	AO	6.2	8.2	9	9.5	3.1	4.2	6.7	5.1	4	5.1	5.6	6.1	3.5	2.8	3.6	4.8
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	<0.001	-	0.002	<0.004	<0.001	-	0.001	<0.004	<0.001	-	0.001	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	84	86	89	84	50	49	40	49	116	114	105	97	103	54	62	61
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	0.3	0.19	0.12	0.1	<0.50	0.29	0.23	<0.50	<0.50	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	26	23	21	20	138	124	109	136	<5	<1	<1	<5	224	131	99	68
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.003	0.003	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.03	0.03	0.03	0.03	0.07	0.07	0.07	0.07	0.16	0.15	<0.01	0.17	0.09	0.05	0.06	0.06
Boron	mg/L	-	5	-	STANDARD	0.88	0.89	0.99	0.88	0.32	0.3	0.32	0.3	0.87	0.92	0.2	0.88	0.49	0.36	0.57	0.7
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	<0.001	0.001	-	0.002	<0.001	0.001	-	<0.001	0.002	<0.001	-	0.003	0.002	0.003
Iron	mg/L	-	-	0.3	AO	<0.03	0.26	0.08	0.11	<0.03	0.4	0.22	0.49	0.04	<0.03	<0.03	<0.03	0.04	0.71	<0.03	<0.03
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.06	0.06	0.06	-	1.09	1.15	1.11	-	<0.01	<0.01	<0.01	-	0.04	<0.01	0.02
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	227	293	240	244	83	90	86	86	244	315	268	262	206	186	213	214
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	P1-2C	P1-2C	P1-2C	P1-2C	P1-2D	P1-2D	P1-2D	P1-2D	P1-3AR	P1-3AR	P1-3AR	P1-3AR	P1-3BR	P1-3BR	P1-3BR	P1-3BR
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	27-Nov-20	13-May-21	5-Aug-21	8-Nov-21	5-Aug-21	26-Nov-20	12-May-21	8-Nov-21	12-May-21	5-Aug-21	26-Nov-20	8-Nov-21
Screened Interval	m bg	-	-	-	-	7.6 - 9.1	7.6 - 9.1	7.6 - 9.1	7.6 - 9.1	4.0 - 5.5	4.0 - 5.5	4.0 - 5.5	4.0 - 5.5	15.7 - 17.2	15.7 - 17.2	15.7 - 17.2	15.7 - 17.2	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7	12.2 - 13.7
pH	pH units	-	-	6.5 - 8.5	OG	8.23	7.77	8.05	7.96	7.69	7.5	7.7	7.56	8.39	8.63	8.45	8.28	8.4	8.09	8.53	8.21
Alkalinity	mg/L	-	-	30 - 500	OG	407	466	414	402	569	517	547	565	450	468	461	466	491	515	496	559
Hardness	mg/L	-	-	80 - 100	OG	139	342	214	178	400	455	447	459	35	32	35	35	74	57	76	61
TDS	mg/L	-	-	500	AO	509	734	613	588	682	676	702	715	715	734	748	754	754	722	748	708
DOC	mg/L	-	-	5	AO	5.4	5.5	6.6	7.4	4.9	5.6	6.3	7.2	7	6.6	6.1	7.8	12.7	13.5	11.1	11.7
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001	<0.004	-	<0.0010	0.001	<0.0010	<0.004	-	0.002
Chloride	mg/L	790	-	250	STANDARD	9	38	36	39	18	24	20	20	98	108	530	91	100	77	82	76
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.50	<0.10	<0.10	<0.10	-	<1.0	<0.50	<1.0	<0.10	-	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	0.78	<0.10	0.23	<0.50	0.73	<0.10	<0.10	<0.10	<1.0	<0.50	<1.0	<0.10	<0.10	0.14
Sulfate	mg/L	-	-	500	AO	<1	121	62	33	41	62	63	46	<1	<1	<10	<5	30	24	39	11
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.002	0.002	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.003	0.011	-	0.002
Barium	mg/L	1	1	-	STANDARD	0.05	0.09	0.05	0.04	0.06	0.05	0.05	0.05	0.21	0.22	0.21	0.22	0.18	0.23	0.2	0.16
Boron	mg/L	-	5	-	STANDARD	0.62	0.47	0.62	0.55	0.43	0.38	0.4	0.39	0.95	0.93	0.91	0.91	0.92	0.97	0.88	0.91
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.002	-	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.003	<0.001	0.002	-	0.002	0.001	0.001	<0.001	-	<0.001	<0.001	0.002	0.005	-	0.002
Iron	mg/L	-	-	0.3	AO	0.05	2.41	0.25	<0.03	0.03	<0.03	0.04	1.42	0.05	0.05	0.06	0.06	<0.03	2.22	0.05	0.75
Lead	mg/L	0.01	0.01	-	STANDARD	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.1	0.01	<0.01	-	0.22	0.06	0.62	0.01	-	0.01	<0.01	<0.01	0.08	-	0.05
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001
Sodium	mg/L	490	-	200	STANDARD	124	150	141	133	78	84	84	87	259	243	292	259	277	248	238	236
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	0.02	<0.01	<0.01	-	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	-	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	-	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	-	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	-	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	-	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	P1-3C	P1-3C	P1-3C	P1-3C	P1-3D	P1-3D	P1-3D	P1-3D	P1-4A	P1-4A	P1-4A	P1-4A	P1-4B	P1-4B	P1-4B	P1-4B
Sampling Date	DD/mmm/yy	-	-	-	-	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	9.6 - 11.1	9.6 - 11.1	9.6 - 11.1	9.6 - 11.1	4.6 - 5.1	4.6 - 5.1	4.6 - 5.1	4.6 - 5.1	18.3 - 19.8	18.3 - 19.8	18.3 - 19.8	18.3 - 19.8	15.0 - 16.5	15.0 - 16.5	15.0 - 16.5	15.0 - 16.5
pH	pH units	-	-	6.5 - 8.5	OG	8.47	8.39	8.24	8.24	7.75	7.8	7.29	7.57	8.59	8.46	8.32	8.25	8.69	8.51	8.48	8.37
Alkalinity	mg/L	-	-	30 - 500	OG	375	361	364	372	827	760	797	816	732	667	706	737	638	644	650	664
Hardness	mg/L	-	-	80 - 100	OG	102	101	84	75	687	753	701	710	24	33	31	31	53	118	59	41
TDS	mg/L	-	-	500	AO	597	597	567	573	968	930	968	994	1060	1030	1070	1100	949	988	994	1000
DOC	mg/L	-	-	5	AO	9.9	9.5	11.4	12.1	4.5	25.3	26.1	5	10	10.6	11.8	19.8	10.2	10.5	13	13.2
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	56	65	54	55	25	30	24	26	131	120	123	122	126	150	117	110
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.10	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	0.14	0.77	0.77	<0.10	0.28	<1.0	0.79	<0.10	<0.10	1.2	0.17	<0.50	<0.10	<1.0	0.64	0.62
Sulfate	mg/L	-	-	500	AO	51	68	26	18	73	70	70	73	3	80	4	<5	3	<10	4	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.003	0.003	-	<0.001	<0.001	<0.001	-	0.003	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.05	0.04	0.04	0.04	0.09	0.08	<0.01	0.08	0.22	0.13	0.24	0.26	0.09	0.08	0.1	0.09
Boron	mg/L	-	5	-	STANDARD	0.71	0.68	0.75	0.73	0.4	0.4	0.19	0.41	1.2	0.93	1.3	1.2	1.1	1.2	1.1	1.2
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.002	0.003	0.002	-	0.002	0.002	0.002	-	0.001	<0.001	0.001	-	<0.001	0.002	0.001
Iron	mg/L	-	-	0.3	AO	0.1	0.5	0.16	0.09	<0.03	0.66	<0.03	0.29	0.08	0.05	<0.03	0.03	0.24	0.04	<0.03	0.04
Lead	mg/L	0.01	0.01	-	STANDARD	-	0.001	0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.02	<0.01	<0.01	-	0.36	<0.01	0.76	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0001	-	<0.0001	<0.0001	0.0001
Sodium	mg/L	490	-	200	STANDARD	168	188	179	183	84	90	87	90	381	431	404	382	331	387	371	339
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	P1-4C	P1-4C	P1-4C	P1-4C	P1-4D	P1-4D	P1-4D	P1-4D	S1-1AR	S1-1AR	S1-1AR	S1-1AR	S1-1BR	S1-1BR	S1-1BR	S1-1BR
Sampling Date	DD/mmm/yy	-	-	-	-	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	9.1 - 10.6	9.1 - 10.6	9.1 - 10.6	9.1 - 10.6	3.7 - 5.2	3.7 - 5.2	3.7 - 5.2	3.7 - 5.2	25.0 - 25.6	25.0 - 25.6	25.0 - 25.6	25.0 - 25.6	23.8 - 24.4	23.8 - 24.4	23.8 - 24.4	23.8 - 24.4
pH	pH units	-	-	6.5 - 8.5	OG	8.55	8.43	8.37	8.35	7.73	7.89	7.48	7.61	8.29	8.32	8.13	8.06	8.55	8.31	8.26	8.33
Alkalinity	mg/L	-	-	30 - 500	OG	677	454	572	638	654	489	549	606	506	455	433	447	405	363	386	374
Hardness	mg/L	-	-	80 - 100	OG	78	289	119	102	495	694	590	566	79	75	29	59	39	45	43	36
TDS	mg/L	-	-	500	AO	949	1250	1030	1010	845	1090	942	936	3090	2480	3000	2320	656	589	656	616
DOC	mg/L	-	-	5	AO	28.1	18.8	29.1	33.9	4.6	4.9	5.2	5.5	3.1	5.8	4.7	5.5	3.9	5.7	5.4	6
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	0.009	0.001	-	<0.0010	<0.004	<0.001	<0.002	0.003	<0.004	0.001	-	<0.0010	<0.004	0.002
Chloride	mg/L	790	-	250	STANDARD	111	120	98	91	36	60	38	34	***1200***	509	470	***840***	94	90	99	83
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.50	-	<0.10	<0.10	<2.5	-	<0.10	<0.10	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<1.0	0.63	0.79	0.54	<1.0	0.32	<0.50	<2.5	<0.10	<0.10	<2.5	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	-	-	500	AO	10	410	125	58	88	350	237	171	<20	9	8	<20	<1	<1	<1	<1
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.003	0.004	0.004	-	<0.001	<0.001	<0.001	-	0.001	0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.02	0.03	0.02	0.03	0.08	0.09	0.08	0.08	0.09	0.1	0.11	0.09	0.19	0.2	0.28	0.22
Boron	mg/L	-	5	-	STANDARD	1.1	0.87	1	1.1	0.34	0.32	0.34	0.36	0.93	0.88	0.97	0.87	0.94	0.87	1.08	0.88
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	0.002	-	0.002	0.001	0.002	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	0.24	0.05	0.19	0.52	<0.03	<0.03	<0.03	<0.03	0.19	0.17	0.22	0.07	0.04	<0.03	0.03	0.04
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	0.003	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.03	0.03	0.05	-	<0.01	0.01	0.09	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	323	355	408	332	112	138	125	125	***966***	***951***	***511***	***743***	201	231	233	219
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S1-1C	S1-1C	S1-1C	S1-1C	S1-2A	S1-2A	S1-2A	S1-2A	S1-2B	S1-2B	S1-2B	S1-2B	S1-2C	S1-2C	S1-2C	S1-2C
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	6.0 - 6.6	6.0 - 6.6	6.0 - 6.6	6.0 - 6.6	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	16.4 - 17.0	16.4 - 17.0	16.4 - 17.0	16.4 - 17.0	1.8 - 2.4	1.8 - 2.4	1.8 - 2.4	1.8 - 2.4
pH	pH units	-	-	6.5 - 8.5	OG	7.84	7.75	7.35	7.47	8.73	8.77	8.29	8.75	8.95	8.48	8.64	8.5	7.94	7.77	7.51	7.55
Alkalinity	mg/L	-	-	30 - 500	OG	776	696	680	691	389	362	360	364	412	449	393	401	662	639	644	655
Hardness	mg/L	-	-	80 - 100	OG	388	406	308	352	13	13	9	9	44	129	13	48	429	586	370	458
TDS	mg/L	-	-	500	AO	956	962	936	988	641	638	636	640	670	682	670	682	968	936	936	956
DOC	mg/L	-	-	5	AO	6.5	10.9	9.6	11.2	2.9	5.1	3.9	4.7	3.1	5.1	5.2	5.1	8.6	12.2	11.3	12.8
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	0.005	0.001	-	<0.0010	<0.004	0.001	-	0.001	<0.004	0.001	0.005	0.001	0.005	<0.001
Chloride	mg/L	790	-	250	STANDARD	69	115	99	109	100	107	95	103	109	114	100	110	98	92	92	93
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	0.73	<0.50	<0.50	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.50	1.07	0.36	0.17	1.47
Sulfate	mg/L	-	-	500	AO	5	2	<1	<5	<5	<1	<1	<1	<5	<1	<1	<5	73	67	49	36
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.1	0.11	0.12	0.09	0.06	0.06	0.08	0.07	0.07	0.09	0.1	0.09	0.07	0.12	0.11	0.09
Boron	mg/L	-	5	-	STANDARD	0.33	0.2	0.28	0.27	0.8	0.84	0.95	0.81	0.79	0.86	0.94	0.78	0.79	0.82	0.84	0.78
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	0.001	0.002	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	0.001	0.001
Iron	mg/L	-	-	0.3	AO	1.08	2.5	0.05	0.34	0.04	<0.03	0.07	<0.03	<0.03	<0.03	<0.03	0.35	<0.03	4.49	<0.03	1.32
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.55	0.37	0.36	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.02	-	0.35	0.27	0.29
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	172	274	238	247	209	284	217	224	216	306	221	236	170	185	169	178
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S1-2CR	S1-2CR	S1-2CR	S1-2CR	S1-3AR	S1-3AR	S1-3AR	S1-3AR	S1-3B	S1-3B	S1-3B	S1-3B	S1-3C	S1-3C	S1-3C	S1-3C
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	6-Aug-21	30-Nov-20	14-May-21	9-Nov-21	25-Nov-20	12-May-21	4-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	1.8 - 2.4	1.8 - 2.4	1.8 - 2.4	1.8 - 2.4	22.5 - 24.0	22.5 - 24.0	22.5 - 24.0	22.5 - 24.0	12.2 - 15.2	12.2 - 15.2	12.2 - 15.2	12.2 - 15.2	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3
pH	pH units	-	-	6.5 - 8.5	OG	7.95	7.95	7.67	7.69	8.3	8.66	8.52	8.41	8.76	8.77	8.63	8.45	7.93	7.6	7.79	7.66
Alkalinity	mg/L	-	-	30 - 500	OG	529	504	509	518	535	562	528	540	663	616	622	762	582	659	573	566
Hardness	mg/L	-	-	80 - 100	OG	302	358	253	306	22	22	29	26	95	31	43	17	356	565	355	367
TDS	mg/L	-	-	500	AO	641	638	647	656	812	819	812	845	832	845	819	871	734	832	780	748
DOC	mg/L	-	-	5	AO	7.7	11.6	10.5	12.4	7.8	5.9	7.9	8.7	9.4	8.5	9.1	11.3	7	10	9	10.4
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.001	<0.004	-	<0.0010	0.002	-	<0.0010	<0.004	0.002	0.003	0.001	<0.004	0.003
Chloride	mg/L	790	-	250	STANDARD	36	36	34	40	98	95	101	103	72	72	69	74	38	48	41	42
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.50	-	<0.10	<0.10	<0.10	-	<0.10	0.14	<0.10
Nitrate	mg/L	-	10	-	STANDARD	<0.10	0.13	0.12	<0.10	<0.10	<0.50	<0.10	<0.50	<0.10	0.2	0.29	<0.10	1.18	0.21	0.79	0.35
Sulfate	mg/L	-	-	500	AO	2	1	1	<1	<1	<5	1	<5	<1	<1	<1	<1	35	46	38	35
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	0.002	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	0.002	0.005	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.05	0.04	0.05	0.04	0.16	0.14	0.13	0.14	0.15	0.14	0.25	0.18	0.08	0.07	0.09	0.06
Boron	mg/L	-	5	-	STANDARD	0.52	0.36	0.47	0.48	1.4	1	1.1	1.07	1.1	1.6	1.4	1.2	0.6	0.54	0.57	0.52
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	0.004	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	0.001	0.003	-	0.002	0.002	0.002
Iron	mg/L	-	-	0.3	AO	0.45	1.44	1.29	0.27	0.05	0.06	0.05	0.06	<0.03	0.2	4.95	0.36	0.09	0.03	0.55	0.11
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	0.002	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.25	0.17	0.17	0.02	-	0.02	0.01	-	<0.01	0.39	<0.01	-	0.61	0.38	0.2
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	109	137	109	122	339	287	372	328	312	370	323	361	112	147	136	133
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S1-3CR	S1-3CR	S1-3CR	S1-3CR	S1-2PAR	S1-2PAR	S1-2PAR	S1-2PAR	S2-1A	S2-1A	S2-1A	S2-1A	S2-1B	S2-1B	S2-1B	S2-1B
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	25-Nov-20	12-May-21	3-Aug-21	8-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3	3.7 - 4.3	2.6 - 4.6	2.6 - 4.6	2.6 - 4.6	2.6 - 4.6	26.2 - 27.7	26.2 - 27.7	26.2 - 27.7	26.2 - 27.7	18.5 - 20.0	18.5 - 20.0	18.5 - 20.0	18.5 - 20.0
pH	pH units	-	-	6.5 - 8.5	OG	7.93	7.88	7.55	7.48	7.86	8.02	7.46	7.84	8.46	8.5	8.26	8.34	7.91	7.9	7.58	7.89
Alkalinity	mg/L	-	-	30 - 500	OG	602	600	616	559	561	537	576	567	634	593	597	604	456	453	491	537
Hardness	mg/L	-	-	80 - 100	OG	428	525	376	504	187	195	186	217	50	57	48	64	357	393	351	268
TDS	mg/L	-	-	500	AO	702	682	708	754	663	642	676	676	1350	1330	1370	1390	648	702	956	1100
DOC	mg/L	-	-	5	AO	6.4	9.5	8.4	9	6.9	6.5	6.8	8.3	4.4	6.2	5.9	6.4	4.2	6.6	5.9	6.4
Phenols	mg/L	0.89	-	-	STANDARD	0.001	<0.0010	<0.004	0.001	-	<0.0010	<0.004	<0.001	<0.001	<0.0010	<0.004	0.001	<0.002	<0.0010	<0.004	0.002
Chloride	mg/L	790	-	250	STANDARD	15	17	15	24	19	22	19	18	322	341	313	330	43	167	137	189
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.10	-	<0.50	<0.10	<0.10	-	<0.10	<0.10	<1.0	-	<0.10	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.10	<0.10	<0.10	<0.10	0.19	<0.50	0.42	0.19	<0.50	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	29	2	<1	82	7	5	6	6	<5	<1	6	<10	55	23	40	72
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.001	0.003	0.002	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.06	0.05	0.06	0.06	0.04	0.03	0.03	0.04	0.15	0.17	0.22	0.21	0.13	0.12	0.16	0.18
Boron	mg/L	-	5	-	STANDARD	0.28	0.23	0.27	0.26	0.87	0.77	0.74	0.87	1.2	1.2	1.6	1.2	0.73	0.83	0.85	0.95
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	2.49	5.35	5.85	3.38	1.01	0.12	0.7	1.18	0.11	0.18	0.13	0.1	0.66	0.42	0.85	0.81
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.39	0.33	0.34	-	0.28	0.29	0.37	-	<0.01	<0.01	<0.01	-	0.11	0.13	0.09
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	73	93	78	81	172	178	183	188	456	***556***	***531***	446	75	160	177	273
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	-	<4.0	17.4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S2-1C	S2-1C	S2-1C	S2-1C	S2-2A	S2-2A	S2-2A	S2-2A	S2-2B	S2-2B	S2-2B	S2-2B	S2-2C	S2-2C	S2-2C	S2-2C
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	5.0 - 6.5	5.0 - 6.5	5.0 - 6.5	5.0 - 6.5	26.7 - 28.2	26.7 - 28.2	26.7 - 28.2	26.7 - 28.2	18.3 - 19.8	18.3 - 19.8	18.3 - 19.8	18.3 - 19.8	4.9 - 6.4	4.9 - 6.4	4.9 - 6.4	4.9 - 6.4
pH	pH units	-	-	6.5 - 8.5	OG	8.16	8.08	7.62	7.85	8.85	8.73	8.74	8.67	8.59	8.25	8.34	8.25	8.11	7.95	7.71	7.74
Alkalinity	mg/L	-	-	30 - 500	OG	619	592	575	605	492	476	477	482	762	742	723	730	634	596	596	608
Hardness	mg/L	-	-	80 - 100	OG	277	318	411	367	21	21	17	19	64	136	64	110	321	461	326	448
TDS	mg/L	-	-	500	AO	988	982	1030	1060	988	994	1010	1020	1640	1680	1660	1640	1000	962	988	994
DOC	mg/L	-	-	5	AO	7.6	9.8	7.5	9.7	3.2	4.6	4.4	5.1	7.3	11.1	10.4	16.1	6.1	8.1	7.4	8.4
Phenols	mg/L	0.89	-	-	STANDARD	<0.002	0.001	<0.004	<0.001	<0.001	<0.0010	<0.004	<0.001	<0.001	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	134	165	113	144	206	221	205	213	403	430	410	403	152	164	142	147
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.50	0.51	<0.10	<0.10	<0.50	0.68	<0.10	<0.10	0.52
Sulfate	mg/L	-	-	500	AO	45	29	89	76	<5	<1	<1	<5	<5	2	<1	<5	12	19	16	15
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	0.002	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.001
Barium	mg/L	1	1	-	STANDARD	0.04	0.04	0.06	0.05	0.1	0.11	0.14	0.12	0.06	0.08	0.1	0.11	0.04	0.05	0.06	0.05
Boron	mg/L	-	5	-	STANDARD	0.58	0.5	0.44	0.46	1.02	0.9	1	1.03	1.4	1.6	1.6	1.4	0.47	0.39	0.4	0.41
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	0.001	<0.001	-	<0.001	<0.001	0.001
Iron	mg/L	-	-	0.3	AO	<0.03	0.3	2.2	0.26	<0.03	<0.03	<0.03	<0.03	0.22	0.17	0.19	0.1	0.29	0.34	0.34	0.59
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.16	0.34	0.26	-	<0.01	<0.01	<0.01	-	0.02	0.02	0.02	-	0.13	0.12	0.12
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	219	310	186	243	342	420	405	349	***544***	***687***	***556***	***572***	198	244	196	201
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S2-3A	S2-3A	S2-3A	S2-3A	S2-3B	S2-3B	S2-3B	S2-3B	S2-3CR	S2-3CR	S2-3CR	S2-3CR	S3-1A	S3-1A	S3-1A	S3-1A
Sampling Date	DD/mmm/yy	-	-	-	-	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	30-Nov-20	14-May-21	6-Aug-21	9-Nov-21	2-Dec-20	12-May-21	5-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21
Screened Interval	m bg	-	-	-	-	27.1 - 28.6	27.1 - 28.6	27.1 - 28.6	27.1 - 28.6	18.1 - 19.6	18.1 - 19.6	18.1 - 19.6	18.1 - 19.6	6.1 - 7.6	6.1 - 7.6	6.1 - 7.6	6.1 - 7.6	15.8 - 17.0	15.8 - 17.0	15.8 - 17.0	15.8 - 17.0
pH	pH units	-	-	6.5 - 8.5	OG	8.78	8.65	8.61	8.58	8.26	7.94	7.97	8.03	8.3	8.34	8.14	7.98	8.36	8.32	8.32	8.22
Alkalinity	mg/L	-	-	30 - 500	OG	488	462	462	471	548	526	498	494	541	520	512	540	450	419	439	446
Hardness	mg/L	-	-	80 - 100	OG	20	22	13	17	91	137	41	60	147	159	149	172	37	44	41	41
TDS	mg/L	-	-	500	AO	956	930	930	936	910	897	890	890	728	734	728	774	754	734	748	780
DOC	mg/L	-	-	5	AO	3.4	4.4	4.5	5.4	6.1	1.3	7.7	8.4	8	9.5	10.9	12.9	4.3	4.8	5.5	6.6
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	<0.001	<0.002	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	0.003
Chloride	mg/L	790	-	250	STANDARD	185	195	172	180	145	159	146	150	74	76	76	81	125	125	114	121
Nitrite	mg/L	-	1	-	STANDARD	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.50	-	<0.10	<0.10	<0.10	-	<0.50	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	<5	<1	2	<5	<5	<1	1	<5	1	<1	2	<1	<5	<5	<1	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	0.003	0.003	-	<0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.06	0.06	0.07	0.06	0.04	0.05	0.05	0.04	0.02	0.02	0.02	0.02	0.32	0.32	0.33	0.39
Boron	mg/L	-	5	-	STANDARD	0.79	0.79	0.83	0.82	0.83	0.87	0.84	0.82	0.47	0.5	0.54	0.54	0.71	0.88	0.78	0.84
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Iron	mg/L	-	-	0.3	AO	<0.03	0.04	<0.03	<0.03	0.43	0.27	0.19	0.08	0.89	0.18	0.89	0.42	0.06	0.08	0.05	0.03
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	<0.01	-	0.06	0.04	0.07	-	0.12	0.1	0.09	-	<0.01	<0.01	<0.01
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	321	357	378	320	296	310	351	304	200	222	213	236	242	305	294	291
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S3-1B	S3-1B	S3-1B	S3-1B	S3-1C	S3-1C	S3-1C	S3-1C	S3-2A	S3-2A	S3-2A	S3-2A	S3-2B	S3-2B	S3-2B	S3-2B
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	9-Nov-21	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	13.7 - 15.2	13.7 - 15.2	13.7 - 15.2	13.7 - 15.2	5.2 - 6.7	5.2 - 6.7	5.2 - 6.7	5.2 - 6.7	17.2 - 18.7	17.2 - 18.7	17.2 - 18.7	17.2 - 18.7	13.1 - 14.6	13.1 - 14.6	13.1 - 14.6	13.1 - 14.6
pH	pH units	-	-	6.5 - 8.5	OG	8.64	8.46	8.28	8.2	8.13	8.05	7.78	7.89	8.5	8.1	8.02	8.32	8.35	8.31	8.33	8.45
Alkalinity	mg/L	-	-	30 - 500	OG	745	715	547	522	556	515	518	525	668	664	661	637	607	660	580	583
Hardness	mg/L	-	-	80 - 100	OG	251	344	127	142	117	135	120	141	157	56	46	36	90	122	161	53
TDS	mg/L	-	-	500	AO	754	760	760	800	696	689	682	702	754	994	968	956	780	767	748	793
DOC	mg/L	-	-	5	AO	4.3	5.6	5.5	6.6	10.9	13	12.4	14.6	7.3	7.8	10.5	15.9	7.3	8.2	6.9	7.8
Phenols	mg/L	0.89	-	-	STANDARD	-	0.002	<0.004	0.002	-	<0.0010	0.004	0.002	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	117	120	111	114	46	53	46	48	90	112	99	97	92	97	97	98
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.10	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	<0.50	<0.50	<0.10	<0.50	<0.10	<0.50	<0.10	<0.10	<0.50	0.71	0.14	<0.50	<0.50	<0.50	<0.10	<0.50
Sulfate	mg/L	-	-	500	AO	<5	<5	<1	<5	12	6	9	7	<5	20	20	5	<5	<5	<1	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	0.001	<0.001	-	0.004	0.004	0.004	-	0.006	0.005	0.006	-	0.001	<0.001	0.001
Barium	mg/L	1	1	-	STANDARD	0.15	0.14	0.15	0.16	0.03	0.02	0.02	0.02	0.05	0.07	0.06	0.06	0.16	0.12	0.11	0.17
Boron	mg/L	-	5	-	STANDARD	0.87	0.82	0.8	0.89	0.81	0.84	0.75	0.81	0.62	0.92	0.79	0.8	0.91	1	0.88	0.93
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.002
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	0.002	<0.001	-	<0.001	0.001	<0.001	-	0.004	0.003	0.001	-	<0.001	0.001	0.003
Iron	mg/L	-	-	0.3	AO	0.24	0.03	<0.03	0.05	0.68	0.17	0.07	0.22	<0.03	<0.03	<0.03	<0.03	0.53	<0.03	0.12	2.06
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.001
Manganese	mg/L	-	-	0.05	AO	-	<0.01	<0.01	<0.01	-	0.03	0.02	0.03	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.1
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	244	320	305	294	210	242	215	226	280	429	416	354	286	333	308	276
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	S3-2C	S3-2C	S3-2C	S3-2C	S3-3A	S3-3A	S3-3A	S3-3A	S3-3B	S3-3B	S3-3B	S3-3B	S3-3C	S3-3C	S3-3C	S3-3C
Sampling Date	DD/mmm/yy	-	-	-	-	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21	27-Nov-20	13-May-21	3-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	5.2 - 6.7	5.2 - 6.7	5.2 - 6.7	5.2 - 6.7	10.7 - 12.2	10.7 - 12.2	10.7 - 12.2	10.7 - 12.2	8.8 - 10.3	8.8 - 10.3	8.8 - 10.3	8.8 - 10.3	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0
pH	pH units	-	-	6.5 - 8.5	OG	8.14	7.96	7.75	8.13	8.37	8.3	8.38	8.31	8.36	8.1	8.13	8.26	7.7	7.46	7.32	7.55
Alkalinity	mg/L	-	-	30 - 500	OG	513	476	485	495	491	473	479	488	570	514	541	525	635	617	659	615
Hardness	mg/L	-	-	80 - 100	OG	126	135	130	121	35	43	36	32	103	120	135	45	989	1181	960	941
TDS	mg/L	-	-	500	AO	638	621	623	649	786	793	760	780	786	767	754	780	1780	1620	1630	1550
DOC	mg/L	-	-	5	AO	8.5	9	9.3	11.5	4.9	6	6	7.7	5.6	7.2	6.6	8.2	2.8	3.4	3.8	5.1
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	<0.001	-	<0.0010	<0.004	0.001	<0.001	<0.0010	<0.004	<0.001
Chloride	mg/L	790	-	250	STANDARD	40	46	38	38	121	116	99	93	110	112	96	97	40	44	36	30
Nitrite	mg/L	-	1	-	STANDARD	-	<0.50	<0.10	<0.10	-	<0.50	<0.10	<0.50	-	<0.50	<0.10	<0.10	-	<0.50	<0.10	<1.0
Nitrate	mg/L	-	10	-	STANDARD	0.38	<0.50	0.16	0.17	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.10	0.22	<1.0	<0.50	<0.10	<1.0
Sulfate	mg/L	-	-	500	AO	3	<5	3	2	<5	<5	<1	<5	<5	<5	<1	<1	758	670	660	560
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.008	0.007	0.007	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	0.002	0.001
Barium	mg/L	1	1	-	STANDARD	0.03	0.03	0.03	0.03	0.38	0.37	0.31	0.34	0.11	0.14	0.09	0.09	0.04	0.03	0.06	0.05
Boron	mg/L	-	5	-	STANDARD	0.85	0.89	0.76	0.82	0.91	0.99	0.87	0.91	1	0.9	0.89	0.94	0.46	0.45	0.5	0.53
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	<0.001	-	<0.001	0.004	0.001
Copper	mg/L	0.087	-	1	STANDARD	-	<0.001	0.002	0.001	-	<0.001	<0.001	<0.001	-	<0.001	0.002	<0.001	-	0.001	0.009	0.006
Iron	mg/L	-	-	0.3	AO	0.07	0.18	0.25	0.36	0.06	0.08	0.07	0.05	0.21	2.37	0.06	0.1	0.03	1.16	2.51	0.98
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	0.002	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.05	0.04	0.06	-	<0.01	<0.01	<0.01	-	0.15	<0.01	<0.01	-	0.78	0.52	0.47
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	186	196	194	211	281	325	310	258	249	303	299	245	144	159	173	143
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.03
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	TF1-1	TF1-1	TF1-1	TF1-1	TF1-2A	TF1-2A	TF1-2A	TF1-2A	TF1-2B	TF1-2B	TF1-2B	TF1-2B	TF1-2C	TF1-2C	TF1-2C	TF1-2C
Sampling Date	DD/mmm/yy	-	-	-	-	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	15.6 - 17.1	15.6 - 17.1	15.6 - 17.1	15.6 - 17.1	12.8 - 14.3	12.8 - 14.3	12.8 - 14.3	12.8 - 14.3	8.8 - 10.3	8.8 - 10.3	8.8 - 10.3	8.8 - 10.3
pH	pH units	-	-	6.5 - 8.5	OG	7.82	7.92	7.27	7.58	8.83	8.68	8.54	8.46	8.6	8.56	8.3	8.37	8.54	8.45	8.2	8.35
Alkalinity	mg/L	-	-	30 - 500	OG	606	566	589	595	496	485	479	487	521	490	481	506	530	525	519	555
Hardness	mg/L	-	-	80 - 100	OG	581	590	481	518	20	24	20	17	47	49	40	28	40	33	26	37
TDS	mg/L	-	-	500	AO	1080	982	982	1030	754	760	734	760	760	754	728	741	890	890	858	884
DOC	mg/L	-	-	5	AO	3.1	3.3	4.3	4.1	6.2	6.1	6.4	6.6	6.5	6.1	6.6	7.5	12.1	11.5	13.9	13.5
Phenols	mg/L	0.89	-	-	STANDARD	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	0.001
Chloride	mg/L	790	-	250	STANDARD	71	60	81	60	98	120	99	92	98	120	98	90	138	150	123	123
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.10	-	<1.0	<0.10	<0.50
Nitrate	mg/L	-	10	-	STANDARD	0.31	<1.0	<0.10	<0.50	<0.10	<1.0	0.12	<0.10	<0.10	<1.0	0.12	<0.10	<0.10	<1.0	0.88	0.67
Sulfate	mg/L	-	-	500	AO	285	260	160	221	<1	<10	<1	<1	<1	<10	<1	<1	9	<10	7	<5
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.004	0.005	0.005
Barium	mg/L	1	1	-	STANDARD	0.06	0.06	0.05	0.05	0.24	0.23	0.24	0.23	0.26	0.24	0.26	0.23	0.02	0.04	0.02	0.03
Boron	mg/L	-	5	-	STANDARD	0.47	0.35	0.51	0.49	0.94	0.98	0.88	0.93	0.8	0.98	0.93	0.9	1.1	1.2	1.3	1.1
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	0.007	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.003	<0.001	0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.012	0.002	0.002	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.002	<0.001	0.002
Iron	mg/L	-	-	0.3	AO	<0.03	4.34	0.19	0.46	<0.03	0.24	0.05	0.04	0.65	0.03	0.05	0.06	0.06	2.31	0.07	1.62
Lead	mg/L	0.01	0.01	-	STANDARD	-	0.002	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.18	<0.01	0.1	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.09	0.02	0.07
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0002	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	0.0001
Sodium	mg/L	490	-	200	STANDARD	162	163	168	171	263	314	278	264	262	315	269	258	313	351	324	362
Zinc	mg/L	1.1	-	5	STANDARD	-	0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

TABLE 3 GROUNDWATER ANALYTICAL RESULTS - FALL 2020 TO FALL 2021
17125 Lafleche RoaD, Moose Creek, Ontario

Sample Name	Units	STANDARDS1 Table 2	STANDARDS2 ODWQS	STANDARDS3 ODWS	STANDARD OR ASTHETIC	TF1-2D	TF1-2D	TF1-2D	TF1-2D	TF1-3	TF1-3	TF1-3	TF1-3	TF1-4	TF1-4	TF1-4	TF1-4
Sampling Date	DD/mmm/yy	-	-	-	-	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21	26-Nov-20	12-May-21	5-Aug-21	8-Nov-21	26-Nov-20	12-May-21	4-Aug-21	8-Nov-21
Screened Interval	m bg	-	-	-	-	1.2 - 2.7	1.2 - 2.7	1.2 - 2.7	1.2 - 2.7	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0	1.5 - 3.0
pH	pH units	-	-	6.5 - 8.5	OG	7.95	8.02	7.47	7.71	7.91	8	7.51	7.55	7.78	7.85	7.3	7.5
Alkalinity	mg/L	-	-	30 - 500	OG	449	467	437	468	571	543	585	384	574	584	578	563
Hardness	mg/L	-	-	80 - 100	OG	379	440	397	520	468	513	943	379	949	1062	937	890
TDS	mg/L	-	-	500	AO	832	917	780	858	942	916	1820	645	1850	1840	1790	1660
DOC	mg/L	-	-	5	AO	3.1	3.3	4.2	4.7	1.7	1.7	3.5	2	2.6	2.8	3.1	3.1
Phenols	mg/L	0.89	-	-	STANDARD	-	0.002	<0.004	<0.001	-	<0.0010	<0.004	0.001	-	<0.0010	<0.004	0.001
Chloride	mg/L	790	-	250	STANDARD	32	50	38	24	20	30	32	9	31	50	32	30
Nitrite	mg/L	-	1	-	STANDARD	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<0.50	-	<1.0	<0.10	<1.0
Nitrate	mg/L	-	10	-	STANDARD	0.43	4.5	0.25	0.62	<0.10	<1.0	<0.10	<0.50	<0.10	<1.0	<0.10	<1.0
Sulfate	mg/L	-	-	500	AO	264	330	280	221	278	270	800	158	851	840	790	730
Arsenic	mg/L	0.025	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	0.001	<0.001	-	0.001	<0.001	<0.001
Barium	mg/L	1	1	-	STANDARD	0.04	0.03	0.05	0.04	0.04	0.03	0.05	0.03	0.05	0.05	0.05	0.05
Boron	mg/L	-	5	-	STANDARD	0.71	0.56	0.67	0.69	0.63	0.56	0.81	0.45	0.7	0.65	0.7	0.72
Cadmium	mg/L	0.0027	0.005	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Chromium	mg/L	-	0.05	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	0.004	<0.001	<0.001
Copper	mg/L	0.087	-	1	STANDARD	-	0.001	0.002	0.002	-	0.002	0.001	0.001	-	0.006	0.002	0.003
Iron	mg/L	-	-	0.3	AO	<0.03	<0.03	0.09	0.25	<0.03	<0.03	2.14	0.17	<0.03	4	1.55	1.07
Lead	mg/L	0.01	0.01	-	STANDARD	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Manganese	mg/L	-	-	0.05	AO	-	0.06	0.16	0.23	-	<0.01	0.63	0.04	-	0.69	0.55	0.4
Mercury	mg/L	0.001	0.001	-	STANDARD	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Sodium	mg/L	490	-	200	STANDARD	144	158	128	193	160	160	217	110	199	213	208	203
Zinc	mg/L	1.1	-	5	STANDARD	-	<0.01	<0.01	0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Benzene	ug/L	5	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	16	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
Bromoform	ug/L	25	-	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.89	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	5	2	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Chloroform	ug/L	22	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
dibromochloromethane	ug/L	25	-	-	STANDARD	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3
dichlorobenzene, 1,4-	ug/L	1	5	-	STANDARD	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.4
Ethylbenzene	ug/L	2.4	140	2.4	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Methylene Chloride	ug/L	50	50	-	STANDARD	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0	-	<4.0	<4.0	<4.0
Styrene	ug/L	5.4	1	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Toluene	ug/L	24	60	24	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	150	-	-	STANDARD	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	1.7	1	-	STANDARD	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2

1 Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended), Table 2: Full depth Generic SCS in a Potable Ground Water Condition, All Types of Property-Use, Fine- to Medium-Textured Soil

2 Standards from O.Reg. 169/03: Ontario Drinking Water Quality Standards for Use Under the Safe Drinking Water Act (2002 and as amended), Schedule 2: Chemical Standards

3 Aesthetic objectives (AO) and operational guidelines (OG) from: Ontario Drinking Water Standards, Objectives and Guidelines, June 2003 (Revised June 2006)

- No standard, not applicable, not analyzed

m bg meters below grade

Value Exceeds Table 2 standard

Value Exceeds ODWQS or ODWO

Table 4 – Summary of Hydraulic Conductivity Test Results

One-Dimensional Consolidation Test Results

Borehole No.	Sample Depth (mbgs) and No.		Coefficient of Permeability (m/sec)
MW20-2D	5.0; Sample 5	Clay	4.8×10^{-11}
MW20-3D	6.1; Sample 7	Silty Clay	1.3×10^{-10}
MW20-8D	3.0; Sample 4	Silty Clay	5.1×10^{-11}
MW20-9D	8.0; Between Samples 6 and 7	Silty Clay	9.5×10^{-11}
MW20-10D	9.8; Sample 7	Silty Clay	1.0×10^{-10}
MW20-11D	11.0; Sample 7	Silty Clay	4.7×10^{-10}

Compaction Permeameter Test Results

Borehole No.	Sample No.	Sample Description	Hydraulic Conductivity (m/s)
MW20-1D	5	Silty Clay	2.5×10^{-9}
MW20-4D	7	Silty Clay	1.5×10^{-9}
MW20-5D	4B	Silty Clay	2.5×10^{-9}
MW20-6D	4	Silt and Clay	1.4×10^{-9}
MW20-9D	4	Silty Clay	4.1×10^{-7}

Grain-size Analyses - Till (Hazen)

Borehole No.	Sample Depth (mbgs) and No.	Sample Description	D_{10} (mm)	Hydraulic Conductivity (m/s)
MW20-3D	10.4; Sample 12	TILL: SANDY GRAVEL, some silt, trace clay	0.0182	3.3×10^{-6}
MW20-5D	8.1; Sample 5B	TILL: SILTY SANDY GRAVEL, trace clay	0.0039	1.5×10^{-7}
MW20-5D	10.3; Sample 7	TILL: SANDY SILTY GRAVEL, trace clay	0.0048	2.3×10^{-7}
MW20-9D	14.2; Sample 10	TILL: GRAVELLY SILTY SAND, trace clay	0.0115	1.3×10^{-6}

Single-Well Response Test Results

Borehole No.	Sample Description	Hydraulic Conductivity (m/s)
MW20-12S	Shallow Clay	4.7×10^{-8}
MW20-11S	Shallow Clay	6.6×10^{-9}
MW20-11C	Clay	3.4×10^{-8}
MW20-10D	Bedrock	1.2×10^{-5}
MW20-8S	Shallow Clay	2.9×10^{-7}
MW20-8C	Clay	3.4×10^{-8}
MW20-7C	Clay	1.8×10^{-9}
MW20-6S	Shallow Clay	5.1×10^{-6}
MW20-6D	Bedrock	1.3×10^{-5}
MW20-5T	Till	7.9×10^{-6}
MW20-4D	Bedrock	1.3×10^{-5}
MW20-4C	Clay	9.2×10^{-9}
MW20-3D	Bedrock	7.9×10^{-6}
MW20-1T	Till	1.3×10^{-6}

TABLE 5
Observed Groundwater Levels
Lafleche Expansion, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev. (m asl)	Top Pipe Elev. (m asl)	Well Depth (m bg)	Groundwater Depth (m bmp)	Groundwater Depth (m bg)	Groundwater Elevation (m asl)
MW20-1S	29-Jan-20	66.64	67.28	3.96	1.76	1.12	65.52
	31-Jan-20				1.78	1.14	65.50
	05-Feb-20				1.85	1.21	65.43
	26-Feb-20				2.00	1.36	65.28
	05-Mar-20				1.72	1.08	65.56
	08-Apr-20				1.24	0.60	66.04
	13-May-20				1.91	1.27	65.37
	08-Jun-20				2.05	1.41	65.23
MW20-1T	29-Jan-20	66.64	67.29	14.65	1.66	1.01	65.63
	31-Jan-20				1.68	1.03	65.61
	05-Feb-20				1.75	1.10	65.55
	26-Feb-20				1.82	1.17	65.48
	05-Mar-20				1.57	0.92	65.72
	26-Mar-20				1.51	0.86	65.78
	08-Apr-20				1.52	0.87	65.77
	13-May-20				1.79	1.14	65.50
	08-Jun-20				1.92	1.27	65.37
MW20-1D	29-Jan-20	66.64	67.36	19.38	1.74	1.02	65.62
	31-Jan-20				1.75	1.03	65.61
	05-Feb-20				1.80	1.08	65.56
	26-Feb-20				1.95	1.23	65.41
	05-Mar-20				19.24	18.52	48.12
	08-Apr-20				19.04	18.32	48.32
	13-May-20				18.76	18.04	48.60
	08-Jun-20				18.52	17.80	48.84
MW20-2S	29-Jan-20	67.94	68.84	4.09	2.31	1.41	66.53
	31-Jan-20				2.29	1.39	66.55
	05-Feb-20				2.35	1.45	66.50
	26-Feb-20				2.42	1.52	66.42
	05-Mar-20				2.25	1.35	66.59
	08-Apr-20				1.88	0.98	66.96
	13-May-20				2.23	1.33	66.61
	08-Jun-20				2.36	1.46	66.48
MW20-2C	29-Jan-20	67.94	68.71	7.20	1.39	0.62	67.33
	31-Jan-20				1.68	0.91	67.03
	05-Feb-20				1.99	1.22	66.73
	26-Feb-20				2.22	1.45	66.49
	05-Mar-20				6.07	5.30	62.64
	08-Apr-20				1.92	1.15	66.79
	13-May-20				2.02	1.25	66.69
	08-Jun-20				2.14	1.37	66.57
MW20-2D	29-Jan-20	67.94	68.74	25.56	1.74	0.94	67.00
	31-Jan-20				1.76	0.96	66.98
	05-Feb-20				1.79	0.99	66.96
	26-Feb-20				1.82	1.02	66.92
	05-Mar-20				1.47	0.67	67.27
	08-Apr-20				1.67	0.87	67.07
	13-May-20				1.82	1.02	66.92
	08-Jun-20				1.86	1.06	66.88
MW20-3S	29-Jan-20	67.21	67.91	3.90	4.37	3.67	63.55
	31-Jan-20				3.96	3.26	63.95
	05-Feb-20				3.13	2.43	64.78
	26-Feb-20				2.17	1.47	65.74
	05-Mar-20				3.80	3.10	64.11
	08-Apr-20				1.64	0.94	66.27
	13-May-20				2.11	1.41	65.81
	08-Jun-20				2.21	1.51	65.70
MW20-3C	29-Jan-20	67.21	67.92	7.00	0.83	0.12	67.09
	31-Jan-20				1.24	0.53	66.69
	05-Feb-20				1.80	1.09	66.12
	26-Feb-20				2.19	1.48	65.73
	05-Mar-20				5.07	4.36	62.85
	08-Apr-20				1.84	1.13	66.08
	13-May-20				2.13	1.42	65.79
	08-Jun-20				2.26	1.55	65.66
MW20-3D	29-Jan-20	67.21	68.02	16.99	2.36	1.55	65.66
	31-Jan-20				2.37	1.56	65.65
	05-Feb-20				2.44	1.63	65.58
	26-Feb-20				2.53	1.72	65.49
	05-Mar-20				2.24	1.43	65.78
	27-Mar-20				2.19	1.38	65.83
	08-Apr-20				2.21	1.40	65.81
	13-May-20				2.48	1.67	65.54
	08-Jun-20				2.61	1.80	65.41

TABLE 5
Observed Groundwater Levels
Lafleche Expansion, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev. (m asl)	Top Pipe Elev. (m asl)	Well Depth (m bg)	Groundwater Depth (m bmp)	Groundwater Depth (m bg)	Groundwater Elevation (m asl)
MW20-4S	29-Jan-20	67.65	68.60	4.03	1.27	0.32	67.33
	31-Jan-20				1.90	0.95	66.71
	05-Feb-20				1.96	1.01	66.64
	26-Feb-20				2.01	1.06	66.59
	05-Mar-20				1.83	0.88	66.77
	08-Apr-20				1.55	0.60	67.05
	13-May-20				1.89	0.94	66.71
	08-Jun-20				1.96	1.01	66.64
MW20-4C	29-Jan-20	67.65	68.64	7.02	0.84	-0.15	67.80
	31-Jan-20				1.76	0.77	66.88
	05-Feb-20				1.96	0.97	66.68
	26-Feb-20				2.04	1.05	66.60
	05-Mar-20				1.95	0.96	66.69
	27-Mar-20				1.72	0.73	66.92
	08-Apr-20				1.69	0.70	66.95
	13-May-20				1.92	0.93	66.72
	08-Jun-20				1.97	0.98	66.67
MW20-4D	29-Jan-20	67.65	68.55	12.80	1.88	0.98	66.67
	31-Jan-20				1.93	1.03	66.62
	05-Feb-20				1.98	1.08	66.57
	26-Feb-20				2.08	1.18	66.47
	05-Mar-20				1.49	0.59	67.06
	31-Mar-20				1.55	0.65	67.00
	08-Apr-20				1.82	0.92	66.73
	13-May-20				1.99	1.09	66.57
	08-Jun-20				1.99	1.09	66.56
MW20-5S	31-Jan-20	66.34	66.72	4.21	2.90	2.52	63.82
	05-Feb-20				1.58	1.20	65.15
	26-Feb-20				1.47	1.09	65.25
	05-Mar-20				2.84	2.46	63.88
	08-Apr-20				0.86	0.48	65.86
	13-May-20				1.31	0.93	65.41
	08-Jun-20				1.20	0.82	65.52
MW20-5T	31-Jan-20	66.34	67.06	11.27	1.49	0.77	65.57
	05-Feb-20				1.56	0.84	65.51
	26-Feb-20				1.64	0.92	65.42
	05-Mar-20				1.38	0.66	65.68
	27-Mar-20				1.32	0.60	65.74
	08-Apr-20				1.34	0.62	65.72
	13-May-20				1.61	0.89	65.45
	08-Jun-20				1.74	1.02	65.32
MW20-5D	31-Jan-20	66.34	67.08	15.47	1.48	0.74	65.60
	05-Feb-20				1.55	0.81	65.53
	26-Feb-20				1.61	0.87	65.47
	05-Mar-20				1.36	0.62	65.72
	08-Apr-20				1.33	0.59	65.76
	13-May-20				1.60	0.86	65.48
	08-Jun-20				1.72	0.98	65.36
MW20-6S	31-Jan-20	67.18	68.09	4.11	2.04	1.13	66.06
	26-Feb-20				2.15	1.24	65.94
	05-Mar-20				1.28	0.37	66.82
	31-Mar-20				1.43	0.52	66.66
	08-Apr-20				1.78	0.87	66.31
	13-May-20				2.09	1.18	66.00
	08-Jun-20				2.17	1.26	65.92
MW20-6T	31-Jan-20	67.18	68.10	6.02	2.03	1.11	66.07
	26-Feb-20				2.14	1.22	65.96
	05-Mar-20				1.25	0.33	66.85
	08-Apr-20				1.80	0.88	66.30
	13-May-20				2.08	1.16	66.02
	08-Jun-20				2.16	1.24	65.94
MW20-6D	31-Jan-20	67.18	68.08	9.20	2.00	1.10	66.08
	26-Feb-20				2.14	1.24	65.94
	05-Mar-20				1.36	0.46	66.72
	31-Mar-20				1.44	0.54	66.64
	08-Apr-20				1.77	0.87	66.31
	13-May-20				2.07	1.17	66.01
	08-Jun-20				2.14	1.24	65.94

TABLE 5
Observed Groundwater Levels
Lafleche Expansion, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev. (m asl)	Top Pipe Elev. (m asl)	Well Depth (m bg)	Groundwater Depth (m bmp)	Groundwater Depth (m bg)	Groundwater Elevation (m asl)
MW20-7S	31-Jan-20	66.10	66.73	4.00	1.03	0.40	65.70
	05-Feb-20				1.76	1.13	64.97
	26-Feb-20				1.90	1.27	64.83
	05-Mar-20				3.16	2.53	63.57
	08-Apr-20				1.43	0.80	65.30
	13-May-20				1.82	1.19	64.91
	08-Jun-20				1.93	1.30	64.80
MW20-7C	31-Jan-20	66.10	66.65	7.02	-	-	-
	05-Feb-20				-	-	-
	26-Feb-20				0.26	-0.29	66.39
	05-Mar-20				6.45	5.90	60.20
	27-Mar-20				1.95	1.40	64.70
	08-Apr-20				2.19	1.64	64.46
	13-May-20				1.60	1.05	65.06
	08-Jun-20				1.65	1.10	65.00
MW20-7D	31-Jan-20	66.10	66.80	16.97	1.25	0.55	65.55
	05-Feb-20				1.32	0.62	65.49
	26-Feb-20				1.41	0.71	65.39
	05-Mar-20				1.13	0.43	65.67
	08-Apr-20				1.09	0.39	65.71
	13-May-20				1.36	0.66	65.44
	08-Jun-20				1.50	0.80	65.30
MW20-8S	05-Feb-20	65.50	66.22	4.17	1.11	0.39	65.11
	26-Feb-20				1.65	0.93	64.58
	05-Mar-20				1.45	0.73	64.78
	31-Mar-20				1.17	0.45	65.05
	08-Apr-20				1.50	0.78	64.72
	13-May-20				1.71	0.99	64.52
	08-Jun-20				1.69	0.97	64.53
MW20-8C	05-Feb-20	65.50	66.26	7.14	1.54	0.78	64.72
	26-Feb-20				1.53	0.77	64.74
	05-Mar-20				1.52	0.76	64.75
	31-Mar-20				1.15	0.39	65.11
	08-Apr-20				1.33	0.57	64.93
	13-May-20				1.53	0.77	64.73
	08-Jun-20				1.55	0.79	64.71
MW20-8D	05-Feb-20	65.50	66.25	12.54	frozen	n/a	n/a
	26-Feb-20				frozen	n/a	n/a
	05-Mar-20				frozen	n/a	n/a
	08-Apr-20				0.50	-0.25	65.75
	13-May-20				0.78	0.03	65.48
	08-Jun-20				0.92	0.17	65.33
MW20-9S	05-Feb-20	65.94	66.52	4.02	1.34	0.76	65.19
	26-Feb-20				2.00	1.42	64.52
	05-Mar-20				2.72	2.14	63.80
	08-Apr-20				1.81	1.23	64.72
	13-May-20				1.94	1.36	64.58
	08-Jun-20				2.03	1.45	64.49
MW20-9T	05-Feb-20	65.94	66.75	17.10	1.74	0.93	65.02
	26-Feb-20				1.84	1.03	64.91
	05-Mar-20				1.70	0.89	65.05
	26-Mar-20				1.57	0.76	65.18
	08-Apr-20				1.57	0.76	65.18
	13-May-20				1.79	0.98	64.96
	08-Jun-20				1.93	1.12	64.82
MW20-9D	05-Feb-20	65.94	66.75	22.43	1.71	0.90	65.05
	26-Feb-20				1.81	1.00	64.94
	05-Mar-20				20.85	20.04	45.91
	08-Apr-20				11.71	10.90	55.04
	13-May-20				6.59	5.78	60.16
	08-Jun-20				4.56	3.75	62.19

TABLE 5
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Lafleche Expansion, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev. (m asl)	Top Pipe Elev. (m asl)	Well Depth (m bg)	Groundwater Depth (m bmp)	Groundwater Depth (m bg)	Groundwater Elevation (m asl)
MW20-10S	05-Feb-20	64.93	65.74	4.20	1.26	0.45	64.48
	26-Feb-20				1.97	1.16	63.78
	05-Mar-20				1.52	0.71	64.22
	08-Apr-20				1.64	0.83	64.10
	13-May-20				1.76	0.95	63.99
	08-Jun-20				1.72	0.91	64.02
MW20-10C	05-Feb-20	64.93	65.81	7.50	frozen	n/a	n/a
	26-Feb-20				frozen	n/a	n/a
	05-Mar-20				0.91	0.03	64.90
	08-Apr-20				1.71	0.83	64.10
	13-May-20				1.75	0.87	64.06
	08-Jun-20				1.76	0.88	64.05
MW20-10D	05-Feb-20	64.93	65.73	19.00	1.58	0.78	64.15
	26-Feb-20				1.57	0.77	64.16
	05-Mar-20				1.50	0.70	64.23
	31-Mar-20				1.37	0.57	64.36
	08-Apr-20				1.42	0.62	64.31
	13-May-20				1.66	0.86	64.07
	08-Jun-20				1.80	1.00	63.93
MW20-11S	25-Feb-20	66.25	66.82	4.02	1.97	1.40	64.85
	05-Mar-20				3.08	2.51	63.75
	26-Mar-20				1.82	1.25	65.00
	08-Apr-20				1.62	1.05	65.20
	13-May-20				1.99	1.42	64.83
	08-Jun-20				2.06	1.49	64.76
MW20-11C	25-Feb-20	66.25	67.10	7.68	2.14	1.29	64.96
	05-Mar-20				2.29	1.44	64.81
	26-Mar-20				2.17	1.32	64.92
	08-Apr-20				2.25	1.40	64.85
	13-May-20				2.24	1.39	64.86
	08-Jun-20				2.26	1.41	64.84
MW20-11D	25-Feb-20	66.25	67.00	23.17	1.90	1.15	65.11
	05-Mar-20				23.33	22.58	43.68
	08-Apr-20				22.46	21.71	44.54
	13-May-20				23.39	22.64	43.61
	08-Jun-20				23.34	22.59	43.66
MW20-12S	26-Feb-20	64.86	65.58	4.31	1.87	1.15	63.71
	05-Mar-20				1.21	0.49	64.37
	31-Mar-20				1.23	0.51	64.35
	08-Apr-20				1.52	0.80	64.06
	13-May-20				1.78	1.06	63.81
	08-Jun-20				1.80	1.08	63.78
MW20-15T	26-Feb-20	67.36	68.34	13.70	1.95	0.97	66.39
	05-Mar-20				1.71	0.73	66.63
	27-Mar-20				1.15	0.17	67.19
	08-Apr-20				1.74	0.76	66.60
	13-May-20				1.92	0.94	66.42
	08-Jun-20				2.03	1.05	66.31
MW20-17S	26-Feb-20	64.99	65.96	4.30	1.82	0.85	64.15
	05-Mar-20				1.60	0.63	64.36
	08-Apr-20				1.55	0.58	64.41
	13-May-20				1.81	0.84	64.15
	08-Jun-20				2.04	1.07	63.92
MW20-18D	26-Feb-20	65.98	66.84	14.30	2.18	1.31	64.66
	05-Mar-20				14.55	13.68	52.30
	08-Apr-20				13.99	13.12	52.86
	13-May-20				13.15	12.28	53.69
	08-Jun-20				12.37	11.50	54.47

TABLE 5
Observed Groundwater Levels
Lafleche Expansion, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev. (m asl)	Top Pipe Elev. (m asl)	Well Depth (m bg)	Groundwater Depth (m bmp)	Groundwater Depth (m bg)	Groundwater Elevation (m asl)
MW96-1A	05-Mar-20			-	Blocked	-	n/a
	07-May-20	67.51	68.36		1.01		67.35
	08-Jun-20	67.51	68.36		1.25		67.11
MW96-1B	05-Mar-20	67.51	68.28		1.09	0.32	67.19
	07-May-20				1.10	0.33	67.18
	08-Jun-20				1.27	0.50	67.01
MW96-1C	05-Mar-20	67.51	68.67		1.89	0.72	66.78
	07-May-20				1.87	0.70	66.80
	08-Jun-20				1.99	0.82	66.68
MW96-1D	05-Mar-20	67.51	68.71		2.43	1.22	66.28
	07-May-20				2.72	1.51	65.99
	08-Jun-20				2.94	1.73	65.77
MW96-2A	05-Mar-20	66.44	67.12		1.24	0.56	65.88
	07-May-20				1.35	0.67	65.77
	08-Jun-20				1.54	0.86	65.58
MW96-2B	05-Mar-20	66.44	67.46		1.63	0.62	65.83
	07-May-20				1.75	0.74	65.71
	08-Jun-20				1.94	0.93	65.52
MW96-2C	05-Mar-20	66.44	67.37		1.62	0.69	65.75
	07-May-20				1.72	0.79	65.65
					1.82	0.89	65.55
MW96-2D	05-Mar-20	66.44	67.57		2.33	1.20	65.24
	07-May-20				2.70	1.57	64.87
	08-Jun-20				2.73	1.60	64.84
MW96-3A	05-Mar-20	65.59	66.67		2.06	0.99	64.60
	07-May-20				2.06	0.99	64.61
	08-Jun-20				2.20	1.13	64.47
MW96-3B	05-Mar-20	65.59	66.45		1.90	1.04	64.55
	07-May-20				1.96	1.10	64.50
	08-Jun-20				2.07	1.21	64.38
MW96-3C	05-Mar-20	65.59	66.38		1.87	1.08	64.51
	07-May-20				2.30	1.51	64.08
	08-Jun-20				2.38	1.59	64.00

Notes

Elevations measured by Topcon GNSS device, to centimetre accuracy

m asl = metres above sea level

m bmp = metres below measurement point (top of pipe)

m bg = metres below ground

Monitoring wells were purged dry for development between February 25 and March 3, 2020

May monitoring event for 96 series wells on May 7, 2020 was completed by others

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
96-1A	15-Nov-20	67.51	68.36	26.15	1.15	0.30	67.21	322	702	2.5	149	27.3
96-1A	10-May-21	67.51	68.36	26.15	1.13	0.28	67.23	291	702	2.8	155	24.8
96-1A	3-Aug-21	67.51	68.36	26.15	1.32	0.47	67.04	296	702	3.1	137	22.3
96-1A	9-Nov-21	67.51	68.36	26.15	1.19	0.34	67.17	300	715	3.8	150	19.8
96-1B	15-Nov-20	67.51	68.28	16.73	1.15	0.38	67.13	425	656	2.7	123	102.3
96-1B	10-May-21	67.51	68.28	16.73	1.19	0.42	67.09	548	656	3.3	128	245.5
96-1B	3-Aug-21	67.51	68.28	16.73	1.39	0.62	66.89	404	663	3.5	117	91.4
96-1B	9-Nov-21	67.51	68.28	16.73	1.15	0.38	67.13	432	676	4.3	126	193
96-1d	15-Nov-20	67.51	68.71	3.29	2.71	1.50	66.00	565	1,150	12.9	191	445.5
96-1d	10-May-21	67.51	68.71	3.29	2.47	1.26	66.24	530	1,140	14.6	192	572.4
96-1d	3-Aug-21	67.51	68.71	3.29	2.78	1.57	65.93	533	1,140	15.2	162	497.6
96-1d	9-Nov-21	67.51	68.71	3.29	2.59	1.38	66.12	509	1,100	17	164	473.7
96-2a	15-Nov-20	66.44	67.12	20.32	1.31	0.63	65.81	485	793	4.6	127	17.3
96-2a	10-May-21	66.44	67.12	20.32	1.31	0.63	65.81	456	806	5.7	128	19.8
96-2a	3-Aug-21	66.44	67.12	20.32	1.48	0.80	65.64	463	800	5.3	112	17.3
96-2a	9-Nov-21	66.44	67.12	20.32	1.21	0.53	65.91	478	826	7.9	127	17.3
96-2b	15-Nov-20	66.44	67.46	13.99	1.69	0.68	65.77	479	780	4.2	119	17.3
96-2b	10-May-21	66.44	67.46	13.99	1.70	0.69	65.76	471	786	5.2	122	23.9
96-2b	3-Aug-21	66.44	67.46	13.99	1.87	0.86	65.59	476	793	5.3	110	17.3
96-2b	9-Nov-21	66.44	67.46	13.99	1.66	0.65	65.80	484	812	6.9	118	17.3
96-2d	15-Nov-20	66.44	67.57	13.38	2.31	1.19	65.26	491	573	7.2	25	141.5
96-2d	10-May-21	66.44	67.57	13.38	2.38	1.26	65.19	463	575	9.2	25	158.8
96-2d	3-Aug-21	66.44	67.57	13.38	2.76	1.64	64.81	472	584	8.4	27	138.1
96-2d	9-Nov-21	66.44	67.57	13.38	2.71	1.58	64.86	490	605	11.1	28	154.7
96-3ar	15-Nov-20	65.59	66.67	19.73	2.08	1.01	64.59	428	741	5.7	133	66.2
96-3ar	10-May-21	65.59	66.67	19.73	2.31	1.24	64.36	403	748	7.7	150	70.3
96-3ar	3-Aug-21	65.59	66.67	19.73	2.12	1.05	64.55	405	734	6.8	124	61.2
96-3ar	9-Nov-21	65.59	66.67	19.73	2.01	0.94	64.66	409	760	9.6	126	67.8
96-3b	15-Nov-20	65.59	66.45	12.14	2.08	1.22	64.37	747	936	27.5	97	43.7
96-3b	10-May-21	65.59	66.45	12.14	2.01	1.15	64.44	803	956	46.6	120	58.5
96-3b	3-Aug-21	65.59	66.45	12.14	2.57	1.71	63.88	751	942	37.4	96	41.2
96-3b	9-Nov-21	65.59	66.45	12.14	2.67	1.81	63.78	703	942	37	91	43.7
96-3c	15-Nov-20	65.59	66.38	2.96	2.33	1.54	64.05	601	845	4.2	13	435.6
96-3c	10-May-21	65.59	66.38	2.96	2.17	1.38	64.21	593	852	5.3	10	547.1
96-3c	3-Aug-21	65.59	66.38	2.96	2.32	1.53	64.06	606	878	5.2	10	471.8
96-3c	9-Nov-21	65.59	66.38	2.96	2.20	1.41	64.18	614	956	6.5	6	533.2
96-4A	15-Nov-20	65.31	65.78	20.53	1.18	0.71	64.60	482	689	6.3	80	21.4
96-4A	10-May-21	65.31	65.78	20.53	1.10	0.63	64.68	466	696	6.1	100	25.5
96-4A	3-Aug-21	65.31	65.78	20.53	1.14	0.67	64.64	457	676	6.4	74	25.5
96-4A	9-Nov-21	65.31	65.78	20.53	1.04	0.57	64.74	463	689	7.9	73	21.4
96-4B	15-Nov-20	65.31	65.80	15.52	1.18	0.70	64.62	470	689	6.3	82	28
96-4B	10-May-21	65.31	65.80	15.52	1.06	0.58	64.74	461	689	6.2	100	32.1
96-4B	3-Aug-21	65.31	65.80	15.52	1.12	0.64	64.68	461	676	6.4	74	28
96-4B	9-Nov-21	65.31	65.80	15.52	1.13	0.64	64.67	461	689	7.6	73	25.5
96-4E	15-Nov-20	65.30	66.07	3.73	1.88	1.11	64.19	514	715	7.8	82	115.6
96-4E	10-May-21	65.30	66.07	3.73	2.28	1.51	63.79	489	722	8.1	100	128.8
96-4E	3-Aug-21	65.30	66.07	3.73	2.40	1.63	63.67	484	708	8.1	81	119.7
96-4E	9-Nov-21	65.30	66.07	3.73	2.65	1.88	63.42	493	722	9.7	81	113.1

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
96-5A	10-May-21	65.25	66.25	12.10	0.43	-0.57	65.82	484	1,030	4.1	240	28
96-5A	3-Aug-21	65.25	66.25	12.10	0.96	-0.04	65.29	424	630	7	75	100.6
96-5A	9-Nov-21	65.25	66.25	12.10	0.84	-0.16	65.41	436	650	7.9	73	80.8
96-5AA	15-Nov-20	65.69	66.73	24.03	0.30	-0.74	66.43	498	1,030	3.6	218	26.4
96-5AA	10-May-21	65.69	66.73	24.03	0.43	-0.61	66.30	406	615	7.3	76	122.9
96-5AA	3-Aug-21	65.69	66.73	24.03	0.55	-0.49	66.18	480	1,030	4.2	202	23.9
96-5AA	9-Nov-21	65.69	66.73	24.03	0.43	-0.61	66.30	489	1,040	4.8	219	23.9
96-5B	10-May-21	-	-	-	1.57	-	-	586	800	18.3	73	69.2
96-5B	3-Aug-21	-	-	-	1.94	-	-	586	793	14.3	65	71.7
96-5B	9-Nov-21	-	-	-	2.20	-	-	595	819	16	66	62.6
96-5C	15-Nov-20	65.67	66.87	3.30	2.12	0.92	64.75	488	760	3.1	43	490.6
96-5C	10-May-21	65.67	66.87	3.30	2.23	1.03	64.64	489	793	2.8	70	544.3
96-5C	3-Aug-21	65.67	66.87	3.30	2.16	0.96	64.71	510	968	4.1	100	636.4
96-5C	9-Nov-21	65.67	66.87	3.30	2.16	0.96	64.71	531	1,030	4.3	95	643.9
96-6Ar	15-Nov-20	67.83	69.14	27.59	27.45	26.14	41.69	387	554	4.8	60	66.2
96-6Ar	10-May-21	67.83	69.14	27.59	27.27	25.96	41.87	389	722	5	100	92.8
96-6Ar	3-Aug-21	67.83	69.14	27.59	27.55	26.24	41.59	446	2,340	89	**1,040**	794
96-6Ar	9-Nov-21	67.83	69.14	27.59	27.09	25.78	42.05	676	9,280	110	**1,600**	1,002
96-6B	15-Nov-20	67.83	69.10	16.23	1.60	0.33	67.50	393	529	4.2	44	19.8
96-6B	10-May-21	67.83	69.10	16.23	1.48	0.21	67.62	368	523	3.9	57	19.8
96-6B	3-Aug-21	67.83	69.10	16.23	3.19	1.92	65.91	367	508	4.2	43	19.8
96-6B	9-Nov-21	67.83	69.10	16.23	1.57	0.30	67.53	374	529	4.7	45	17.3
96-6D	15-Nov-20	67.86	69.00	3.36	2.91	1.77	66.09	488	923	7	183	355.3
96-6D	10-May-21	67.86	69.00	3.36	3.00	1.86	66.00	466	936	8.1	210	388.3
96-6D	3-Aug-21	67.86	69.00	3.36	2.96	1.82	66.04	463	949	8.5	193	357.6
96-6D	9-Nov-21	67.86	69.00	3.36	3.01	1.87	65.99	476	1000	9.5	203	388.3
L2R	15-Nov-20	67.44	68.53	1.71	1.35	0.26	67.18	662	1,100	6.3	142	469.6
L2R	10-May-21	67.44	68.53	1.71	1.57	0.48	66.96	620	1,060	5.6	170	488.5
L2R	3-Aug-21	67.44	68.53	1.71	1.59	0.50	66.94	628	1,050	6.3	141	447.1
L2R	9-Nov-21	67.44	68.53	1.71	1.25	0.16	67.28	633	1,030	7	110	474.4
L3R	15-Nov-20	67.65	68.16	2.44	0.73	0.22	67.43	907	1,200	13.4	140	673.5
L3R	10-May-21	67.65	68.16	2.44	0.87	0.36	67.29	833	1,140	15	160	664.9
L3R	3-Aug-21	67.65	68.16	2.44	0.97	0.46	67.19	817	1,110	13.7	124	659.4
L3R	9-Nov-21	67.65	68.16	2.44	0.62	0.11	67.54	886	1,160	15	110	693.1
L6	15-Nov-20	-	-	-	2.15	-	-	669	1,570	8.9	403	766.7
L6	10-May-21	-	-	-	1.98	-	-	634	1,530	8	400	811.3
L6	3-Aug-21	-	-	-	2.29	-	-	624	1,540	9.4	360	793.1
L6	9-Nov-21	-	-	-	1.78	-	-	631	1,540	9.6	400	770.6
L7	15-Nov-20	-	-	-	1.95	-	-	802	988	7.6	58	431.5
L7	10-May-21	-	-	-	1.88	-	-	772	994	19.1	70	506.8
L7	3-Aug-21	-	-	-	2.17	-	-	764	982	20.5	61	457.9
L7	9-Nov-21	-	-	-	2.12	-	-	776	988	8	65	460.4
P1-1A	15-Nov-20	68.14	68.63	19.01	4.09	3.60	64.54	474	715	5	101	34.6
P1-1A	10-May-21	68.14	68.63	19.01	3.99	3.50	64.64	465	722	7.3	97	41.2
P1-1A	3-Aug-21	68.14	68.63	19.01	4.09	3.60	64.54	474	741	7.2	95	34.6
P1-1A	9-Nov-21	68.14	68.63	19.01	4.01	3.52	64.62	492	774	7.6	92	36.2

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
P1-1B	15-Nov-20	68.14	68.93	13.72	4.40	3.62	64.53	504	728	5	103	44.6
P1-1B	10-May-21	68.14	68.93	13.72	4.31	3.53	64.62	497	715	5.8	97	112.8
P1-1B	3-Aug-21	68.14	68.93	13.72	4.39	3.61	64.54	477	722	6.6	99	91
P1-1B	9-Nov-21	68.14	68.93	13.72	4.21	3.43	64.72	475	754	6.8	90	34.6
P1-1C	15-Nov-20	68.14	68.97	9.67	3.93	3.10	65.04	503	754	6.2	84	100.8
P1-1C	10-May-21	68.14	68.97	9.67	5.19	4.36	63.78	487	760	8.2	86	114
P1-1C	3-Aug-21	68.14	68.97	9.67	5.07	4.24	63.90	491	767	9	89	102.4
P1-1C	9-Nov-21	68.14	68.97	9.67	6.75	5.92	62.22	506	786	9.5	84	104.9
P1-1D	15-Nov-20	68.14	68.83	5.31	3.60	2.91	65.23	728	949	3.1	50	640.9
P1-1D	10-May-21	68.14	68.83	5.31	3.31	2.62	65.52	635	916	4.2	49	714.6
P1-1D	3-Aug-21	68.14	68.83	5.31	3.88	3.19	64.95	729	982	6.7	40	721.9
P1-1D	9-Nov-21	68.14	68.83	5.31	3.39	2.70	65.44	687	1000	5.1	49	673
P1-2A	15-Nov-20	68.29	68.93	19.36	4.30	3.66	64.63	460	722	4	116	19.8
P1-2A	10-May-21	68.29	68.93	19.36	4.27	3.63	64.66	432	728	5.1	114	26.4
P1-2A	3-Aug-21	68.29	68.93	19.36	4.40	3.76	64.53	438	734	5.6	105	26.4
P1-2A	9-Nov-21	68.29	68.93	19.36	4.25	3.61	64.68	446	748	6.1	97	23.9
P1-2B	15-Nov-20	68.29	69.01	12.78	4.07	3.35	64.94	609	1,070	3.5	103	426.2
P1-2B	10-May-21	68.29	69.01	12.78	4.22	3.50	64.79	473	793	2.8	54	287.5
P1-2B	3-Aug-21	68.29	69.01	12.78	4.38	3.66	64.63	468	780	3.6	62	199.5
P1-2B	9-Nov-21	68.29	69.01	12.78	4.45	3.73	64.56	462	722	4.8	61	127.4
P1-2C	15-Nov-20	68.29	68.97	8.33	3.91	3.24	65.06	407	509	5.4	9	138.8
P1-2C	10-May-21	68.29	68.97	8.33	3.11	2.44	65.86	466	734	5.5	38	341.7
P1-2C	3-Aug-21	68.29	68.97	8.33	4.34	3.67	64.63	414	613	6.6	36	214.1
P1-2C	9-Nov-21	68.29	68.97	8.33	4.79	4.12	64.18	402	588	7.4	39	177.7
P1-2D	15-Nov-20	68.29	68.75	5.04	3.04	2.58	65.71	569	682	4.9	18	399.6
P1-2D	10-May-21	68.29	68.75	5.04	4.09	3.63	64.66	517	676	5.6	24	455.1
P1-2D	3-Aug-21	68.29	68.75	5.04	3.50	3.04	65.25	547	702	6.3	20	446.7
P1-2D	9-Nov-21	68.29	68.75	5.04	3.31	2.85	65.44	565	715	7.2	20	459.2
P1-3AR	15-Nov-20	68.36	69.22	12.64	4.60	3.74	64.62	468	734	6.6	108	32.1
P1-3AR	10-May-21	68.36	69.22	12.64	4.54	3.68	64.68	461	748	6.1	530	34.6
P1-3AR	3-Aug-21	68.36	69.22	12.64	4.71	3.85	64.51	450	715	7	98	34.6
P1-3AR	9-Nov-21	68.36	69.22	12.64	4.62	3.76	64.60	466	754	7.8	91	34.6
P1-3br	15-Nov-20	68.36	69.15	12.71	4.82	4.03	64.33	496	748	11.1	82	76
P1-3br	10-May-21	68.36	69.15	12.71	4.64	3.85	64.51	491	754	12.7	100	74.2
P1-3br	3-Aug-21	68.36	69.15	12.71	4.70	3.91	64.45	515	722	13.5	77	56.9
P1-3br	9-Nov-21	68.36	69.15	12.71	4.53	3.74	64.62	559	708	11.7	76	61
P1-3c	15-Nov-20	68.36	69.08	10.28	3.40	2.68	65.68	375	597	9.9	56	101.9
P1-3c	10-May-21	68.36	69.08	10.28	5.09	4.37	63.99	361	597	9.5	65	101
P1-3c	3-Aug-21	68.36	69.08	10.28	4.06	3.34	65.02	364	567	11.4	54	84.4
P1-3c	9-Nov-21	68.36	69.08	10.28	6.11	5.39	62.97	372	573	12.1	55	75.3
P1-3d	15-Nov-20	68.36	69.11	5.25	2.49	1.74	66.62	827	968	4.5	25	687.1
P1-3d	10-May-21	68.36	69.11	5.25	2.76	2.01	66.35	760	930	25.3	30	753.1
P1-3d	3-Aug-21	68.36	69.11	5.25	3.90	3.15	65.21	797	968	26.1	24	701
P1-3d	9-Nov-21	68.36	69.11	5.25	2.91	2.16	66.20	816	994	5	26	710.3
P1-4A	15-Nov-20	68.16	68.85	18.80	4.18	3.48	64.67	732	1,060	10	131	23.9
P1-4A	10-May-21	68.16	68.85	18.80	4.11	3.41	64.74	667	1,030	10.6	120	33
P1-4A	3-Aug-21	68.16	68.85	18.80	4.16	3.46	64.69	706	1,070	11.8	123	30.5
P1-4A	9-Nov-21	68.16	68.85	18.80	4.22	3.52	64.63	737	1,100	19.8	122	30.5

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
P1-4B	15-Nov-20	68.16	69.05	15.60	4.33	3.43	64.72	638	949	10.2	126	52.8
P1-4B	10-May-21	68.16	69.05	15.60	4.26	3.36	64.79	644	988	10.5	150	117.9
P1-4B	3-Aug-21	68.16	69.05	15.60	4.08	3.18	64.97	650	994	13	117	58.5
P1-4B	9-Nov-21	68.16	69.05	15.60	4.23	3.33	64.82	664	1000	13.2	110	41.2
P1-4C	15-Nov-20	67.98	68.82	9.66	2.89	2.05	65.93	677	949	28.1	111	77.8
P1-4C	10-May-21	67.98	68.82	9.66	3.76	2.92	65.06	454	1,250	18.8	120	289.2
P1-4C	3-Aug-21	67.98	68.82	9.66	3.89	3.05	64.93	572	1,030	29.1	98	119.4
P1-4C	9-Nov-21	67.98	68.82	9.66	5.01	4.17	63.81	638	1,010	33.9	91	101.9
P1-4D	15-Nov-20	67.98	68.76	4.23	2.94	2.17	65.82	654	845	4.6	36	495.3
P1-4D	10-May-21	67.98	68.76	4.23	4.78	4.01	63.98	489	1,090	4.9	60	693.8
P1-4D	3-Aug-21	67.98	68.76	4.23	4.01	3.24	64.75	549	942	5.2	38	589.9
P1-4D	9-Nov-21	67.98	68.76	4.23	5.07	4.30	63.69	606	936	5.5	34	565.8
S1-1AR	15-Nov-20	68.75	69.12	28.44	2.31	1.95	66.81	506	3,090	3.1	**1,200**	79.2
S1-1AR	10-May-21	68.75	69.12	28.44	2.28	1.92	66.84	455	2,480	5.8	509	75.1
S1-1AR	3-Aug-21	68.75	69.12	28.44	2.68	2.32	66.44	433	3,000	4.7	470	28.9
S1-1AR	9-Nov-21	68.75	69.12	28.44	2.55	2.19	66.57	447	2,320	5.5	**840**	59.4
S1-1BR	15-Nov-20	68.75	69.10	24.16	2.35	2.01	66.75	405	656	3.9	94	38.7
S1-1BR	10-May-21	68.75	69.10	24.16	2.33	1.99	66.77	363	589	5.7	90	45.3
S1-1BR	3-Aug-21	68.75	69.10	24.16	2.74	2.40	66.36	386	656	5.4	99	42.8
S1-1BR	9-Nov-21	68.75	69.10	24.16	2.44	2.10	66.66	374	616	6	83	36.2
S1-1c	15-Nov-20	68.75	69.07	6.18	1.81	1.49	67.26	776	956	6.5	69	388.3
S1-1c	10-May-21	68.75	69.07	6.18	1.69	1.37	67.38	696	962	10.9	115	405.6
S1-1c	3-Aug-21	68.75	69.07	6.18	2.04	1.72	67.03	680	936	9.6	99	307.8
S1-1c	9-Nov-21	68.75	69.07	6.18	1.67	1.35	67.40	691	988	11.2	109	352.4
S1-2a	15-Nov-20	68.40	69.29	23.11	1.65	0.76	67.64	389	641	2.9	100	13.2
S1-2a	10-May-21	68.40	69.29	23.11	1.67	0.78	67.62	362	638	5.1	107	13.2
S1-2a	3-Aug-21	68.40	69.29	23.11	2.06	1.17	67.23	360	636	3.9	95	9.1
S1-2a	9-Nov-21	68.40	69.29	23.11	1.77	0.88	67.52	364	640	4.7	103	9.1
S1-2b	15-Nov-20	68.40	69.25	16.15	1.59	0.74	67.66	412	670	3.1	109	43.9
S1-2b	10-May-21	68.40	69.25	16.15	1.57	0.72	67.68	449	682	5.1	114	128.7
S1-2b	3-Aug-21	68.40	69.25	16.15	1.91	1.06	67.34	393	670	5.2	100	13.2
S1-2b	9-Nov-21	68.40	69.25	16.15	1.62	0.77	67.63	401	682	5.1	110	48
S1-2c	15-Nov-20	68.40	69.02	1.88	1.68	1.06	67.34	662	968	8.6	98	429.4
S1-2c	10-May-21	68.40	69.02	1.88	1.55	0.93	67.47	639	936	12.2	92	586.3
S1-2c	3-Aug-21	68.40	69.02	1.88	1.76	1.14	67.26	644	936	11.3	92	369.6
S1-2c	9-Nov-21	68.40	69.02	1.88	1.69	1.07	67.33	655	956	12.8	93	457.6
S1-2Cr	15-Nov-20	-	-	-	1.10	-	-	529	641	7.7	36	301.6
S1-2Cr	10-May-21	-	-	-	1.00	-	-	504	638	11.6	36	358
S1-2Cr	3-Aug-21	-	-	-	1.07	-	-	509	647	10.5	34	253.4
S1-2Cr	9-Nov-21	-	-	-	1.22	-	-	518	656	12.4	40	305.7
S1-2PAr	15-Nov-20	67.96	68.89	3.67	2.33	1.40	66.56	561	663	6.9	19	186.7
S1-2PAr	10-May-21	67.96	68.89	3.67	1.67	0.74	67.22	537	642	6.5	22	194.9
S1-2PAr	3-Aug-21	67.96	68.89	3.67	2.67	1.74	66.22	576	676	6.8	19	185.8
S1-2PAr	9-Nov-21	67.96	68.89	3.67	2.71	1.78	66.18	567	676	8.3	18	217.4
S1-3AR	15-Nov-20	68.25	69.05	23.20	2.64	1.83	66.41	562	819	5.9	95	22.3
S1-3AR	10-May-21	68.25	69.05	23.20	2.70	1.90	66.35	528	812	7.9	101	28.9
S1-3AR	3-Aug-21	68.25	69.05	23.20	2.87	2.07	66.18	535	812	7.8	98	22.3
S1-3AR	9-Nov-21	68.25	69.05	23.20	2.70	1.90	66.35	540	845	8.7	103	26.4

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
S1-3B	15-Nov-20	68.25	69.28	16.05	2.59	1.56	66.69	663	832	9.4	72	94.6
S1-3B	10-May-21	68.25	69.28	16.05	8.64	7.61	60.64	616	845	8.5	72	31.4
S1-3B	3-Aug-21	68.25	69.28	16.05	-	-	-	622	819	9.1	69	43
S1-3B	9-Nov-21	68.25	69.28	16.05	2.59	1.56	66.69	762	871	11.3	74	17.3
S1-3c	15-Nov-20	68.25	68.99	3.76	1.43	0.69	67.56	582	734	7	38	356.4
S1-3c	10-May-21	68.25	68.99	3.76	1.31	0.57	67.68	659	832	10	48	564.7
S1-3c	3-Aug-21	68.25	68.99	3.76	1.56	0.82	67.43	573	780	9	41	354.6
S1-3c	9-Nov-21	68.25	68.99	3.76	1.60	0.86	67.39	566	748	10.4	42	367.1
S1-3Cr	15-Nov-20	-	-	-	1.22	-	-	602	702	6.4	15	428
S1-3Cr	10-May-21	-	-	-	1.14	-	-	600	682	9.5	17	525.1
S1-3Cr	3-Aug-21	-	-	-	1.39	-	-	616	708	8.4	15	376.4
S1-3Cr	9-Nov-21	-	-	-	1.39	-	-	559	754	9	24	504.4
S2-1a	15-Nov-20	68.34	69.10	26.73	2.89	2.12	66.21	634	1,350	4.4	322	50.3
S2-1a	10-May-21	68.34	69.10	26.73	2.99	2.22	66.11	593	1,330	6.2	341	56.9
S2-1a	3-Aug-21	68.34	69.10	26.73	3.14	2.37	65.96	597	1,370	5.9	313	47.8
S2-1a	9-Nov-21	68.34	69.10	26.73	2.97	2.20	66.13	604	1,390	6.4	330	63.5
S2-1b	15-Nov-20	68.34	68.71	20.13	2.62	2.25	66.09	456	648	4.2	43	357
S2-1b	10-May-21	68.34	68.71	20.13	2.70	2.33	66.01	453	702	6.6	167	392.7
S2-1b	3-Aug-21	68.34	68.71	20.13	2.84	2.47	65.87	491	956	5.9	137	351.1
S2-1b	9-Nov-21	68.34	68.71	20.13	2.71	2.34	66.00	537	1,100	6.4	189	267.9
S2-1c	15-Nov-20	68.34	68.92	5.92	0.91	0.33	68.01	619	988	7.6	134	277.3
S2-1c	10-May-21	68.34	68.92	5.92	1.67	1.09	67.25	592	982	9.8	165	317.8
S2-1c	3-Aug-21	68.34	68.92	5.92	1.28	0.70	67.64	575	1,030	7.5	113	411.2
S2-1c	9-Nov-21	68.34	68.92	5.92	1.23	0.65	67.69	605	1,060	9.7	144	366.7
S2-2a	15-Nov-20	68.52	69.06	12.97	2.89	2.35	66.17	492	988	3.2	206	21.4
S2-2a	10-May-21	68.52	69.06	12.97	3.01	2.47	66.05	476	994	4.6	221	21.4
S2-2a	3-Aug-21	68.52	69.06	12.97	3.14	2.60	65.92	477	1,010	4.4	205	17.3
S2-2a	9-Nov-21	68.52	69.06	12.97	2.99	2.45	66.07	482	1,020	5.1	213	18.9
S2-2b	15-Nov-20	68.52	69.18	20.15	2.97	2.32	66.21	762	1,640	7.3	403	64.2
S2-2b	10-May-21	68.52	69.18	20.15	3.09	2.44	66.09	742	1,680	11.1	430	135.9
S2-2b	3-Aug-21	68.52	69.18	20.15	3.28	2.63	65.90	723	1,660	10.4	410	64.2
S2-2b	9-Nov-21	68.52	69.18	20.15	3.10	2.45	66.08	730	1,640	16.1	403	109.5
S2-2c	15-Nov-20	68.52	69.08	6.44	0.20	-0.36	68.88	634	1000	6.1	152	321
S2-2c	10-May-21	68.52	69.08	6.44	1.09	0.53	67.99	596	962	8.1	164	461.1
S2-2c	3-Aug-21	68.52	69.08	6.44	0.88	0.32	68.20	596	988	7.4	142	326
S2-2c	9-Nov-21	68.52	69.08	6.44	1.51	0.95	67.57	608	994	8.4	147	448.4
S2-3a	15-Nov-20	68.44	69.45	28.68	3.13	2.11	66.32	488	956	3.4	185	19.8
S2-3a	10-May-21	68.44	69.45	28.68	3.18	2.16	66.27	462	930	4.4	195	22.3
S2-3a	3-Aug-21	68.44	69.45	28.68	3.36	2.34	66.09	462	930	4.5	172	13.2
S2-3a	9-Nov-21	68.44	69.45	28.68	3.16	2.14	66.29	471	936	5.4	180	17.3
S2-3b	15-Nov-20	68.44	69.47	19.42	3.20	2.17	66.27	548	910	6.1	145	91
S2-3b	10-May-21	68.44	69.47	19.42	3.24	2.21	66.23	526	897	1.3	159	137.4
S2-3b	3-Aug-21	68.44	69.47	19.42	3.41	2.38	66.06	498	890	7.7	146	41.4
S2-3b	9-Nov-21	68.44	69.47	19.42	3.20	2.17	66.27	494	890	8.4	150	60.3
S2-3Cr	15-Nov-20	68.44	69.40	3.33	0.00	-0.97	69.40	541	728	8	74	147
S2-3Cr	10-May-21	68.44	69.40	3.33	0.64	-0.33	68.76	520	734	9.5	76	159.3
S2-3Cr	3-Aug-21	68.44	69.40	3.33	0.00	-0.97	69.40	512	728	10.9	76	148.6
S2-3Cr	9-Nov-21	68.44	69.40	3.33	0.00	-0.97	69.40	540	774	12.9	81	171.6

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
S3-1A	15-Nov-20	66.23	67.00	16.03	2.33	1.56	64.67	450	754	4.3	125	37.1
S3-1A	10-May-21	66.23	67.00	16.03	2.31	1.54	64.69	419	734	4.8	125	43.7
S3-1A	3-Aug-21	66.23	67.00	16.03	2.43	1.66	64.57	439	748	5.5	114	41.2
S3-1A	9-Nov-21	66.23	67.00	16.03	2.33	1.56	64.67	446	780	6.6	121	41.2
S3-1B	15-Nov-20	66.17	67.06	15.41	2.54	1.65	64.52	745	754	4.3	117	251
S3-1B	10-May-21	66.17	67.06	15.41	2.38	1.49	64.68	715	760	5.6	120	344.4
S3-1B	3-Aug-21	66.17	67.06	15.41	2.45	1.56	64.61	547	760	5.5	111	126.9
S3-1B	9-Nov-21	66.17	67.06	15.41	2.36	1.47	64.70	522	800	6.6	114	141.9
S3-1C	15-Nov-20	66.14	67.22	6.82	1.54	0.46	65.68	556	696	10.9	46	117.2
S3-1C	10-May-21	66.14	67.22	6.82	2.14	1.06	65.08	515	689	13	53	134.5
S3-1C	3-Aug-21	66.14	67.22	6.82	2.59	1.51	64.63	518	682	12.4	46	120.4
S3-1C	9-Nov-21	66.14	67.22	6.82	2.60	1.52	64.62	525	702	14.6	48	141.1
S3-2A	15-Nov-20	66.28	67.15	18.56	11.75	10.88	55.40	668	754	7.3	90	156.9
S3-2A	10-May-21	66.28	67.15	18.56	10.04	9.17	57.11	664	994	7.8	112	55.5
S3-2A	3-Aug-21	66.28	67.15	18.56	11.35	10.48	55.80	661	968	10.5	99	45.5
S3-2A	9-Nov-21	66.28	67.15	18.56	12.98	12.11	54.17	637	956	15.9	97	36.4
S3-2B	15-Nov-20	66.37	67.17	14.47	2.54	1.74	64.63	607	780	7.3	92	90.3
S3-2B	10-May-21	66.37	67.17	14.47	2.47	1.67	64.70	660	767	8.2	97	121.9
S3-2B	3-Aug-21	66.37	67.17	14.47	2.56	1.76	64.61	580	748	6.9	97	161
S3-2B	9-Nov-21	66.37	67.17	14.47	2.43	1.63	64.74	583	793	7.8	98	52.8
S3-2C	15-Nov-20	66.31	67.25	6.66	1.60	0.66	65.65	513	638	8.5	40	126.3
S3-2C	10-May-21	66.31	67.25	6.66	1.85	0.91	65.40	476	621	9	46	134.5
S3-2C	3-Aug-21	66.31	67.25	6.66	2.35	1.41	64.90	485	623	9.3	38	129.5
S3-2C	9-Nov-21	66.31	67.25	6.66	2.62	1.68	64.63	495	649	11.5	38	121.3
S3-3A	15-Nov-20	64.51	65.64	10.87	1.11	-0.02	64.53	491	786	4.9	121	34.6
S3-3A	10-May-21	64.51	65.64	10.87	1.00	-0.13	64.64	473	793	6	116	42.8
S3-3A	3-Aug-21	64.51	65.64	10.87	0.99	-0.14	64.65	479	760	6	99	36.2
S3-3A	9-Nov-21	64.51	65.64	10.87	1.00	-0.13	64.64	488	780	7.7	93	32.1
S3-3B	15-Nov-20	64.58	65.71	9.77	1.60	0.47	64.11	570	786	5.6	110	102.6
S3-3B	10-May-21	64.58	65.71	9.77	0.99	-0.14	64.72	514	767	7.2	112	119.9
S3-3B	3-Aug-21	64.58	65.71	9.77	1.09	-0.04	64.62	541	754	6.6	96	134.9
S3-3B	9-Nov-21	64.58	65.71	9.77	0.97	-0.16	64.74	525	780	8.2	97	45.3
S3-3C	15-Nov-20	64.63	65.79	2.74	1.04	-0.12	64.75	635	1,780	2.8	40	989
S3-3C	10-May-21	64.63	65.79	2.74	0.98	-0.18	64.81	617	1,620	3.4	44	1,181
S3-3C	3-Aug-21	64.63	65.79	2.74	1.76	0.60	64.03	659	1,630	3.8	36	959.7
S3-3C	9-Nov-21	64.63	65.79	2.74	1.08	-0.08	64.71	615	1,550	5.1	30	940.8
TF1-1	15-Nov-20	65.13	66.08	2.55	1.68	0.73	64.40	606	1,080	3.1	71	581.1
TF1-1	10-May-21	65.13	66.08	2.55	1.86	0.91	64.22	566	982	3.3	60	590.2
TF1-1	3-Aug-21	65.13	66.08	2.55	1.89	0.94	64.19	589	982	4.3	81	480.8
TF1-1	9-Nov-21	65.13	66.08	2.55	1.83	0.88	64.25	595	1,030	4.1	60	517.9
TF1-2A	15-Nov-20	64.78	65.45	16.32	0.81	0.13	64.64	496	754	6.2	98	19.8
TF1-2A	10-May-21	64.78	65.45	16.32	0.82	0.14	64.63	485	760	6.1	120	23.9
TF1-2A	3-Aug-21	64.78	65.45	16.32	0.86	0.18	64.59	479	734	6.4	99	19.8
TF1-2A	9-Nov-21	64.78	65.45	16.32	0.88	0.20	64.57	487	760	6.6	92	17.3
TF1-2B	15-Nov-20	64.79	65.56	13.22	1.38	0.60	64.18	521	760	6.5	98	47.1
TF1-2B	10-May-21	64.79	65.56	13.22	0.93	0.15	64.63	490	754	6.1	120	48.7
TF1-2B	3-Aug-21	64.79	65.56	13.22	0.98	0.20	64.58	481	728	6.6	98	39.6
TF1-2B	9-Nov-21	64.79	65.56	13.22	0.91	0.13	64.65	506	741	7.5	90	28

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
TF1-2C	15-Nov-20	64.79	65.45	9.33	0.91	0.24	64.54	530	890	12.1	138	39.6
TF1-2C	10-May-21	64.79	65.45	9.33	0.81	0.14	64.64	525	890	11.5	150	33
TF1-2C	3-Aug-21	64.79	65.45	9.33	1.86	1.19	63.59	519	858	13.9	123	26.4
TF1-2C	9-Nov-21	64.79	65.45	9.33	0.82	0.15	64.63	555	884	13.5	123	37.1
TF1-2D	15-Nov-20	64.79	65.73	2.06	1.01	0.07	64.72	449	832	3.1	32	378.5
TF1-2D	10-May-21	64.79	65.73	2.06	1.66	0.72	64.07	467	917	3.3	50	440.4
TF1-2D	3-Aug-21	64.79	65.73	2.06	1.81	0.87	63.92	437	780	4.2	38	397.4
TF1-2D	9-Nov-21	64.79	65.73	2.06	1.52	0.58	64.21	468	858	4.7	24	519.6
TF1-3	15-Nov-20	64.69	65.65	2.05	1.35	0.39	64.30	571	942	1.7	20	467.7
TF1-3	10-May-21	64.69	65.65	2.05	1.67	0.72	63.98	543	916	1.7	30	513
TF1-3	3-Aug-21	64.69	65.65	2.05	1.65	0.70	64.00	585	1,820	3.5	32	943.4
TF1-3	9-Nov-21	64.69	65.65	2.05	1.29	0.34	64.36	384	645	2	9	379.2
TF1-4	15-Nov-20	64.90	65.89	2.01	1.50	0.51	64.39	574	1,850	2.6	31	948.8
TF1-4	10-May-21	64.90	65.89	2.01	1.59	0.60	64.30	584	1,840	2.8	50	1,062
TF1-4	3-Aug-21	64.90	65.89	2.01	1.97	0.98	63.92	578	1,790	3.1	32	936.8
TF1-4	9-Nov-21	64.90	65.89	2.01	1.55	0.56	64.34	563	1,660	3.1	30	889.7
MW20-1s	15-Nov-20	66.64	67.28	3.31	1.72	1.08	65.56	447	568	11.2	30	241.8
MW20-1s	10-May-21	66.64	67.28	3.31	1.68	1.04	65.60	412	579	14.1	38	276.6
MW20-1s	3-Aug-21	66.64	67.28	3.31	2.29	1.65	64.99	416	578	16.1	30	250.9
MW20-1s	9-Nov-21	66.64	67.28	3.31	1.79	1.15	65.49	427	616	20	30	346.9
MW20-1T	15-Nov-20	66.64	67.29	14.00	1.64	0.99	65.65	556	689	6.9	64	90.1
MW20-1T	10-May-21	66.64	67.29	14.00	1.61	0.96	65.68	502	696	7.5	64	66
MW20-1T	3-Aug-21	66.64	67.29	14.00	1.88	1.23	65.41	495	682	8	69	49.4
MW20-1T	9-Nov-21	66.64	67.29	14.00	1.84	1.19	65.45	554	702	9.4	64	179.7
MW20-1D	15-Nov-20	66.64	67.36	18.66	17.80	17.08	49.56	-	-	-	-	-
MW20-1D	10-May-21	66.64	67.36	18.66	19.20	18.48	48.16	-	-	-	-	-
MW20-1D	3-Aug-21	66.64	67.36	18.66	19.14	18.42	48.22	-	-	-	-	-
MW20-1D	9-Nov-21	66.64	67.36	18.66	18.48	17.76	48.88	-	-	-	-	-
MW20-2C	15-Nov-20	67.94	68.71	6.43	1.96	1.19	66.75	674	1,220	13.1	239	144.3
MW20-2C	10-May-21	67.94	68.71	6.43	2.27	1.50	66.44	638	1,210	15.7	240	148.4
MW20-2C	3-Aug-21	67.94	68.71	6.43	2.51	1.74	66.20	628	1,200	17.2	200	133.6
MW20-2C	9-Nov-21	67.94	68.71	6.43	2.45	1.68	66.26	632	1,200	18.9	229	173.9
MW20-2D	15-Nov-20	67.94	68.74	24.76	1.78	0.98	66.96	331	599	3	97	17.3
MW20-2D	10-May-21	67.94	68.74	24.76	1.79	0.99	66.95	315	589	3.5	105	21.4
MW20-2D	3-Aug-21	67.94	68.74	24.76	1.96	1.16	66.78	315	586	4.1	97	17.3
MW20-2D	9-Nov-21	67.94	68.74	24.76	1.84	1.04	66.90	317	598	4.7	100	21.4
MW20-2S	15-Nov-20	67.94	68.84	3.19	2.06	1.16	66.78	709	994	14.7	103	570.2
MW20-2S	10-May-21	67.94	68.84	3.19	2.08	1.18	66.76	669	968	16.6	130	602.5
MW20-2S	3-Aug-21	67.94	68.84	3.19	2.51	1.61	66.33	678	988	19.3	100	527
MW20-2S	9-Nov-21	67.94	68.84	3.19	2.11	1.21	66.73	682	988	21.4	98	733.3
MW20-3C	15-Nov-20	67.21	67.92	6.25	2.06	1.35	65.86	271	349	7.4	18	141.3
MW20-3C	10-May-21	67.21	67.92	6.25	2.44	1.73	65.48	262	350	8.6	18	152
MW20-3C	3-Aug-21	67.21	67.92	6.25	2.76	2.05	65.16	261	346	8.8	18	125.6
MW20-3C	9-Nov-21	67.21	67.92	6.25	2.76	2.05	65.16	268	359	10.9	16	185
MW20-3d	15-Nov-20	67.21	68.02	16.18	2.33	1.52	65.69	384	603	3.8	90	42.1
MW20-3d	10-May-21	67.21	68.02	16.18	2.99	2.18	65.03	391	593	4.2	96	76.2
MW20-3d	3-Aug-21	67.21	68.02	16.18	2.54	1.73	65.48	346	591	3.3	92	21.4
MW20-3d	9-Nov-21	67.21	68.02	16.18	2.31	1.50	65.71	351	597	4	88	48.7

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
MW20-3s	15-Nov-20	67.21	67.91	3.20	1.99	1.29	65.92	372	517	12.3	18	352.5
MW20-3s	10-May-21	67.21	67.91	3.20	2.29	1.59	65.62	336	491	13.9	20	356.6
MW20-3s	3-Aug-21	67.21	67.91	3.20	2.76	2.06	65.15	344	503	15.3	22	335
MW20-3s	9-Nov-21	67.21	67.91	3.20	2.48	1.78	65.43	355	518	17.2	18	446.9
MW20-4c	15-Nov-20	67.65	68.64	6.03	1.84	0.85	66.80	270	387	5	40	172.7
MW20-4c	10-May-21	67.65	68.64	6.03	1.83	0.84	66.81	249	390	6.1	41	187.5
MW20-4c	3-Aug-21	67.65	68.64	6.03	2.08	1.09	66.56	258	400	6	43	149.5
MW20-4c	9-Nov-21	67.65	68.64	6.03	1.86	0.87	66.78	251	393	7.3	40	165.2
MW20-4d	15-Nov-20	67.65	68.55	11.84	1.89	0.99	66.66	693	962	12.9	107	755
MW20-4d	10-May-21	67.65	68.55	11.84	1.95	1.05	66.60	269	562	3.9	137	155.6
MW20-4d	3-Aug-21	67.65	68.55	11.84	2.04	1.14	66.51	258	573	4.1	127	114.9
MW20-4d	9-Nov-21	67.65	68.55	11.84	1.92	1.02	66.63	269	589	4.6	128	138.1
MW20-4s	15-Nov-20	67.65	68.60	3.08	1.80	0.85	66.80	272	556	3.2	128	122.4
MW20-4s	10-May-21	67.65	68.60	3.08	1.81	0.86	66.79	668	1,010	15.4	130	825.3
MW20-4s	3-Aug-21	67.65	68.60	3.08	2.07	1.12	66.53	648	982	16.4	101	675.2
MW20-4s	9-Nov-21	67.65	68.60	3.08	1.86	0.91	66.74	671	1,030	18.9	114	773.9
MW20-5d	15-Nov-20	66.34	67.08	14.73	1.45	0.71	65.63	287	436	21.6	52	72.6
MW20-5d	10-May-21	66.34	67.08	14.73	1.41	0.67	65.67	282	452	12.7	52	79.2
MW20-5d	3-Aug-21	66.34	67.08	14.73	1.64	0.90	65.44	283	438	3.6	52	63.5
MW20-5d	9-Nov-21	66.34	67.08	14.73	1.42	0.68	65.66	283	438	8.9	52	63.5
MW20-5s	15-Nov-20	66.34	66.72	3.83	1.00	0.62	65.72	388	427	8	6	202.7
MW20-5s	10-May-21	66.34	66.72	3.83	1.35	0.97	65.37	349	410	7.7	6	205.9
MW20-5s	3-Aug-21	66.34	66.72	3.83	1.59	1.21	65.13	348	411	8.6	6	161.3
MW20-5s	9-Nov-21	66.34	66.72	3.83	1.24	0.86	65.48	353	419	9.4	6	183.6
MW20-5t	15-Nov-20	66.34	67.06	10.55	1.47	0.75	65.59	385	415	4.4	15	78.5
MW20-5t	10-May-21	66.34	67.06	10.55	1.43	0.71	65.63	363	420	4.9	16	119.2
MW20-5t	3-Aug-21	66.34	67.06	10.55	1.67	0.95	65.39	362	419	4.8	18	41.2
MW20-5t	9-Nov-21	66.34	67.06	10.55	1.42	0.70	65.64	337	423	7	17	47.8
MW20-6D	15-Nov-20	67.18	68.08	8.28	1.99	1.09	66.09	319	975	2.4	276	458.8
MW20-6D	10-May-21	67.18	68.08	8.28	2.01	1.11	66.07	306	936	3	260	444.5
MW20-6D	3-Aug-21	67.18	68.08	8.28	2.16	1.26	65.92	309	923	3.5	248	433.8
MW20-6D	9-Nov-21	67.18	68.08	8.28	1.95	1.05	66.13	315	975	4	262	422.9
MW20-6s	15-Nov-20	67.18	68.09	3.20	2.03	1.12	66.06	325	800	4.7	168	427.2
MW20-6s	10-May-21	67.18	68.09	3.20	2.04	1.13	66.05	319	884	3.2	220	411.3
MW20-6s	3-Aug-21	67.18	68.09	3.20	2.16	1.25	65.93	320	897	3.3	222	407.2
MW20-6s	9-Nov-21	67.18	68.09	3.20	1.99	1.08	66.10	324	949	4.2	239	404.7
MW20-6t	15-Nov-20	67.18	68.10	5.10	2.03	1.11	66.07	322	910	2.6	236	370.8
MW20-6t	10-May-21	67.18	68.10	5.10	2.04	1.12	66.06	308	910	3	250	382.4
MW20-6t	3-Aug-21	67.18	68.10	5.10	2.14	1.22	65.96	307	910	3.2	225	379.9
MW20-6t	9-Nov-21	67.18	68.10	5.10	1.99	1.07	66.11	322	1,040	3.8	283	389.9
MW20-7c	15-Nov-20	66.10	66.65	6.47	1.52	0.97	65.13	537	588	12.6	13	100.6
MW20-7c	10-May-21	66.10	66.65	6.47	3.40	2.85	63.25	505	598	14	13	143.6
MW20-7c	3-Aug-21	66.10	66.65	6.47	3.42	2.87	63.23	504	595	15.6	13	91.5
MW20-7c	9-Nov-21	66.10	66.65	6.47	3.68	3.13	62.97	518	611	17.1	11	115.4
MW20-7d	15-Nov-20	66.10	66.80	16.27	1.21	0.51	65.59	332	560	3.4	94	189.7
MW20-7d	10-May-21	66.10	66.80	16.27	1.18	0.48	65.62	321	563	4.5	94	191.3
MW20-7d	3-Aug-21	66.10	66.80	16.27	1.49	0.79	65.31	325	558	5.1	94	186.3
MW20-7d	9-Nov-21	66.10	66.80	16.27	1.78	1.08	65.02	328	571	5.7	87	187.2

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
MW20-7s	15-Nov-20	66.10	66.73	3.33	1.73	1.10	65.00	459	516	7.5	13	177.9
MW20-7s	10-May-21	66.10	66.73	3.33	1.77	1.14	64.96	469	521	8.4	12	161.6
MW20-7s	3-Aug-21	66.10	66.73	3.33	2.20	1.57	64.53	445	521	9.7	12	186.1
MW20-7s	9-Nov-21	66.10	66.73	3.33	1.84	1.21	64.89	460	541	10.4	11	192.7
MW20-8c	15-Nov-20	65.50	66.26	6.38	1.33	0.57	64.93	392	465	8.5	10	101.5
MW20-8c	10-May-21	65.50	66.26	6.38	1.38	0.62	64.88	376	472	9.5	10	121.3
MW20-8c	3-Aug-21	65.50	66.26	6.38	1.24	0.48	65.02	374	463	10.7	11	103.1
MW20-8c	9-Nov-21	65.50	66.26	6.38	1.35	0.59	64.91	378	469	11.6	9	148.4
MW20-8d	15-Nov-20	65.50	66.25	11.79	0.53	-0.22	65.72	301	632	2.7	128	281.7
MW20-8d	10-May-21	65.50	66.25	11.79	0.53	-0.22	65.72	291	614	3.4	120	279.2
MW20-8d	3-Aug-21	65.50	66.25	11.79	0.81	0.06	65.44	286	640	4	129	283.3
MW20-8d	9-Nov-21	65.50	66.25	11.79	0.59	-0.16	65.66	295	613	4.9	111	282.4
MW20-8s	15-Nov-20	65.50	66.22	3.45	1.47	0.75	64.75	405	476	6.6	16	186.1
MW20-8s	10-May-21	65.50	66.22	3.45	1.63	0.91	64.59	389	473	7.1	15	205
MW20-8s	3-Aug-21	65.50	66.22	3.45	1.34	0.62	64.88	395	482	8.4	12	199.3
MW20-8s	9-Nov-21	65.50	66.22	3.45	1.59	0.87	64.63	397	486	9.5	14	229.8
MW20-9d	15-Nov-20	65.94	66.75	21.62	2.10	1.29	64.65	379	2,290	7	763	69.4
MW20-9d	10-May-21	65.94	66.75	21.62	17.66	16.85	49.09	368	2,180	6	680	74.4
MW20-9d	3-Aug-21	65.94	66.75	21.62	18.02	17.21	48.73	370	2,030	6.8	590	58.7
MW20-9d	9-Nov-21	65.94	66.75	21.62	15.69	14.88	51.06	381	1,940	6.5	630	49.6
MW20-9s	15-Nov-20	65.94	66.52	3.44	1.89	1.31	64.63	487	574	11.4	29	200.4
MW20-9s	10-May-21	65.94	66.52	3.44	1.93	1.35	64.59	455	573	12.1	29	215.2
MW20-9s	3-Aug-21	65.94	66.52	3.44	2.09	1.51	64.43	460	582	16.3	29	206.1
MW20-9s	9-Nov-21	65.94	66.52	3.44	2.01	1.43	64.51	345	518	11.9	67	110.6
MW20-9t	15-Nov-20	65.94	66.75	16.23	1.71	0.90	65.04	332	497	9.9	69	99
MW20-9t	10-May-21	65.94	66.75	16.23	1.67	0.86	65.08	345	505	11.8	68	134.7
MW20-9t	3-Aug-21	65.94	66.75	16.23	1.89	1.08	64.86	315	499	8.2	70	89
MW20-9t	9-Nov-21	65.94	66.75	16.23	1.71	0.90	65.04	471	602	15.5	32	206.1
MW20-10c	15-Nov-20	64.93	65.81	6.06	1.73	0.85	64.08	634	878	11.8	83	114.5
MW20-10c	10-May-21	64.93	65.81	6.06	2.28	1.40	63.53	610	871	14.6	100	142.5
MW20-10c	3-Aug-21	64.93	65.81	6.06	2.16	1.28	63.65	613	871	16.2	84	116.1
MW20-10c	9-Nov-21	64.93	65.81	6.06	2.49	1.61	63.32	622	878	17.5	79	148.2
MW20-10d	15-Nov-20	64.93	65.73	18.09	1.59	0.79	64.14	428	617	5.2	76	59.4
MW20-10d	10-May-21	64.93	65.73	18.09	1.59	0.79	64.14	397	602	6.3	90	66
MW20-10d	3-Aug-21	64.93	65.73	18.09	1.83	1.03	63.90	397	615	7.1	75	63.5
MW20-10d	9-Nov-21	64.93	65.73	18.09	1.74	0.94	63.99	401	629	7.6	75	74.2
MW20-10s	15-Nov-20	64.93	65.74	3.39	1.59	0.78	64.15	557	728	5	50	231.4
MW20-10s	10-May-21	64.93	65.74	3.39	1.79	0.98	63.95	534	780	5.3	60	281.7
MW20-10s	3-Aug-21	64.93	65.74	3.39	1.79	0.98	63.95	535	767	6.5	52	246.2
MW20-10s	9-Nov-21	64.93	65.74	3.39	1.74	0.93	64.00	544	780	7.1	50	292.4
MW20-11C	15-Nov-20	66.25	67.10	6.83	2.01	1.16	65.09	707	890	16.3	76	114.5
MW20-11C	10-May-21	66.25	67.10	6.83	2.02	1.17	65.08	660	890	19.3	76	125.2
MW20-11C	3-Aug-21	66.25	67.10	6.83	2.64	1.79	64.46	656	890	21.5	76	94.7
MW20-11C	9-Nov-21	66.25	67.10	6.83	2.19	1.34	64.91	659	884	23.7	74	133.4
MW20-11D	15-Nov-20	66.25	67.00	22.42	-	-	-	-	-	-	-	-
MW20-11D	10-May-21	66.25	67.00	22.42	22.67	21.92	44.33	-	-	-	-	-
MW20-11D	3-Aug-21	66.25	67.00	22.42	23.01	22.26	43.99	-	-	-	-	-
MW20-11D	9-Nov-21	66.25	67.00	22.42	22.37	21.62	44.63	-	-	-	-	-

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
MW20-11S	15-Nov-20	66.25	66.82	3.45	1.71	1.14	65.11	538	663	19.8	46	179.5
MW20-11S	10-May-21	66.25	66.82	3.45	1.76	1.19	65.06	489	638	13.6	44	195.2
MW20-11S	3-Aug-21	66.25	66.82	3.45	2.42	1.85	64.40	495	647	15.4	46	181.1
MW20-11S	9-Nov-21	66.25	66.82	3.45	1.67	1.10	65.15	499	656	15.8	45	216.6
MW20-12s	15-Nov-20	64.86	65.58	3.59	1.64	0.92	63.94	478	599	4.7	18	274.6
MW20-12s	10-May-21	64.86	65.58	3.59	1.63	0.91	63.95	445	616	5.3	17	280.3
MW20-12s	3-Aug-21	64.86	65.58	3.59	1.73	1.01	63.85	444	604	6.7	17	286.9
MW20-12s	9-Nov-21	64.86	65.58	3.59	1.54	0.82	64.04	453	627	7	16	311.7
MW20-15t	15-Nov-20	67.36	68.34	12.72	1.86	0.88	66.48	524	640	10.6	50	71
MW20-15t	10-May-21	67.36	68.34	12.72	1.84	0.86	66.50	828	613	12.8	48	349.5
MW20-15t	3-Aug-21	67.36	68.34	12.72	2.05	1.07	66.29	502	593	12.4	48	32.1
MW20-15t	9-Nov-21	67.36	68.34	12.72	1.89	0.91	66.45	578	586	13	48	36.2
MW20-17s	15-Nov-20	64.99	65.96	3.14	1.61	0.64	64.35	533	631	9.6	25	132.9
MW20-17s	10-May-21	64.99	65.96	3.14	1.66	0.69	64.30	504	647	11.1	25	135.4
MW20-17s	3-Aug-21	64.99	65.96	3.14	2.03	1.06	63.93	498	637	12.1	24	106.5
MW20-17s	9-Nov-21	64.99	65.96	3.14	1.71	0.74	64.25	508	647	13.3	24	143.6
MW20-18D	15-Nov-20	65.98	66.84	13.12	9.24	8.37	57.60	-	-	-	-	-
MW20-18D	10-May-21	65.98	66.84	13.12	12.45	11.58	54.39	627	2,610	13.8	**910**	68.7
MW20-18D	3-Aug-21	65.98	66.84	13.12	-	-	-	-	-	-	-	-
MW20-18D	9-Nov-21	65.98	66.84	13.12	-	-	-	-	-	-	-	-
MW20-19A	15-Nov-20	66.02	67.71	17.71	0.00	-1.69	67.71	341	447	6.1	14	289
MW20-19A	10-May-21	66.02	67.71	17.71	0.00	-1.69	67.71	329	396	5.9	<1	87.4
MW20-19A	3-Aug-21	66.02	67.71	17.71	0.00	-1.69	67.71	330	389	5.5	13	69.2
MW20-19A	9-Nov-21	66.02	67.71	17.71	0.00	-1.69	67.71	342	421	6.1	14	96.5
MW20-19B	15-Nov-20	66.02	67.76	13.38	0.00	-1.74	67.76	365	530	10.6	16	308.1
MW20-19B	10-May-21	66.02	67.76	13.38	0.30	-1.44	67.46	433	410	7.1	14	238.8
MW20-19B	3-Aug-21	66.02	67.76	13.38	0.00	-1.74	67.76	341	395	5.9	14	79.9
MW20-19B	9-Nov-21	66.02	67.76	13.38	0.00	-1.74	67.76	351	416	6.8	14	100.6
MW20-19C	15-Nov-20	66.02	67.53	8.85	0.15	-1.36	67.38	458	620	11.2	27	116.7
MW20-19C	10-May-21	66.02	67.53	8.85	1.09	-0.42	66.44	461	599	13.8	20	61.9
MW20-19C	3-Aug-21	66.02	67.53	8.85	0.33	-1.18	67.20	464	567	9.9	19	30.5
MW20-19C	9-Nov-21	66.02	67.53	8.85	0.25	-1.26	67.28	477	612	11.4	19	82.4
MW20-19D	15-Nov-20	66.02	67.41	2.93	1.40	0.01	66.01	513	592	12.1	14	280.2
MW20-19D	10-May-21	66.02	67.41	2.93	1.39	0.00	66.02	522	613	13	11	273.6
MW20-19D	3-Aug-21	66.02	67.41	2.93	1.42	0.03	65.99	539	627	13	12	277.7
MW20-19D	9-Nov-21	66.02	67.41	2.93	1.41	0.02	66.00	566	682	16	15	300.9
MW20-20A	15-Nov-20	66.10	67.90	19.70	0.10	-1.70	67.80	288	382	5.8	19	86.5
MW20-20A	10-May-21	66.10	67.90	19.70	0.00	-1.80	67.90	278	369	5.2	21	99.7
MW20-20A	3-Aug-21	66.10	67.90	19.70	0.34	-1.46	67.56	279	374	4.4	25	90.6
MW20-20A	9-Nov-21	66.10	67.90	19.70	0.28	-1.52	67.62	282	389	5	26	94.7
MW20-20B	15-Nov-20	66.10	67.81	17.05	1.74	0.03	66.07	301	499	6.8	31	65.1
MW20-20B	10-May-21	66.10	67.81	17.05	0.00	-1.71	67.81	371	450	7.6	26	492.9
MW20-20B	3-Aug-21	66.10	67.81	17.05	0.00	-1.71	67.81	296	401	4.8	30	74.9
MW20-20B	9-Nov-21	66.10	67.81	17.05	0.00	-1.71	67.81	299	404	5.7	28	109.7

TABLE 6 GROUNDWATER MONITORING DATA - FALL 2020 TO FALL 2021

17125 Lafleche Road, Moose Creek, Ontario

Monitoring Well ID	Date	Ground Elev.	Top Pipe Elev.	Well Depth	Groundwater Depth	Groundwater Depth	Groundwater Elevation	Alkalinity	TDS	DOC	Chloride	Hardness
		m asl	m asl	m bg	m bmp	m bg	m asl	mg/L	mg/L	mg/L	mg/L	mg/L
MW20-20C	15-Nov-20	66.10	67.11	9.03	3.14	2.13	63.97	801	1,310	36.6	136	100.6
MW20-20C	10-May-21	66.10	67.11	9.03	2.07	1.06	65.04	789	1,260	41	154	89
MW20-20C	3-Aug-21	66.10	67.11	9.03	0.68	-0.33	66.43	795	1,220	37	135	69.2
MW20-20C	9-Nov-21	66.10	67.11	9.03	0.74	-0.27	66.37	813	1,250	31	142	98.8
MW20-20D	15-Nov-20	66.10	67.05	2.08	1.04	0.09	66.01	663	812	14.5	53	240
MW20-20D	10-May-21	66.10	67.05	2.08	0.99	0.04	66.06	649	845	12.2	63	234.1
MW20-20D	3-Aug-21	66.10	67.05	2.08	1.28	0.33	65.77	669	871	11.9	71	196.8
MW20-20D	9-Nov-21	66.10	67.05	2.08	1.01	0.06	66.04	732	962	16	71	265.5

Notes

MW20-series well elevations measured by Topcon GNSS device, to centimetre accuracy

Elevations from other locations obtained from previous reports

Groundwater monitoring was conducted by others

m asl = metres above sea level

m bmp = metres below measurement point (top of pipe)

m bg = metres below ground

Table 7
Moisture Surplus and Unit Infiltration Rate
Lafleche Expansion, Moose Creek

	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Daily Average Temperature	(°C)	-10.2	-9.2	-2.9	5.9	12.8	18.1	20.3	19.1	14.5	7.8	1.5	-6.1	
Precipitation	(mm)	83.7	59.8	69.2	83.1	91	101	99.5	96	103.3	94.2	95.5	79.2	1055.5
Potential Evapotranspiration	(mm)	0	0	0.0	27.7	62.5	90.0	101.5	95.2	71.3	37.2	6.6	0	492.0
Latitude correction for 45° N		0.76	0.87	0.99	1.12	1.24	1.31	1.28	1.18	1.05	0.92	0.80	0.74	
Potential Evapotranspiration, with latitude correction		0.0	0.0	0.0	31.0	77.5	117.4	129.9	112.4	74.9	34.0	5.2	0.0	582.4
Moisture surplus	(mm)	83.7	59.8	69.2	52.1	13.5	-16.4	-30.4	-16.4	28.4	60.2	90.3	79.2	473.1
General trend		Wetting	Wetting	Wetting	Wetting	Wetting	Drying	Drying	Drying	Wetting	Wetting	Wetting	Wetting	
Evaporation per day	(mm/day)	0	0	0	1.035	2.585	3.915	4.331	3.745	2.495	1.134	0.174	0.000	
Infiltration Rate (factor = 0.50)	(mm)	41.9	29.9	34.6	26.0	6.7	-8.2	-15.2	-8.2	14.2	30.1	45.1	39.6	237

Notes.
1. Moisture surplus calculations based on Thornthwaite method
2. Values are approximate. Numerous site specific and meteorological factors can modify values.
3. Infiltration calculations based on Government of Ontario (2003) method.
4. Infiltration factor sum of slope of 1.7 m/1000 m (subfactor=0.25), clayey silt (subfactor=0.15), cultivate ground cover (subfactor=0.10).
5. Data based on St. Albert climate station, normals from 1981-2010.

APPENDIX III

BOREHOLE/MONITORING WELL LOGS

CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-1(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.64	
LOCATION: 17125 Lafleche Road, Moose Creek	NORTHING: 5018053	EASTING: 500681	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	67							Top of Pipe elevation = 67.36 m.
		very loose, wet, dark brown TOPSOIL, high organics, trace wood chips, trace rootlets	0								
			1	66	2		1		2		Advanced casing through frozen soil to 0.76 mbgs.
		firm light grey	2	65	0		2A		0		
		----- -----	3	64	89		2B				Shear vane test at 2.6 mbgs = 89 kPa, remould = 19 kPa.
			4	63	0		3		0		
		light grey mottled reddish brown		62	9						Shear vane test at 4.4 mbgs = 9 kPa, remould = 0 kPa.
		very soft	5		0		4		0		
		wet SILTY CLAY trace sand	6	61	14						Shear vane test at 6.1 mbgs = 14 kPa, remould = 5 kPa.
		----- light grey	7	60	0	96	5		0		
				59	28						Shear vane test at 8.2 mbgs = 28 kPa, remould = 5 kPa.
			8	58	0	86	6		0		
			9	57	26						Shear vane test at 9.7 mbgs = 26 kPa, remould = 5 kPa.
		soft -----	10	56	0		7		0		
		dark grey	11		26						Shear vane test at 11.7 mbgs = 26 kPa, remould = 7 kPa. Refusal on granite boulder at 12.2 mbgs.
		CLAY, some silt, trace sand, trace gravel	12	55	50/110	64	8		50/110		
		very dense		54							
		----- wet, grey coarse	13								
		loose GRAVELLY SAND trace silt, trace clay	14	53							
		----- very dense (TILL)		52	5		9		5		
		1st Core Run 15.24-15.54 mbgs weathered LIMESTONE with SHALE interbeds	15		66		10		66		RQD = 0% TCR = 98%
			16	51			1				RQD = 85% TCR = 100%
		2nd Core Run 15.54-16.91 mbgs weathered LIMESTONE to 15.85 mbgs Competent LIMESTONE recovered at 15.85	17	50			2				RQD = 100% TCR = 100%
		3rd Core Run 16.91-18.54 mbgs Competent LIMESTONE	18	49			3				MW20-1(D) Screen interval between 17.8 to 19.4 mbgs.
				48							

LOGGED BY: RH | DRILLING DATE: Jan 21-22, 2020

REVIEWED BY: SR

CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-1(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.64	
LOCATION: 17125 Lafleche Road, Moose Creek	NORTHING: 5018053	EASTING: 500681	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		50 mm clay seam at 17.1 mbgs 4th Core Run 18.54-19.38 mbgs Competent LIMESTONE	19				4				RQD = 100% TCR = 100%
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-1(T)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.64	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018054	EASTING: 500679	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-1(D) for stratigraphy information.	0	67							Top of Pipe Elevation = 67.293 m
		TOPSOIL	1	66							
		SILTY CLAY	2–11	65–56							Bentonite pellets used as backfill to surface.
		CLAY, some silt, trace sand, trace gravel	12	55							
		TILL	13–14	54–53							#2 silica sand backfilled 0.3 m above screen. 1.52 m screen installed between 13.0 m to 14.6 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-1(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.64	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018055	EASTING: 500680	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-1(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 67.277 m.
▼		TOPSOIL	0								
			1	66							Bentonite pellets used as backfill to surface.
		SILTY CLAY	2	65							#2 silica sand backfilled 0.3 m above screen.
			3	64							1.52 m screen installed between 2.4 m to 3.8 mbgs.
		END OF BOREHOLE		63							

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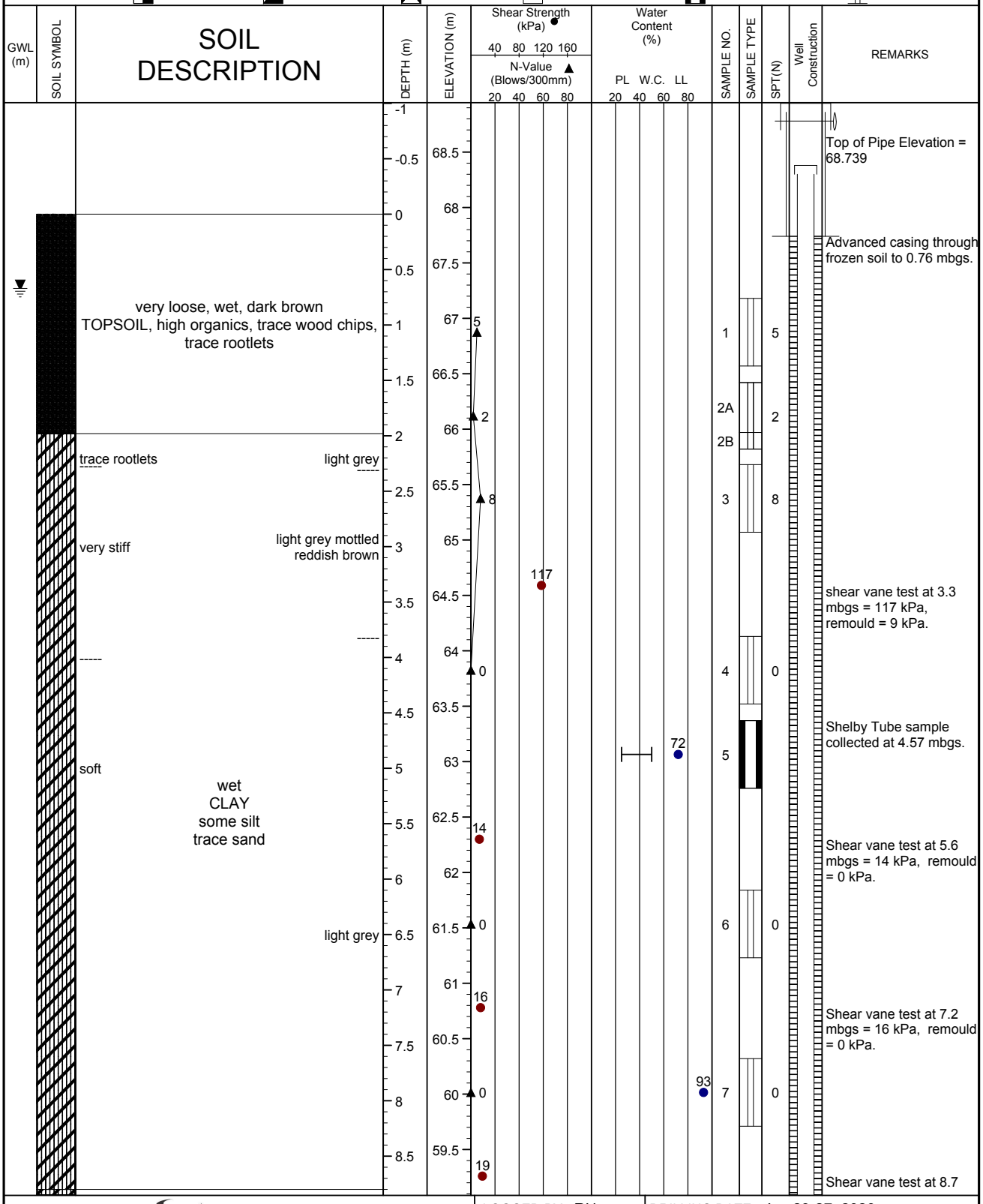
CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-2(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017078	EASTING: 501125	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-2(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017078	EASTING: 501125	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%)	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		soft, light grey CLAY some silt trace sand	9	59							mbgs = 19 kPa, remould = 1 kPa.
			9.5	58.5	0		8		0		
			10	58	33						Shear vane test at 10.2 mbgs = 33 kPa, remould = 4 kPa.
		firm, dark grey	10.5	57.5							
			11	57	0		9		0		
			11.5	56.5	33						Shear vane test at 11.7 mbgs = 33 kPa, remould = 2 kPa.
			12	56							
		wet CLAY and SILT trace sand	12.5	55.5	0		10		0		
			13	55							
			13.5	54.5	33						Shear vane test at 13.3 mbgs = 33 kPa, remould = 4 kPa.
			14	54	0	55	11		0		
			14.5	53.5							
		grey with black speckling	15	53							
			15.5	52.5	0		12		0		
			16	52							
		grey	16.5	51.5							
			17	51	0		13		0		
			17.5	50.5							
		dense compact wet, grey, coarse GRAVELLY SAND trace silt, trace clay (TILL)	18	50	34		14		34		Encountered Till layer at 17.8 mbgs.
			18.5	49.5	10		15		10		

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-2(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017078	EASTING: 501125	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
	wet, grey, coarse GRAVELLY SAND, trace silt, trace clay (TILL) ----- very dense	19	49	70/125		16		70/125		RQD = 22% TCR = 42%
	1st Core Run 19.2 - 20.0 mbgs dark grey to black highly weathered SHALE (possible TILL)	19.5	48.5			1				
		20	48							RQD = 9% TCR = 53%
	2nd Core Run 20.0 - 21.5 mbgs dark grey to black moderate to highly fractured SHALE with clay seams	20.5	47.5			2				
		21	47							
	3rd Core Run 21.5 - 21.8 mbgs dark grey moderate to highly fractured, weathered SHALE with occassional silt and clay seams	21.5	46.5			3				RQD = 0% TCR = 87%
		22	46			4				RQD = 57% TCR = 73%
	4th Core Run 21.8 - 23.0 mbgs dark grey moderately fractured competent LIMESTONE 50 mm clay seam at 22.2 mbgs.	22.5	45.5							
		23	45							RQD = 72% TCR = 98%
	5th Core Run 23.0 - 24.4 mbgs dark grey competent LIMESTONE with SHALE interbeds 127 mm void at 23.7 mbgs.	23.5	44.5			5				
		24	44							MW20-2(D) Screen interval between 23.8 to 25.3 mbgs. RQD = 94% TCR = 98%
	6th Core Run 24.4 - 25.3 mbgs dark grey copmetent LIMESTONE with SHALE interbeds	24.5	43.5			6				
		25	43							
	END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-2(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017079	EASTING: 501124	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-2(D) for stratigraphy information.	-1								Top of Pipe Elevation = 68.712
		TOPSOIL	0	68							
			1	67							
			2	66							
		CLAY some silt trace sand	3	65							Bentonite pellets used as backfill to surface.
▼			4	64							
			5	63							#2 silica sand backfilled 0.3 m above screen.
			6	62							1.52 m screen installed between 5.5 m to 7.0 mbgs.
				61							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-2(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017078	EASTING: 501123	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-2(D) for stratigraphy information.	-1								Top of Pipe Elevation = 68.835 m.
▼		TOPSOIL	0	68							
			1	67							Bentonite pellets used as backfill to surface.
			2	66							#2 silica sand backfilled 0.3 m above screen.
		CLAY some silt trace sand	3	65							1.52 m screen installed between 2.5 m to 4.0 mbgs.
			4	64							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-3(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.21	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017691	EASTING: 500889	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	68							Top of Pipe Elevation = 68.022 m.
		very loose, wet, dark brown TOPSOIL, high organics, trace wood chips, trace rootlets	0	67							Advanced casing through frozen soil to 0.76 mbgs.
▼		light grey ----- firm	1	66	2		1		2		
			2	65	1		2A 2B		1		
			3	64	4		3		4		
			4	63	0		4		0		
		light grey mottled reddish brown -----			28						shear vane test at 3.9 mbgs = 28 kPa, remould = 5 kPa.
		wet SILTY CLAY	5	62	0		5		0		
		soft -----	6	61	0	86	6		0		
							7				Shebly Tube sample collected at 6.10 mbgs.
		light grey -----	7	60	0		8		0		
		light grey with black speckling -----	8	59	0		9		0		
		very dense	9	58	0		10		0		
					50/130		11		50/130		Advanced rock core from 9.3 to 10.7 mbgs through boulder.
		compact -----	10	57		10					
		wet, grey coarse SANDY GRAVEL some silt, trace clay (TILL) large angular limestone gravel -----	11	56	37		12		37		
			12	55	51		13		51		
		dense	13	54							
			14	53	36		14		36		
		1st Core Run 14.5 - 15.4 mbgs competent LIMESTONE with occassional SHALE interbeds	15	52			1				RQD = 48% TCR = 100%
		2nd Core Run 15.4 - 16.9 mbgs Competent LIMESTONE with occassional SHALE interbeds	16	51			2				RQD = 26% TCR = 100% MW20-3(D) Screen interval between 15.4 to 16.9 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-3(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.21	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017693	EASTING: 500888	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-3(D) for stratigraphy information.	-1	68							Top of Pipe Elevation = 67.918 m.
		TOPSOIL	0	67							
			1	66							
			2	65							
			3	64							
▼		SILTY CLAY	4	63							Bentonite pellets used as backfill to surface.
			5	62							#2 silica sand backfilled 0.3 m above screen.
			6	61							1.52 m screen installed between 5.5 m to 7.0 mbgs.
		END OF BOREHOLE	7								

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CLIENT: GFL	METHOD: Casing		**MW20-3(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.21	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017695	EASTING: 500887	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-3(D) for stratigraphy information.	-1	68							Top of Pipe Elevation = 67.913 m.
		TOPSOIL	0	67							
			1	66							Bentonite pellets used as backfill to surface.
▼		SILTY CLAY	2	65							#2 silica sand backfilled 0.3 m above screen.
			3	64							1.52 m screen installed between 2.5 m to 3.9 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-4(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.65	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017309	EASTING: 501501	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	68	40 80 120 160 / 20 40 60 80	20 40 60 80					Top of Pipe Elevation = 68.552 m.
		very loose, wet, dark brown TOPSOIL, high organics, trace wood chips, trace rootlets	0								
			1	67	0		1A 1B		0		Advanced casing through frozen soil to 0.76 mbgs.
		stiff ----- light grey	2	66	4		2		4		
			3	65	89						shear vane test at 2.6 mbgs = 89 kPa, remould = 14 kPa.
		----- soft wet SILTY CLAY light grey mottled reddish brown	4	64	0		3		0		
			5	63	0		4		0		
				62	0 19		5		0		
		----- dark grey	6								shear vane test at 5.6 mbgs = 19 kPa, remould = 0 kPa.
			7	61	0		6		0		
			8	60	0	86	7		0		MW20-4(D) Screen interval between 11.3 to 12.7 mbgs.
		very dense, wet, grey, coarse GRAVELLY SAND trace silt, trace clay (TILL)	9	59	50/127		8		50/127		
		1st Core Run 9.29 - 9.45 mbgs moderate weathered LIMESTONE (possible boulder)	10	58	50/25		9 1		50/25		RQD = 0% TCR = 100% RQD = 97% TCR = 99%
		2nd Core Run 9.45 - 10.92 mbgs Competent LIMESTONE with occassional SHALE interbeds	11	57			2				
		3rd Core Run 10.92 - 12.37 mbgs Competent LIMESTONE with occassional SHALE interbeds	12	56			3				RQD = 93% TCR = 100%
		4th Core Run 12.37 - 12.77 mbgs Competent LIMESTONE		55			4				RQD = 70% TCR = 100%
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-4(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.65	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017310	EASTING: 501500	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-4(D) for stratigraphy information.	-1	68							Top of Pipe Elevation = 68.639
		TOPSOIL	0								
▼			1	67							
			2	66							
			3	65							
		SILTY CLAY	4	64							Bentonite pellets used as backfill to surface.
			5	63							#2 silica sand backfilled 0.3 m above screen.
			6	62							Screen installed between 5.6 m to 7.0 mbgs.
			7	61							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-4(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.65	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017308	EASTING: 501500	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-4(D) for stratigraphy information.	-1	68							Top of Pipe Elevation = 68.595 m.
		TOPSOIL	0								
▼			1	67							Bentonite pellets used as backfill to surface.
		SILTY CLAY	2	66							#2 silica sand backfilled 0.3 m above screen.
			3	65							1.52 m screen installed between 2.5 m to 4.0 mbgs.
		END OF BOREHOLE		64							

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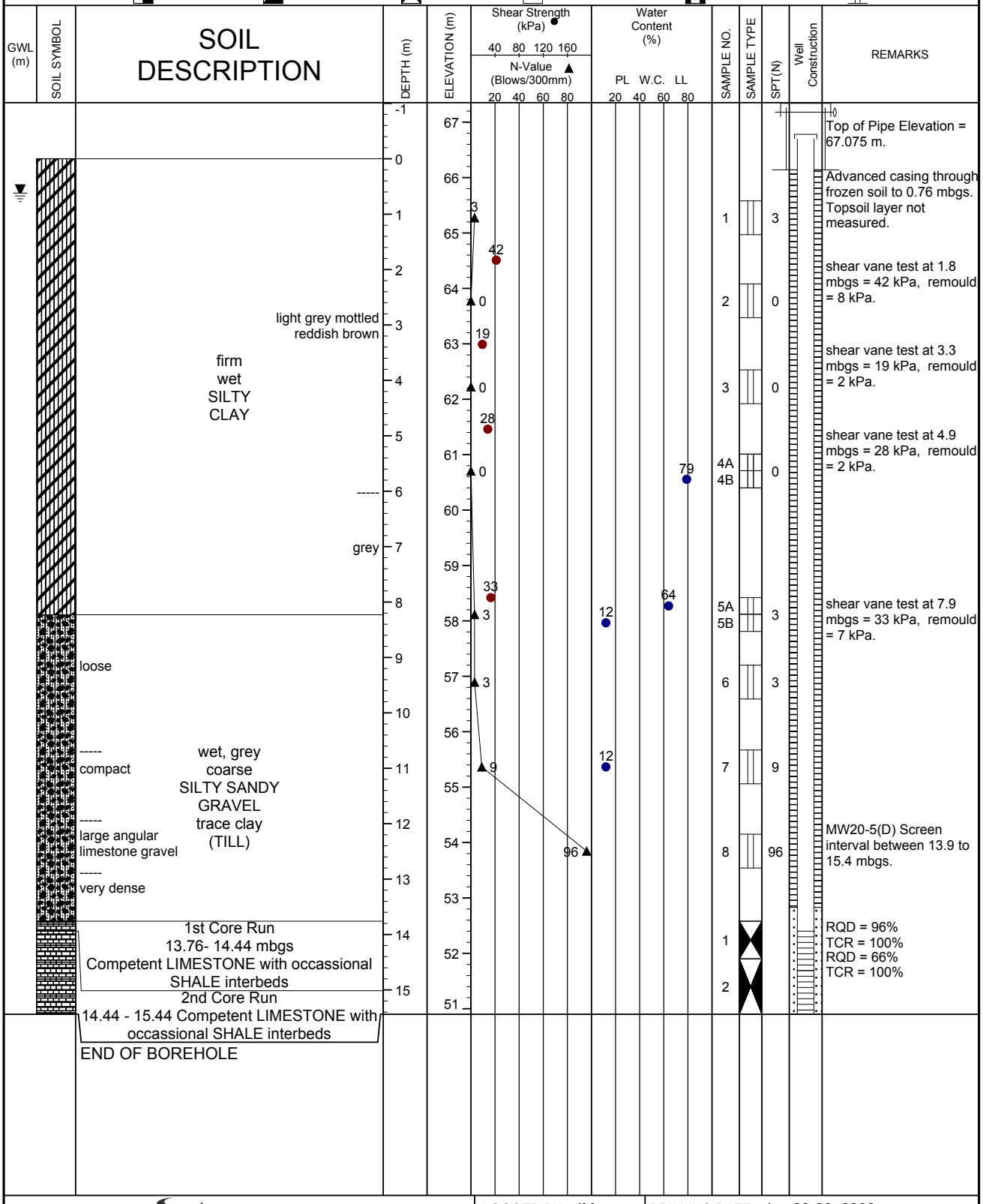
CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-5(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.34	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017917	EASTING: 501278	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



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CLIENT: GFL	METHOD: Casing		**MW20-5(T)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.34	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017918	EASTING: 501277	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-5(D) for stratigraphy information.	-1 to 0	67 to 66						Top of Pipe Elevation = 67.063 m.	
▼		SILTY CLAY	0 to 8	66 to 58						Bentonite pellets used as backfill to surface.	
		TILL	8 to 10	58 to 56						#2 silica sand backfilled 0.3 m above screen. 1.52 m screen installed between 9.6 m to 11.1 mbgs.	
		END OF BOREHOLE	10 to 11	56							

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CLIENT: GFL	METHOD: Casing		**MW20-5(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.34	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017920	EASTING: 501276	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-5(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 66.724 m
▼		SILTY CLAY	0	66							Bentonite pellets used as backfill to surface.
			1	65							#2 silica sand backfilled 0.3 m above screen.
			2	64							1.52 m screen installed between 2.7 m to 4.2 mbgs.
			3	63							
		END OF BOREHOLE	4								

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-6(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.18	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017680	EASTING: 501685	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	68	20 40 60 80	20 40 60 80					Top of Pipe Elevation = 68.076 m
		280 mm of TOPSOIL measured from surface.	0	67							
		stiff light grey mottled reddish brown wet SILT and CLAY trace sand	1	66	3		1		3		Advanced casing through frozen soil to 0.76 mbgs.
			2	65	70 1		2		1		shear vane test at 1.8 mbgs = 70 kPa, remould = 12 kPa.
			3	64	0	54	3		0		
		firm grey	4	63	47 0	69	4		0		shear vane test at 4.8 mbgs =47 kPa, remould was not taken vane tip on gravel.
		loose, wet, grey, coarse GRAVELLY SAND trace silt, trace clay (TILL)	5	62	1		5A 5B		1		
		1st Core Run 5.58 - 6.4 mbgs TILL (possible very weathered LIMESTONE until 6 mbgs)	6	61			1				RQD = 20% TCR = 98%
		2nd Core Run 6.4 - 7.94 mbgs Competent LIMESTONE with occassional SHALE interbeds	7	60			2				RQD = 72% TCR = 96%
		3rd Core Run 7.9 - 9.2 mbgs Competent LIMESTONE with occassional SHALE interbeds	8	59			3				RQD = 89% TCR = 99% MW20-6(D) Screen interval between 7.7 to 9.2 mbgs.
			9	58							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-6(T)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.18	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017681	EASTING: 501686	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
▼		Refer to MW20-6(D) for stratigraphy information.	-1 / 0	68 / 67							Top of Pipe Elevation = 68.099 m.
		SILT and CLAY	1 / 2 / 3 / 4	66 / 65 / 64 / 63							Bentonite pellets used as backfill to surface.
		TILL	5 / 6	62							#2 silica sand backfilled 0.3 m above screen. 0.82 m screen installed between 5.2 m to 6.0 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-6(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.18	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017681	EASTING: 501685	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
▼		Refer to MW20-6(D) for stratigraphy information.	-1 to 0	68 to 67						Top of Pipe Elevation = 68.093 m.	
		SILT and CLAY	1 to 4	66 to 64						Bentonite pellets used as backfill to surface. #2 silica sand backfilled 0.3 m above screen. 1.52 m screen installed between 2.7 m to 4.1 mbgs.	
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-7(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.10	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018283	EASTING: 501078	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	67	40 80 120 160 / 20 40 60 80	20 40 60 80					Top of Pipe Elevation = 66.798 m.
▼		very loose, wet, dark brown TOPSOIL, high organics, trace wood chips, trace rootlets	0	66							Advanced casing through frozen soil to 0.76 mbgs.
			1	65	2		1A 1B		2		
		stiff light grey	2	64	89						shear vane test at 1.83 mbgs = 89 kPa, remould = 18 kPa.
			3	63	0 19		2		0		shear vane test at 3.35 mbgs = 19 kPa, remould = 2 kPa.
		light grey mottled reddish brown	4	62	0		3		0		
		-----	5	61	0		4		0		
		soft	6	60	21						shear vane test at 6.10 mbgs = 21 kPa, remould = 2 kPa.
		wet SILTY CLAY	7	59							
		-----	8	58	0		5		0		
		-----	9	57	33						shear vane test at 6.10 mbgs = 33 kPa, remould = 5 kPa.
		firm grey	10	56							
			11	55	0		6		0		
			12	54							
			13	53	0		7		0		
		very dense, wet, grey coarse GRAVELLY SAND trace silt, trace clay (TILL)	14	52	75		8		75		RQD = 74% TCR = 100%
		1st Core Run 14.02 - 15.46 mbgs competent LIMESTONE with occassional SHALE interbeds	15	51			1				
		2nd Core Run 15.46 - 16.91 mbgs Competent LIMESTONE with occassional SHALE interbeds	16	50			2				RQD = 99% TCR = 100% MW20-7(D) Screen interval between 15.4 to 16.9 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-7(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.10	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018284	EASTING: 501077	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-7(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 66.648 m.
			0	66							
			1	65							
		SILTY CLAY	2	64							Bentonite pellets used as backfill to surface.
			3	63							
▼			4	62							#2 silica sand backfilled 0.3 m above screen.
			5	61							
			6	60							1.52 m screen installed between 5.5 m to 7.0 mbgs.
			7								
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-7(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.10	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018286	EASTING: 501076	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-7(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 66.733 m
▼			0	66							
		SILTY CLAY	1	65							Bentonite pellets used as backfill to surface.
			2	64							#2 silica sand backfilled 0.3 m above screen.
			3	63							1.52 m screen installed between 2.4 m to 4.0 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-8(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.5	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018409	EASTING: 501404	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
			-1	66							Top of Pipe Elevation = 66.251 m.
		280 mm of TOPSOIL measured from surface	0	65							Advanced casing through frozen soil to 0.76 mbgs.
		light grey mottled reddish brown	1	64	0, 2		1		0		
		-----	2	63	0		2		2		
		light grey	3	62		72	3		0		
		-----	4	61	14		4		0		Shelby Tube sample collected at 3 mbgs
		soft wet SILTY CLAY trace sand	5	60	0		5		0		shear vane test at 4.1 mbgs = 14 kPa, remould = 0 kPa.
		grey	6	59	0		6		0		
			7	58	23, 0	66	7		0		shear vane test at 4.8 mbgs = 23 kPa, no remould.
		----- shale fragments	9	56	50/25		8		50/25		MW20-8(D) Screen interval between 10.95 to 12.5 mbgs.
		1st Core Run 9.48 - 10.8 mbgs slightly weathered LIMESTONE with occassional SHALE interbeds	10	55			1				RQD = 89% TCR = 99%
		2nd Core Run 10.8 - 12.5 mbgs Competent LIMESTONE with occassional SHALE interbeds	11	54			2				RQD = 83% TCR = 92%
			12	53							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-8(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.5	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018410	EASTING: 501403	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-8(D) for stratigraphy information.	-1	66							Top of Pipe Elevation = 66.262 m
▼			0	65							
		SILTY CLAY	1	64							
			2	63							
			3	62							Bentonite pellets used as backfill to surface.
			4	61							
			5	60							#2 silica sand backfilled 0.3 m above screen.
			6	59							1.52 m screen installed between 5.6 m to 7.1 mbgs.
		END OF BOREHOLE	7								

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CLIENT: GFL	METHOD: Casing		**MW20-8(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.5	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018410	EASTING: 501404	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-8(D) for stratigraphy information.	-1	66							Top of Pipe Elevation = 66.216 m
▼			0	65							
		SILTY CLAY	1	64							Bentonite pellets used as backfill to surface.
			2	63							#2 silica sand backfilled 0.3 m above screen.
			3	62							1.52 m screen installed between 2.5 m to 4.1 mbgs.
		END OF BOREHOLE	4								

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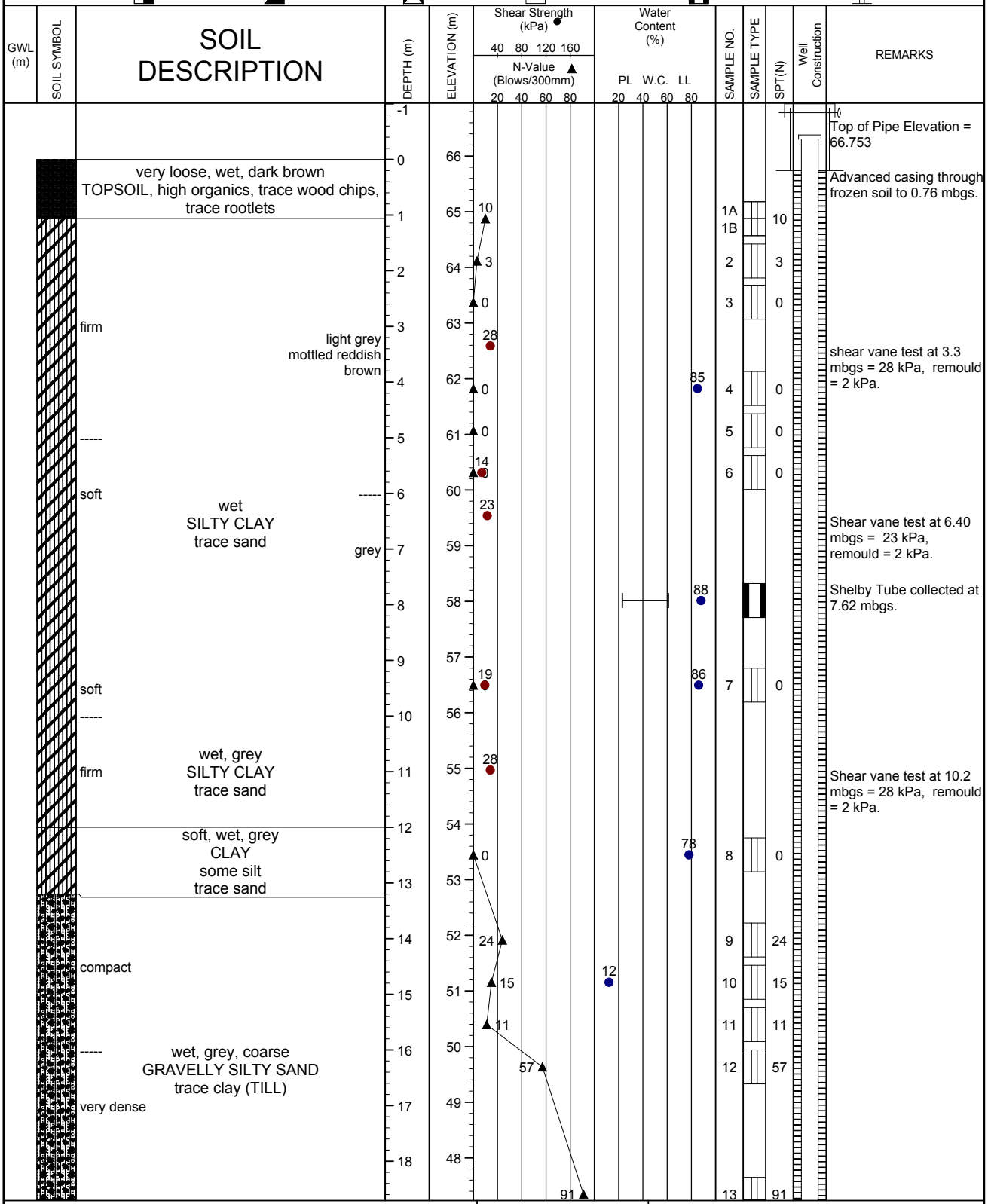
CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-9(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018528	EASTING: 500716	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-9(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018528	EASTING: 500716	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
▼		1st Core Run 19.10 - 19.96 mbgs dark grey weathered LIMESTONE	19	47			1				RQD = 40% TCR = 100%
		2nd Core Run 19.96 - 21.46 mbgs dark grey, moderately fractured LIMESTONE with occassional SHALE interbeds	20 21	46 45			2				RQD = 82% TCR = 98%
		3rd Core Run 21.46 - 22.42 mbgs dark grey LIMESTONE with occassional SHALE interbeds	22	44			3				MW20-9(D) Screen interval between 20.9 to 22.4 mbgs. RQD = 98% TCR = 100%
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-9(T)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018530	EASTING: 500715	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-9(D) for stratigraphy information.	-1								Top pf Pipe Elevation = 66.753 m
		TOPSOIL	0	66							
▼			1	65							
			2	64							
			3	63							
			4	62							
			5	61							Bentonite pellets used as backfill to surface.
			6	60							
		SILTY CLAY	7	59							
			8	58							
			9	57							
			10	56							
			11	55							
			12	54							
			13	53							
			14	52							
		TILL	15	51							#2 silica sand backfilled 0.3 m above screen.
			16	50							1.52 m screen installed between 15.5 m to 17.1 mbgs.
			17	49							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-9(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.94	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018531	EASTING: 500714	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-9(D) for stratigraphy information.	-1								Top of Pipe Elevation = 66.516 m
		TOPSOIL	0	66							
			1	65							Bentonite pellets used as backfill to surface.
▼		SILTY CLAY	2	64							#2 silica sand backfilled 0.3 m above screen.
			3	63							1.52 m screen installed between 2.5 m to 4.0 mbgs.
		END OF BOREHOLE	4	62							

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-10(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.93	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018801	EASTING: 501191	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
			-1	65							Top of Pipe Elevation = 65.725 m
			0								Advanced casing through frozen soil to 0.76 mbgs.
			1	64	5		1		5		
			2	63	0		2		0		
		light grey mottled reddish brown	3	62	0		3		0		Shelby Tube collected at 2.26 mbgs, NO SAMPLE RECOVERY.
			4	61	12		3		0		
		soft	5	60	0		4		0		shear vane test at 4.11 mbgs = 12 kPa, remould = 0 kPa.
		-----	6	59	0		5		0		
		grey ----- trace black speckling	7	58	16						
		wet SILTY CLAY	8	57	0		6		0		shear vane test at 7.16 mbgs = 16 kPa, remould = 0 kPa.
			9	56		80	7		0		Shelby Tube collected at 9.14 mbgs.
		-----	10	55							
		firm	11	54	0		8		0		
					42						shear vane test at 11.73 mbgs = 42 kPa, remould = 5 kPa.
		-----	12	53	0		9		0		
		dark grey	13	52							
			14	51	0		10		0		MW20-10(D) Screen interval between 17.5 to 19.0 mbgs.
			15	50							
		very dense, wet, GRAVELLY SAND (TILL)			50/25		11		50/25		RQD = 59% TCR = 100%
		1st Core Run 15.56-16.86 mbgs competent LIMESTONE with occassional SHALE interbeds	16	49			1				
			17	48							RQD = 93% TCR = 100%
		2nd Core Run 16.86 - 18.47 mbgs Competent LIMESTONE with occassional SHALE interbeds	18	47			2				RQD = 89%

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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-10(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.93	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018801	EASTING: 501191	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		3nd Core Run 18.47- 19.00 mbgs Competent LIMESTONE with occassional SHALE interbeds		46			3				TCR = 100%
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-10(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.93	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018801	EASTING: 501190	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-10(D) for stratigraphy information.	-1								Top of Pipe Elevation = 65.806 m
			0	65							
			1	64							
		SILTY CLAY	2	63							
			3	62							
			4	61							Bentonite pellets used as backfill to surface.
			5	60							
			6	59							#2 silica sand backfilled 0.3 m above screen.
			7	58							1.52 m screen installed between 6.0 m to 7.5 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-10(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.93	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018802	EASTING: 501190	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-10(D) for stratigraphy information.	-1								Top of Pipe Elevation = 65.744 m
▼			0	65							
			1	64							Bentonite pellets used as backfill to surface.
		SILTY CLAY	2	63							#2 silica sand backfilled 0.3 m above screen.
			3	62							1.52 m screen installed between 2.5 m to 4.1 mbgs.
			4	61							
		END OF BOREHOLE									

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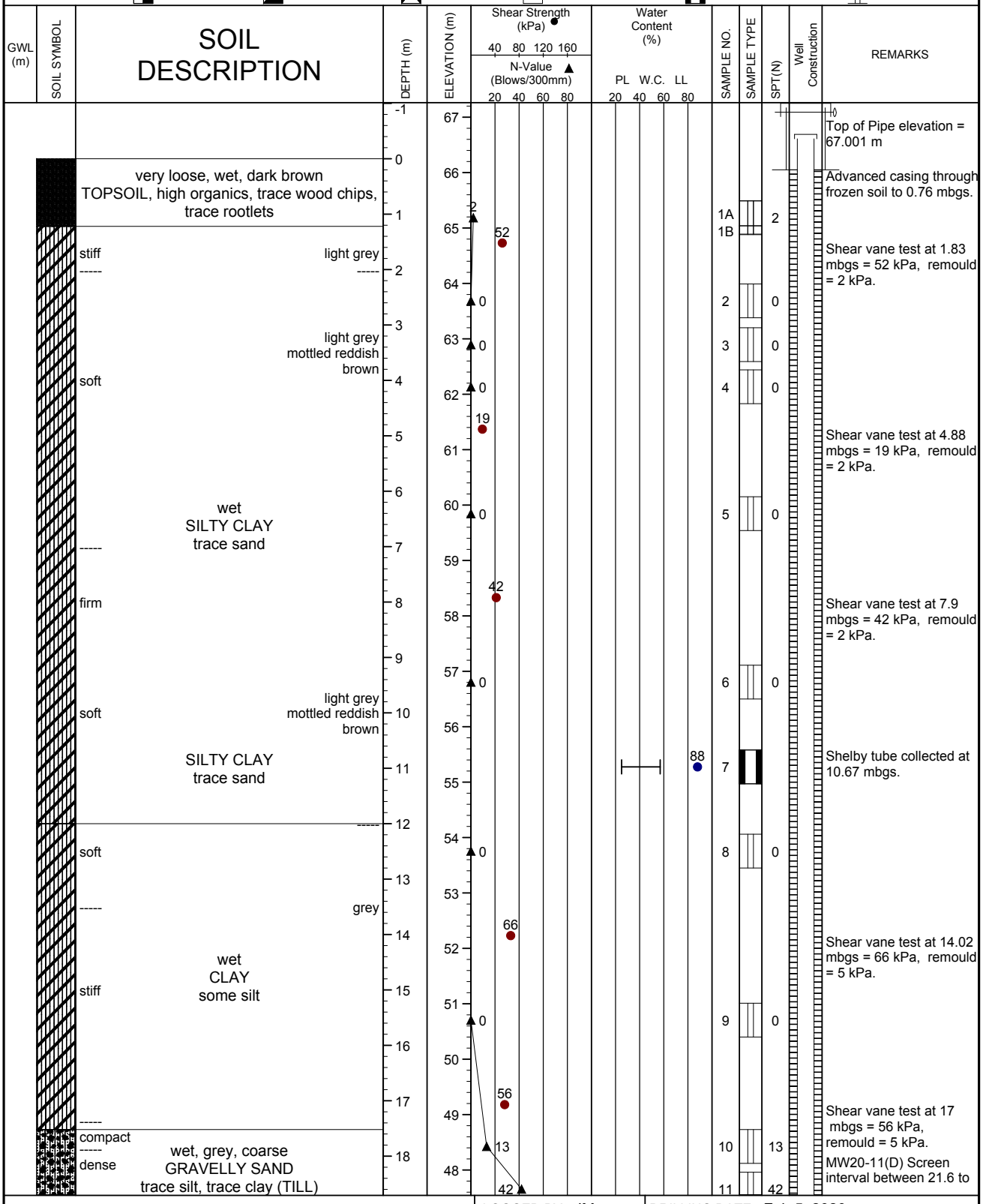
CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-11(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.25	
LOCATION: 17125 Lafleche Road, Moose Creek	NORTHING: 5017065	EASTING: 501123	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



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CLIENT: GFL	METHOD: Casing/coring/split spoon sampling		**MW20-11(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.25	
LOCATION: 17125 Lafleche Road, Moose Creek	NORTHING: 5017065	EASTING: 501123	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
▼		1st Core Run 18.90 - 19.86 mbgs LIMESTONE with occasional horizontal fractures	19	47			1				23.1 mbgs. RQD = 80% TCR = 100%
		2nd Core Run 19.86 - 21.34 mbgs LIMESTONE with occasional horizontal fractures	20 21	46			2				RQD = 98% TCR = 100%
		3rd Core Run 21.34 - 23.17 mbgs LIMESTONE with occasional horizontal fractures	22	45 44			3				RQD = 92% TCR = 100%
		END OF BOREHOLE	23								

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CLIENT: GFL	METHOD: Casing		**MW20-11(C)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.25	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018348	EASTING: 500398	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		Refer to MW20-11(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 67.097 m
▼			0	66							
			1	65							
		SILTY CLAY	2	64							Bentonite pellets used as backfill to surface.
			3	63							
			4	62							#2 silica sand backfilled 0.6 m above screen.
			5	61							
			6	60							1.52 m screen installed between 6.1 m to 7.6 mbgs.
			7	59							
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-11(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 66.25	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018349	EASTING: 500397	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to MW20-11(D) for stratigraphy information.	-1	67							Top of Pipe Elevation = 66.821 m
			0	66							
			1	65							Bentonite pellets used as backfill to surface.
▼		SILTY CLAY	2	64							#2 silica sand backfilled 0.3 m above screen.
			3	63							1.52 m screen installed between 2.4 m to 4.0 mbgs.
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-12(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.86	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018908	EASTING: 500862	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
▼		Refer to MW20-10(D) for stratigraphy information.	-1	65						Top of Pipe Elevation = 65.581 m	
			0								
			1	64							
		SILTY CLAY	2	63						Bentonite pellets used as backfill to surface.	
			3	62						#2 silica sand backfilled 0.3 m above screen.	
			4	61						1.52 m screen installed between 2.8 m to 4.3 mbgs.	
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**BH No.: 20-13**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.5	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018640	EASTING: 500965	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		SILTY CLAY	0	65							Advanced casing from surface to bedrock, borehole was not sampled.
			1	64							
			2	63							
			3	62							
			4	61							
			5	60							
			6	59							
			7	58							
			8	57							
			9	56							
			10	55							
			11	54							
			12	53							Inferred TILL layer was encountered at 13.64 mbgs.
			13	52							Inferred bedrock was encountered at 14.25 mbgs.
		TILL	14								
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**BH No.: 20-14**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.15	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017523	EASTING: 501207	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		SILTY CLAY	0	67							Advanced casing from surface to bedrock, borehole was not sampled.
			1	66							
			2	65							
			3	64							
			4	63							
			5	62							
			6	61							
			7	60							
			8	59							
			9	58							
			10	57							
			11	56							
			12	55							Inferred TILL layer was encountered at 12.63 mbgs.
		TILL	13	54							
			14	53							
			15	52							Inferred bedrock was encountered at 16.02 mbgs.
			16								
		END OF BOREHOLE									

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CLIENT: GFL	METHOD: Casing		**MW20-15(T)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.36	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017257	EASTING: 501345	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Adavanced casing without sampling; soil descriptions are inferred.	-1	68							Top pf Pipe Elevation = 68.342 m
▼			0	67							Note: Monitoring well installed in seperate borehole.
			1	66							
			2	65							
			3	64							
			4	63							Bentonite pellets used as backfill to surface.
		SILTY CLAY	5	62							
			6	61							
			7	60							
			8	59							
			9	58							
			10	57							
			11	56							#2 silica sand backfilled 0.3 m above screen.
			12	55							1.52 m screen installed between 12.2 m to 13.7 mbgs.
		TILL	13	54							
			14	53							
			15	52							
			16	51							
		END OF BOREHOLE									Inferred Bedrock at 16.4 mbgs.

TERRAPEX

LOGGED BY: RH	DRILLING DATE: Feb 5, 2020
REVIEWED BY: SR	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**BH No.: 20-16**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 67.23	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5017392	EASTING: 500921	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		SILTY CLAY	0	67							Advanced casing from surface to bedrock, borehole was not sampled; soil descriptions are inferred. TILL was confirmed by samples 1A and 1B.
			1	66							
			2	65							
			3	64							
			4	63							
			5	62							
			6	61							
			7	60							
			8	59							
			9	58							
			10	57							
			11	56							
			12	55							
			13	54							
			14	53	27 ▲		1A 1B		27		TILL layer was encountered (1B) at 14.02 mbgs.
		TILL	15	52							
			16	51							Inferred bedrock was encountered at 17.37 mbgs.
			17	50							
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: RH | DRILLING DATE: Feb 5, 2020

REVIEWED BY: SR | Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW20-17(S)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 64.99	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018699	EASTING: 500354	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
			-1								Top of Pipe Elevation = 65.961 m
			0	65							Augured through frozen soil to 0.76 mbgs.
▼		loose, wet, dark brown topsoil with high organics	1	64	4		1		4		Bentonite pellets used as backfill to surface.
		soft wet light grey mottled pink SILTY CLAY trace sand	2	63	0		2		0		#2 silica sand backfilled 0.3 m above screen.
			3	62	23						Shear vane test at 3.35 mbgs = 23 kPa, remould = 2 kPa.
			4	61	0		3		0		1.52 m screen installed between 2.7 m to 4.3 mbgs.
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: JM	DRILLING DATE: Feb 6, 2020
REVIEWED BY: SR	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW20-18(D)**
PROJECT: GFL EOWHF Expansion Project	PROJECT ENGINEER:	ELEV. (m) 65.98	
LOCATION: 17125 Lafleche Road, Moosecreek	NORTHING: 5018076	EASTING: 501567	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Adavanced casing without sampling; soil descriptions are inferred.	-1								Top pf Pipe Elevation = 66.841 m
		SILTY CLAY	0	66							
			1	65							
			2	64							
			3	63							
			4	62							Bentonite pellets used as backfill to surface.
			5	61							
		TILL	6	60							
			7	59							
			8	58							
			9	57							
			10	56							
			11	55							#2 silica sand backfilled 0.3 m above screen.
		LIMESTONE with occassional SHALE interbeds.	12	54							
▼			13	53							1.52 m screen installed between 12.8 m to 14.3 mbgs.
			14	52							
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: RH | DRILLING DATE: Feb 7, 2020

REVIEWED BY: SR | Page 1 of 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF:** **MW20-19A**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016338 / EASTING (m): 500369	ELEV. (m) 66.0
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14 / WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 / SAND TYPE: 2	SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER, DRIVEN, CORING, DYNAMIC CONE, SHELBY, SPLIT SPOON

Columns: GWL (m) | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) | ELEVATION (m) | SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80 | WATER CONTENT (%) PL W.C. LL 20 40 60 80 | SAMPLE NO. | SAMPLE TYPE | RECOVERY (%) | SV/TOV (ppm or %LEL) | LABORATORY TESTING | WELL INSTALLATION | REMARKS

Depth (m)	Soil Description
0 – 10.1	wet, grey SILTY CLAY trace sand; firm ----- soft
10.1 – 15.4	compact to dense wet, grey SANDY GRAVEL trace silt, trace clay (TILL)
15.4 – 18.2	slightly weathered strong slightly to very slightly fractured LIMESTONE with SHALE INTERBEDS; fair ----- good

Depth (m)	Elevation (m)
0	66
1	65
2	64
3	63
4	62
5	61
6	60
7	59
8	58
9	57
10	56
11	55
12	54
13	53
14	52
15	51
16	50
17	49
18	48

Sample No.	N-Value	Shear Strength (kPa)	Water Content (%)
1	1	49	54
2	0		77
3	0		84
4	0		93
5	0		94
6	0		88
7	0		84
8	0		57
9	0		67
10	19		6.3
11	29		3.3
12	34		5.7
13	100+		5.5
14			
15			

REMARKS:

Well stick up measured at 1.6 m above grade.

TCR = 67%
RQD = 53%

TCR = 87%
RQD = 80%
UCS = 68 MPa

TERRAPEX

LOGGED BY: JM	DRILLING DATE: October 27, 2020
INPUT BY:	MONITORING DATE: 02-NOV-20
REVIEWED BY: VN	PAGE 1 OF 2

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-19A**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016338	EASTING (m): 500369 ELEV. (m) 66.0
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) ▲ PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: October 27, 2020
INPUT BY:	MONITORING DATE: 02-NOV-20
REVIEWED BY: VN	PAGE 2 OF 2

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-19B**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016339	EASTING (m): 500370 ELEV. (m) 66.0
CONTRACTOR: -	METHOD: Casing/Split Spoon/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		Advanced augers to 13. 5 mbg In-situ field vanes (FV) conducted Shelby tube samples (TW) collected for subsurface soil information refer to MW20-19A	0 1 2 3 4 5 6 7 8 9 10 11 12 13	66 65 64 63 62 61 60 59 58 57 56 55 54 53	26 KPa 21 KPa 23 KPa 31 KPa		FV 1 TW 1 FV 2 TW 2 FV 3 FV 4						Stick-up measured at 1.5 m above grade. S = 5 S = 21 S = 8 S = 3
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 28-Oct-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-19C**
ADDRESS: 17125 Lafleche Road	STATION:	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016368	EASTING (m): 500368 ELEV. (m) 66.0
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Core	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
			-2	68								Stick-up measured at 1.3 m.	
			-1	67									
		Advanced augers to 10.1 m for subsurface soil information refer to MW20-19A	0	66									
▼			1	65									
			2	64									
			3	63									
			4	62									
			5	61									
			6	60									
			7	59									
			8	58									
			9	57									
		END OF BOREHOLE	10	56									

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 28-Oct-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-19D**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016339	EASTING (m): 500367 ELEV. (m) 66.0
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
			-2	68									Stick-up measured at 1.3 m.
			-1	67									
▼		Advanced augers to 3.1 m for subsurface soil information refer to MW20-19A	0	66									
			1	65									
			2	64									
		END OF BOREHOLE	3	63									

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 28-Oct-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW 20-20A**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016480	EASTING (m): 500727 ELEV. (m) 66.1
CONTRACTOR:	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: 2 SEALANT TYPE: Bentonite time

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) / N-VALUE (Blows/300mm)	WATER CONTENT (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
			0	67									Well stick-up measured at 1.66 m above grade.
▼		wet, grey SILT and CLAY	1	66									
		firm ----- soft	2	65	2	46	1						
			3	64	0	33	2						
			4	63	0	84	3						
			5	62	0	74	4						
			6	61	0	82	5						
			7	60	0	94	6						
			8	59	0	60	7						
			9	58	0	83	8						
			10	57	0	67	9						
			11	56	0	42	10						
			12	55	0	57	11						
			13	54	0	67	12						
			14	53	0	63	13						
			15	52	0	33	14						
			16	51	0	6.5	15						
		loose to compact, wet, grey SILTY GRAVEL, some clay, trace sand (TILL)	17	50	8								
				49	20								

TERRAPEX

LOGGED BY: JM	DRILLING DATE: October 29, 2020
INPUT BY:	MONITORING DATE: 01-Nov-20
REVIEWED BY: VN	PAGE 1 OF 2

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW 20-20A**
ADDRESS: 17125 Lafleche Road	STATION: -	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016480	EASTING (m): 500727 ELEV. (m) 66.1
CONTRACTOR:	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: 2 SEALANT TYPE: Bentonite time

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) ▲ PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		slightly weathered, slightly to very excellent slightly fractured ----- strong ----- poor LIMESTONE very intensely ----- with SHALE INTERBEDS fractured excellent	18 19	48 47			16 17 18						TCR = 97% RQD = 97% TCR = 100% RQD = 33% TCR = 92% RQD = 92% UCS = 65 MPa
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: October 29, 2020
INPUT BY:	MONITORING DATE: 01-Nov-20
REVIEWED BY: VN	PAGE 2 OF 2

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-20B**
ADDRESS: 17125 Lafleche Road	STATION:	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016479.4	EASTING (m): 500726.5 ELEV. (m) 66.098
CONTRACTOR: GEORGE DOWNING ESTATE DRILLING	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		Advanced augers to 17.6 mbg In-situ field vanes (FV) conducted Shelby tube samples (TW) collected for subsurface soil information refer to MW20-20A	0	66								Stick-up measured at 1.5 m.	
			1	65									
			2	64	31 KPa		FV 1						S = 4
			3	63	15 KPa		FV 2						S = 15
			4	62									
			5	61			TW 1						
			6	60	21 KPa		FV 3						S = 21
			7	59									
			8	58	31 KPa		FV 4						S = 31
			9	57			TW 2						
			10	56									
			11	55	28 KPa		FV 5						S = 14
			12	54									
			13	53	28 KPa		FV 6						S = 7
			14	52	36 KPa		FV 7						S = 9
			15	51									
			16	50									
			17	49									
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 02-Nov-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-20C**
ADDRESS: 17125 Lafleche Road	STATION:	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016678	EASTING (m): 500724 ELEV. (m) 66.1
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		Advanced augers to 8.9 m for subsurface soil information refer to MW20-20A	-1 / 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	67 / 66 / 65 / 64 / 63 / 62 / 61 / 60 / 59 / 58								Stick-up measured at 0.9 m.	
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 2-Nov-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL Environmental Inc.	PROJECT NO.: CO790.00	**RECORD OF: MW20-20D**
ADDRESS: 17125 Lafleche Road	STATION:	
CITY/PROVINCE: Moose Creek, Ontario	NORTHING (m): 5016478	EASTING (m): 500723 ELEV. (m) 66.1
CONTRACTOR: -	METHOD: Casing/Split Spoon Sampling/Coring	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO. 2 SEALANT TYPE: Bentonite

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		Advanced augers to 2.9 m for subsurface soil information refer to MW20-20A	-1 0 1 2	67 66 65 64									Stick-up measured at 0.9 m.
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 02-Nov-20
INPUT BY: RH	MONITORING DATE: 6-NOV-20
REVIEWED BY: JM	PAGE 1 OF 1

CLIENT: GFL	METHOD: Casing		**MW .: L6**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: 5016681	EASTING: 500506	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		Advanced casing from surface to 3.66 mbgs without sampling.	-1								
		Silty clay with topsoil	0								
		SILTY CLAY	1								Bentonite Pellets used as backfill to surface.
			2								#2 Silica sand placed 0.3 m above top of screen.
			3								Bottom of pipe at 4.36 mbgs.
		END OF BOREHOLE									

LOGGED BY: RH | DRILLING DATE: Feb 10, 2020

REVIEWED BY: MG | Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW .: L7**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: 5016842	EASTING: 500759	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Advanced casing from surface to 4.36 mbgs without sampling.	-1								
		Silty clay with topsoil	0								
			1								
			2								
		SILTY CLAY	3								
			4								
		END OF BOREHOLE									

Bentonite Pellets used as backfill to surface.

#2 Silica sand placed 0.4 m above top of screen.

Bottom of pipe at 4.36 mbgs.

LOGGED BY: RH	DRILLING DATE: Feb 10, 2020
REVIEWED BY: MG	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW .: S1-1A-R**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: -	EASTING: -	PROJECT NO.: CO749.00

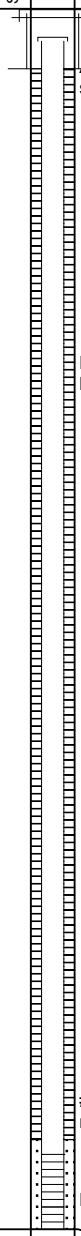
SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		Refer to S1-1A for stratigraphy information.	0								Advanced casing from surface to 23.96 mbgs without sampling, cored bedrock from 23.96 to 26.82 mbgs.
			1.5								
			3								
			4.5								
			6								Bentonite Pellets used as backfill to surface.
			7.5								
			9								
			10.5								
		SILTY CLAY	12								
			13.5								
			15								
			16.5								
			18								
			19.5								
			21								
			22.5								
			24								
		LIMESTONE with occassional SHALE interbeds	25.5								#2 Silica sand placed 0.3 m above top of screen.
											Bottom of pipe at 26.82 mbgs.
		END OF BOREHOLE									

	LOGGED BY: MG	DRILLING DATE: Feb 14, 2020
	REVIEWED BY: MG	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW .: S1-1B-R**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: -	EASTING: -	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to S1-1B for stratigraphy information.	0 1.5 3 4.5 6 7.5 9 10.5 12 13.5 15 16.5 18 19.5 21 22.5								Advanced casing from surface without sampling. Bentonite Pellets used as backfill to surface. #2 Silica sand placed 0.3 m above top of screen. Bottom of pipe at 23.77 mbgs.
		END OF BOREHOLE									

	LOGGED BY: MG	DRILLING DATE: Feb 19, 2020
	REVIEWED BY: MG	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW .: S1-3A-R**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: -	EASTING: -	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		Refer to S1-3B for stratigraphy information.	0								Advanced casing from surface to 21.64 mbgs without sampling, cored bedrock from 21.64 to 23.98 mbgs.
			1.5								
			3								
			4.5								
			6								Bentonite Pellets used as backfill to surface.
			7.5								
			9								
		SILTY CLAY	10.5								
			12								
			13.5								
			15								
			16.5								
			18								
			19.5								
			21								#2 Silica sand placed 0.3 m above top of screen.
		LIMESTONE with occassional SHALE interbeds	22.5								Bottom of pipe at 23.98 mbgs.
		END OF BOREHOLE									

	LOGGED BY: MG	DRILLING DATE: Feb 13, 2020
	REVIEWED BY: MG	Page 1 of 1

CLIENT: GFL	METHOD: Casing		**MW .: P1-3B-R**
PROJECT: 17125 Lafleche Road	PROJECT ENGINEER: SR	ELEV. (m) -	
LOCATION: Moosecreek, ON	NORTHING: -	EASTING: -	PROJECT NO.: CO749.00

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) ▲ 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT (N)	Well Construction	REMARKS
		Refer to P1-3B for stratigraphy information.	0								Advanced casing from surface without sampling.
		FILL	1.5								
			3								
			4.5								Bentonite Pellets used as backfill to surface.
		SILTY CLAY	6								
			7.5								
			9								
			10.5								#2 Silica sand placed 0.46 m above top of screen.
		TILL	12								Bottom of pipe at 13.41 mbgs.
		END OF BOREHOLE									

	LOGGED BY: MG	DRILLING DATE: Feb 19, 2020
	REVIEWED BY: MG	Page 1 of 1

CLIENT: GFL	PROJECT NO.: CO790.00	**RECORD OF: MW96-5A**
ADDRESS: 17125 LAFLECHE ROAD	STATION:	
CITY/PROVINCE: MOOSE CREEK, ONTARIO	NORTHING (m):	EASTING (m): ELEV. (m) 65.247
CONTRACTOR:	METHOD: CME 75	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO 2 SEALANT TYPE: BENTONITE TIME

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
▽		Advanced casing through soil to bedrock	0	66									
			2	64									
			4	62									
			6	60									
			8	58									
			10	56									
			12	54									
			14	52									
			16	50									
			18	48									
		SHALE	20	46			1						
		SHALE	22	44			2						
		SHALE	24	42			3						
		END OF BOREHOLE											

LOGGED BY: JM	DRILLING DATE: 4-NOV-20
INPUT BY: JM	MONITORING DATE: 6-NOV-20
REVIEWED BY:	PAGE 1 OF 1

CLIENT: GFL	PROJECT NO.: CO790.00	**RECORD OF: MW96-6Ar**
ADDRESS: 17125 LAFLECHE ROAD	STATION:	
CITY/PROVINCE: MOOSE CREEK, ONTARIO	NORTHING (m):	EASTING (m): ELEV. (m) 67.469
CONTRACTOR:	METHOD: CME 75	
BOREHOLE DIAMETER (cm): 14	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: NO 2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

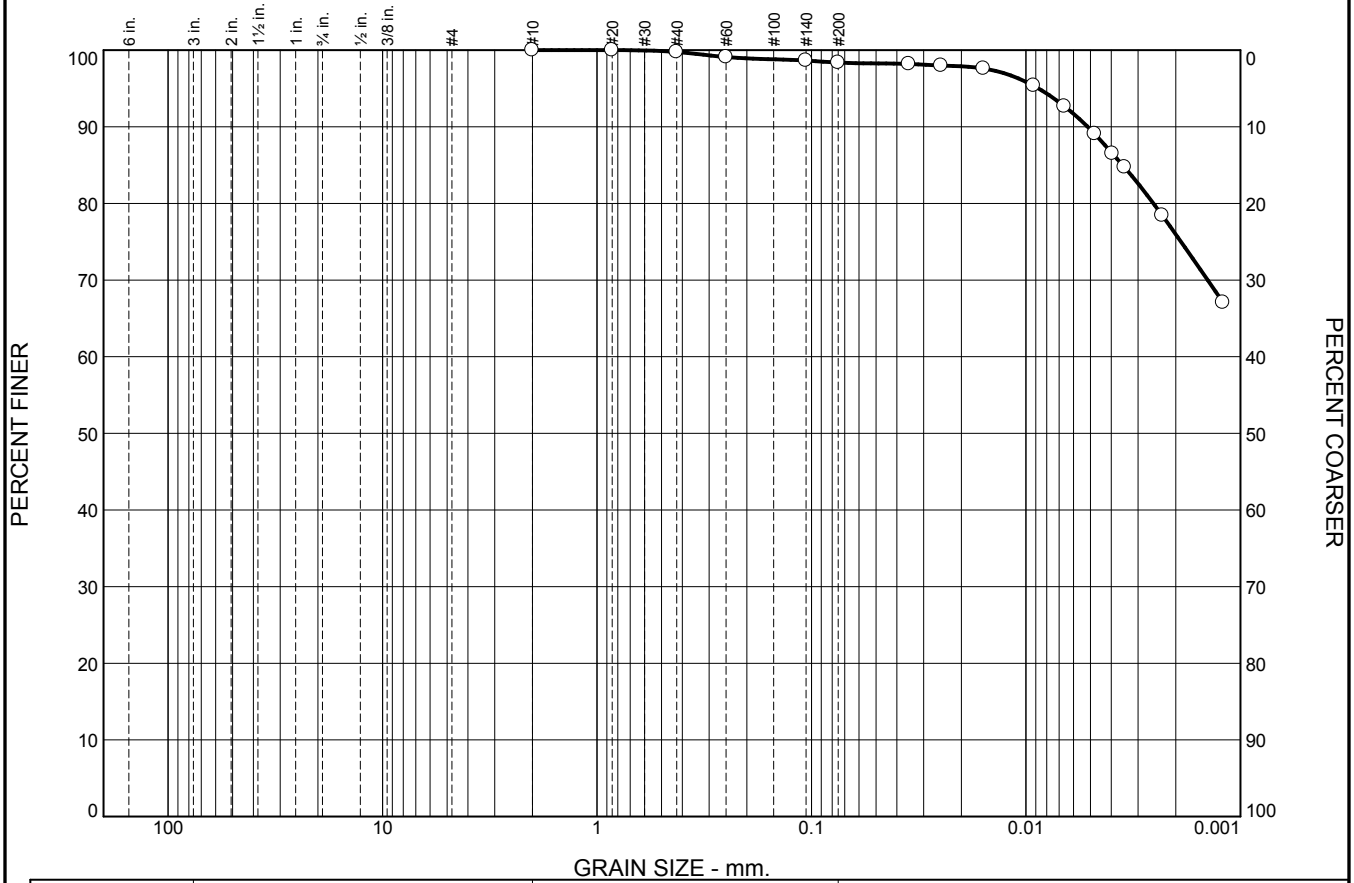
GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
▽		Advanced casing through soil to bedrock.	0	68								Stick up measured at 1.0 m	
			2	66									
			4	64									
			6	62									
			8	60									
			10	58									
			12	56									
			14	54									
			16	52									
			18	50									
			20	48									
		Dolomitic LIMESTONE TCR = 100% RQD = 100%	22	46			1 2						
		Dolomitic LIMESTONE TCR = 100% RQD = 91%	24	44			3						
		Dolomitic LIMESTONE TCR = 99% RQD = 93%	26	42			4						
		Dolomitic LIMESTONE TCR = 100% RQD = 100%		40			5						
		Dolomitic LIMESTONE TCR = 98% RQD = 94%											
		END OF BOREHOLE											

LOGGED BY: JM	DRILLING DATE: 3-NOV-20
INPUT BY: JM	MONITORING DATE: 6-NOV-20
REVIEWED BY:	PAGE 1 OF 1

APPENDIX IV

GRAIN SIZE ANALYSIS

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	2	22	76

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0035							

Material Description	USCS	AASHTO
○ SILTY CLAY, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-1D, Sample 6

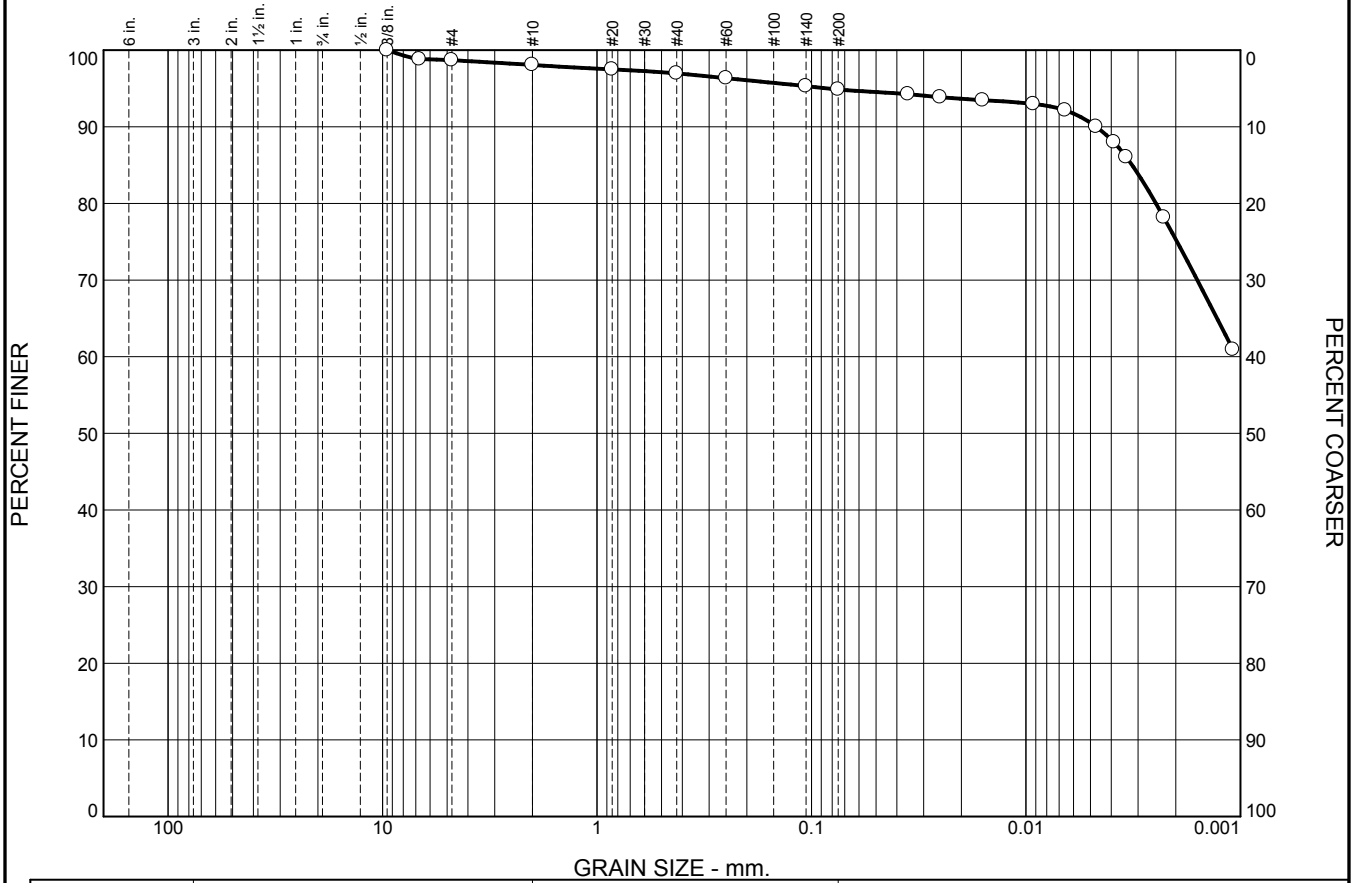
Remarks:

Terrapex

Figure D-1

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	2	1	2	20	75

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0032							

Material Description	USCS	AASHTO
○ CLAY, some silt, trace sand, trace gravel		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-1D, Sample 8

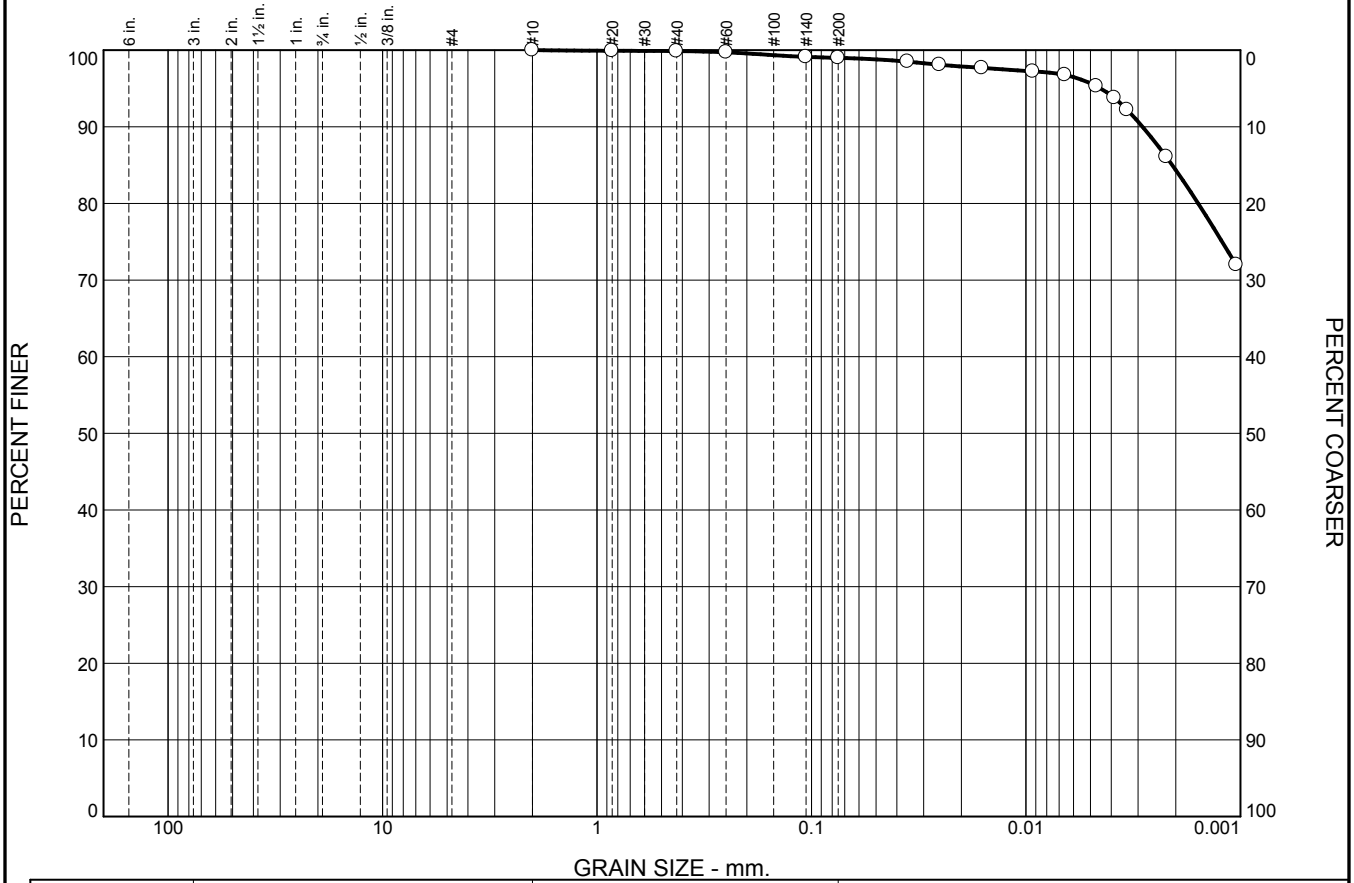
Remarks:

Terrapex

Figure D-2

Tested By: DM/PG **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	1	15	84

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0021							

Material Description	USCS	AASHTO
○ CLAY, some silt, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-2D, Sample 7

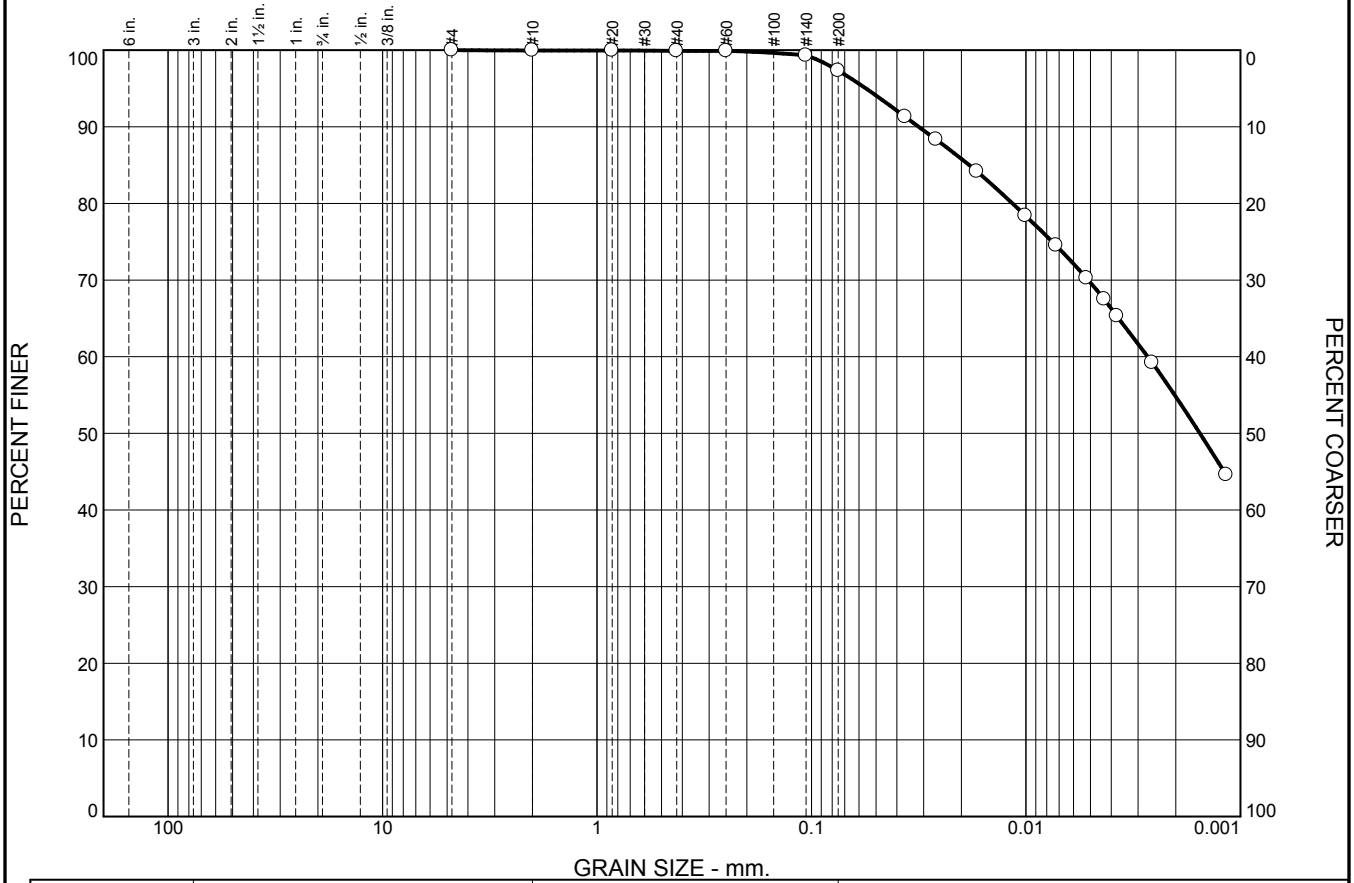
Remarks:

Terrapex

Figure D-3

Tested By: DM/PG **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	3	42	55

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0184	0.0027	0.0015					

Material Description	USCS	AASHTO
○ SILT and CLAY, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-2D, Sample 11

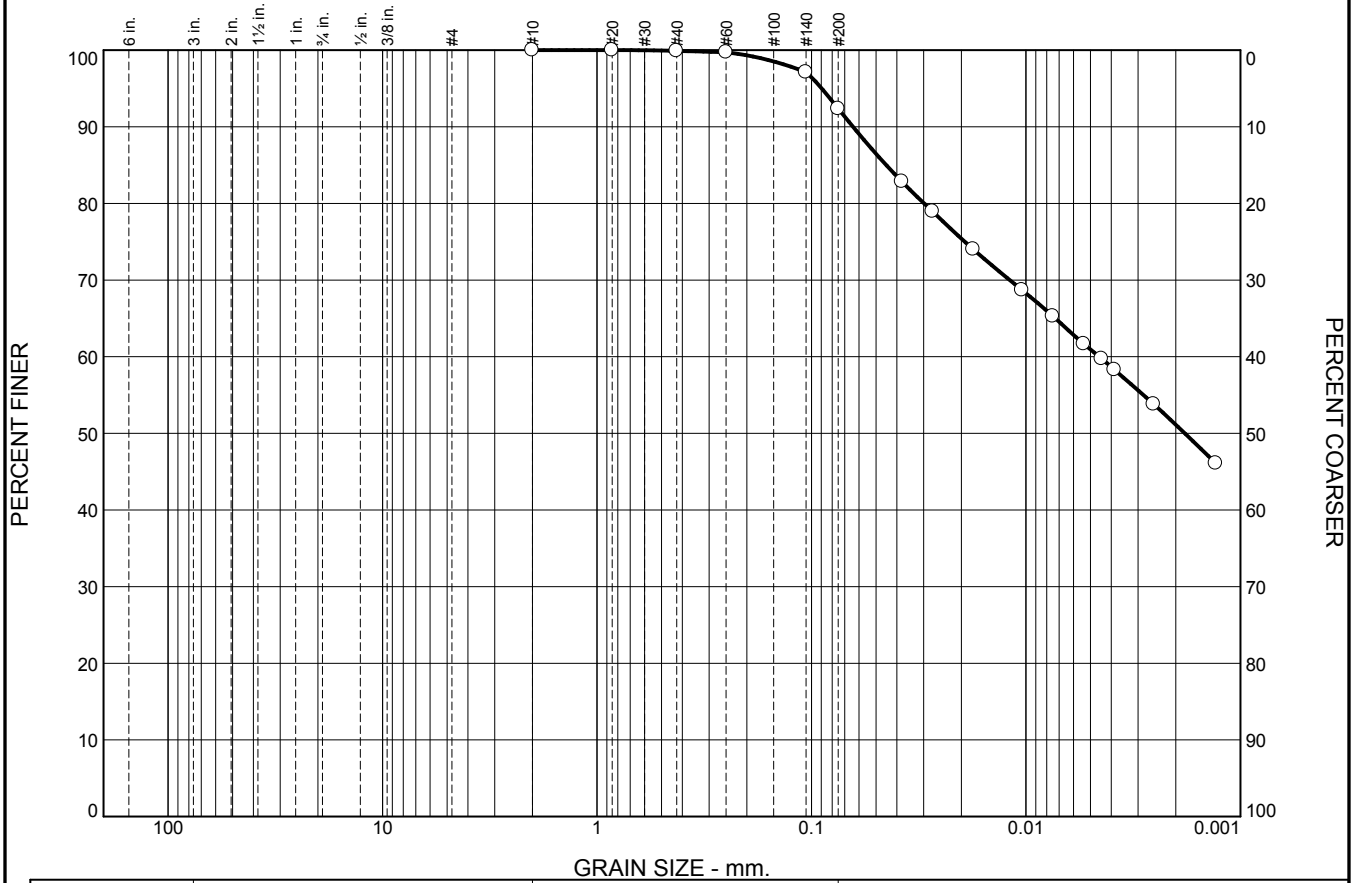
Remarks:

Terrapex

Figure D-4

Tested By: PG **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	8	41	51

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0448	0.0046	0.0018					

Material Description	USCS	AASHTO
○ SILT and CLAY, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-6D, Sample 4

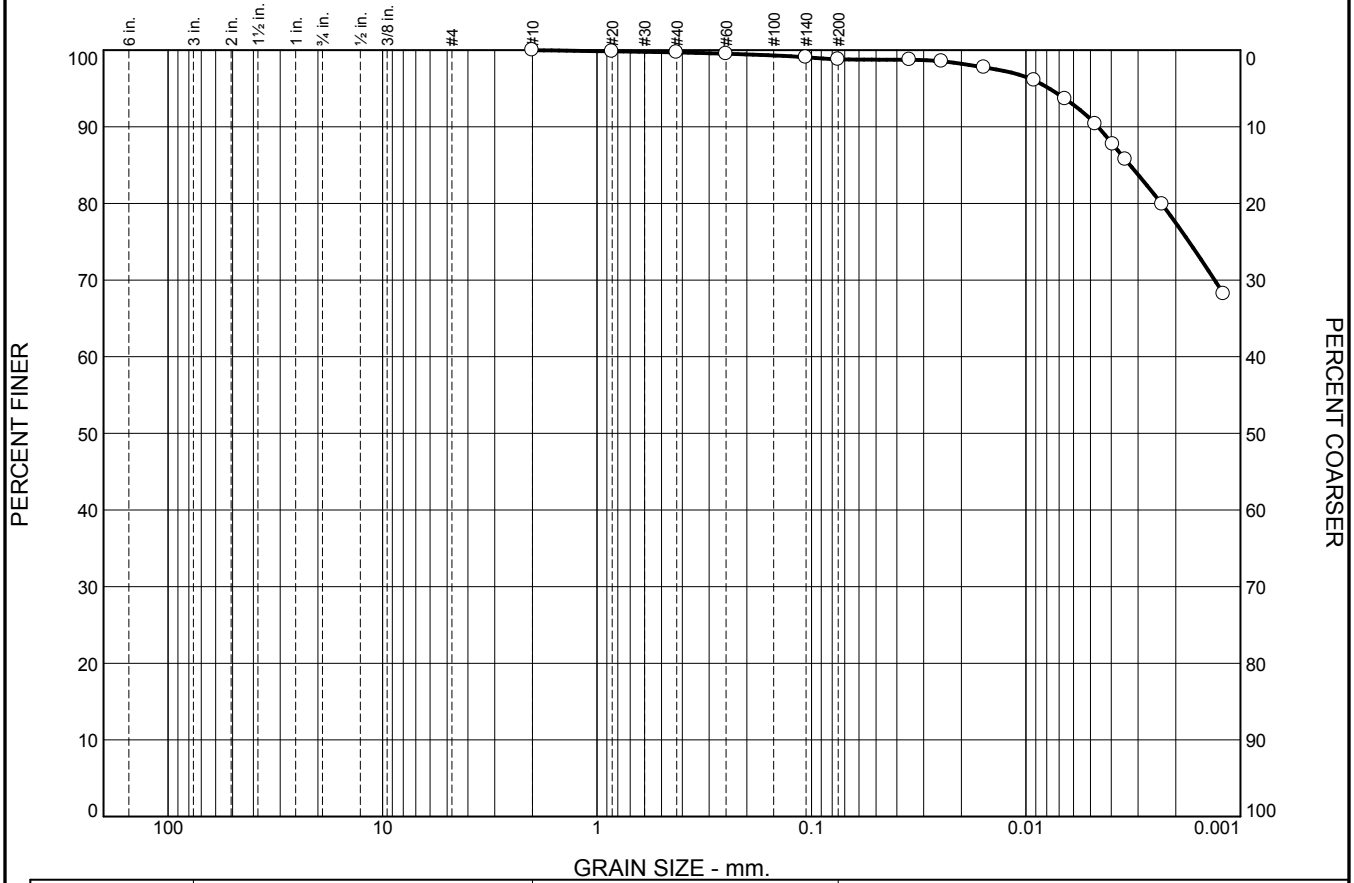
Remarks:

Terrapex

Figure D-5

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	1	22	77

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0033							

Material Description	USCS	AASHTO
○ SILTY CLAY, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-8D, Sample 7

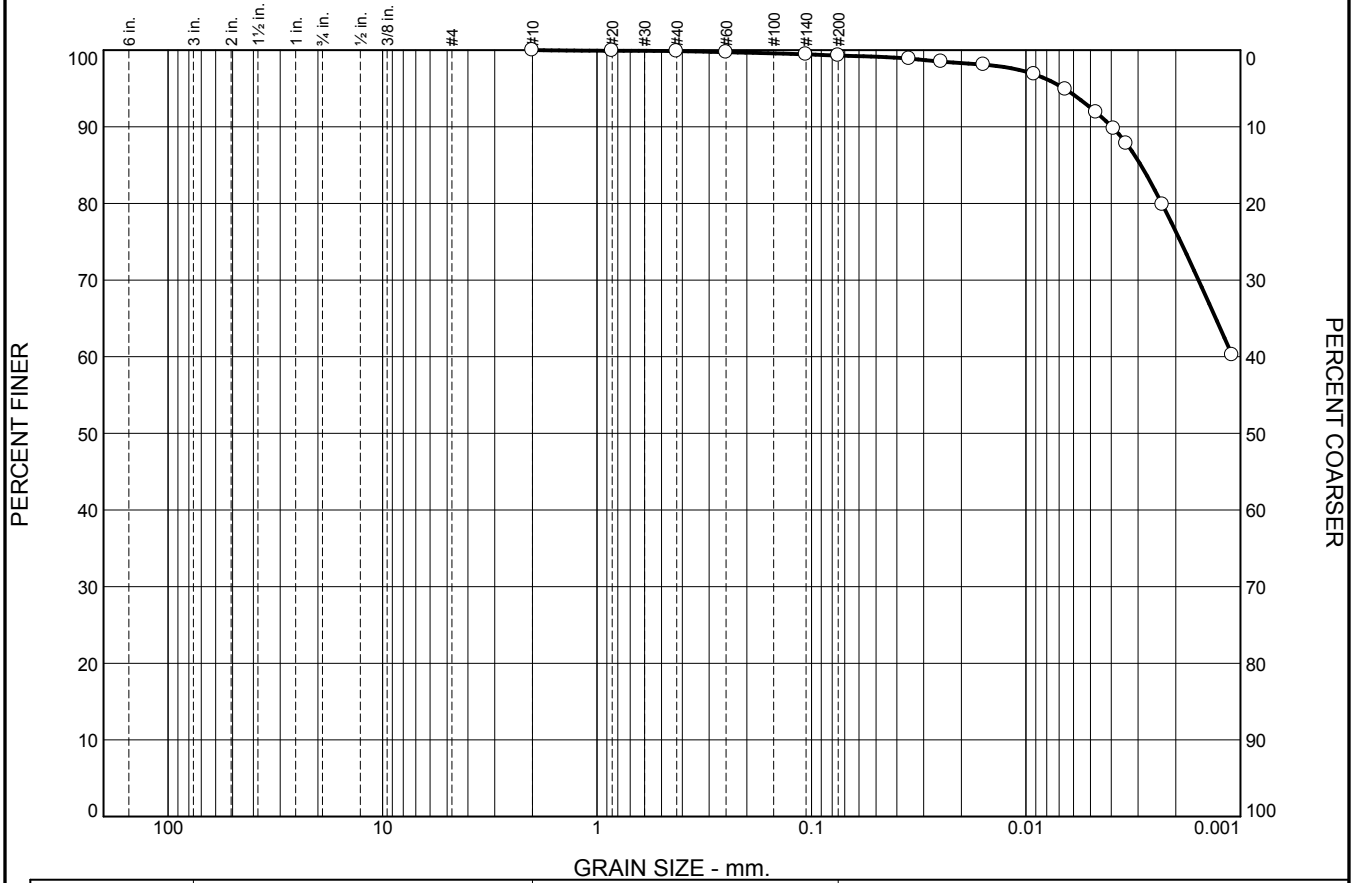
Remarks:

Terrapex

Figure D-6

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	1	23	76

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0029							

Material Description	USCS	AASHTO
○ SILTY CLAY, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-9D, Sample 7

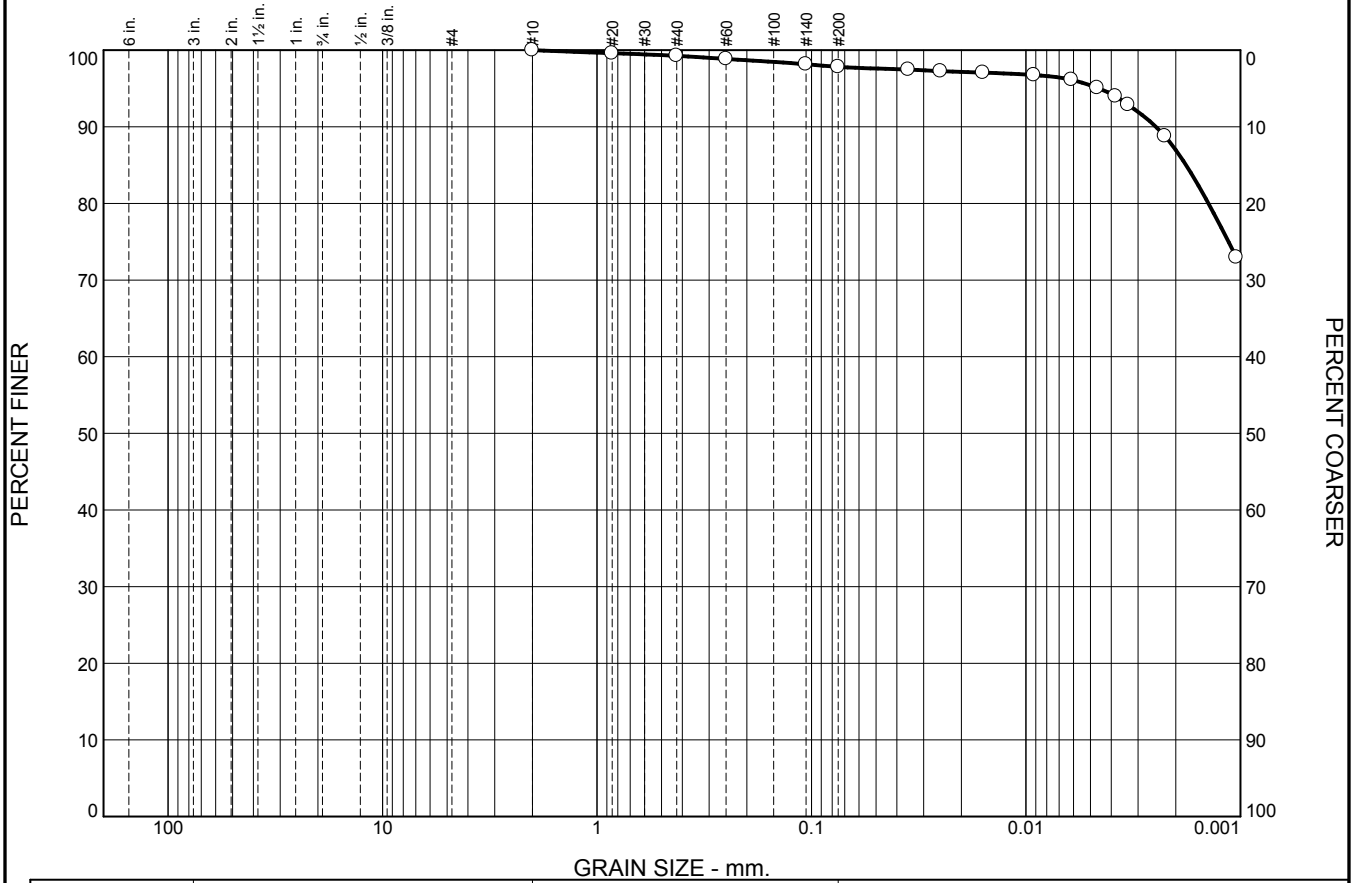
Remarks:

Terrapex

Figure D-7

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	1	1	11	87

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0018							

Material Description	USCS	AASHTO
○ CLAY, some silt, trace sand		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-9D, Sample 8

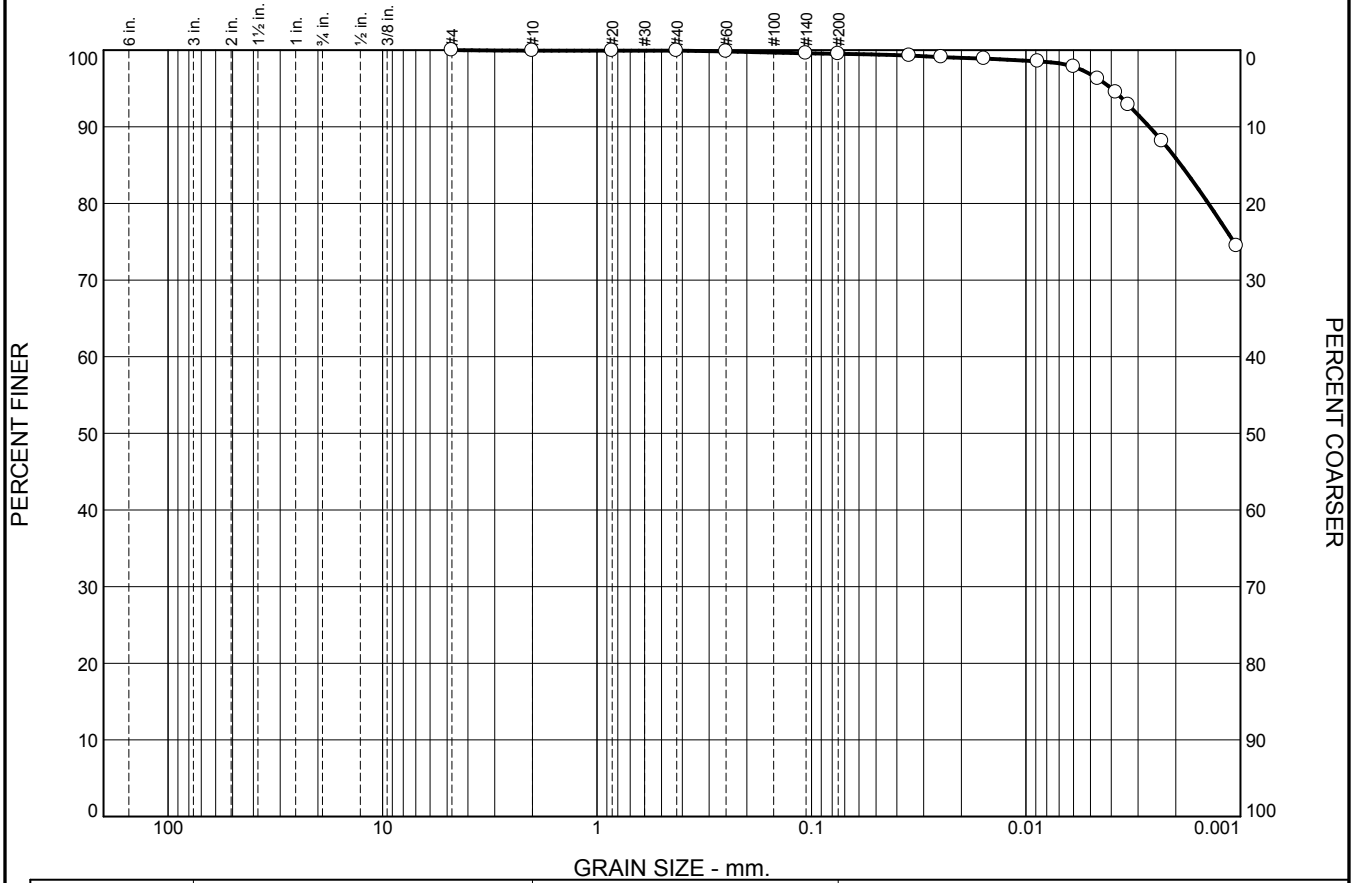
Remarks:

Terrapex

Figure D-8

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	0	0	0	14	86

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	57	25	0.0019							

Material Description	USCS	AASHTO
○ CLAY, some silt	CH	A-7-6(37)

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-11D, Sample 7

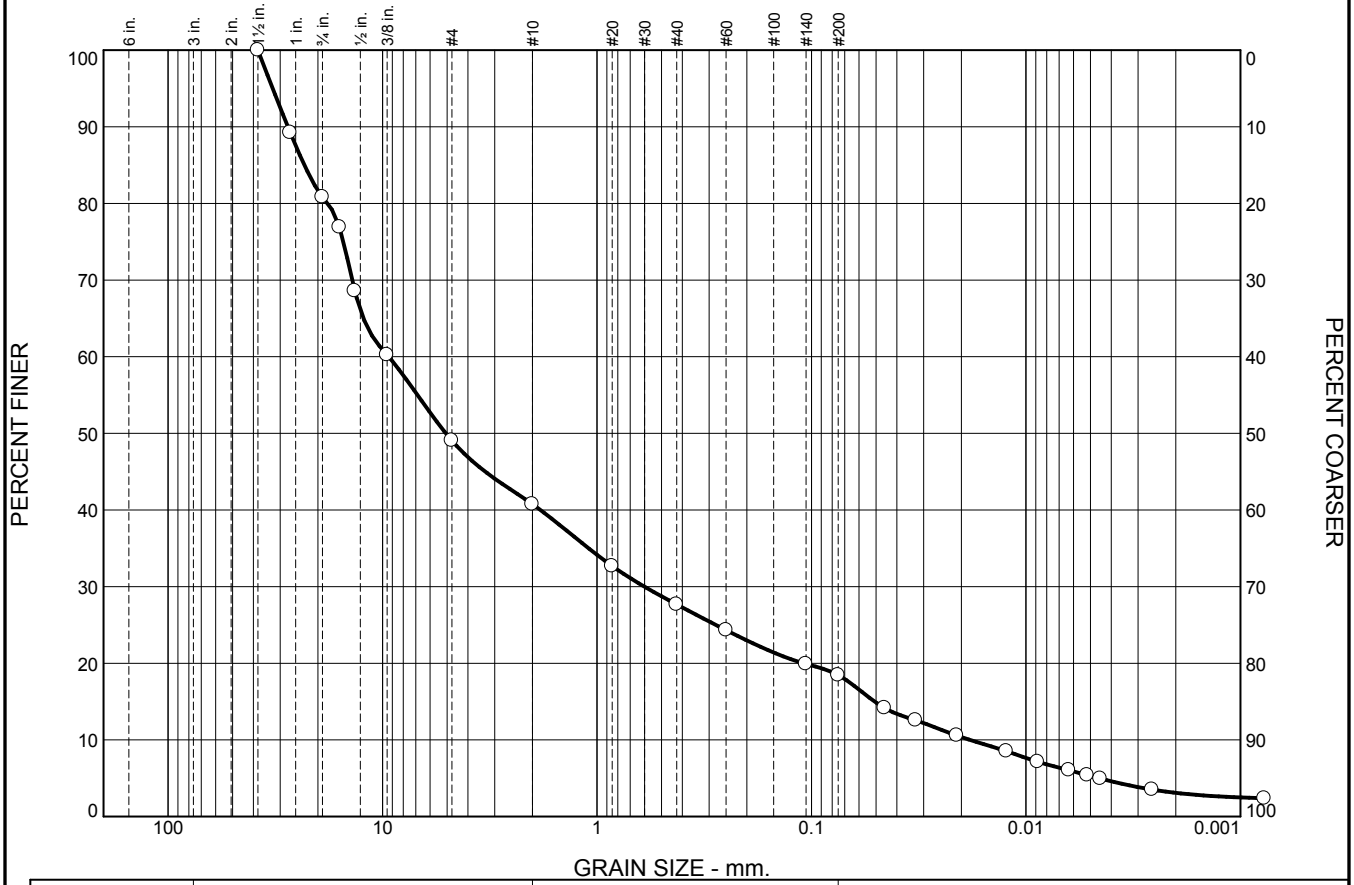
Remarks:

Terrapex

Figure D-9

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	59	13	10	15	3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			23.1518	9.3651	5.0684	0.6012	0.0508	0.0182	2.12	513.58

Material Description	USCS	AASHTO
○ SANDY GRAVEL, some silt, trace clay		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-3D, Sample 12

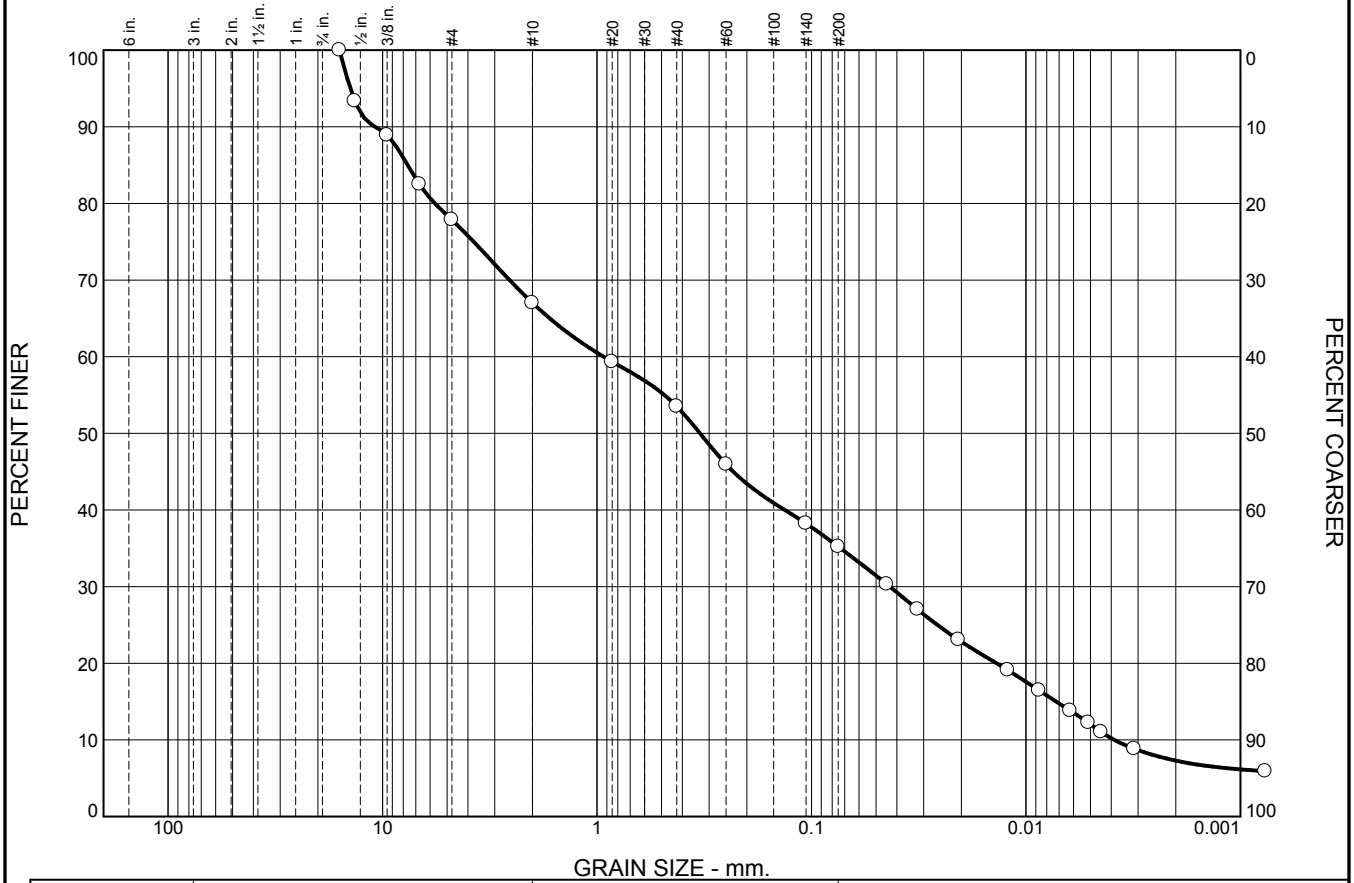
Remarks:

Terrapex

Figure D-10

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	33	13	19	28	7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			7.6278	0.9328	0.3309	0.0431	0.0072	0.0039	0.51	240.66

Material Description	USCS	AASHTO
○ SILTY SANDY GRAVEL, trace clay		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-5D, Sample 5B

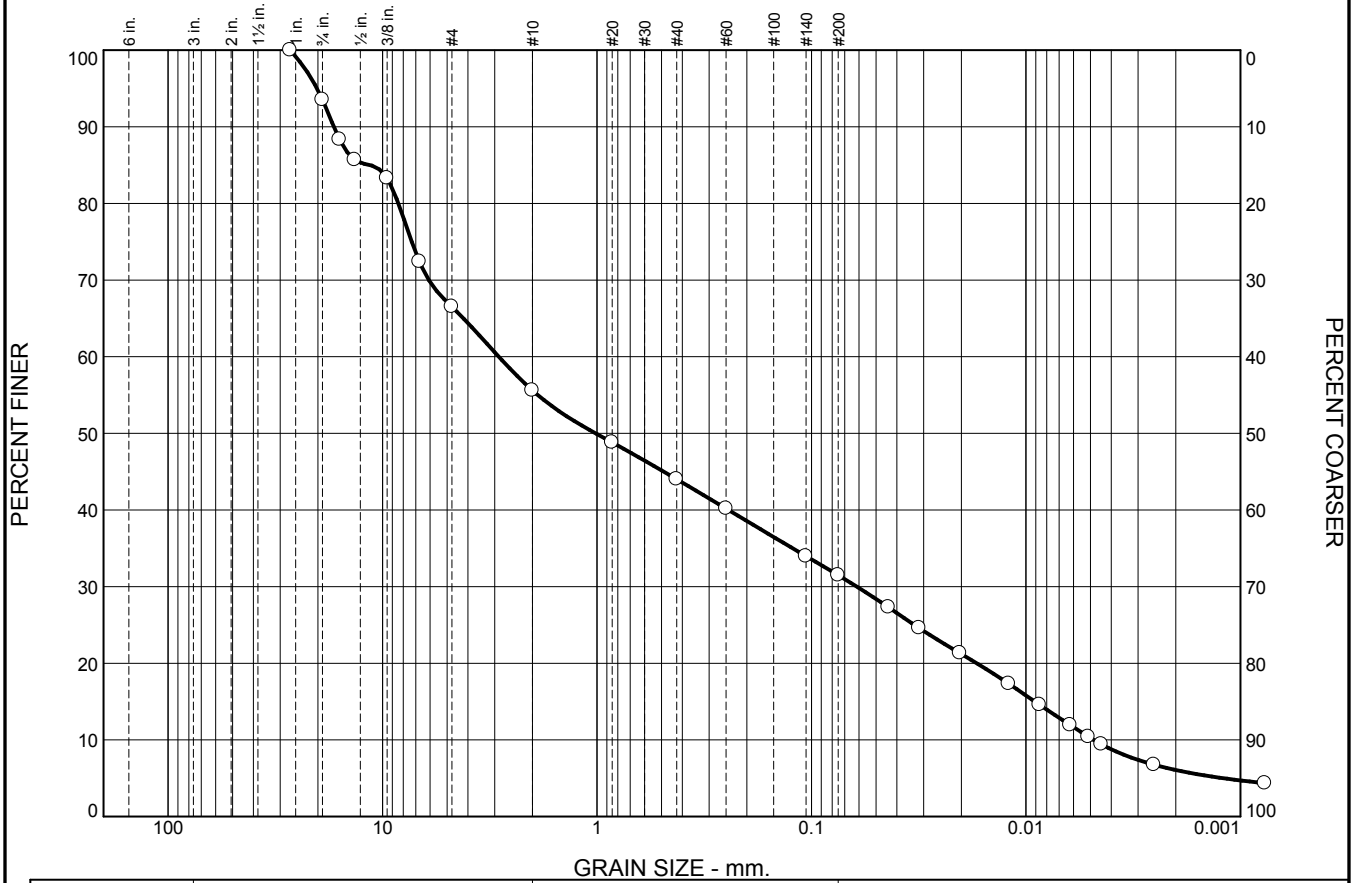
Remarks:

Terrapex

Figure D-11

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	44	12	13	25	6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.4447	2.8694	1.0146	0.0615	0.0091	0.0048	0.27	593.95

Material Description	USCS	AASHTO
○ SANDY SILTY GRAVEL, trace clay		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-5D, Sample 7

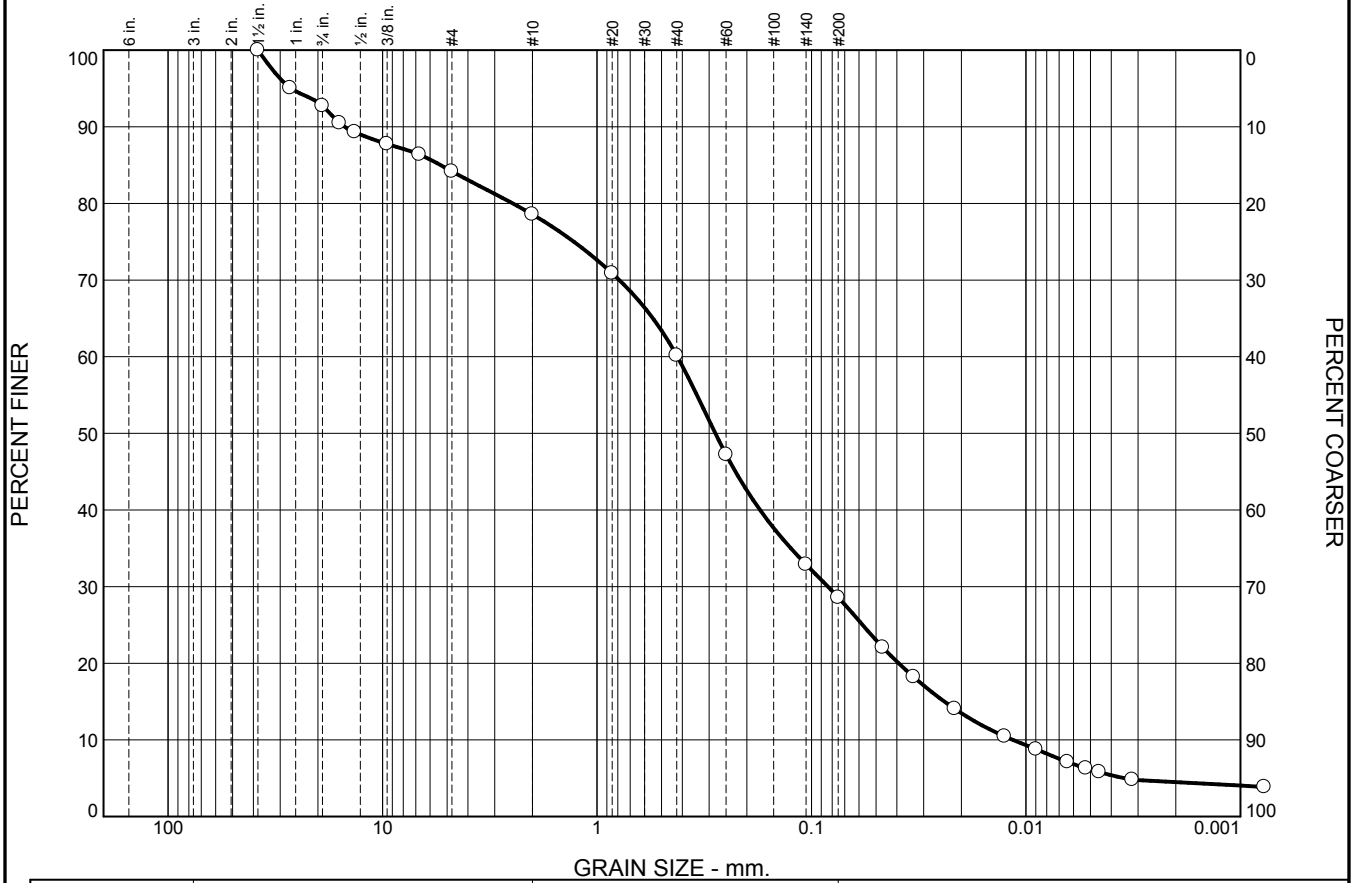
Remarks:

Terrapex

Figure D-12

Tested By: PG/DM **Checked By:** DM

Grain Size Distribution Report



	% +3"	% Gravel	% Sand		% Fines	
			Coarse	Fine	Silt	Clay
○	0	21	19	31	25	4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.3584	0.4218	0.2807	0.0839	0.0240	0.0115	1.45	36.67

Material Description	USCS	AASHTO
○ GRAVELLY SILTY SAND, trace clay		

Project No. CO749.00 **Client:** GFL Environmental Inc.

Project: EOWHF Expansion- 17125 Lafleche Road, Moose Creek, Ontario

○ **Sample Number:** MW20-9D, Sample 10

Remarks:

Terrapex

Figure D-13

Tested By: PG/DM **Checked By:** DM

APPENDIX V

PHOTOGRAPHS OF SELECTED CORES

TERRAPEX	PHOTOGRAPHIC LOG		Page 1 of 6
Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 1 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Overview	

Photo No: 2 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Section 1 of 6	

Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 3 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Section 2 of 6	

Photo No: 4 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Section 3 of 6	

Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 5	
Date: June 4, 2020	
Description: MW20-6D Core Part 1 of 2 Section 4 of 6	

Photo No: 6	
Date: June 4, 2020	
Description: MW20-6D Core Part 1 of 2 Section 5 of 6	

Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 7 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Section 6 of 6	

Photo No: 8 **Date:** June 4, 2020 **Description:** MW20-6D Core Part 1 of 2 Overview	

Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 9	
Date: June 4, 2020	
Description: MW20-6D Core Part 2 of 2 Section 1 of 3	

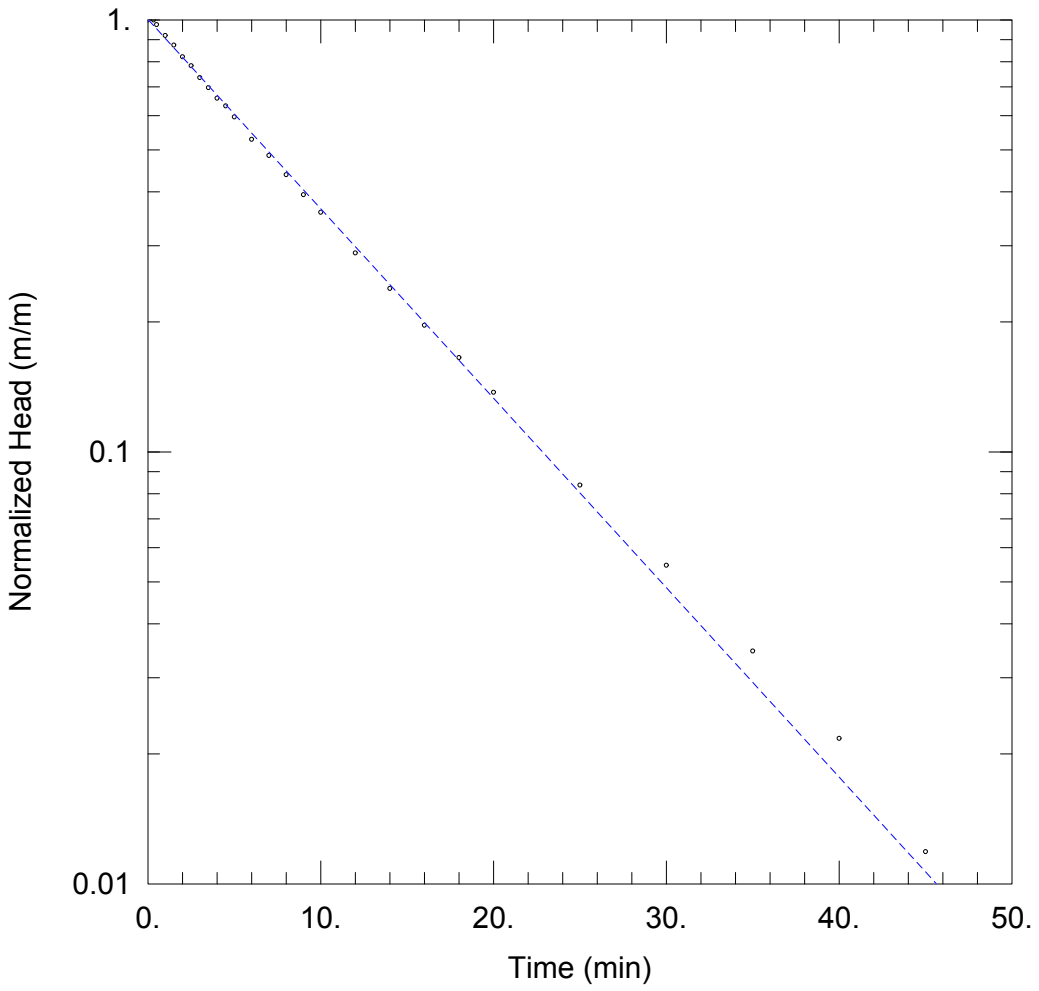
Photo No: 10	
Date: June 4, 2020	
Description: MW20-6D Core Part 2 of 2 Section 2 of 3	

TERRAPEX	PHOTOGRAPHIC LOG		Page 6 of 6
Client: GFL Environmental Inc	**Site Location**:	17125 Lafleche Road Moose Creek, ON	**Project No**: CO749.00

Photo No: 11	
Date: June 4, 2020	
Description: MW20-6D Core Part 2 of 2 Section 3 of 3	

APPENDIX VI

HYDRAULIC CONDUCTIVITY TESTING



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-1T.aqt
Date: 04/22/20 Time: 17:38:48

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-1T
Test Date: March 26, 2020

AQUIFER DATA

Saturated Thickness: 15.8 m Anisotropy Ratio (Kz/Kr): 0.1

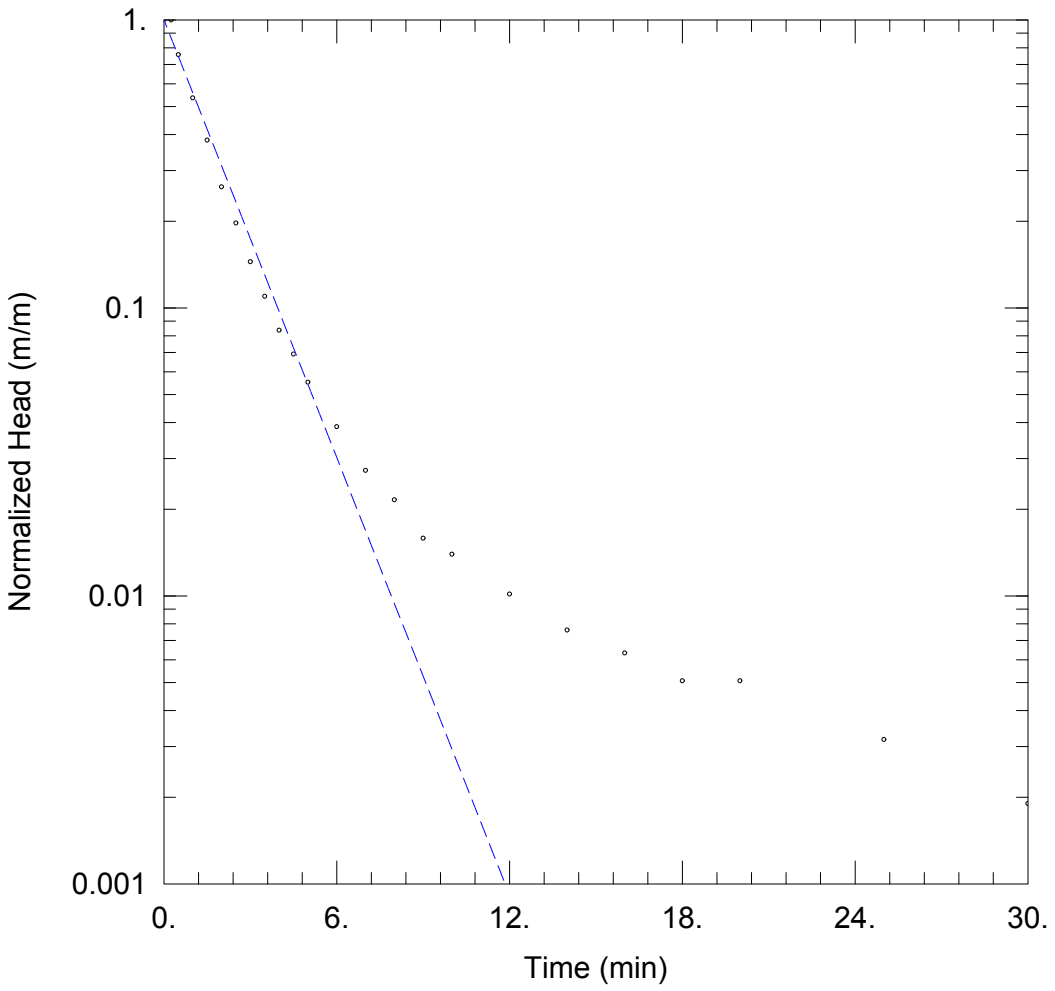
WELL DATA (MW20-1T)

Initial Displacement: 2.947 m
Total Well Penetration Depth: 13.79 m
Casing Radius: 0.0254 m
Static Water Column Height: 13.8 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.25E-6 m/sec
y0 = 2.955 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-3D.aqt
Date: 04/22/20 Time: 17:39:25

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-3D
Test Date: March 27, 2020

AQUIFER DATA

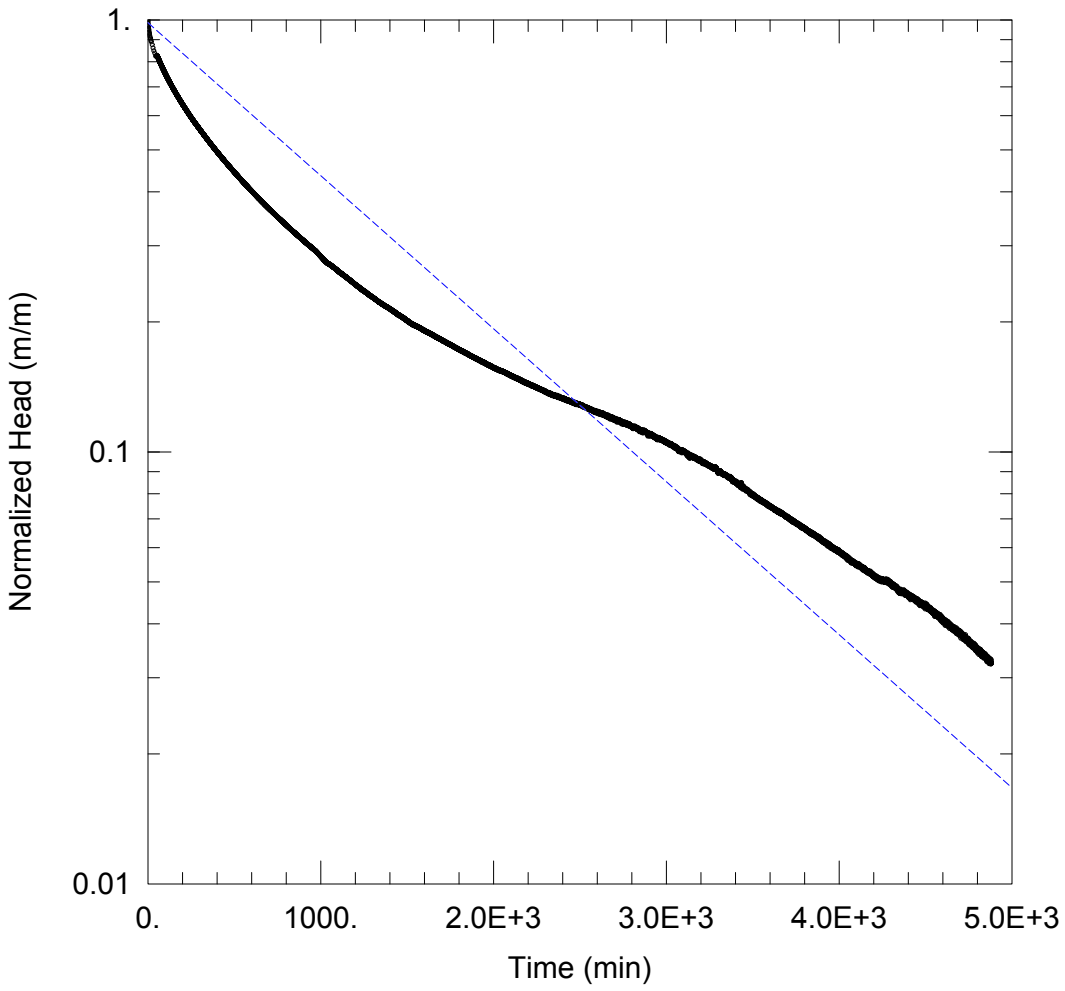
Saturated Thickness: 17.6 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-3D)

Initial Displacement: 1.577 m
Total Well Penetration Depth: 15.61 m
Casing Radius: 0.0254 m
Static Water Column Height: 15.6 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 7.316E-6 m/sec
y0 = 1.577 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-4C.aqt
Date: 04/22/20 Time: 17:39:43

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-4C
Test Date: March 27, 2020

AQUIFER DATA

Saturated Thickness: 8.3 m Anisotropy Ratio (Kz/Kr): 0.1

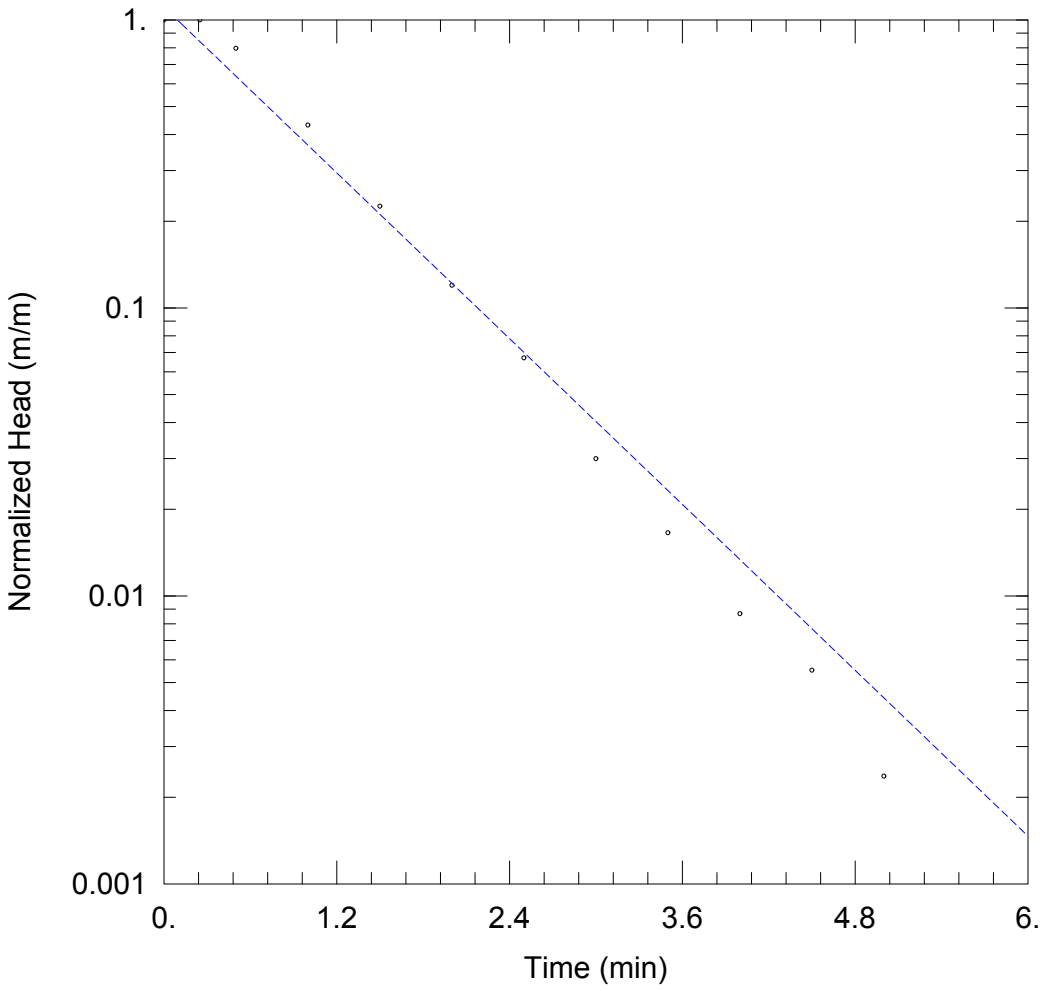
WELL DATA (MW20-4C)

Initial Displacement: 2.697 m
Total Well Penetration Depth: 6.29 m
Casing Radius: 0.0254 m
Static Water Column Height: 6.3 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 9.232E-9 m/sec y0 = 2.657 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-4D.aqt
Date: 04/22/20 Time: 17:41:35

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-4D
Test Date: March 31, 2020

AQUIFER DATA

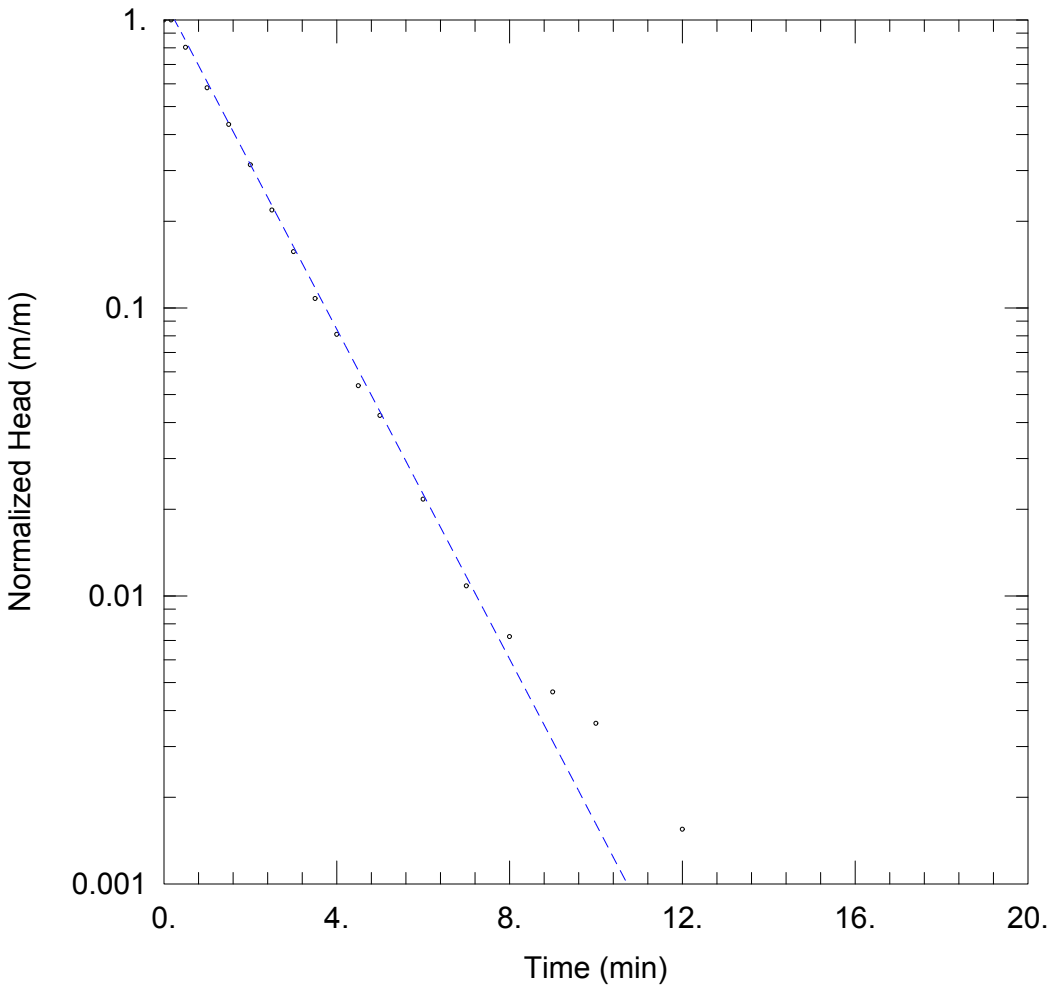
Saturated Thickness: 14.1 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-4D)

Initial Displacement: 1.268 m
Total Well Penetration Depth: 12.09 m
Casing Radius: 0.0254 m
Static Water Column Height: 12.1 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.349E-5 m/sec
y0 = 1.405 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-5T.aqt
Date: 04/22/20 Time: 17:41:48

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-5T
Test Date: March 27, 2020

AQUIFER DATA

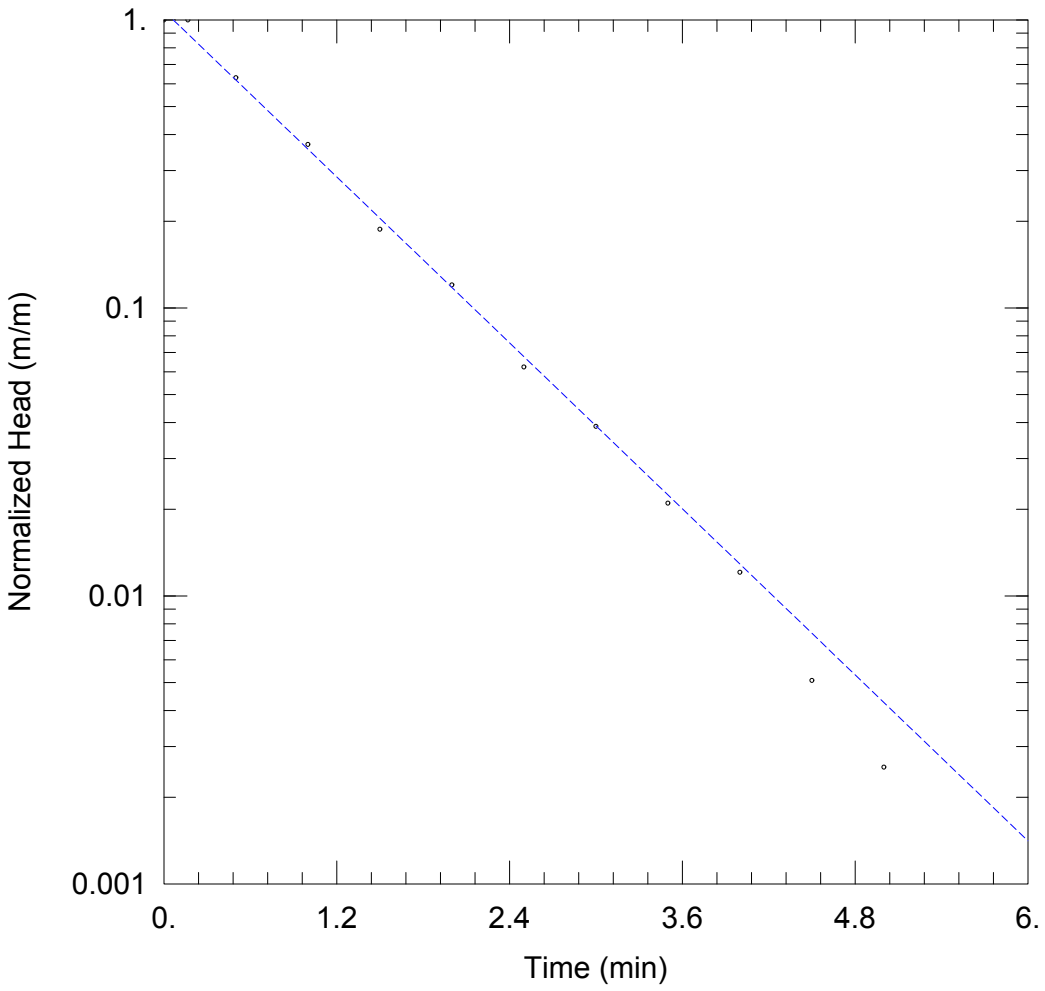
Saturated Thickness: 12.7 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-5T)

Initial Displacement: 1.939 m
Total Well Penetration Depth: 10.67 m
Casing Radius: 0.0254 m
Static Water Column Height: 10.7 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 7.937E-6 m/sec
y0 = 2.282 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-6D.aqt
Date: 04/22/20 Time: 17:42:04

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-6D
Test Date: March 31, 2020

AQUIFER DATA

Saturated Thickness: 10.6 m Anisotropy Ratio (Kz/Kr): 0.1

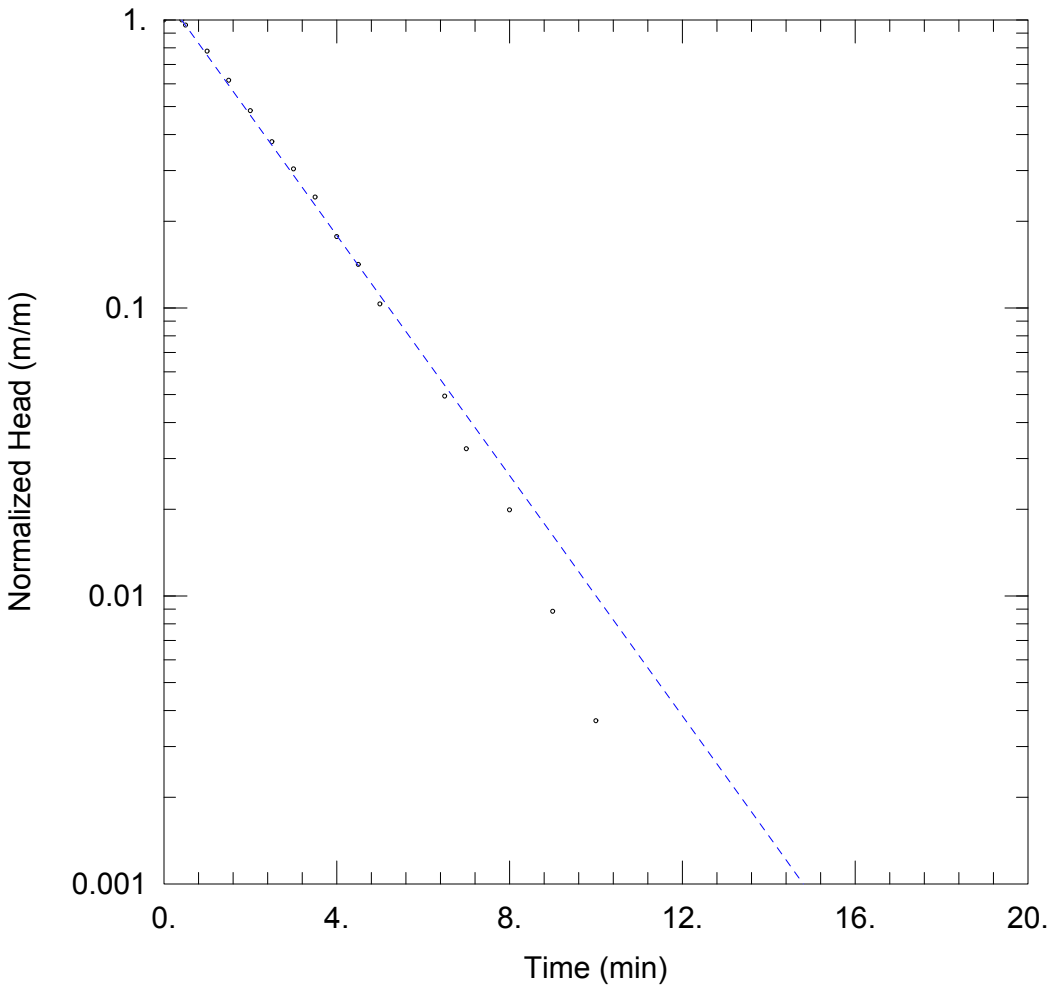
WELL DATA (MW20-6D)

Initial Displacement: 1.573 m
Total Well Penetration Depth: 8.64 m
Casing Radius: 0.0254 m
Static Water Column Height: 8.6 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.302E-5 m/sec y0 = 1.69 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-6S.aqt
Date: 04/22/20 Time: 17:42:17

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-6S
Test Date: March 31, 2020

AQUIFER DATA

Saturated Thickness: 5.6 m Anisotropy Ratio (Kz/Kr): 0.1

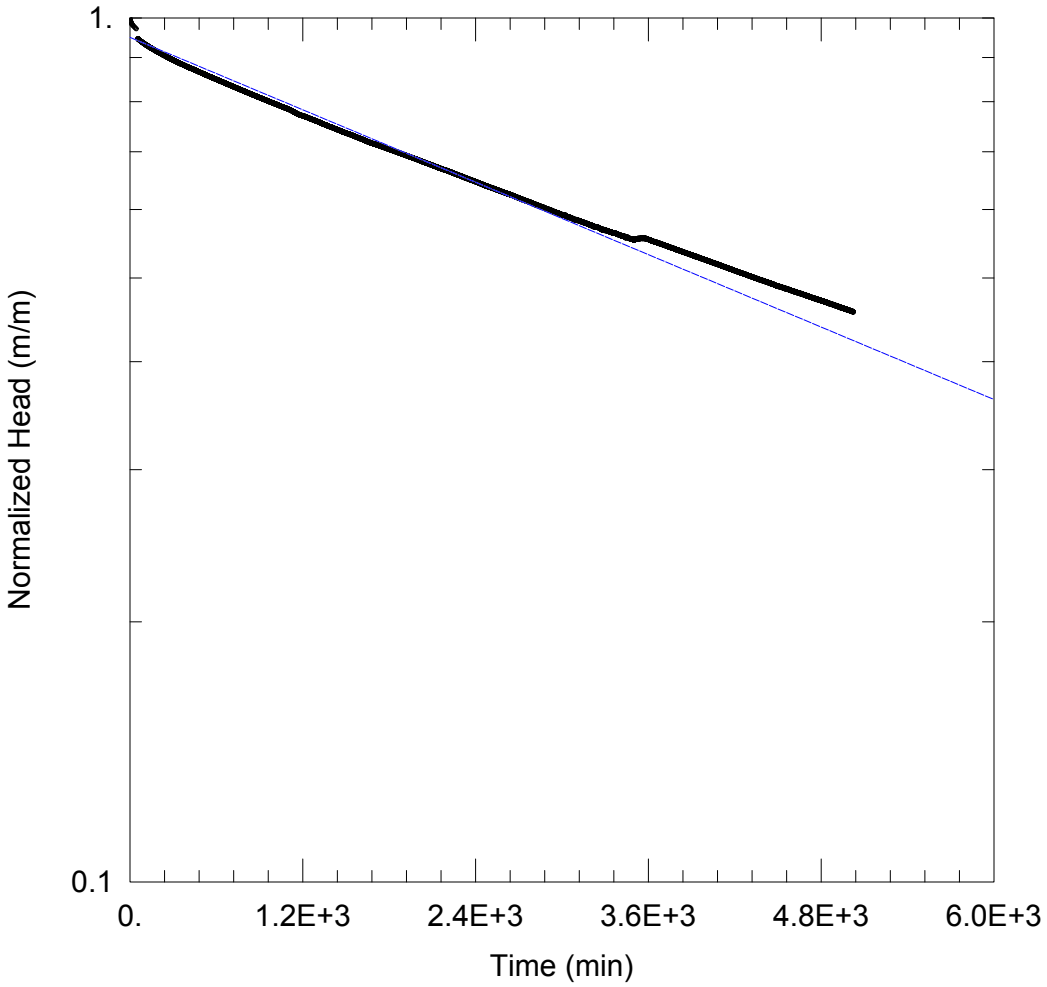
WELL DATA (MW20-6S)

Initial Displacement: 1.357 m
Total Well Penetration Depth: 3.59 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.6 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.036E-6 m/sec y0 = 1.652 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-7C.aqt
Date: 04/22/20 Time: 17:42:34

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-7C
Test Date: March 27, 2020

AQUIFER DATA

Saturated Thickness: 7.6 m Anisotropy Ratio (Kz/Kr): 0.1

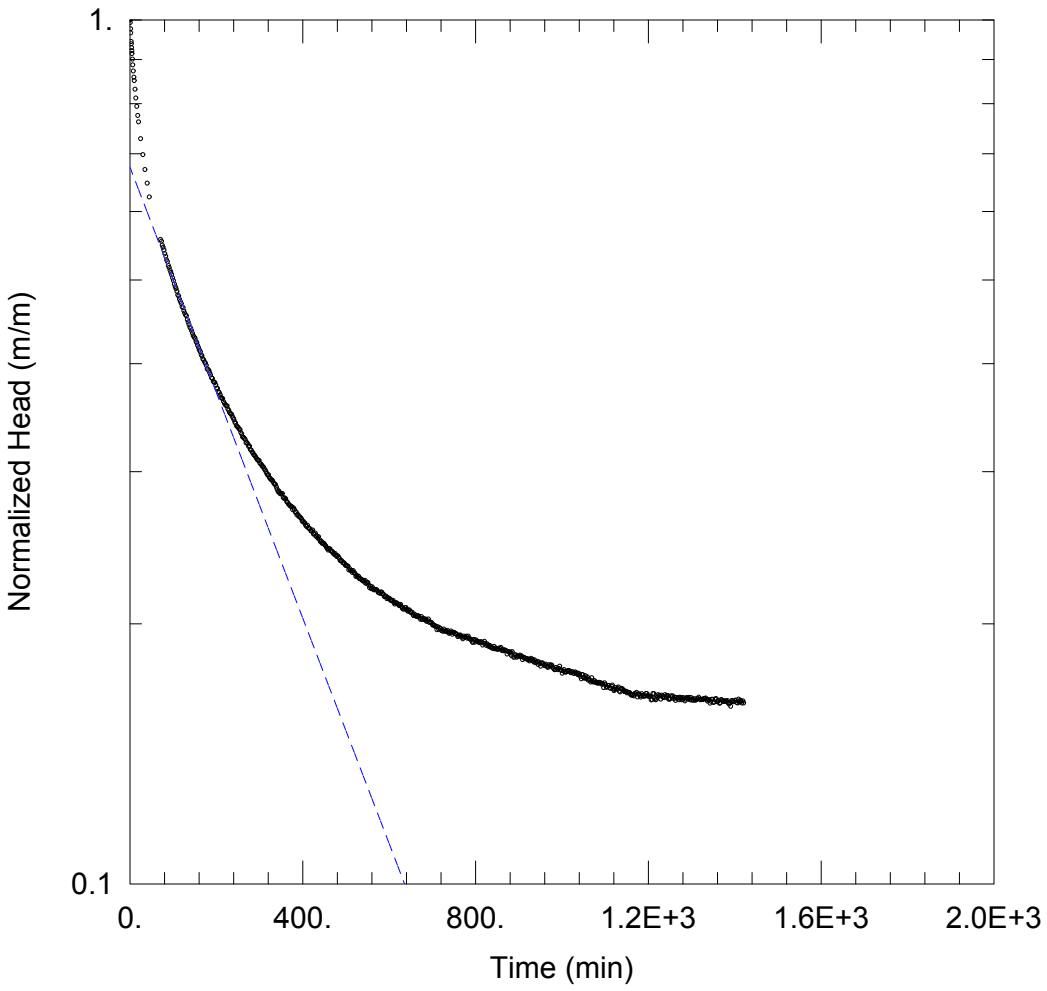
WELL DATA (MW20-7C)

Initial Displacement: 3.395 m
Total Well Penetration Depth: 5.62 m
Casing Radius: 0.0254 m
Static Water Column Height: 5.6 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.796E-9 m/sec y0 = 3.224 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-8C.aqt
Date: 04/22/20 Time: 17:42:50

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-8C
Test Date: March 31, 2020

AQUIFER DATA

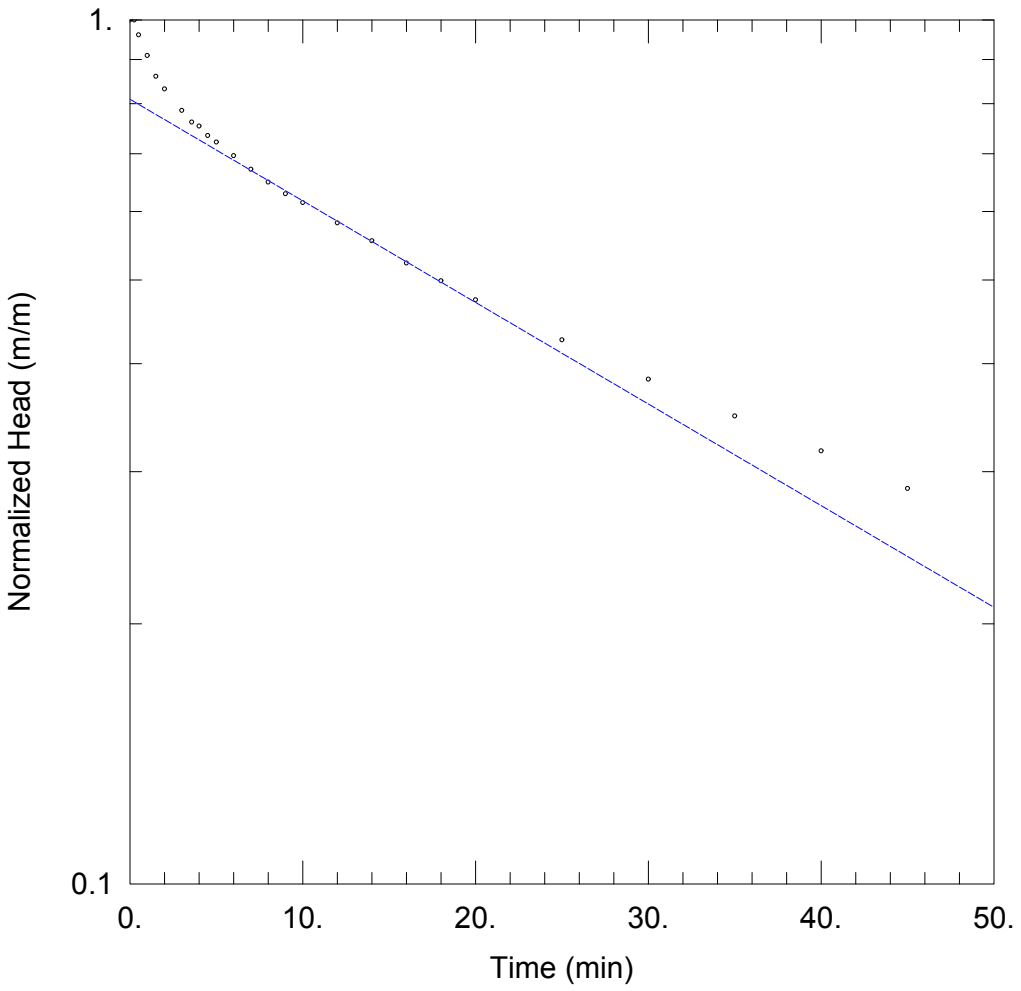
Saturated Thickness: 8.8 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-8C)

Initial Displacement: 2.571 m
Total Well Penetration Depth: 6.75 m
Casing Radius: 0.0254 m
Static Water Column Height: 6.8 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.429E-8 m/sec
y0 = 1.736 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-8S.aqt
Date: 04/22/20 Time: 17:43:09

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-8S
Test Date: March 31, 2020

AQUIFER DATA

Saturated Thickness: 5.7 m Anisotropy Ratio (Kz/Kr): 0.1

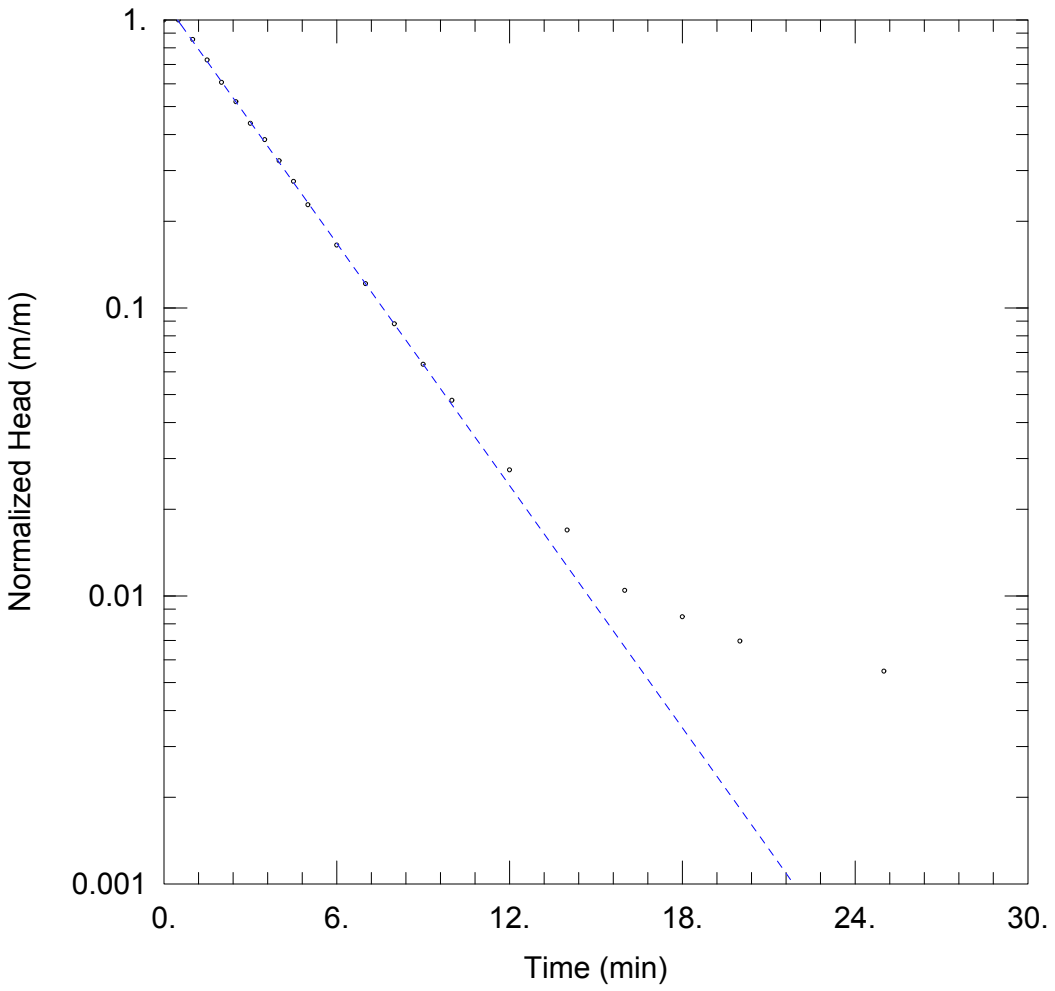
WELL DATA (MW20-8S)

Initial Displacement: 1.98 m Static Water Column Height: 3.7 m
Total Well Penetration Depth: 3.72 m Screen Length: 1.52 m
Casing Radius: 0.0254 m Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.857E-7 m/sec y0 = 1.603 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-9T.aqt
Date: 04/22/20 Time: 17:43:30

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-9T
Test Date: March 26, 2020

AQUIFER DATA

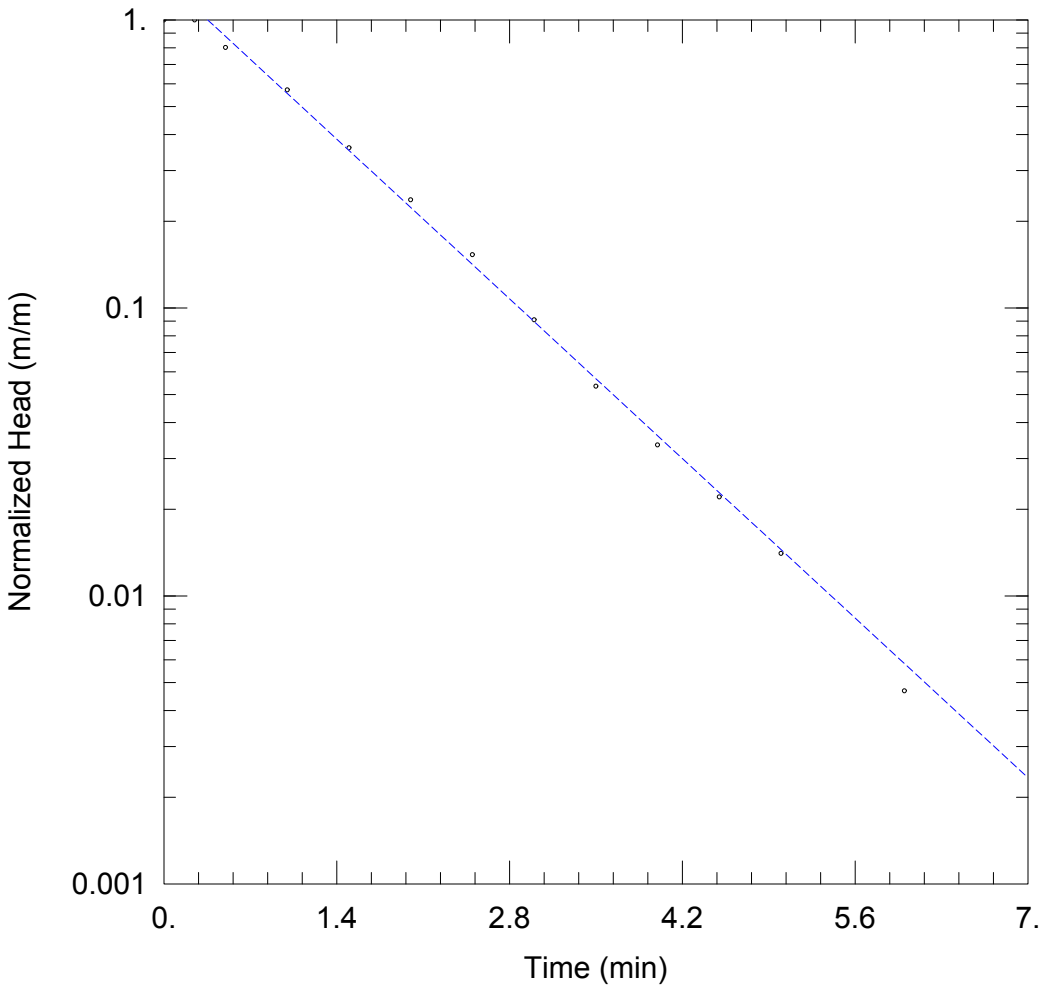
Saturated Thickness: 18.3 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-9T)

Initial Displacement: 2.009 m
Total Well Penetration Depth: 16.34 m
Casing Radius: 0.0254 m
Static Water Column Height: 16.3 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.072E-6 m/sec
y0 = 2.338 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-10D.aqt
Date: 04/22/20 Time: 17:43:46

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-10D
Test Date: March 31, 2020

AQUIFER DATA

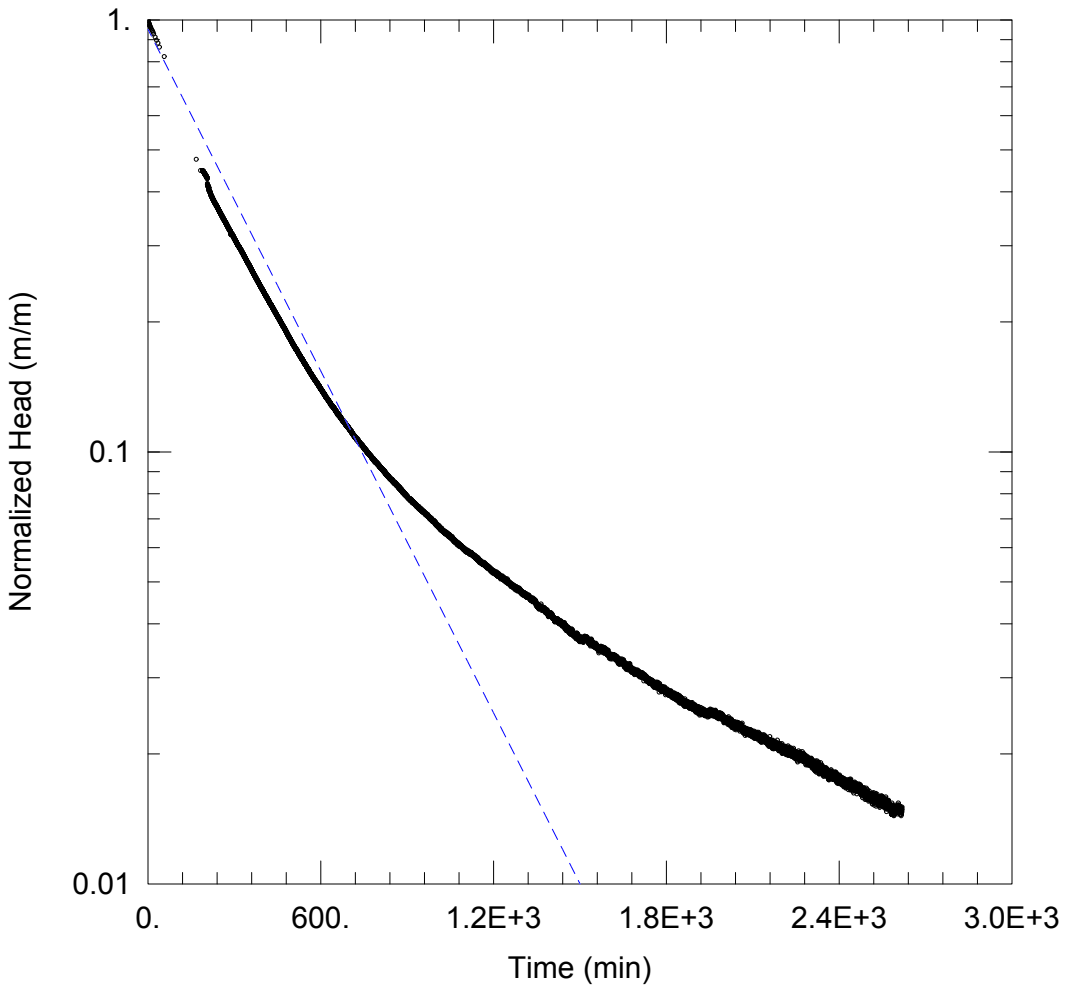
Saturated Thickness: 20.4 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-10D)

Initial Displacement: 1.496 m
Total Well Penetration Depth: 18.43 m
Casing Radius: 0.0254 m
Static Water Column Height: 18.3 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.163E-5 m/sec
y0 = 2.066 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-11C.aqt
Date: 04/22/20 Time: 17:44:06

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-11C
Test Date: March 26, 2020

AQUIFER DATA

Saturated Thickness: 8.4 m Anisotropy Ratio (Kz/Kr): 0.1

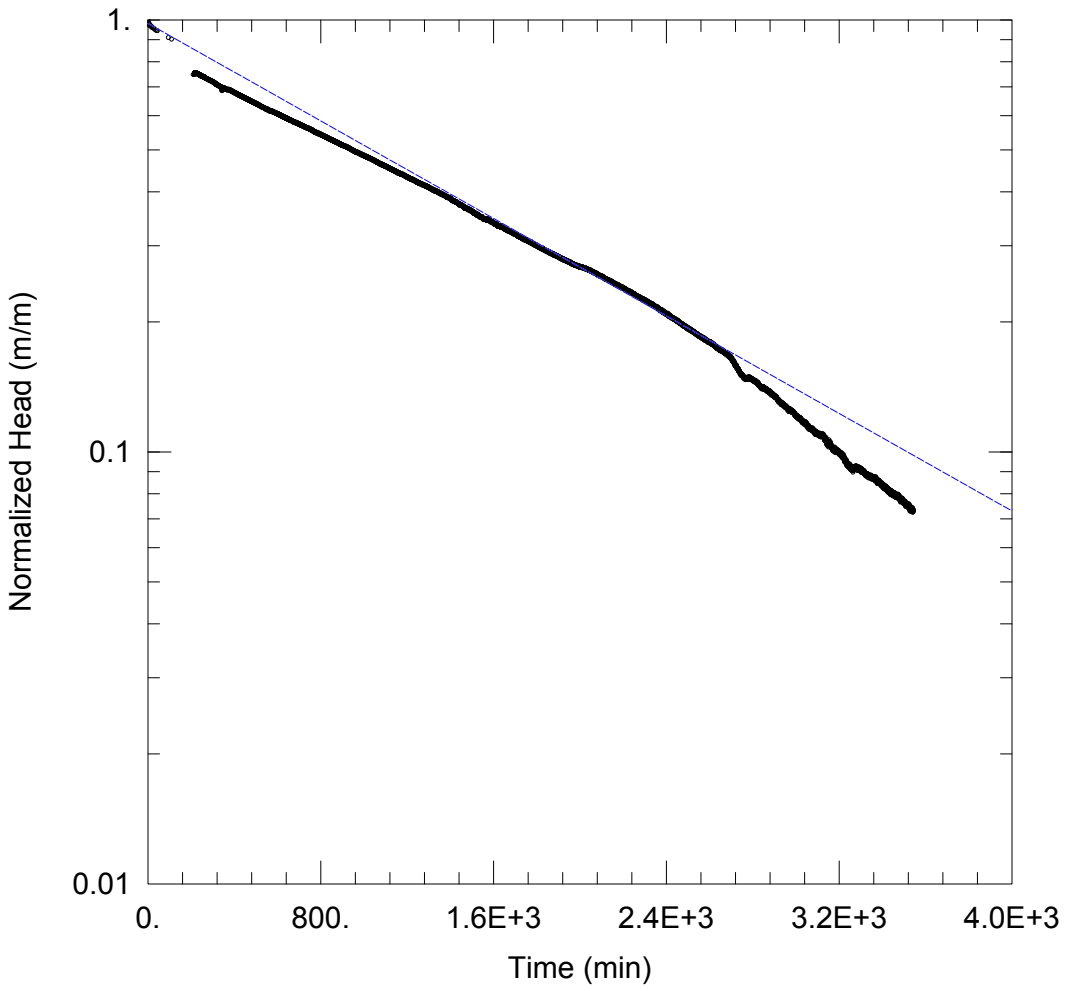
WELL DATA (MW20-11C)

Initial Displacement: 2.742 m
Total Well Penetration Depth: 6.36 m
Casing Radius: 0.0254 m
Static Water Column Height: 6.4 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 3.441E-8 m/sec
y0 = 2.609 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-11S.aqt
Date: 04/22/20 Time: 17:44:24

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-11S
Test Date: March 26, 2020

AQUIFER DATA

Saturated Thickness: 4.8 m Anisotropy Ratio (Kz/Kr): 0.1

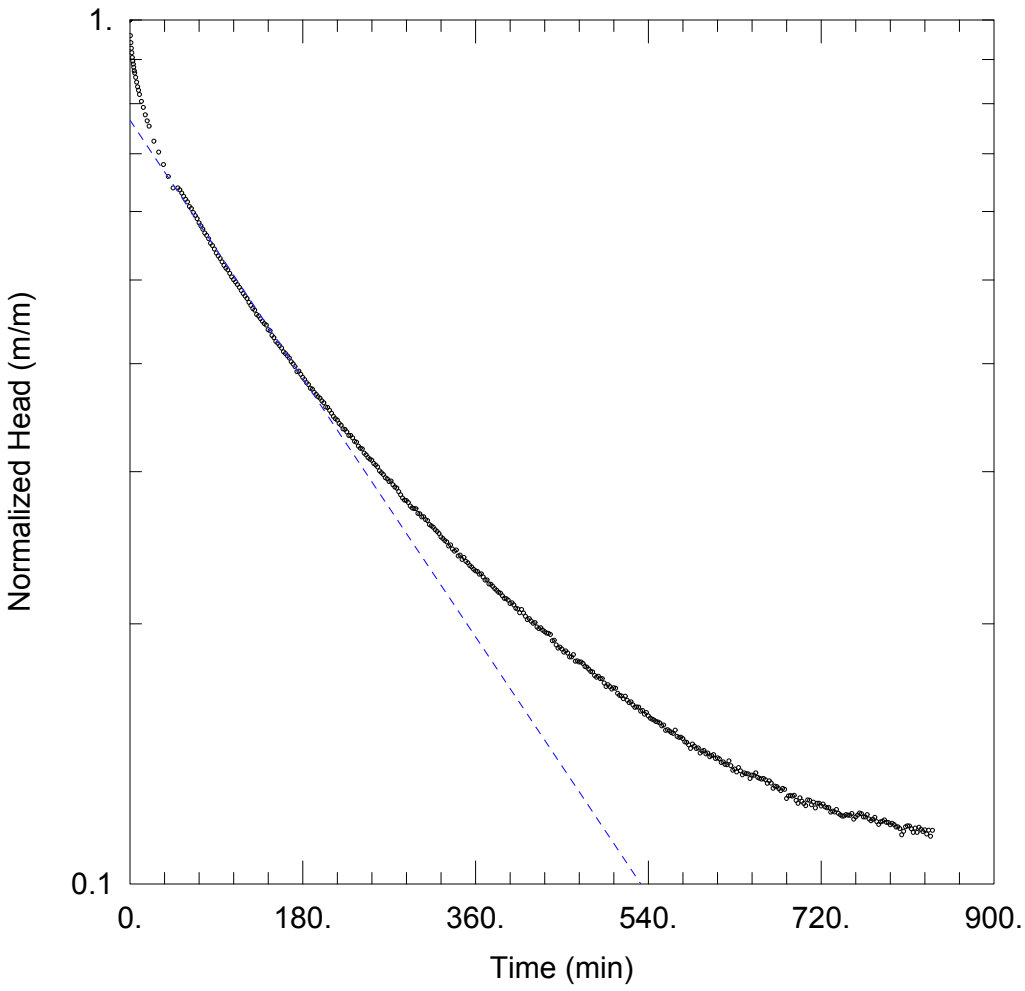
WELL DATA (MW20-11S)

Initial Displacement: 0.942 m Static Water Column Height: 2.8 m
Total Well Penetration Depth: 2.77 m Screen Length: 1.52 m
Casing Radius: 0.0254 m Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.553E-9 m/sec y0 = 0.9247 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-12S.aqt
Date: 04/22/20 Time: 17:44:51

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-12S
Test Date: March 31, 2020

AQUIFER DATA

Saturated Thickness: 5.8 m Anisotropy Ratio (Kz/Kr): 0.1

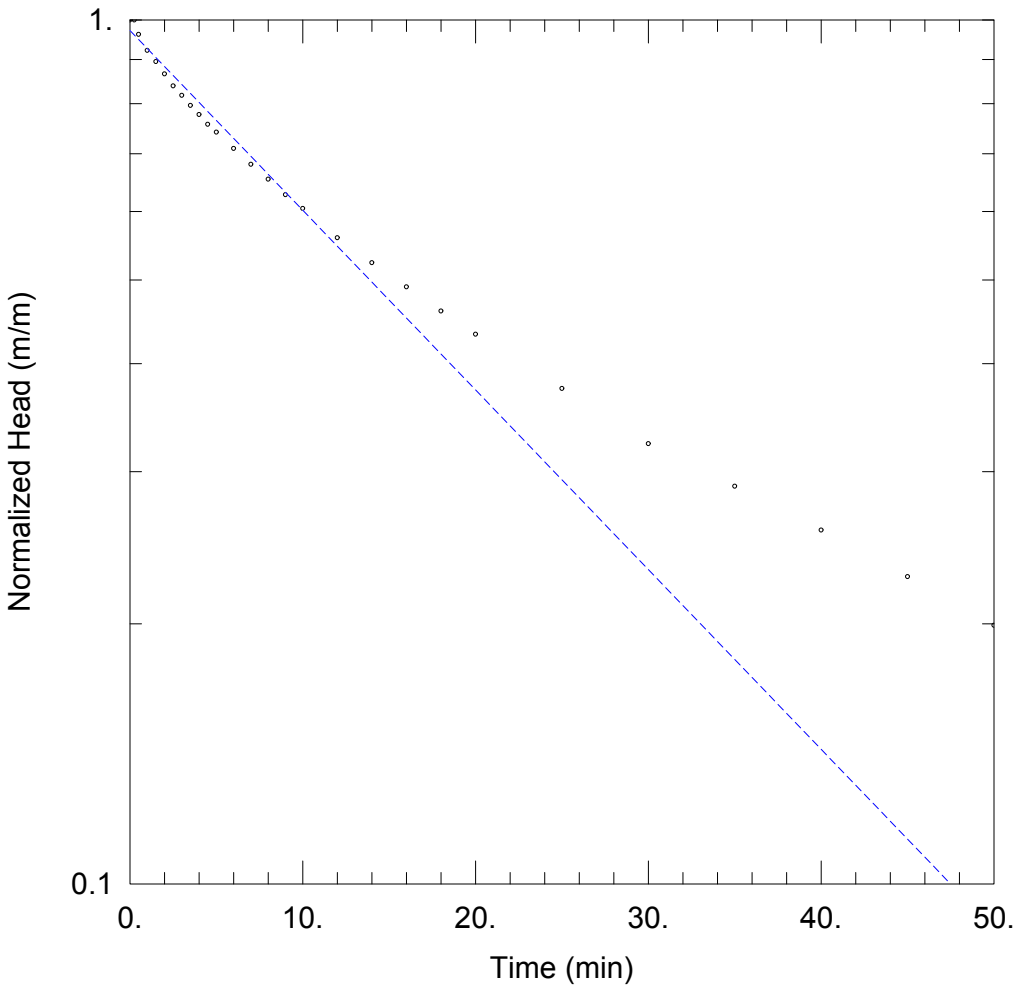
WELL DATA (MW20-12S)

Initial Displacement: 2.013 m
Total Well Penetration Depth: 3.8 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.8 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.047E-8 m/sec y0 = 1.541 m



HYDROGEOLOGICAL REVIEW

Data Set: H:\...\MW20-15T.aqt
Date: 04/22/20 Time: 17:45:59

PROJECT INFORMATION

Company: Terrapex Environmental Ltd.
Client: GFL
Project: CO749.00
Location: Concession 10, Moose Creek, ON
Test Well: MW20-15T
Test Date: March 27, 2020

AQUIFER DATA

Saturated Thickness: 14.9 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW20-15T)

Initial Displacement: 2.831 m
Total Well Penetration Depth: 12.89 m
Casing Radius: 0.0254 m
Static Water Column Height: 12.9 m
Screen Length: 1.52 m
Well Radius: 0.1 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.888E-7 m/sec y0 = 2.752 m