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Hydrogeological Investigation Report
Proposed Residential Development
3275/3301 Trafalgar Road
Oakville, Ontario
L6H 7C2

Prepared for:

New Horizon Development Group
3170 Harvester Road, Unit 200
Burlington, Ontario
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■ FOUNDATION INVESTIGATIONS ■ ENVIRONMENTAL SITE ASSESSMENTS AND CLEANUP ■ GROUNDWATER STUDIES ■ SLOPE STABILITY STUDIES
■ ASPHALT TECHNOLOGY ■ ASPHALT MIX DESIGNS ■ PAVEMENT PERFORMANCE ANALYSIS ■ CONSTRUCTION MATERIALS TESTING & INSPECTION
■ ANALYSIS OF SOIL CORROSION POTENTIAL ■ PAVEMENT REHABILITATION & TENDER SPECIFICATIONS ■ CONCRETE QUALITY ASSURANCE TESTING
■ ROOF INSPECTIONS ■ INFRASTRUCTURE NEEDS STUDIES ■ FAILURE ANALYSIS AND EXPERT WITNESS SERVICES ■ AGGREGATE EVALUATION

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Appendices:

1.0 INTRODUCTION

1.1 Background

Landtek Limited (Landtek) has been retained by New Horizon Development Corp. to complete a Hydrogeologic Investigation for the proposed residential development at 3275/3201 Trafalgar Road in Oakville, Ontario (the Site or development).

The site is located in Oakville, Ontario, and is centered at approximate grid reference 602854, 4816752 (UTM 17T coordinates). The Geodetic elevation of the ground surface at the site is approximately 177.5 m to 184.5 m.

The site is located on the east side of Trafalgar Road between Burnhamthorpe Road East and Dundas Street East in an area with a zoning classification as Existing Development (ED). It is bound to the west by Trafalgar Road followed by an agricultural land, to the north by an uncultivated land, to the east by uncultivated lands, and to the south by a construction site. The Site is approximately 7.845 ha (19.39 ac) and its location is provided on Figure 1, in Appendix A.

Based on the site plan provided by GRAZIANI + CORAZZA ARCHTECTS, the site is to be developed into mixed use commercial and multi-tenant residential dwellings to be implemented as Phase 1 and Phase developments. The site plan is provided on Figure 2, in Appendix A.

The purpose of the Hydrogeological Investigation is to evaluate the groundwater conditions at the site, delineate possible development/post-development effects, and suggest mitigation measures to minimize the effects to the shallow groundwater system during and post-development. Specifically, the report provides the following:

- A description of the hydrogeologic setting of the property and a summary of the existing soil and groundwater conditions at the site.

- Identification of hydrogeologic features such as zones of significant groundwater recharge and discharge.

- Assessment of the requirement for groundwater dewatering and control during construction, if any.

1.2 Work Scope and Report Organization

The scope of work for this investigation includes the following:

- Review of available background information. A review of published works was done of available geologic and hydrogeologic information for the site including topographic and geologic maps and water well records. Meteorological data was reviewed to assess the local climate.

- Site Assessment. A detailed visual inspection of the site and surrounding area was completed to identify and document local topography, surface water drainage features, and the potential presence of significant hydrogeologic features such as closed depressions (areas of ground water recharge), seeps, springs, or the presence of phreatophytic vegetation.

- A subsurface investigation. A total of eleven (11) additional monitoring wells to the existing five (5) completed by MTE were drilled and installed at the Site. The subsurface investigation of the property was done to characterize the overburden stratigraphy at the property as well as assess the site-specific groundwater conditions.

- Hydraulic Conductivity Tests. In-situ rising head tests were completed in the three of the five installed monitoring wells to assess the hydraulic conductivity of overburden/bedrock against which the monitoring wells were screened.

- Groundwater Monitoring. Groundwater level monitoring was conducted in all monitoring wells in order to assess the depth of groundwater level across the site.

The report is organized as follows:

Section 1 contains a brief introduction to the project and the scope of work undertaken by Landtek.

Section 2 outlines the methodologies followed during completion of the desktop study and the field investigation.

Section 3 summarizes the findings of the investigation. It includes:
- a description of the physical setting
- the results of the field investigation

Section 4 provides Water Taking Evaluation and Impact Assessment.

Section 5 provides a Monitoring Plan.

Section 6 provides a Mitigation Plan.

Section 7 provides Site Development and Water Balance.

Section 8 provides Summary and Conclusions.

Section 9 provides Closure.

Section 10 provides References.

Section 11 provides Limitations.

2.0 METHODOLOGY

2.1 Desktop Study

A review of published works was done of available geologic and hydrogeologic information for the site including topographic and geologic maps.

The Ministry of Environment, Conservation and Park (MECP) water well database for the local area was also accessed and the individual well record obtained for wells located within 500 m radius of the Site.

2.2 Site Inspection to Assess Hydrogeologic Features

A detailed site inspection was conducted on August 18, 2021, to assess the presence of features which may be significant from a hydrogeologic viewpoint. In particular, the site was inspected to assess the following:

- The presence of closed drainage features, depressions, or sandy areas which may allow for ponding and significant or enhanced infiltration of water.
- Assessment of the presence of phreatophytic vegetation which may indicate seasonally high groundwater levels and/or groundwater discharge and seepage.
- Identification of any zones of visible seepage or groundwater discharge.

2.3 Field Investigation

2.3.1 Drilling and Well Installation

MTE Consultants

The field investigation for a geotechnical Investigation report completed for the Site in 2020 by MTE Consultants (MTE) was reviewed. The investigation and findings are provided below.

“The fieldwork was carried out between September 22 and 29, 2020 and involved the drilling of seventeen geotechnical boreholes (Boreholes MW101-20 and BH120-20 to BH135-20) to depths ranging from 3.7 to 11.3 m.

The boreholes were advanced with a CME75 track mounted drill rig equipped with continuous flight solid and hollow stem augers, supplied and operated by Tri-Phase Group. The bedrock was cored using an HQ diameter core barrel.

One 50 mm diameter monitoring well was installed in Borehole MW101-20. The installation comprised a 3 m filtered screen and bentonite seal above the screen. Stabilized water level measurements were taken by MTE on October 7, 2020.

Three 50 mm diameter monitoring wells were also installed by Direct Push/SSA drilling method.

The locations of the monitoring wells are shown on Figure 4, in Appendix A, and the log of monitoring well MW101-20 is provided in Appendix B.

Landtek Limited

The subsurface hydrogeological drilling investigation at the Site was conducted on August 9, 10, 11, and 12, 2021. It included twenty (20) boreholes with five (5) completed as monitoring wells to a maximum depth of approximately 10.0 mbgs.

Additional five (5) boreholes were completed at the Site on March 20 to 24, 2023 with three (3) completed as monitoring wells to a maximum depth of approximately 18.7 mbgs.

The boreholes were advanced using a continuous flight power auger track-mounted drill rig equipped with conventional soil sampling and testing tools. The drilling was conducted by Pontil Drilling. of Hamilton Ontario under the supervision of a member of Landtek staff who logged the borings and examined the samples as they were obtained. The results of the drilling are recorded in detail on the accompanying borehole logs, provided in Appendix B.

The monitoring wells were constructed with 50 mm inner diameter, Schedule 40 machine slotted PVC screens equipped with a bottom cap, and machine threaded riser pipe. The screen length and slot size are 3.0 mm, and 0.10-inch, respectively.

The annular space between the PVC riser pipes and each borehole wall was backfilled to at least 0.3 m above the top of the screen with selected silica sand. A bentonite seal was placed immediately above the sand pack to a height just below grade. Each monitoring well was finished with a monumental protective steel casing, which was cemented in-place.

A summary of monitoring well installation details of the wells previously completed by MTE (2020) and Landtek (2021, 2022 and 2023) is presented on below in Table 1, and the monitoring wells' locations are shown on Figure 4, in Appendix A.

Table 1. Construction Details - update

Monitoring Well ID	Easting* (NAD83)	Northing* (NAD83)	Ground Surface Elevation (masl)**	Stick Up (m)	Well Depth (mbgs)	Screened Interval (m)	Screened Material
MW101-20+	602985.4	4816821.8	178.87	1.00	5.10	3.00-5.00	Shale Bedrock
MW111-20+	602878.7	4816771.6	179.25	1.05	8.30		Shale Bedrock
MW117D+	602801.1	4816640.6	180.26	0.98			
MW118-20+	602858.5	4816611.7	179.67	0.95	8.60		Shale Bedrock
MW119-20+	602816.9	4816544.8	180.65	1.03	8.50		Shale Bedrock
MW102S#	602765.0	4816750.7	180.74	1.16	3.18		Clayey Silt
MW102D#	602765.0	4816750.7	180.74	0.71	4.50	3.00-4.50	Clayey Silt/Shale Bedrock
MW103#	602819.8	4816830.5	184.19	0.70	10.00	7.00-10.00	Shale Bedrock
MW106#	602913.6	4816941.6	182.53	0.94	9.40	6.40-9.40	Shale Bedrock
MW120S#	602868.9	4816701.0	178.49	0.68	2.43		Silty clay/ clayey silt
MW120D#	602868.9	4816701.0	178.49	0.63	6.50	4.50-7.50	Shale Bedrock
MW121S#	602925.3	4816709.6	178.28	0.79	2.43		Silty clay/ Shale bedrock
MW121D#	602925.3	4816709.6	178.28	1.00	6.50	5.00-6.50	Shale Bedrock
MW1D-23#	602960.6	4816868.6	179.64	0.96	18.72	15.72-18.72	Shale Bedrock
MW4-23#	602855.7	4616609.7	179.45	1.02	18.60	15.60-18.60	Shale Bedrock
MW122D-23#	602992.4	4816842.8	178.30	1.06	18.60	15.60-18.60	Shale Bedrock

Notes:
[+] Well completed by MTE.
[#] Wells completed by Landtek.
masl = meters above sea level.

m = meters
[*] Values are approximate by GPS +/- 4 m
[**] A.T. McLaren Limited (Legal and Engineering Surveys), Drawing No. 36729-T, August 10, 2021
[+] Direct Push

2.3.2 Monitoring Well Development, Monitoring and Sampling

Well Development: Each of the installed monitoring wells (MW102D, MW102S, MW103, MW106, MW120D, MW120S, MW121S and MW121D) was developed to remove any sediment that may have been introduced during installation and to improve the hydraulic properties of the formation against which the wells were screened. Development employed electric well pump/waterra tubing with foot valves and each well was developed until a visible decrease in turbidity was observed.

Groundwater Monitoring

Groundwater level monitoring was completed between August 2021 and June 2023 to determine the seasonal variation and highest ground water level.

Groundwater Sampling

Provincial Water Quality Objectives (PWQO) Analysis

On April 5, 2023, groundwater samples were collected from monitoring well MW4-23 at Phase 1, including at MW111-20 and MW106, located at the central and northeast areas of the overall site, respectively after purging.

On August 8, 2024, groundwater samples were collected from monitoring well MW101-20 located at a background area at the southeast area of the overall site, to determined background water quality for the site after purging.

All collected samples were stored in a cooler with freezer packs after collection and during transport to AGAT Laboratories in Mississauga, Ontario. The collected samples were analyzed for the Provincial Water Quality Objective (PWQO) Analysis. ALS is accredited by the *Canadian Associations for Laboratory Accreditation Inc*. (CALA).

2.3.3 Hydraulic Conductivity Testing

Hydraulic conductivity tests were completed in the following three monitoring wells at the Site (MW106, MW120, and MW121) to provide estimates of the hydraulic conductivity for the zones against which the screens for the wells were set. Rising head tests were conducted by Landtek on November 25, 2021, and April 17,2023. The tests involved the extraction of a known volume to displace the water level. A datalogger programed at 2 and 3 second intervals were used to record the water level response during the tests.

Data Analysis: The rising head test data were analyzed using AqteSolve Professional Version 4.5 software package developed by Glenn M. Duffield of HydroSOLVE Inc. applying the Hvorslev analysis solutions, depending on hydrogeology.

3.0 FINDINGS

3.1 Topography, Drainage

The Site topography is uneven with the topography ranging from 178 masl at the south-central area, to 185 masl north-central area. The Site is located in the East Morrison Watershed in the Halton Region Source Protection Area. It is not in a Highly Vulnerable Aquifer Area, an Intake Protection Zone, a Significant Recharge Area, or a Wellhead Protection Area. (Ontario Source Protection Information Atlas, November 2021).

3.2 Regional Physiography, Hydrology and Geological Setting

The site is located within the physiographic region known as the South Slope physiographic region identified by Chapman and Putnam (1984). The Trafalgar Moraine is a topographic ridge that was formed during the retreat of the Lake Ontario ice lobe 12,000 - 13,000 years ago. It extends from west area of Mississauga to the northern portion of Oakville and is found to the north of the site marking the boundary between the South Slope and the Peel Plain physiographic region located north.

The Site lies on a till plain comprised of reddish coloured clay-Silt Halton Till which is derived from the underlying bedrock formation, the Queenston Formation. The Halton Till is a poor aquifer due to its fine-grained nature and low permeability and is capable of providing only limited quantities of groundwater to water wells.

Queenston Formation surface, on a regional basis dip from the northwest to southeast, generally following the regionally topographic slope, mapped with a surface elevation of approximately 157 down to 152 masl in the vicinity of Site (Ontario Department of Mines, 1964). It is poorly fractured and also a poor aquifer due to poor pore space interconnections in the shale Formation. It is capable of providing only limited quantities of groundwater to water wells.

3.3 Climate

The site is located in the Mixedwood Plains ecozone of Ontario (Natural Resources Canada, 2012). The general climate data presented on the following page in Table 2 was obtained from Environment Canada publications and from the Environment Canada online database. Average climate data was taken from the Hamilton RBG for the period of 1981 to 2010.

Table 2. 1981 to 2010 Climate Normals for Hamilton RBG (as averages)

	Daily Average Temperature (°C)	Average Rainfall (mm)	Average Snowfall (cm)	Average Precipitation (mm)
January	-4.7	27.4	32.4	56.8
February	-3.9	26.4	31.1	57.2
March	0.5	43.3	18.3	63.7
April	7.1	70.1	2.8	73.3
May	13.3	85.5	0.0	85.5
June	18.9	72.7	0.0	72.7
July	22.0	82.7	0.0	82.7
August	20.9	89.7	0.0	89.7
September	16.3	80.9	0.0	80.9
October	10.0	71.6	0.0	71.6
November	4.1	83.2	7.5	91.3

Table 2 Continued.

	Daily Average Temperature (°C)	Average Rainfall (mm)	Average Snowfall (cm)	Average Precipitation (mm)
December	-1.4	46.8	26.0	71.9
Year	8.6	780.0	118.1	897.1

3.4 Local Hydrogeology

Local hydrogeology conditions were assessed on the basis of local water well records and available ground investigation reports for the area.

The hydrostratigraphy (i.e., the vertical sequence and horizontal extent of aquifers and aquitards) in the overburden and bedrock generally follows the geologic layering. Till formations in the overburden act as aquitards while the sandier units generally behave as aquifers. Shale generally acts as an aquitard with an upper weathered bedrock aquifer layer.

3.5 MECP Water Well Records and Groundwater Resources

The Ministry of Environment, Conservation and Park (MECP) Water Well Information System is a publicly available database which contains information such as groundwater well location, well construction details, static water level, geologic units encountered with depth, general water quality observations, water use, date of construction, and screened interval.

The MECP records for wells located within approximately 500 meters of the site were reviewed to assess the general nature and use of the groundwater resource in the area and to characterize local hydrogeologic conditions.

Desk Top Study

A search of the MECP water well records within approximately 500 m of the site, conducted on October 20, 2021, returned a total of 15 wells comprising of seven (7) water wells, five (5) observation wells, two (2) abandoned wells, and one (1) well without information. The records were reviewed to assess the general nature of the groundwater resource in the area and to characterize local hydrogeologic conditions. The locations of the wells are shown on Figure 5 in Appendix A. A summary of the data obtained from the review is presented below and a summary of the well records is provided in Appendix C.

A summary of the data obtained from the well survey is presented below.

Well Construction

- Wells terminated in bedrock 12
- Well terminated in overburden 1
- Wells without information 2
- **Total 15**

Well Use

- Water Wells 7
- Observation Wells 5
- Abandoned Wells 2
- No Information 1
- **Total 15**

Well Depth

- Less than 15 m 7
- 15 to 30 m 5
- Greater than 30 m 1
- No Data.....2
- **Total.....15**

Based on the well records, it was determined that there are 7 water wells within 500 m radius of the Site.

3.6 Results of Site Inspection

A watercourse with significant riparian buffer within 3301 Trafalgar Road runs through the central portion of 3301 Trafalgar Road from north to south. The water pools in a fire pond at the southern limit of 3301 Trafalgar Road that is surrounded by tall grasses and cattails.

The northeast portion of 3301 Trafalgar Road is natural, grass covered, and is higher in elevation than the adjacent site areas.

At the time of Landtek's site visit, the northeastern portion of 3275 Trafalgar Road was agricultural in nature with tall grasses and wet soils progressing to the East.

The site consists of one community church parcel on the Southwestern boundary and one Residential dwelling at the Southernmost boundary.

3.7 Results of Subsurface Investigation

The borehole information is generally consistent with the geological data for the area, with the predominant soils comprising of clay and silt till underlain by red shale.

Detailed monitoring wells logs are presented in Appendix B, and the lithologies encountered during drilling are discussed further in the following sections.

Existing Pavement Structure

Boreholes BH114 and BH115 (geotechnical boreholes) were located within the existing pavement structure at the site. The pavement structure comprises of an approximately 300 mm asphaltic concrete cover with 300 mm of pavement granular materials. The pavement granular materials generally comprise of a sand and gravel product.

Organic Soils

Organic soil was encountered all boreholes, except boreholes BH114 and BH115, at the ground surface and comprised of an approximately 150 mm to 600 mm thick layer of topsoil.

It should be noted that topsoil thicknesses may vary across the site and the thicknesses encountered at the borehole locations may not be representative of the site-wide, organic soil cover.

Fill

Fill material was encountered in all boreholes underlying the surface materials and extends to depths of approximately 1.5 m (borehole BH114) to 4.1 m (borehole BH103) below existing ground level. The fill generally comprises of silt, clay, and sand, and includes trace fractions of gravel and cobbles and is generally brown in colour.

Silty Clay and Clayey Silt

Silty clay and clayey silt deposits were encountered in boreholes BH110, BH111 and BH119 below the fill material, ranging in depth between approximately 1.5 m (borehole BH3) to 4.4 m below existing ground level. The silty clay and clayey silt deposits encountered are primarily brown in colour and include trace fractions of sand, gravel and shale fragments.

Silty Clay and Clayey Silt Till

Clayey silt till deposits were encountered in all boreholes except boreholes BH121 and BH123 below the fill material and silty clay/clayey silt deposits. The till deposits range in depth between approximately 0.9 m (borehole BH118) to 6.6 m (borehole BH103) below the ground surface. The till deposits encountered are primarily brown in colour and include variable fractions of sand and gravel and trace cobbles.

Bedrock

Red shale of the Queenston Formation was encountered in all boreholes at depths of between approximately 1.8 m (borehole BH123) and 6.6 m (boreholes BH103) below existing ground level, and extends to the terminus of the boreholes at a maximum drill depth of approximately 10.0 m.

3.7.1 Grain Size Analyses

Results of grain size analyses are provided in Appendix D.

In total, seven (7) soil samples were collected for grain size analysis, representing major soil types. Soil samples were collected from the following five boreholes, BH1-23, BH2-23, BH3-23, BH4-23, and BH122D-23 at depths ranging from 0.8 to 5.0 mbgs. These results are summarized below.

BH1-23 @ 0.8-1.2 m bgs
Classified as Silty Clay with 3.9% gravel, 20.2% sand, 49.3% silt and 26.6% clay.
BH2-23 @ 3.0-3.5 m bgs
Classified as Clayey Silt with 12.7% gravel, 41.0% sand, 37.4% silt and 8.9% clay.
BH3-23 @ 2.3-2.7 m bgs
Classified as Silty Clay with 4.9% gravel, 22.6% sand, 46.0% silt and 26.5% clay.
BH3-23 @ 4.6-5.0 m bgs
Classified as Silty Clay with 4.1% gravel, 29.6% sand, 56.2% silt and 22.5% clay.
BH4-23 @ 2.3-2.7 m bgs
Classified as Silty Clay with 6.7% gravel, 22.6% sand, 46.9% silt and 23.8% clay.
BH4-23 @ 4.6-5.0 m bgs
Classified as Silty Clay with 7.3% gravel, 29.5% sand, 45.2% silt and 18.0% clay.

BH122D-23 @ 1.5-2.0 m bgs
Classified as Silty Clay with 10.7% gravel, 26.3% sand, 48.9% silt and 14.1% clay.

Based on the above, it was determined that the soil types are Silty Clay and Clayey Silt.

3.8 Groundwater Monitoring

Depths to groundwater level in the monitoring wells installed at the Site were obtained manually by Landtek staff between August 2021 and June 2023. The readings are presented below in Table3.

Table 3. Groundwater Level Monitoring Data

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
MW101-20	26-Aug-21	5.10	NA	1.00	Dry	NA	NA	178.97
	10-Sep-21				4.07	3.07	175.90	
	13-Oct-21				2.98	1.98	176.99	
	15-Nov-21				2.55	1.55	177.42	
	12-Jan-22				2.51	1.51	177.46	
	16-Feb-22				2.52	1.52	177.45	
	25-Mar-22				2.1	1.10	177.87	
	28-Apr-22				2.18	1.18	177.79	
	10-May-22				2.29	1.29	177.68	
	22-Jun-22				3.25	2.25	176.72	
	20-Jul-22				4	3.00	175.97	
	15-Aug-22				4.61	3.61	175.36	
	12-Sep-22				4.96	3.96	175.01	
	07-Oct-22				5.21	4.21	174.76	
	08-Nov-22				5.37	4.37	174.60	
	12-Dec-22				5.47	4.47	174.50	
	23-Jan-23				2.98	1.98	176.99	
	16-Feb-23				2.49	1.49	177.48	
	17-Mar-23				2.17	1.17	177.80	
	13-Apr-23				2.23	1.23	177.74	
	10-May-23				2.28	1.28	177.69	
	26-Jun-23				2.89	1.89	177.08	
MW111-20	26-Aug-21	8.30	NA	1.05	3.39	2.34	176.91	179.25
	10-Sep-21				3.72	2.67	176.58	
	13-Oct-21				2.95	1.90	177.35	
	15-Nov-21				2.6	1.55	177.70	
	12-Jan-22				2.47	1.42	177.83	
	16-Feb-22				2.63	1.58	177.67	
	25-Mar-22				2.15	1.10	178.15	
	28-Apr-22				2.28	1.23	178.02	
	10-May-22				2.26	1.21	178.04	
	22-Jun-22				3	1.95	177.30	
	20-Jul-22				3.71	2.66	176.59	
	15-Aug-22				4.22	3.17	176.08	
	12-Sep-22				4.51	3.46	175.79	
	07-Oct-22				4.77	3.72	175.53	
	08-Nov-22				4.91	3.86	175.39	
	12-Dec-22				5.04	3.99	175.26	
	23-Jan-23				3.36	2.31	176.94	
	16-Feb-23				2.78	1.73	177.52	
	17-Mar-23				2.46	1.41	177.84	
	13-Apr-23				2.37	1.32	177.93	
	10-May-23				2.38	1.33	177.92	
	26-Jun-23				3.78	2.73	176.52	

Table 3. Groundwater Level Monitoring Data

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
MW117-20	26-Aug-21	17.28	NA	0.98	11.12	10.14	170.12	180.26
	10-Sep-21				11.785	10.81	169.46	
	13-Oct-21				10.74	9.76	170.50	
	15-Nov-21				9.07	8.09	172.17	
	12-Jan-22				9.37	8.39	171.87	
	16-Feb-22				9.12	8.14	172.12	
	25-Mar-22				9.52	8.54	171.72	
	28-Apr-22				9.64	8.66	171.60	
	10-May-22				9.5	8.52	171.74	
	22-Jun-22				10.15	9.17	171.09	
	20-Jul-22				9.88	8.90	171.36	
	15-Aug-22				11.89	10.91	169.35	
	12-Sep-22				10.76	9.78	170.48	
	07-Oct-22				10.35	9.37	170.89	
	08-Nov-22				8.82	7.84	172.42	
	12-Dec-22				10.68	9.70	170.56	
	23-Jan-23				9.77	8.79	171.47	
	16-Feb-23				8.98	8.00	172.26	
	17-Mar-23				8.39	7.41	172.85	
	13-Apr-23				8.70	7.72	172.54	
	10-May-23				8.90	7.92	172.34	
	26-Jun-23				7.88	6.90	173.36	
MW118-20	26-Aug-21	8.60	NA	0.95	5	4.05	175.62	179.67
	10-Sep-21				4.92	3.97	175.70	
	13-Oct-21				4.67	3.72	175.95	
	15-Nov-21				4.52	3.57	176.10	
	12-Jan-22				4.23	3.28	176.39	
	16-Feb-22				4.37	3.42	176.25	
	25-Mar-22				3.78	2.83	176.84	
	28-Apr-22				3.92	2.97	176.70	
	10-May-22				3.9	2.95	176.72	
	22-Jun-22				4.12	3.17	176.50	
	20-Jul-22				4.11	3.16	176.51	
	15-Aug-22				4.58	3.63	176.04	
	12-Sep-22				4.93	3.98	175.69	
	07-Oct-22				5.3	4.35	175.32	
	08-Nov-22				5.82	4.87	174.80	
	12-Dec-22				5.88	4.93	174.74	
	23-Jan-23				5.24	4.29	175.38	
	16-Feb-23				5.03	4.08	175.59	
	17-Mar-23				4.46	3.51	176.16	
	13-Apr-23				4.58	3.63	176.04	
	10-May-23				4.55	3.60	176.07	
	26-Jun-23				4.47	3.52	176.15	
MW119-20	26-Aug-21	8.50	NA	1.03	6.75	5.72	174.93	180.65
	10-Sep-21				7.14	6.11	174.54	
	13-Oct-21				7.08	6.05	174.60	
	15-Nov-21				6.93	5.90	174.75	
	12-Jan-22				6.93	5.90	174.75	
	16-Feb-22				6.99	5.96	174.69	
	25-Mar-22				6.49	5.46	175.19	
	28-Apr-22				6.83	5.80	174.85	
	10-May-22				6.83	5.80	174.85	
	22-Jun-22				7.02	5.99	174.66	
	20-Jul-22				7.07	6.04	174.61	
	15-Aug-22				7.15	6.12	174.53	
	12-Sep-22				7.21	6.18	174.47	

Table 3. Groundwater Level Monitoring Data Continued

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
MW119-20	07-Oct-22	8.50	NA	1.03	7.39	6.36	174.29	180.65
	08-Nov-22				7.49	6.46	174.19	
	12-Dec-22				7.42	6.39	174.26	
	23-Jan-23				7.03	6.00	174.65	
	16-Feb-23				6.81	5.78	174.87	
	17-Mar-23				5.87	4.84	175.81	
	13-Apr-23				7.01	5.98	174.67	
	10-May-23				7.58	6.55	174.10	
	26-Jun-23				8.02	6.99	173.66	
MW102S	26-Aug-21	3.18	None	1.16	-	NA	NA	180.74
	10-Sep-21				-	NA	NA	
	13-Oct-21				-	NA	NA	
	15-Nov-21				-	NA	NA	
	12-Jan-22				-	NA	NA	
	16-Feb-22				-	NA	NA	
	25-Mar-22				-	NA	NA	
	28-Apr-22				Dry	NA	NA	
	10-May-22				4.12	2.96	177.78	
	22-Jun-22				3.57	2.41	178.33	
	20-Jul-22				3.53	2.37	178.37	
	15-Aug-22				3.59	2.43	178.31	
	12-Sep-22				3.84	2.68	178.06	
	07-Oct-22				3.91	2.75	177.99	
	08-Nov-22				4.07	2.91	177.83	
	12-Dec-22				4.23	3.07	177.67	
	23-Jan-23				2.79	1.63	179.11	
	16-Feb-23				2.44	1.28	179.46	
	17-Mar-23				2.22	1.06	179.68	
	13-Apr-23				2.48	1.32	179.42	
	10-May-23				2.57	1.41	179.33	
	26-Jun-23				2.98	1.82	178.92	
MW102D	26-Aug-21	4.50	2.1	0.71	3.02	2.31	178.43	180.74
	10-Sep-21				3.18	2.47	178.27	
	13-Oct-21				2.85	2.14	178.60	
	15-Nov-21				2.6	1.89	178.85	
	12-Jan-22				2.5	1.79	178.95	
	16-Feb-22				2.58	1.87	178.87	
	25-Mar-22				1.73	1.02	179.72	
	28-Apr-22				2.48	1.77	178.97	
	10-May-22				2.44	1.73	179.01	
	22-Jun-22				2.86	2.15	178.59	
	20-Jul-22				3.15	2.44	178.30	
	15-Aug-22				3.4	2.69	178.05	
	12-Sep-22				3.68	2.97	177.77	
	07-Oct-22				3.93	3.22	177.52	
	08-Nov-22				4.21	3.50	177.24	
	12-Dec-22				4.36	3.65	177.09	
	23-Jan-23				2.91	2.20	178.54	
	16-Feb-23				2.64	1.93	178.81	
	17-Mar-23				2.34	1.63	179.11	
	13-Apr-23				2.30	1.59	179.15	
	10-May-23				2.45	1.74	179.00	
	26-Jun-23				2.64	1.93	178.81	
MW103	26-Aug-21	10.00	6.7	0.70	7.02	6.32	177.87	184.19
	10-Sep-21				7.37	6.67	177.52	
	13-Oct-21				7.01	6.31	177.88	
	15-Nov-21				6.5	5.80	178.39	

Table 3. Groundwater Level Monitoring Data Continued

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
MW103	12-Jan-22	10.00	6.7	0.70	5.82	5.12	179.07	184.19
	16-Feb-22				6.06	5.36	178.83	
	25-Mar-22				Frozen	NA	NA	
	28-Apr-22				5.46	4.76	179.43	
	10-May-22				5.41	4.71	179.48	
	22-Jun-22				6.19	5.49	178.70	
	20-Jul-22				6.23	5.53	178.66	
	15-Aug-22				6.31	5.61	178.58	
	12-Sep-22				7.7	7.00	177.19	
	07-Oct-22				7.89	7.19	177.00	
	08-Nov-22				7.97	7.27	176.92	
	12-Dec-22				7.98	7.28	176.91	
	23-Jan-23				7.82	7.12	177.07	
	16-Feb-23				7.39	6.69	177.50	
	17-Mar-23				7.08	6.38	177.81	
	13-Apr-23				5.86	5.16	179.03	
	10-May-23				5.91	5.21	178.98	
	26-Jun-23				6.07	5.37	178.82	
MW106	26-Aug-21	9.50	7.0	0.94	5.7	4.76	177.77	182.53
	10-Sep-21				5.94	5.00	177.53	
	13-Oct-21				5.75	4.81	177.72	
	15-Nov-21				4.98	4.04	178.49	
	12-Jan-22				4.29	3.35	179.18	
	16-Feb-22				4.65	3.71	178.82	
	25-Mar-22				3.5	2.56	179.97	
	28-Apr-22				4.02	3.08	179.45	
	10-May-22				3.88	2.94	179.59	
	22-Jun-22				4.20	3.26	179.27	
	20-Jul-22				4.36	3.42	179.11	
	15-Aug-22				4.48	3.54	178.99	
	12-Sep-22				6.35	5.41	177.12	
	07-Oct-22				6.48	5.54	176.99	
	08-Nov-22				6.62	5.68	176.85	
	12-Dec-22				6.67	5.73	176.80	
	23-Jan-23				5.99	5.05	177.48	
	16-Feb-23				5.59	4.65	177.88	
	17-Mar-23				5.34	4.40	178.13	
	13-Apr-23				4.02	3.08	179.45	
	10-May-23				4.08	3.14	176.31	
	26-Jun-23				4.28	3.34	179.19	
MW120S	26-Aug-21	2.43	None	0.68	-	NA	NA	178.49
	10-Sep-21				-	NA	NA	
	13-Oct-21				-	NA	NA	
	15-Nov-21				-	NA	NA	
	12-Jan-22				-	NA	NA	
	16-Feb-22				-	NA	NA	
	25-Mar-22				-	NA	NA	
	28-Apr-22				1.02	0.34	178.15	
	10-May-22				1.16	0.48	178.01	
	22-Jun-22				1.5	0.82	177.67	
	20-Jul-22				1.99	1.31	177.18	
	15-Aug-22				2.39	1.71	176.78	
	12-Sep-22				2.84	2.16	176.33	
	07-Oct-22				2.96	2.28	176.21	
	08-Nov-22				3.11	2.43	176.06	
	12-Dec-22				Dry	NA	NA	
	23-Jan-23				1.1	0.42	178.07	

Table 3. Groundwater Level Monitoring Data Continued

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
	16-Feb-23				1.11	0.43	178.06	
	17-Mar-23				0.93	0.25	178.24	
	13-Apr-23				1.17	0.49	178.00	
	10-May-23				1.14	0.46	178.03	
	26-Jun-23				1.68	1.00	168.49	
MW120D	26-Aug-21	7.40	None	0.63	Dry	NA	NA	178.49
	10-Sep-21				2.22	1.59	176.90	
	13-Oct-21				2.03	1.40	177.09	
	15-Nov-21				1.82	1.19	177.30	
	12-Jan-22				2.03	1.40	177.09	
	16-Feb-22				1.6	0.97	177.52	
	25-Mar-22				1.33	0.70	177.79	
	28-Apr-22				1.4	0.77	177.72	
	10-May-22				1.55	0.92	177.57	
	22-Jun-22				2.06	1.43	177.06	
	20-Jul-22				2.4	1.77	176.72	
	15-Aug-22				2.97	2.34	176.15	
	12-Sep-22				3.38	2.75	175.74	
	07-Oct-22				3.87	3.24	175.25	
	08-Nov-22				4.25	3.62	174.87	
	12-Dec-22				4.24	3.61	174.88	
	23-Jan-23				2.16	1.53	176.96	
	16-Feb-23				1.82	1.19	177.30	
	17-Mar-23				1.46	0.83	177.66	
	13-Apr-23				1.56	0.93	177.56	
	10-May-23				1.52	0.89	177.60	
	26-Jun-23				1.90	1.27	177.22	
MW121S	26-Aug-21	2.43	None	0.79	-	NA	NA	178.28
	10-Sep-21				-	NA	NA	
	13-Oct-21				-	NA	NA	
	15-Nov-21				-	NA	NA	
	12-Jan-22				-	NA	NA	
	16-Feb-22				-	NA	NA	
	25-Mar-22				-	NA	NA	
	28-Apr-22				Dry	NA	NA	
	10-May-22				2.42	1.63	176.65	
	22-Jun-22				2.7	1.91	176.37	
	20-Jul-22				2.05	1.26	177.02	
	15-Aug-22				2.45	1.66	176.62	
	12-Sep-22				2.96	2.17	176.11	
	07-Oct-22				3.1	2.31	175.97	
	08-Nov-22				Dry	NA	NA	
	12-Dec-22				Dry	NA	NA	
	23-Jan-23				1.17	0.38	177.90	
	16-Feb-23				1.18	0.39	177.89	
	17-Mar-23				0.99	0.20	178.08	
	13-Apr-23				1.26	0.47	177.81	
	10-May-23				1.14	0.35	177.93	
	26-Jun-23				1.59	0.80	177.48	
MW121D	26-Aug-21	6.50	5.0	1.00	3.13	2.13	176.15	178.28
	10-Sep-21				3.48	2.48	175.80	
	13-Oct-21				2.42	1.42	176.86	
	15-Nov-21				2.02	1.02	177.26	
	12-Jan-22				1.99	0.99	177.29	
	16-Feb-22				2.02	1.02	177.26	
	25-Mar-22				1.6	0.60	177.68	
	28-Apr-22				1.72	0.72	177.56	

Table 3. Groundwater Level Monitoring Data Continued

MW ID	Date	Total Depth (mbgs)	Water Strike (mbgs)*	Stick-up (m)	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Ground Elevation (masl)**
MW121D	10-May-22	6.50	5.0	1.00	1.8	0.80	177.48	178.28
	22-Jun-22				1.73	0.73	177.55	
	20-Jul-22				3.52	2.52	175.76	
	15-Aug-22				4.05	3.05	175.23	
	12-Sep-22				4.41	3.41	174.87	
	07-Oct-22				4.68	3.68	174.60	

Notes:
[*] water strike/groundwater seepage
mbtoc = meters below top of casing
mbgs = meters below ground surface
masl = meters above sea-level
[**] A.T. McLaren Limited (Legal and Engineering Surveys), Drawing No. 36729-T, August 10, 2021

3.9 Hydraulic Gradients and Flow

Vertical Hydraulic Gradient

Groundwater generally flows from the shallow to deeper aquifers as leakage across the aquitards. However, this may vary locally, and the direction of vertical flow depends on the relative heads in the different layers. Leakage rates vary locally depending on the magnitude of the vertical gradients and on the thickness and hydraulic conductivity of the confining units.

Horizontal Hydraulic Gradient

Groundwater flow typically follows the general path of the surface water courses and flow to low lying and major surface water features from areas of higher gradients to areas of relative lower gradients. In this study area, the inferred groundwater flow direction is towards the wetland/ watercourse with significant riparian buffer runs across the central portion of 3301 Trafalgar Road, from north to south.

3.10 Estimated Hydraulic Conductivity

3.10.1 Hydraulic Conductivity Tests Analysis

The analyses were completed using the Hvorslev method (Fetter, 1994). The graphical results of the hydraulic conductivity analysis are presented in Appendix E, and the results are summarized on the below in Table 4.

Table 4. Hydraulic Conductivity Results

Monitoring Well	Hydraulic Conductivity (m/s)	Screened Material
MW106	7.298×10^{-6}	Shale Bedrock
MW120	2.112×10^{-8}	Shale Bedrock
MW121	3.944×10^{-7}	Shale Bedrock
MW1D-23	4.682×10^{-9}	Shale Bedrock
MW4-23	6.227×10^{-8}	Shale Bedrock
MW102D	4.183×10^{-8}	Silty Clay Till/Shale Bedrock
MW122D-23	1.036×10^{-8}	Shale Bedrock

The results indicate that the hydraulic conductivity of the screened shale bedrock at the site has a geometric mean of 7.538×10^{-8} m/s. This value indicates that the fractured bedrock beneath the Site is heterogeneous.

3.11 Groundwater Quality

Copies of the laboratory Certificates of Analyses are provided in Appendix F. The results of the analyzed unfiltered groundwater samples collected from monitoring well MW120D were compared to the Town of Oakville Storm Sewer Discharge Limits. All analyzed parameters were within guideline Limits.

The results of the analyzed unfiltered groundwater samples collected from monitoring wells MW106, MW4-23 and MW111-20 were compared to the Ontario Provincial Water Quality Standards (PWQS) Discharge parameters. All analyzed parameters were within guideline Limits with the exception of the parameters presented below in Table 5.

Table 5. Summary of Laboratory Analysis Results

Monitoring Well	Parameters	Guideline Value+ (mg/L)	Result (mg/L)	MW101-20 (Background) (mg/L)
MW106	Phenols	0.001	0.017*	<0.001
	Total Cobalt	0.0009	0.0077	**0.0193**
	Total Copper	0.005	0.028	**0.015**
	Total Iron	0.3	20.2*	**33.6**
	Total Nickel	0.025	0.026	**0.042**
	Total Uranium	0.005	0.027	**0.0146**
	Total Vanadium	0.006	0.035	**0.059**
	Total Zinc	0.030	0.059	**0.084**
MW4-23	Phenols	0.001	0.013	<0.001
	Total Boron	0.2	1.17	**1.67**
	Total Cobalt	0.0009	0.0126	**0.0193**
	Total Copper	0.005	0.015	**0.015**
	Total Iron	0.3	23.3*	**33.6**
	Total Nickel	0.025	0.034	**0.042**
	Total Uranium	0.005	0.015	**0.0146**
	Total Vanadium	0.006	0.036	**0.059**
	Total Zinc	0.030	0.078	**0.084**
	Total Zirconium	0.004	0.010	**0.020**
MW111-20	Ammonia-Un-ionized (Calculated)	0.02	0.166**	0.04
	Phenols	0.001	0.002*	<0.001
	Total Boron	0.2	6.52*	**1.67**
	Total Iron	0.3	2.83**	**33.6**

[*] Ontario Provincial Water Quality Objectives (PWQO)
MW101-20: Background Well – sampled to determine background water quality
[+] Like many Phenols primarily enter the groundwater from environmental contamination sources.
[*] In the environment, ammonia is part of the nitrogen cycle and is produced in soil from bacterial processes.
[**] Iron oxide as ferric oxide occurs due to oxidation of ferrous iron. This is very common in soil and rocks.

As shown on the above Table, the result of the groundwater samples at the background monitoring well MW101-20 located at the southeast area of the site, indicate that exceedances of most of the inorganic metals are marginal and comparable to background values, with the exception of Phenols, ammonia, and Iron.

4.0 WATER TAKING EVALUATION & IMPACT ASSESSMENT

Based on the Concept Site Plan by **CRAZIANI + CORAZZA ARCHITECTS**, it is understood that the proposed development will comprise of four (4) levels of underground parking. The underground parking levels plan is shown on Figure 3, with the following proposed five Underground Parking Areas.

1. Phase 1
2. Phase 2 West
3. Phase 2 East A
4. Phase 2 East B
5. Phase 2 East C

These Areas are generally irregular in shape, as a result, the approximate dimensions of each area was determined for ease of excavation dewatering assessment. These are as follows.

Phase 1

Equivalent rectangle: 99.5 m x 60.0 m

Phase 2 West

Equivalent rectangle: 101.0 m x 60.5 m

Phase 2 East A

Equivalent rectangle: 110.0 m x 48.0 m

Phase 2 East B

Equivalent rectangle: 78.0 m x 55.0 m

Phase 2 East C

Equivalent rectangle: 64.0 m x 18.0 m

A maximum of four levels of underground parking is assumed for this assessment. As a result, the maximum depth of the underground levels is estimated to be 13.1 mbgs (P1 = 4.1 m, P2 = 3.0, P3 = 3.0, and P4 = 3.0). Assuming a depth of 1.5 m for the elevator shaft, a total excavation depth of 14.6 mbgs is required for the construction. A dewatering depth of approximately 0.5 m below the excavation bottom (15.1 mbgs) is assumed in order to keep the bottom of the excavation dry during construction.

Static Water Level

Depths to groundwater at the five underground parking areas were determined based on the monitoring wells located at or in close proximity to building/underground levels locations (see Figures 3 and 4 in Appendix A) as follows.

Phase 1

Monitoring well MW111-7D used to represent the geology of underground parking at Phase 1. Depths to groundwater in this monitoring were obtained manually by Landtek staff from August 2021 to July 2023. The readings are presented in Table 3 of this report. Based on the groundwater levels, the highest water level was determined to be 6.90 mbgs on July 26, 2023.

Phase 2 West

Monitoring well MW111-7D used to represent the geology of underground parking at Phase 2 West. Depths to groundwater in this monitoring were obtained manually by Landtek staff from August 2021 to July 2023. The readings are presented in Table 3 of this report. Based on the groundwater levels, the highest water level was determined to be 6.90 mbgs July 26, 2023.

Phase 2 East A

Monitoring wells MW111-20, MW1D-23, and MW122D-23 were used to represent the geology of underground parking at Phase 2 East A. Depths to groundwater in these monitoring wells were obtained manually by Landtek staff from August 2021 to July 2023 at MW111-20; and on. April 13, May 10, and June 26, 2023, at MW1D-23 and MW122D-23. The readings are presented in Table 3 of this report. Based on the groundwater levels, the highest water level was determined to be 1.10 mbgs on March 25, 2022, 4.12 mbgs on July 26, 2023, and 4.02 mbgs on July 26, 2023, respectively. The highest water level at underground parking area E was determined to be the average of the above three readings, resulting in approximately 3.10 mbgs.

Phase 2 East B

Monitoring well MW103 used to represent the geology of underground parking at Phase 2 East B. Depths to groundwater in this monitoring well were obtained manually by Landtek staff from August 2021 to July 2023. The readings are presented in Table 3 of this report. Based on the groundwater levels, the highest water level was determined to be 4.71 mbgs May 22, 2022.

Phase 2 East C

Monitoring well MW106 used to represent the geology of underground parking at Phase 2 East C. Depths to groundwater in this monitoring wells were obtained manually by Landtek staff from August 2021 to July 2023. The readings are presented in Table 3 of this report. Based on the groundwater levels, the highest water level was determined to be 2.56 mbgs March 25, 2022.

4.1 Groundwater Dewatering Requirements

Groundwater seepage will occur where excavations are made below the groundwater level. If groundwater levels are intercepted within the excavation, adequate pumping should be provided to prevent significant groundwater volumes from accumulating.

The method suitable for dewatering an area depends on the locations, type, size and depth of the dewatering; and the hydrogeological conditions such as stratification, thickness, and hydraulic conductivity of the foundation soils below the water table into which the excavation extends or is underlain. It is assumed that any groundwater dewatering for the Site excavations would likely be completed with standard construction sump pump/well points or equivalent, depending on conditions encountered such as water table elevation and subsurface materials. The pumps must appropriately be used to prevent the pumping of fines and loss of ground

during dewatering activities and the flow of water should be appropriately managed so that sediment is not pumped into the proposed discharge point.

For the purposes of this assessment, an open excavation was assumed. The use of conventional shoring could further reduce the amount of groundwater infiltration and should be determined in consultation with the selected subcontractor.

4.1.1 Dewatering Calculations

The lithology at the Site consists of Till overlying Shale bedrock at depths ranging from approximately 1.40 mbgs to 6.0 mbgs. As a result, the potential groundwater flow rate to the proposed underground parking levels excavation was estimated using the dewatering equation for a fully penetrated well of confined aquifer fed by circular source:

$$Q = 2\pi kD\ (H–h_w)/(\ln R_o/r_e)$$

Where: Q = pumping rate [m^3/s]
k = hydraulic conductivity [m/s]
D = aquifer thickness [m]
H = height of piezometer level above base of aquifer before dewatering [m]
h_w = height of water after dewatering [m]
R_o. = radius of influence [m]
r_e = equivalent radius [m]

The radius of cone of depression R can be estimated using:

$$R_o = Ch*Sqrt(K)$$

Where: C = is a factor equal to 3000 for radial flow to a pumping well

h = H- h_w = required drawdown [m]
K = hydraulic conductivity [m/s]

Dewatering of a rectangular area can be accomplished by using an equivalent radius (r_e) to assess drawdown where r_e is given by the following equation:

r_e = Sqrt (length*width/π) (applies when a/b>1.5 and $R_o << r_e$)
r_e = (length + width)/π (applies when a/b,1.5 and $R_o >> r_e$)

Radial Flow into Excavation

Phase 1

The total amount of groundwater required to be pumped for dewatering the excavation associated with the underground parking levels construction assuming there is no rainfall and applying a factor of safety of 2.0 will be ~76,826 L/day (~0.89 L/s). The radius of influence was determined to be approximately 14 m with a Factor of Safety of 2.0 m. These calculations and associated assumptions are provided in Table 1, Appendix G.

Phase 2 West

The total amount of groundwater required to be pumped for dewatering the excavation associated with the underground parking levels construction assuming there is no rainfall and applying a factor of safety of 2.0 will be ~77,656 L/day (~0.90 L/s). The radius of influence was determined to be approximately 15 m with a Factor of Safety of 2.0 m. These calculations and associated assumptions are provided in Table 2, Appendix G.

Phase 2 East A

The total amount of groundwater required to be pumped for dewatering the excavation associated with the underground parking levels construction assuming there is no rainfall and applying a factor of safety of 2.0 will be ~73,526 L/day (~0.85 L/s). The radius of influence was determined to be approximately 20 m with a Factor of Safety of 2.0 m. These calculations and associated assumptions are provided in Table 3, Appendix G.

Phase 2 East B

The total amount of groundwater required to be pumped for dewatering the excavation associated with the underground parking levels construction assuming there is no rainfall and applying a factor of safety of 2.0 will be ~57,058 L/day (~0.66 L/s). The radius of influence was determined to be approximately 18 m with a Factor of Safety of 2.0 m. These calculations and associated assumptions are provided in Table 4, Appendix G.

Phase 2 East C

The total amount of groundwater required to be pumped for dewatering the excavation associated with the underground parking levels level construction assuming there is no rainfall and applying a factor of safety of 2.0 will be ~33,678 L/day (~0.39 L/s). The radius of influence was determined to be approximately 20 m with a Factor of Safety of 2.0 m. These calculations and associated assumptions are provided in Table 5, Appendix G.

4.2 Dewatering Considerations

4.2.1 Estimating Dewatering Volume

The dewatering rate for the proposed excavation must also consider management of direct precipitation input. As a result, dewatering volume is estimated from the following two contributions:

- Radial flow into an excavation under a water table condition (Section 4.1).
- Direct precipitation

Direct Precipitation

Note: Radial flow into an excavation under a water table condition estimate does not take into account storm water management from rainfall events. Additional could be from rainfall due to a 100 year-storm event for the Town of Oakville of 98.4 mm (0.0984 m) rainfall in 24 hours obtained from Intensity Duration Frequency Values, Rainfall Intensity (mm/hour).

4.2.2 Short Term Dewatering Volumes

Phase 1

Direct Precipitation into the proposed excavation = A (m^2) *rainfall (m) = (99.5 m x 60.0 m) *0.0984 m = ~ 587.4 m^3/day = 587,400 L/day

- Dewatering rate outside periods of active precipitation: ~ 76,826 L/day (~77 m3/day)
- Dewatering during Spring/active precipitation period: ~76,826 L/day (radial flow into excavation) + 587,400 L/day (direct precipitation) = 664,226 L/day or ~664.2 m^3/day (7.7 L/s).

Dewatering requirements less contribution from active weather precipitation is estimated to be approximately 76,826 L/day = 77 m^3/day (0.9 L/s).

Phase 2 West

Direct Precipitation into the proposed excavation = A (m^2) *rainfall (m) = (101.0 m x 60.5 m) *0.0984 m = ~ 601.3 m^3/day = 601,300 L/day

- Dewatering rate outside periods of active precipitation: ~ 77,656 L/day (~78 m3/day)
- Dewatering during Spring/active precipitation period: ~77,656 L/day (radial flow into excavation) + 601,300 L/day (direct precipitation) = 678,956 L/day or ~679 m^3/day (7.9 L/s).

Dewatering requirements less contribution from active weather precipitation is estimated to be approximately 77,656 L/day = 78 m^3/day (0.9 L/s).

Phase 2 East A

Direct Precipitation into the proposed excavation = A (m^2) *rainfall (m) = (110.0 m x 48.0 m) *0.0984 m = ~ 519.6. m^3/day = 519,600 L/day

- Dewatering rate outside periods of active precipitation: ~ 73,526 L/day (~74 m3/day)
- Dewatering during Spring/active precipitation period: ~73,526 L/day (radial flow into excavation) + 519,600 L/day (direct precipitation) = 593,126 L/day or ~593 m^3/day (6.9 L/s).

Dewatering requirements less contribution from active weather precipitation is estimated to be approximately 73,526 L/day = 74 m^3/day (0.85 L/s).

Phase 2 East B

Direct Precipitation into the proposed excavation = A (m^2) *rainfall (m) = (78.0 m x 55.0 m) *0.0984 m = ~ 422.1. m^3/day = ~422,100 L/day

- Dewatering rate outside periods of active precipitation: ~ 57,058 L/day (~57 m3/day)
- Dewatering during Spring/active precipitation period: ~57,058 L/day (radial flow into excavation) + 422,100 L/day (direct precipitation) = 479,158 L/day or ~479 m^3/day (5.5 L/s).

Dewatering requirements less contribution from active weather precipitation is estimated to be approximately 57,058 L/day = 57 m^3/day (0.66 L/s).

Phase 2 East C

Direct Precipitation into the proposed excavation = A (m^2) *rainfall (m) = (64.0 m x 18.0 m) *0.0984 m = ~ 113.4. m^3/day = ~113,400 L/day

- Dewatering rate outside periods of active precipitation: ~ 33,678 L/day (~34 m3/day)
- Dewatering during Spring/active precipitation period: ~33,678 L/day (radial flow into excavation) + 113,400 L/day (direct precipitation) = 147,078 L/day or ~147 m^3/day (1.7 L/s).

A normal condition is considered to be a weather condition that should be expected during the operation of the construction dewatering, without extreme weather events. It is advised that dewatering should not be completed during period of active precipitation to minimize the dewatering volume.

Dewatering requirements less contribution from active weather precipitation is estimated to be approximately 33,678 L/day = 34 m^3/day (0.39 L/s).

Note.
A normal condition is considered to be a weather condition that should be expected during the operation of the construction dewatering, without extreme weather events. It is advised that dewatering should not be completed during period of active precipitation to minimize the dewatering volume.

4.2.3 Long Term Groundwater Control (Post Construction)

It is understood that long term dewatering will not be allowed at the Site. As a result, the underground parking levels should be waterproofed below the seasonal highest groundwater level. It is recommended that the proposed parking levels be waterproofed below the established "*seasonally high groundwater level*" plus the required buffer zone (nominally 1.0 m to 1.5 m above).

4.2.4 Permit to Take Water

Assuming excavation is carried out under normal weather conditions without rainfall, groundwater dewatering rates for the proposed underground parking levels excavation were determined to range from approximately 33,678 L/day (0.39 L/s) to 77,656 L/day (0.90 L/s), resulting in a total rate of 318,744 L/day (3.7 L/s). An Environmental Activity and Sector Registry (EASR) Registration is required for this volume of water taking, as the estimated water taking is more than 50,000 L/day and less than 400,000 L/day.

4.2.6 Dewatering Procedure

Based on the results of the hydraulic conductivity tests, seepage through the overburden and bedrock beneath the Site should be feasible to be handled by a sump and/or well point dewatering system. The type of dewatering system to be used should be discussed with a dewatering contractor and evaluated based on anticipated low and high volumes estimates.

The following general construction practices should be implemented to minimize the volume of water to be extracted:

- Schedule construction outside the spring period when water table is typically elevated and avoid construction during period of active precipitation.
- Excavation should be staged or constructed in such a manner to be able to manage dewatering volume conveniently.
- Reduce the length of time during which the excavation cut remains open.

4.2.7 Water Management and Discharge Plan

Water extracted during construction dewatering will be discharged into a creek near the Site.

In order to issue a discharge approval, information relating to the quality and quantity of the discharge must be provided to Town of Oakville. It is strongly recommended that the applicant provide this information eight to twelve weeks prior to the proposed start of discharge.

The rate and total volume of the discharge during dewatering should be provided. During dewatering, the discharge line should be equipped with a flow meter capable of monitoring the discharge rate and a volume totalizer to record the total volume of water discharged. The discharge rate and total daily flow should be recorded with the records maintained on site.

If needed, a weir tank and filter bag should be utilized during dewatering to reduce total suspended solids (TSS) and turbidity prior to discharging of the water into either a sewer system or surface water.

A T-Coupling and valves should be installed downstream of the flow meter, which, if necessary, can be operated to divert flow for mitigation purposes.

4.3 Assessment of Potential Impacts and Water Management

4.3.1 Impact to Existing Groundwater Users

A search of the Ontario MECP within an area extending about 500 m outward from the edge of the excavation was completed.

A summary of the MECP Well Records is presented in Appendix C; and the approximate locations of the wells are shown on Figure 5 in Appendix A. Based on review, seven (7) water wells were identified within 500 m radius of the Site.

The estimated radii of influence from the proposed underground level excavation dewatering were determined to range from approximately 15.0 m to 20.0 m, depending on excavation location. As a result, potential impacts on water wells located within 500 m radius of the Site are not anticipated, as none is within these radii of influence.

4.3.2 Impact to Surface Water and Natural Functions of the Ecosystem

A watercourse with significant riparian buffer runs through the central portion of the Site from north to south. As a result, it is anticipated that there will be potential impacts to the watercourse during construction dewatering from groundwater drawdown within the radius of influence estimated to be approximately 15.0 m.

4.3.3 Contaminants Impacts

This occurs when pre-existing soil or groundwater contamination is mobilised and transported where transmission pathways are created.

Based on the Phase Two Environmental Site Assessment (ESA) completed by Landtek, there are known contamination in the soil and groundwater at the Site. Based on the results of the ESA, an appropriate remediation strategy is being recommended.

4.3.4 Geotechnical Impacts

Geotechnical impacts occur where the geotechnical properties or state of the ground are changed by groundwater dewatering activities. The most common type of impact in this category is ground settlement, with the corresponding risk of distortion and damage to structures, services and other sensitive infrastructure.

The site is located on the east side of Trafalgar Road between Burnhamthorpe Road East and Dundas Street East in an area with a zoning classification as Existing Development (ED). It is bound to the west by Trafalgar Road followed by an agricultural land, to the north by an uncultivated land, to the east by uncultivated lands, and to the south by a construction site.

Based on the above, potential geotechnical impacts are anticipated during dewatering at the Site within the estimated radii of influence of approximately 15.0 to 20.0 m. Surrounding buildings and roads should be monitored by geotechnical instrumentation to determine impact, if any.

Dewatering could be by pumping from a sump and well point dewatering system. These systems used for lowering the water table within the excavation should be properly screened and installed to ensure that pumping will not remove sediment from low permeability overburden aquifers. Removal of significant fines may result in the formation of voids and the loss of ground.

The potential ground subsidence (settlement) of the soil within the zone of influence due to the lowering of the groundwater level should be assessed considering the maximum drawdown to be achieved. The ground settlement usually results from the increase in effective stresses, due to the lowering of the groundwater level and subsequent decrease in pore pressure. In addition, settlement associated with dewatering may also occur due to the loss of fine particles (migration of fines) within the dewatering system as a result of pumping. Therefore, adequate filtration at the system ingress points should be maintained at all times to reduce the potential of soils migration through the system.

It is anticipated that there will not be impact beyond the estimated radius of influence of 20.0 m. The proposed monitoring and mitigation plans are presented in Sections 5 and 6, respectively.

5.0 MONITORING PLAN

5.1 Construction Monitoring

Once construction dewatering is initiated it will be difficult to stop pumping or significantly reduce the rate of pumping without disrupting construction activities. It will however be possible to monitor the drawdown response at the construction site and to adjust the pumping rate to optimize drawdown and the associated pumping rate.

5.2 Management of Dewatering Abstraction

5.2.1 Monitoring, Trigger Levels and Management Responses

Abstraction management is critical to ensure target water levels within the construction zone are met, but that over-pumping does not occur.

Target groundwater levels in- and outside excavations should be set individually for each dewatering monitoring well based on location, aquifer and construction requirements, in-line with stated dewatering aims above.

Trigger levels for wells should typically be set 0.5 m above the dewatering target and 1.0 m below the dewatering target to give a 1.5 m target operational zone. These targets may be reviewed and adjusted to decrease size of the operational target zone and increase the factor of safety.

If monitoring indicates that dewatering zone groundwater levels exceed the upper trigger levels (i.e., required drawdown is not being achieved or maintained) the following management actions should be carried out (in order of preference):

- Adjust automatic pump start and stop water levels.
- Increase pumping rates within the constraints of the system; and/or
- Install additional abstraction capacity (well points, spears or sump pumps).

If monitoring indicates that excavation zone groundwater levels are below the lower trigger levels (i.e., excessive drawdown) the following management actions should be carried out (in order of preference):

- Adjust automatic pump start and stop water levels; and/or
- Decrease pumping rates; and/or
- Reduce the number of pumps operating.

5.2.2 Contingency Responses

If management responses prove to be insufficient to achieve and maintain the target levels, excavations should be slowed or suspended to enable contingencies to be implemented. Available contingency measures include the following (in order of preference):

- Construction of additional dewatering wells, spears or sumps.
- Construction of additional drains or groundwater control structures.

Excavation should resume when the required drawdown is able to be reliably obtained.

5.3 Settlement Monitoring

Ground settlement can be caused by two principal mechanisms:

- Increases in effective stress as a result of lowering of groundwater levels, resulting in compression and consolidation of the ground. Such settlements are the unavoidable consequence of lowering of groundwater level.
- Removal of fine particles from the ground (loss of fines) which can occur when poorly controlled sump pumping draws out soil particles with the pumped water. With good design and implementation, loss of fines (and the associated settlement risk) can be avoided.

The potential ground subsidence (settlement) of the soil within the zone of influence due to the lowering of the groundwater level should be assessed considering the maximum drawdown to be achieved. The ground settlement usually results from the increase in effective stresses per metre of drawdown, due to the lowering of the groundwater level and subsequent decrease in pore pressure.

The maximum amount of settlement usually occurs in the area adjacent to maximum drawdown points, and the potential of settlement decreases substantially towards the radius of influence limit. The clayey silt till deposit is relatively compressible and shale bedrock, is considered not readily compressible.

Implementation of a settlement monitoring plan should be completed within an approximate radius of influence of 14.0 m to 20.0 m. Prior to commencing dewatering, condition surveys of adjacent properties that could potentially be affected by dewatering, considering anticipated effects and specific dewatering design, should be completed.

Temporary access permit should be obtained from properties and utilities owners within the estimated radius of influence of the Site on a case-by-case basis prior to construction.

The following monitoring measures are recommended to be carried out before and during the temporary dewatering:

- Complete a pre-excavation condition survey and install settlement monitoring monuments and or markers at the existing buildings and roadways within the estimated zone of influence. This should be done to document existing ground elevations and building/structure conditions.

- The settlement monitoring monuments (markers) should be surveyed prior to the dewatering to establish a baseline and surveyed on a daily basis during the dewatering.

- A typical settlement monitoring system should comprise a series of settlement markers sited at various distances beyond and at the site, within the zone of influence of groundwater drawdown. Monitoring points should be surveyed to an accuracy of +/-2 mm. Note that the reference benchmark must be located beyond the extent of the anticipated influence of groundwater drawdown. For sensitive projects, incorporation of piezometer standpipes will allow confirmation of the field groundwater drawdown and will enable calibration of field settlement observation with theoretical assessments.

- Alert and Action settlement thresholds should be set, selected through theoretical assessment of anticipated settlements and review of sensitivity of adjacent structures

and infrastructures. It is prudent to implement staged groundwater drawdown, providing holding points to allow adequate time to enable observation of the delayed settlement response of the ground.

- The monitoring program will include review and alert levels. If instrument readings exceed “review” levels, the Proponent and its Contractor will jointly assess the necessity of altering the method, rate, or sequence of construction.

- The survey results should be provided to the project geotechnical engineer for evaluation. The estimated potential and actual settlements should also be reviewed by a structural engineer to assess the potential damage to the existing structures.

6.0 MITIGATION PLAN

The groundwater dewatering activities will result in localized depression of the groundwater table, and it is not anticipated that there will impact beyond the radius of influence of 20.0 m.

Mitigation would involve the reduction or elimination of the impacts induced by construction dewatering. As noted above, the potential exists for dewatering to cause ground settlement, with the corresponding risk of distortion and damage to structures, services and other sensitive infrastructure.

Methods to limit adverse dewatering settlement should include the following:

- Settlement associated with loss of fines should be mitigated through appropriate design of the dewatering system to control flow velocity and provide screens and/or filters matched to the grading of the in-situ soils. Entrainment of fines must be monitored during construction; actions could include analysis of TSS in discharge water and/or monitoring of accumulation of sediment in sedimentation tanks.

- Drawdown-induced ground settlement should be mitigated though pre-construction estimation of groundwater drawdown and settlement coefficients to identify risk prior to drawing the groundwater down, and water level monitoring in monitoring wells to check that larger drawdown than anticipated at distance from the excavation is not occurring.

- Differential settlement is most problematic. This should be reduced by managing the rate of drawdown and understanding where clear changes in soil type occur. Should potentially damaging settlement be indicated, these can be mitigated by installing groundwater cut-offs to stem or restrict groundwater flow and limit drawdown beyond the site.

- Sufficient temporary support should be provided for excavations to maintain stability, where seepage might otherwise induce progressive collapse of the sides of the excavation.

- During dewatering, staged drawdowns (where appropriate) should be implemented and field settlement and water level changes beyond the immediate site monitored, comparing against theoretical settlements and water levels to allow warning of potential dewatering settlement issues.

At “alert” levels, the dewatering should be reduced to a lower rate or ceased temporarily, and alternative measures considered for the excavation, which should be approved by the project geotechnical engineer and project team.

If the settlement monitoring indicates an undesirable deformation, the project manager should order construction operations to cease until the necessary mitigation measures are undertaken.

7.0 SITE DEVELOPMENT and WATER BALANCE

Phase 1 Development Water Balance

Phase 1 Area of 1.03 ha (10,349.93 m^2) is a part of a larger site of 7.79 ha (77,946 m^2). It should be noted that the proposed Phase 1 development will impact the entire site.

The following discussion and recommendations are based on the data gathered for the study and are presented for site planning purposes.

7.1 Site Development Concepts

Phase 1 Development

The following summarizes the approximate land coverage areas related to the Phase 1 development and its impact on the other areas of the entire site:

- Impervious Area .....0.76 ha
- Roof Top Area.....0.33 ha
- Landscape Area + Core Area.....6.70 ha
- **Total Area .....7.79 ha**

7.2 Principal Hydrogeologic Features and Functions

The results of the study indicate that the Site hydrogeologic characteristics can be summarized as follows:

- Fill/Clayey Till overburden was generally observed during the borehole drilling to depths ranging from 1.5 mbgs to 6.6 mbgs, overlying fractured bedrock which extends to the maximum drilled depth of 18.7 mbgs.

- Groundwater flow at the Site is controlled by the surficial geology present across the area. The surface soils at the Site are of medium to low permeability (on the order of 10^{-8} m/s), and as a result, water will tend to flow overland and drain along surface watercourses after rainfall. As such, the glaciolacustrine soils will reduce the amount of groundwater infiltration, recharge, or flow. The recharge rate for this type of soil ranges from approximately 100 mm/year to 125 mm/year (MOE, 1995).

- Groundwater was generally not encountered within the glaciolacustrine overburden materials at the Site, but in the underlying bedrock. Groundwater level in the bedrock was found to vary across the site, due to the inhomogeneity of the bedrock fracture system.

- It is understood the proposed Phase 1 development will include four (4) levels of underground parking. This will require excavation down to approximately 14.6 mbgs. Based on groundwater monitoring at the Site, groundwater dewatering of the shallow groundwater system is anticipated during the proposed development and should be control by adequate methods.

- The Site topography is uneven with the topography ranging from 178 masl at the south-central area, to 185 masl north-central area.

- Based on the groundwater level readings obtained from the installed monitoring wells at the site, groundwater flow direction at the site was determined to be in a southwest direction as shown on Figure 6, in Appendix A.

The above noted hydrogeological characteristics should be considered in conjunction with the requirement for Site development plans and in particular storm water management practices at the Site. Further information regarding water balance at the Site is presented below in section 7.3.

Based on the above information, the following considerations should be made with respect to maintenance of hydrogeologic functions and hydrogeologic conditions at the Site:

- The site consists of clayey silt till overburden overlying shale bedrock and would not be well suited to groundwater recharge due to the relatively low hydraulic conductivity of the glacial soils. Engineered infiltration methods, other Best Management Practices, and low impact.
- development methods should be implemented accordingly.

7.3 Phase 1 Development Water Balance

The proposed development will result in the construction of residential buildings and impervious areas. Without mitigation, this will lead to a decrease in infiltration and groundwater recharge.

The surface soils at the Site will provide limited water recharge into the shallow groundwater system. This is a result of the relatively impermeable clayey silt soil encountered below surface across the Site. Based on the subsurface investigation completed for the Site, no enhanced zones of groundwater flow or transmission were identified across the Site. However, groundwater recharge will occur at the Site over the natural cover at the site, while the impervious areas would prevent groundwater recharge.

Notwithstanding the above, one of the objectives during development should be to ensure that the overall volume of groundwater recharge is not significantly impacted. A water balance for the Site was prepared to assess the distribution of precipitation, evapotranspiration, infiltration, and runoff for existing (pre-development) conditions as well as post-development conditions. The water balance calculations are detailed in Appendix H.

Evapotranspiration represents the transport of water from the earth back to the atmosphere and is an important component to a water balance calculation. The Thornthwaite method was used to calculate potential evapotranspiration typical for the region. By using equations 8, 9, and 10 in Thornthwaite (1948), the potential evapotranspiration for the region was found to be 609 mm/year. The calculation is included in Appendix H.

As was presented in Table 2, the annual total precipitation was taken from the Hamilton RBG climate station for the period of 1981 to 2010. Total annual precipitations for the area is 897.1 mm/year, and mean daily temperature is 8.6 °C.

In summary, the typical shallow groundwater recharge rate for the Site is estimated to be 100 mm/year. This recharge was referenced from the MOE Table 2 and Table 3 approach in the Technical Information Requirements for Land Development Applications (MOE, 1995). The post-development water budget was calculated and is presented in Appendix H.

The water balance (pre- and post-development) is summarized from data in Table 6 in Appendix H and comparison of pre- and post-development water balance is summarized below in Table 6.

Table 6. Comparison of Pre- and Post-Development Water Balance

Development Phase	Precipitation (m^3)	Evapotranspiration (m^3)	Infiltration (m^3)	Run-Off (m^3)
Pre-Development	69,925	46,155	7,331	16,439
Post-Development	69,925	42,180	6,700	21,046

The increase in run-off from 16,439 m^3 to 21,046 m^3 is the result of developing and installing hard surfaced or impermeable areas across the Site. The post-development impermeable areas also result in the decrease of evapotranspiration and infiltration across the Site.

The above-noted values and associated calculations found in Appendix H are considered to be conservative and are based on the following assumptions:

- No infiltration will occur beneath the internal roads, public walkways, buildings or driveways.
- No evapotranspiration will occur from the internal roads, public walkways, buildings or parking areas.

7.3.1 Maintenance of Groundwater Recharge

The site is considered not to have significant amounts of groundwater recharge due to the relatively low-permeable soils encountered at surface. Infiltration values are expected to decrease from 7,331 m^3/year to 6,700 m^3/year, based on the water balance calculations outlined in Appendix H. This decrease in infiltration indicates that only approximately 21% of the roof runoff from the buildings must be re-directed towards overland flow or infiltration facilities in order to match the pre-development infiltration rates and surface flow.

The total Building Roofs Roof-Off was determined to be 2,975 m^3, and deficit from pre- to post-development infiltration determined to be 631 m^3, resulting in a Water Surplus of 2,344 m^3.

7.3.2 Low Impact Development (LID) Measures

Proposed LID Measures

Low impact development (LID) measures are proposed to be included in the design of the development towards addressing the water surplus from the roofs run-off of 2,344 m^3. The LID measures to be implemented should be roof run-off collection to be re-directed towards overland flow or infiltration facilities.

7.4 Maintenance of Groundwater Transmission Pathways

It is understood that the earthworks and servicing will be completed within the low-permeability silty clay, clayey silt. The overall continuity of the groundwater flow at the Site should be maintained, where practical. Generally, any groundwater transmission pathways encountered can be maintained through the following means:

- The excavation of any underground services or utilities across more permeable layers may interrupt the groundwater flow. As good practice, it is recommended that trench

backfilling operations be carried out with materials that are similar to the materials that have been excavated. In particular, if any more permeable sand zones are encountered, they must not be truncated by backfilling of the excavation or trench using lower permeability materials (such as the clayey silt identified across the subject Site).

Groundwater flow may occur into the open shallow excavations if more permeable pockets of deposits, such as silty sand, are encountered; however, based on the results of the subsurface investigation, groundwater control (such as from wells or well points) is anticipated during construction. It is recommended that any excavations should be staged or constructed in such a manner to avoid the collection of overland drainage.

8.0 SUMMARY AND CONCLUSIONS

The following summarizes the results of the investigation:

- The Site is characterized by fill over bedrock or clayey silt till which in turn overlies bedrock. Bedrock was encountered across the Site to the maximum geotechnical investigation drilling depth of 18.7 mbgs.

- The Site topography of the Site is uneven with the topography ranging from 178 masl at the south-central area, to 185 masl north-central area.

- A watercourse with significant riparian buffer runs through the central portion of 3301 Trafalgar Road from north to south. The water pools in a fire pond, part of PSW 25 at the southern limit of 3301 Trafalgar Road that is surrounded by tall grasses and cattails.

- Depths to groundwater in the monitoring wells installed at the Site were obtained manually by Landtek staff between August 2021 and June 2023 and was determined to range from 0.20 mbgs in the shallow nested monitoring well to 10.91 mbgs. This is likely due to inhomogeneity of the bedrock beneath the overburden till at the Site.

- Based on the groundwater level readings obtained from the installed monitoring wells at the site, groundwater flow direction at the site was determined to be in a southwest direction.

- The short-term dewatering rate outside periods of active precipitation, under normal conditions, for the five (5) building areas were determined to range from approximately 33,678 L/day (0.4 L/s) to 77,656 L/day (0.9 L/s). Normal conditions are considered to be weather conditions that should be expected during the operation of the construction dewatering. Normal operation does not include extreme weather events.

- It is understood that long term dewatering will not be allowed at the Site. As a result, the underground parking levels should be waterproofed below the seasonal highest groundwater level. It is recommended that the proposed parking levels be waterproofed below the established "*seasonally high groundwater level*" plus the required buffer zone (nominally 1.0 m to 1.5 m above).

- It is understood that long term dewatering will not be allowed at the Site. As a result, the underground parking levels should be waterproofed below the seasonal highest groundwater level. It is recommended that the proposed parking levels be waterproofed below the established "*seasonally high groundwater level*" plus the required buffer zone (nominally 1.0 m to 1.5 m above).

- Assuming excavation is carried out under normal weather conditions without rainfall, groundwater dewatering rates for the proposed underground parking levels excavation were determined to range from approximately 33,678 L/day (0.39 L/s) to 77,656 L/day (0.90 L/s), resulting in a total rate of 318,744 L/day (3.7 L/s). An Environmental Activity and Sector Registry (EASR) Registration is required for this volume of water taking, as the estimated water taking is more than 50,000 L/day and less than 400,000 L/day.

- The results of the analyzed groundwater samples collected from the monitoring well MW4-23 located at the Phase 1 area indicate that the exceedances of inorganic metals are marginal and are comparable to background values determined from the sampling at MW101-20 at an undisturbed area of the bigger site, with the exception of Phenols and Iron.

- Low impact development (LID) measures are proposed to be included in the design of the development to address the infiltration deficits. The LID measures to be implemented include roof leader disconnection and discharge to pervious area and tree pits on a street in accordance with Town standards.

9.0 CLOSURE

We trust this report is satisfactory for your purposes. If you have any questions regarding our submission, please do not hesitate to contact Landtek.

Yours truly,

Landtek Limited

Henry Erebor, M.Sc., P.Geo.,

10.0 REFERENCES

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11.0 LIMITATIONS

The conclusions and recommendations given in this report are based on information determined at the borehole locations. Subsurface and ground water conditions between and beyond the boreholes may be different from those encountered at the borehole locations, and conditions may become apparent during construction that could not be detected or anticipated at the time of the geotechnical investigation. It is recommended practice that Landtek be retained during construction to confirm that the subsurface conditions throughout the site are consistent with the conditions encountered in the boreholes.

The comments made in this report on potential construction problems and possible remedial methods are intended only for the guidance of the designer. The number of boreholes may not be sufficient to determine all the factors that may influence construction methods and costs. For example, the thickness and quality of surficial topsoil or fill layers may vary markedly and unpredictably. Contractors bidding on the project or undertaking construction on the site should make their own interpretation of the factual borehole information and establish their own conclusions as to how the subsurface conditions may affect their work.

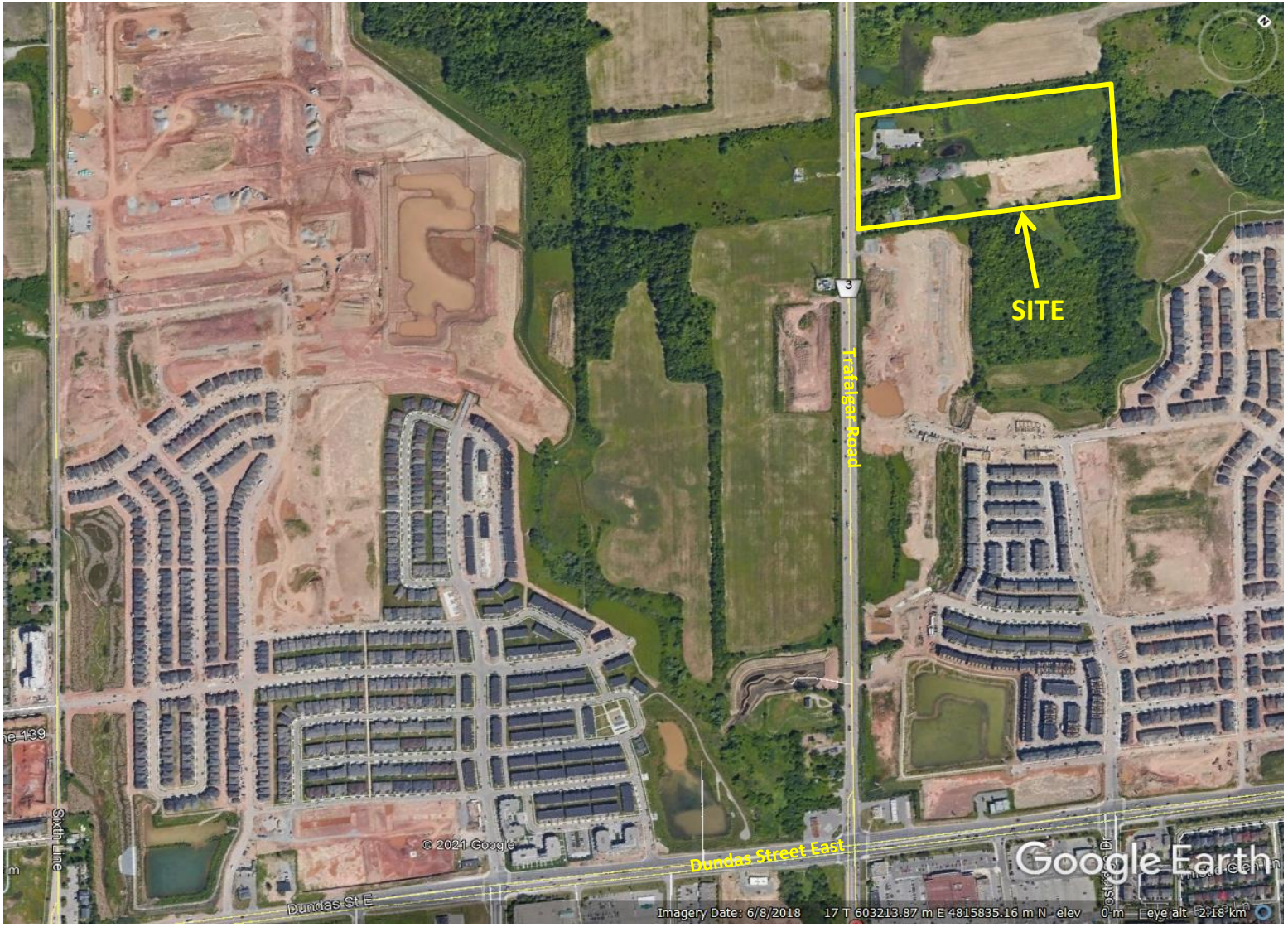
The survey elevations in the report were obtained by Landtek or others and are strictly for use by Landtek in the preparation of the geotechnical report. The elevations should not be used by any other parties for any other purpose.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Landtek accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

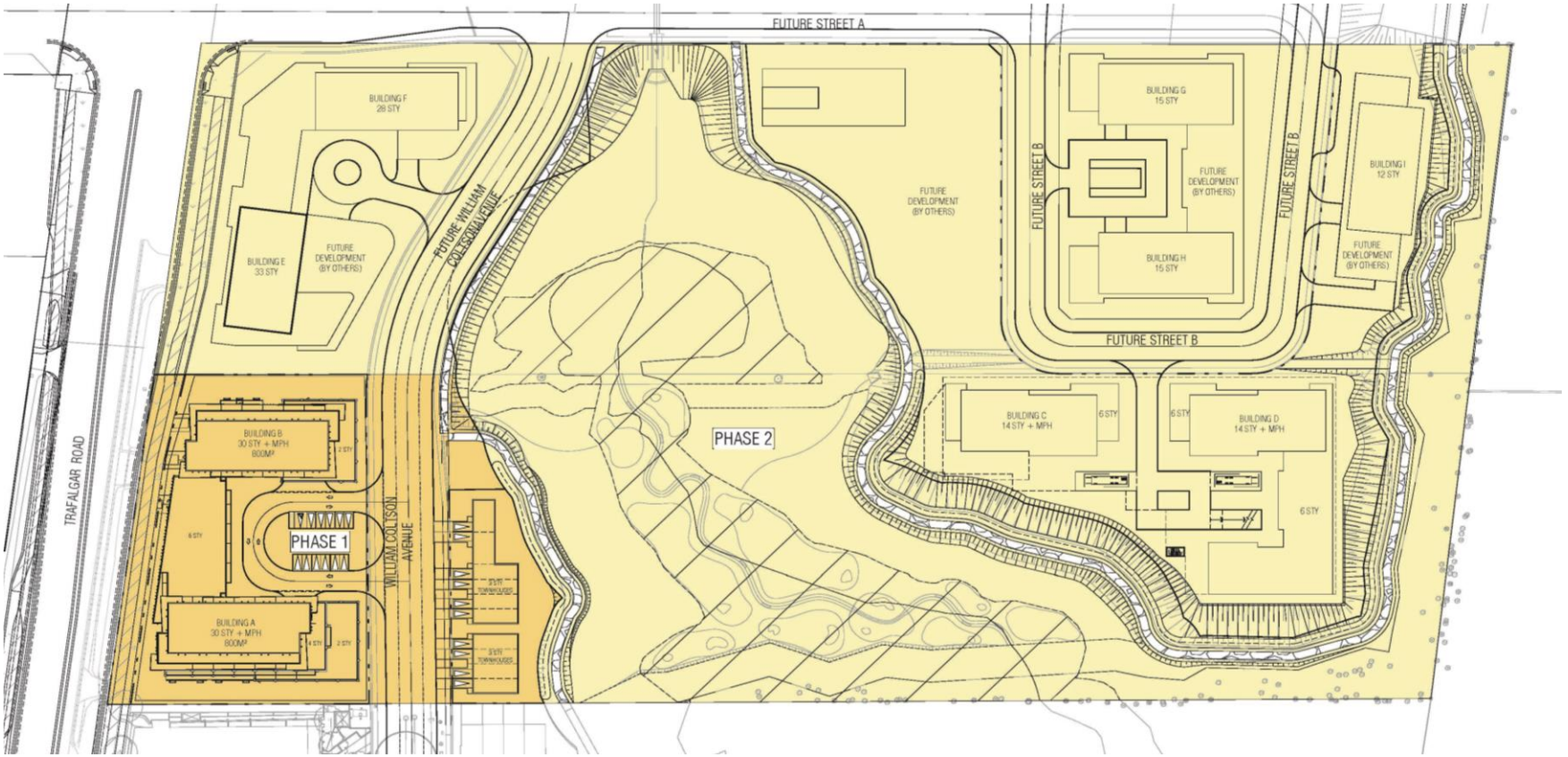
This report does not reflect environmental issues or concerns related to the property unless otherwise stated in the report. The design recommendations given in the report are applicable only to the project described in the text and then only if constructed substantially in accordance with the details stated in this report. Since all details of the design may not be known, it is recommended that Landtek be retained during the final design stage to verify that the design is consistent with the report recommendations, and that the assumptions made in the report are still valid.

APPENDIX A

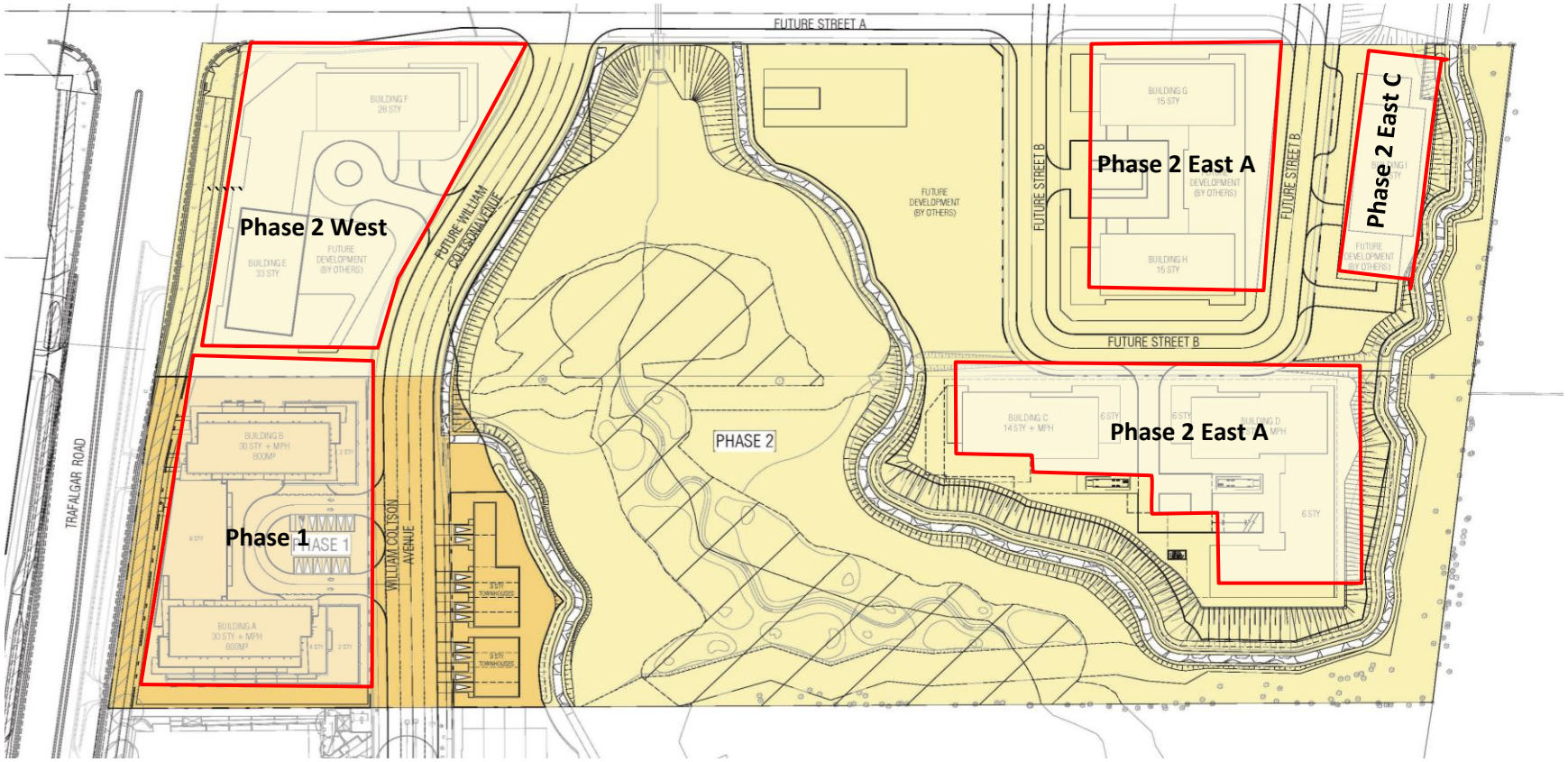
FIGURES



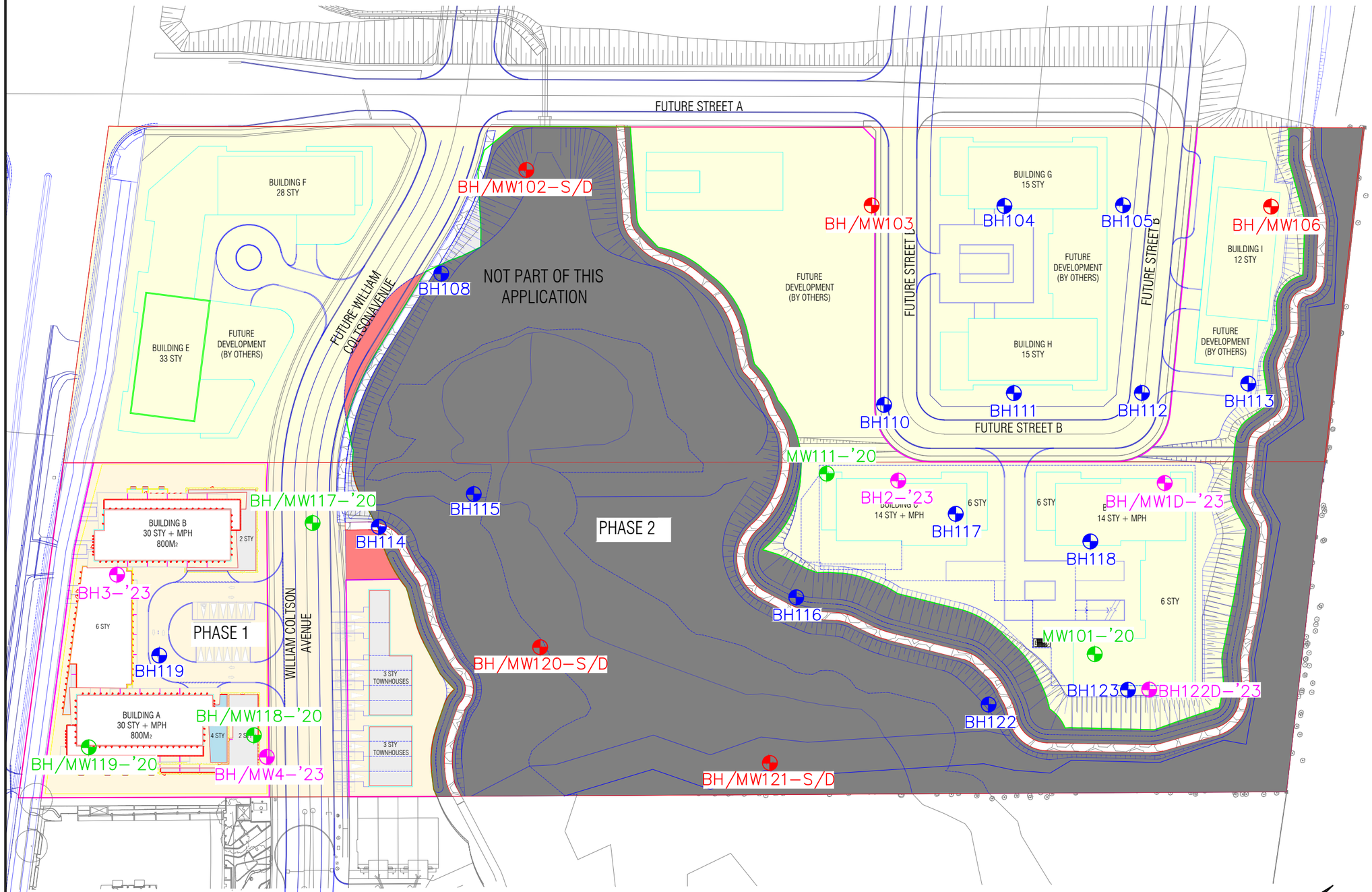
	LANDTEK LIMITED ***CONSULTING ENGINEERS*** **205 NEBO ROAD, HAMILTON, ONTARIO, L8W 2E1**
	Scale: On Map — Date: September 2021
Project:	Hydrogeological Investigation 3275/3201 Trafalgar Road Oakville, Ontario
Title:	Figure 1: Site Location
Project No.	21260



	LANDTEK LIMITED ***CONSULTING ENGINEERS*** **205 NEBO ROAD, HAMILTON, ONTARIO, L8W 2E1**
	Scale: As Noted — Date: August 2024
Project:	Hydrogeological Investigation 3275/3201 Trafalgar Road Oakville, Ontario
Title:	Figure 2: Site Plan (Phase 1 and Phase 2)
Project No.	21260



	LANDTEK LIMITED *CONSULTING ENGINEERS* **205 NEBO ROAD, HAMILTON, ONTARIO, L8W 2E1**
	Scale: As Noted — Date: August 2024
Project:	Hydrogeological Investigation 3275/3201 Trafalgar Road Oakville, Ontario
Title:	Figure 3 : Phase Underground Level Plans
Project No.	21260



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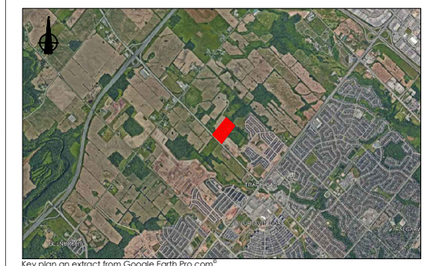
project location



Key plan an extract from Google Earth Pro.com©

Key:

- Approximate location of borehole drilled by Landtek Limited between August 10th and 12th, 2021.
- Approximate location of boreholes drilled by Landtek Limited between March 20th to 27th, 2023.
- Approximate location of boreholes drilled by MTE in 2020.

Notes:

Base plan and extract from the drawing "Context Plan", reference Job #: 1975.22, Dated: AUG.06.2024 as issued by GRAZIANI + CORAZZA ARCHITECTS.

revisions/ submissions

#	date	description
1	2022-02-25	issued for report

client

New Horizon Development Group

municipality

The Corporation of the Town of Oakville

project

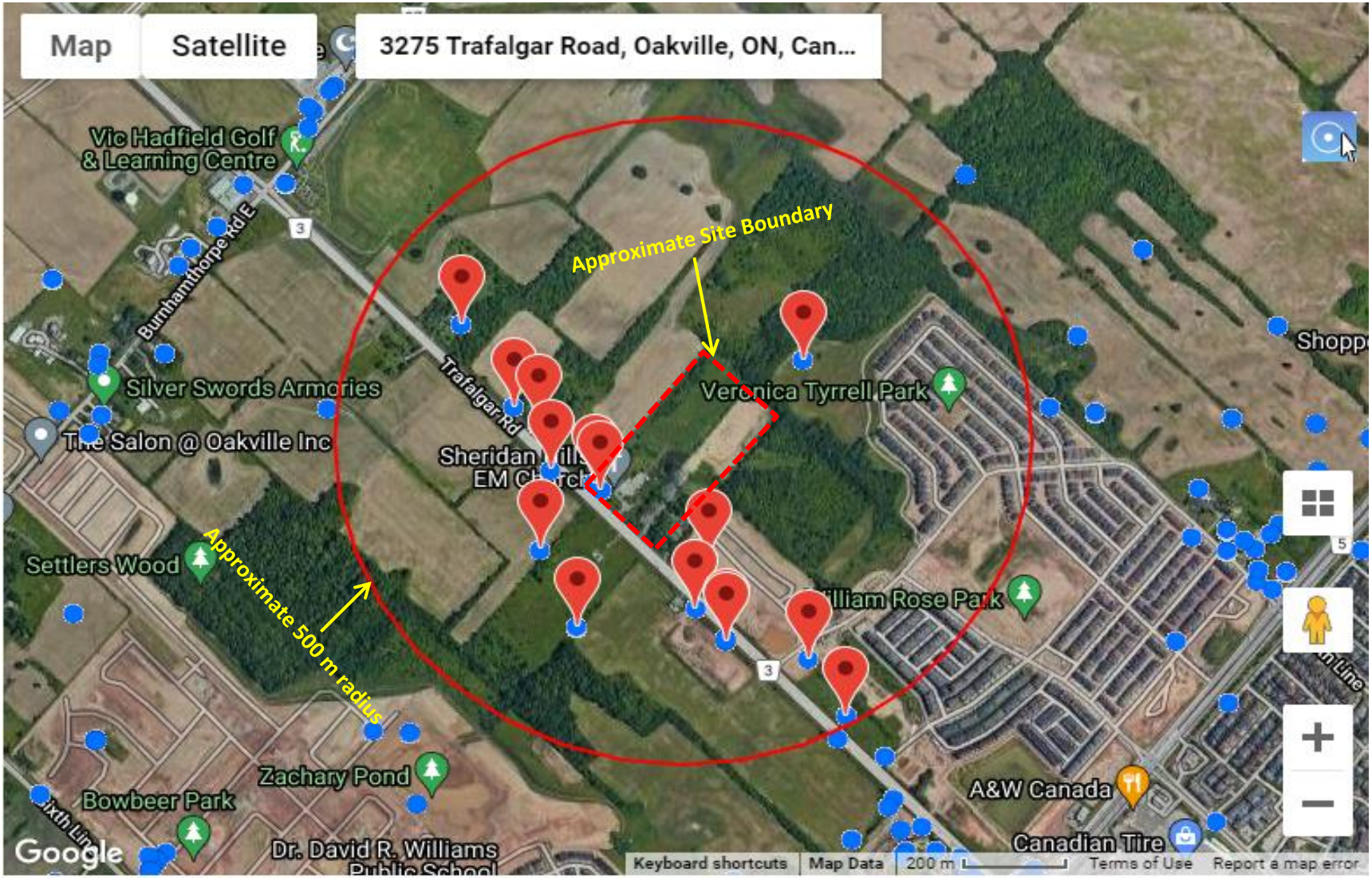
Preliminary Geotechnical and HydroGeological Investigation
3275 & 3301 Trafalgar Road

sheet

Figure 4: Borehole and Monitoring well Location Plan

date: august, 2024
drawn: mdc
checked: he
project #: 21260
scale: nts

21260-04

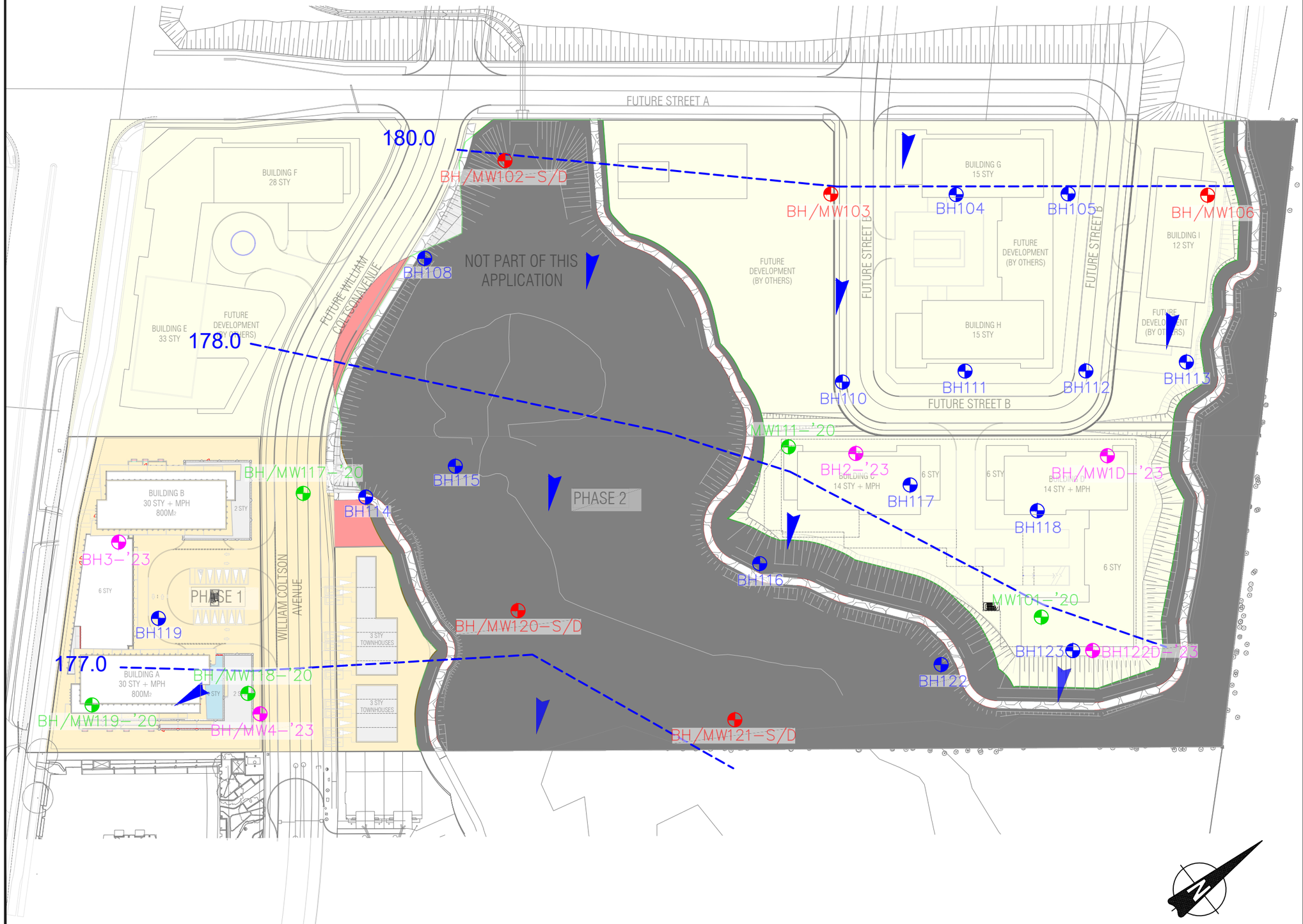


Latitude:43.48910, Longitude:-79.71246 (UTM Zone:17, Easting:604110, Northing:4815936)

MECP Wells

LANDTEK LIMITED
CONSULTING ENGINEERS
205 NEBO ROAD, HAMILTON, ONTARIO, L8W 2E1

	Scale: On Map	Date: September 2021
Project:	Hydrogeological Investigation	
	3275/3201 Trafalgar Road	
	Oakville, Ontario	
Title:	Figure 5: MECP Wells Locations	
Project No.	21260	



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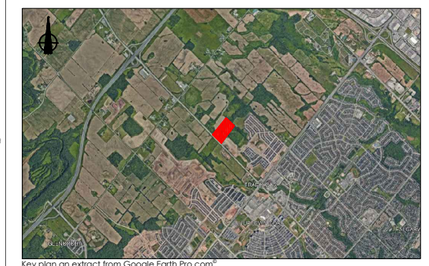
project location



Key plan an extract from Google Earth Pro.com©

Key:

- Cross - Section Location Key
- Approximate Interpreted Groundwater Flow
- 177.0 Approximate Groundwater Elevation, April 28th, 2022.

Notes:

Base plan and extract from the drawing "Context Plan", reference Job #: 1975.22, Dated: AUG.06.2024 as issued by GRAZIANI + CORAZZA ARCHITECTS.

revisions/ submissions

#	date	description
1	2022-02-25	issued for report

client

New Horizon Development Group

municipality

The Corporation of the Town of Oakville

project

Preliminary Geotechnical and HydroGeological Investigation
3275 & 3301 Trafalgar Road

sheet

Figure 6: Interpreted Groundwater Flow

date: august, 2024
drawn: mdc
checked: he
project #: 21260
scale: nts

21260-06

APPENDIX B

MONITORING WELL LOGS

ID Number: MW101-20

Project Name: Phase II ESA

MTE File No.: 48113-100

Client: Wyatt Development Group

Site Location: 3275 Trafalgar Road, Oakville

Drill Date: 9/23/2020

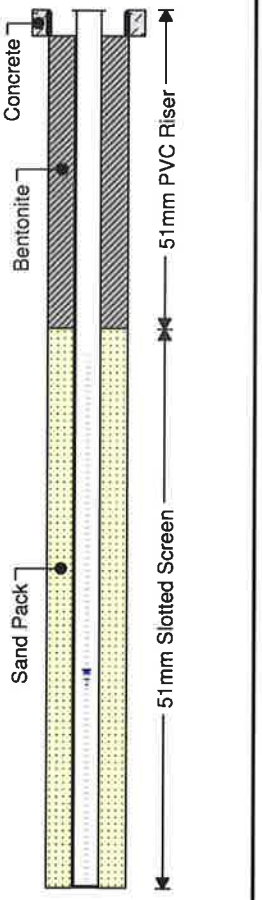
Drilling Contractor: Triphase

Drill Rig: CME 75

Drill Method: Hollow Stem Auger

Protective Cover: Monument

Subsurface Profile			Sample							Well Completion Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) Depth (m)	Number	Type	Recovery (%)	Soil Sample Lab Analysis	PID (ppm)	Hydrocarbon (ppm)	
0 / 0		Ground Surface	178.9							
		TOPSOIL sandy topsoil, some silt and gravel, moist	0.0	1	SS	71	Metals, OCs, PCBs, PHCs, BTEX			
2		**FILL** grey silt, some clay, trace to some sand and gravel, moist		2	SS	27				
4				3						
6 / 2		water added	177.1 1.8							
		rock encountered	176.8 2.1	4						
8		**SHALE** shale pieces								
10										
12 / 4		poor weathered red shale	175.4 3.5							
14										
16			173.8 5.1							
18		Drilling Terminated								
20 / 6										



Field Technician: MBC

Drafted by: JAK

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Top of pipe elevation: 179.89m asl
Water level: 3.80m bgs (October 7, 2020)

ID Number: MW111-20

Project Name: Phase II ESA

MTE File No.: 48113-100

Client: Wyatt Development Group

Site Location: 3275 Trafalgar Road, Oakville

Drill Date: 9/21/2020

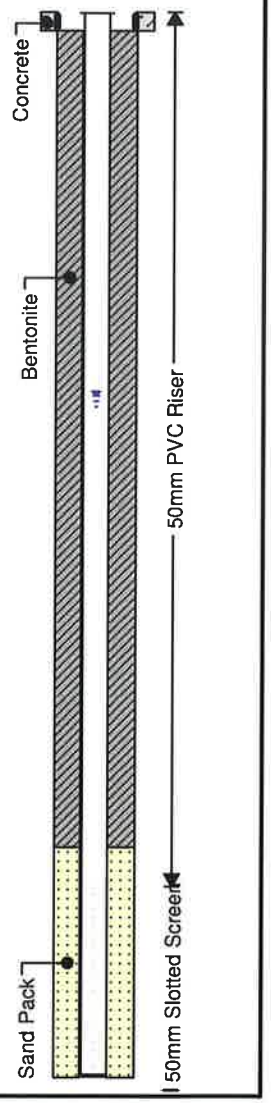
Drilling Contractor: Triphase

Drill Rig: Geoprobe

Drill Method: Direct Push/SSA

Protective Cover: N/A

Subsurface Profile			Sample							Well Completion Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	Soil Sample Lab Analysis	PID (ppm)	Hydrocarbon (ppm)	
0 / 0		Ground Surface	179.0							
		FILL Brown sandy silt, moist	0.0				Metals	1	0	
2		**FILL** Brown with red and grey mottling, silt, some clay, trace to some sand, trace gravel. Possible reworked native.		1	MC	99		1	0	
4		Large rock at 1.83m bgs								
6 / 2				2	MC	100		2	0	
8			176.6							
		Drilling Terminated	2.4							
10										
12 / 4										
14										
16										
18										
20 / 6										
22										
24										
26 / 8										
28										



Field Technician: MBC

Drafted by: JAK

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Well details provided for existing adjacent monitoring well

Top of pipe elevation: 179.16m asl
Water level: 3.08m bgs (October 7, 2020)

ID Number: MW117-20

Project Name: Phase II ESA

MTE File No.: 48113-100

Client: Wyatt Development Group

Site Location: 3275 Trafalgar Road, Oakville

Drill Date: 9/21/2020

Drilling Contractor: Triphase

Drill Rig: Geoprobe

Drill Method: Direct Push/SSA

Protective Cover: N/A

Subsurface Profile			Sample							Well Completion Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) Depth (m)	Number	Type	Recovery (%)	Soil Sample Lab Analysis	PID (ppm)	Hydrocarbon (ppm)	
0 / 0		Ground Surface	180.1							
		FILL Brown sand and gravel, asphalt debris	0.0 179.7							
2		Grey clayey silt, trace to some sand, trace gravel, moist with trace organics	0.4 179.4				Metals, OCs, PHCs, BTEX	1	0	
		Brown with red and grey mottling, grey clayey silt, trace to some sand, trace gravel, moist. Possible reworked native	0.8	1	MC	95		1	0	
4		Less mottling at 1.52m bgs								
6 / 2					MC			1	0	
8			177.7							
		Drilling Terminated	2.4							
10										
12 / 4										
14										
16										
18										
20 / 6										

Bentonite

Field Technician: MBC

Drafted by: JAK

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Well details could not be provided for existing adjacent monitoring well

Water level: 8.21m bgs (October 7, 2020)

ID Number: MW118-20

Project Name: Phase II ESA

MTE File No.: 48113-100

Client: Wyatt Development Group

Site Location: 3275 Trafalgar Road, Oakville

Drill Date: 9/21/2020

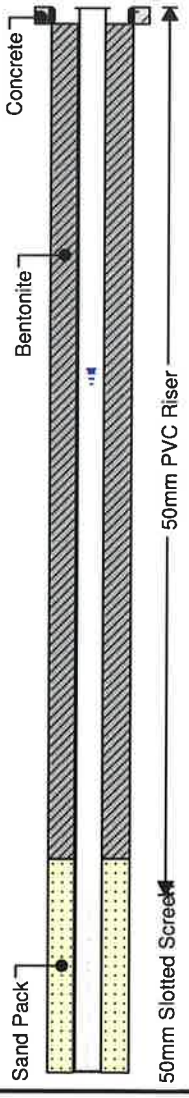
Drilling Contractor: Triphase

Drill Rig: Geoprobe

Drill Method: Direct Push/SSA

Protective Cover: N/A

Subsurface Profile			Sample							Well Completion Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) Depth (m)	Number	Type	Recovery (%)	Soil Sample Lab Analysis	PID (ppm)	Hydrocarbon (ppm)	
0 / 0		Ground Surface	179.4							
		TOPSOIL Light brown topsoil, sand and gravel, trace silt and organics, damp	0.0							
2		**FILL** Gravel		1	MC	90	Metals, OCs, PHCs, BTEX	1	0	
4		Greyish brown clayey silt, with sand, trace gravel	178.2 1.2							
6 / 2		**CLAYEY SILT** Reddish brown with orange and grey mottling, clayey silt with sand, trace gravel, moist								
8		Brown with increasing gravel at 1.52m bgs			MC	100		2	0	
			176.7 2.7							
10		Drilling Terminated								
12 / 4										
14										
16										
18										
20 / 6										
22										
24										
26 / 8										
28										
30										



Field Technician: MBC

Drafted by: JAK

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Well details provided for existing adjacent monitoring well

Top of pipe elevation: 179.45m asl
Water level: 3.15m bgs (October 7, 2020)

ID Number: MW119-20

Project Name: Phase II ESA

MTE File No.: 48113-100

Client: Wyatt Development Group

Site Location: 3275 Trafalgar Road, Oakville

Drill Date: 9/21/2020

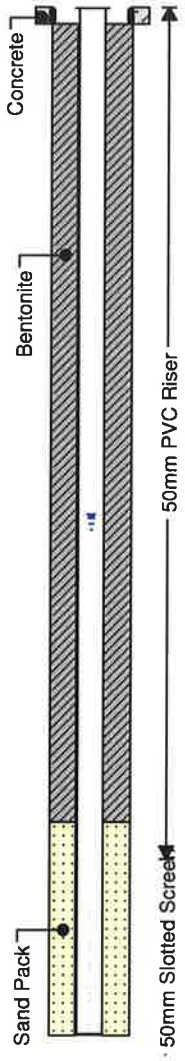
Drilling Contractor: Triphase

Drill Rig: Geoprobe

Drill Method: Direct Push/SSA

Protective Cover: N/A

Subsurface Profile			Sample							Well Completion Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) Depth (m)	Number	Type	Recovery (%)	Soil Sample Lab Analysis	PID (ppm)	Hydrocarbon (ppm)	
0 / 0		Ground Surface	180.5							
		TOPSOIL Dark brown silty topsoil, some sand, moist with rootlets	0.0 180.0 0.5							
2		**FILL** Brown with grey and red mottling, clayey silt, trace to some sand and gravel, moist. Possible reworked native		1	MC	95	Metals	0	0	
4								0	0	
6 / 2					MC					
8								0	0	
		Brown at 2.29m bgs	177.6							
10		Drilling Terminated	2.9							
12 / 4										
14										
16										
18										
20 / 6										
22										
24										
26 / 8										
28										
30										



Field Technician: MBC

Drafted by: JAK

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Well details provided for existing adjacent monitoring well

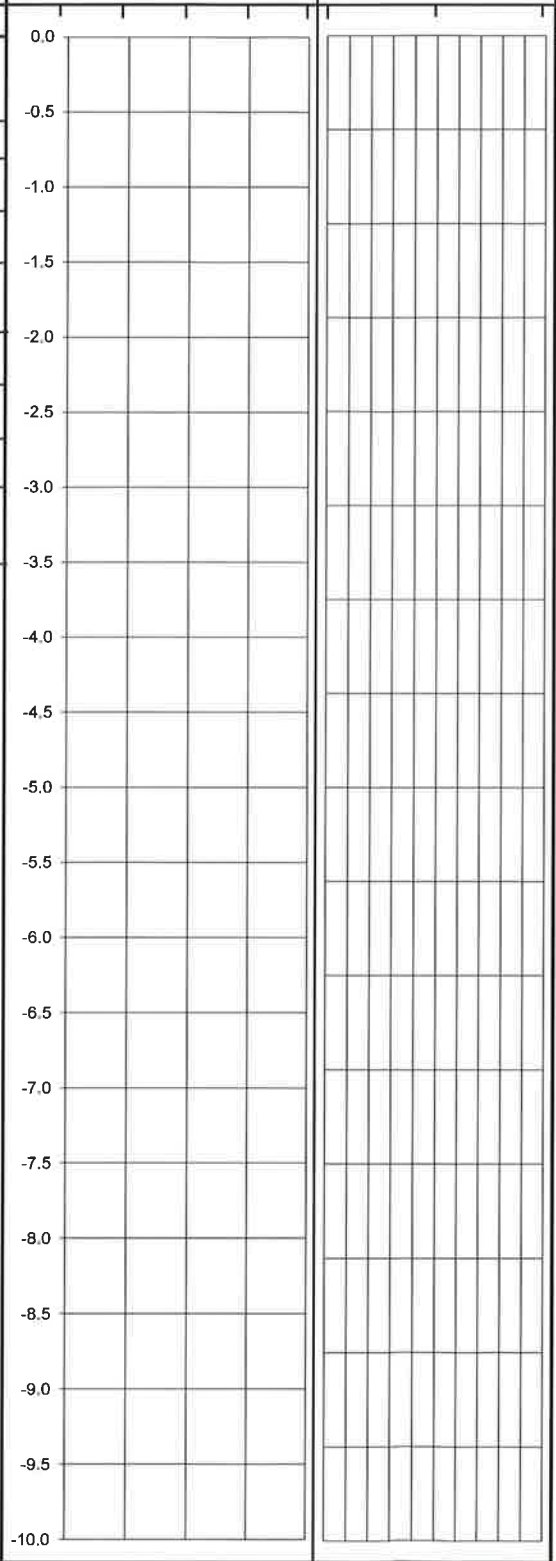
Top of pipe elevation: 181.61m asl
Water level: 4.39m bgs (October 7, 2020)

LANDTEK LIMITED

MW 102D

Project No.:	21260	Drill Date:	August 9, 2021
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario.	Datum:	Geodetic

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		181.0			stick up = 0.71 m
±300 mm of topsoil		0.0			
FILL: silty clay with sand			1	SS	
clayey silt, red, some shale fragments		0.8	2	SS	
			3	SS	bentonite backfill to ground level
			4	SS	
			5	SS	sand backfill to 2.7 m
SHALE BEDROCK: fractured, wet		3.8			3.0 m
END OF BOREHOLE		4.5			1.5 m of slotted 50 mm dia. PVC pipe; 4.5 m



Notes:
1. On completion, borehole open to 4.5 m
2. Groundwater was encountered at 2.1 m during the drilling process
3. Water level reading: WL at 1.89 m depth on November 15, 2021

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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LANDTEK LIMITED

MW 102S

Project No.:	21260	Drill Date:	April 25, 2022
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario.	Datum:	Geodetic

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		181.0			stick up = 1.16 m
±300 mm of topsoil		0.0			
FILL: silty clay with sand			1	SS	bentonite backfill to ground level
clayey silt, red, some shale fragments		0.8	2	SS	sand backfill to 1.38 m
			3	SS	1.5 m of slotted 50 mm dia. PVC pipe
			4	SS	
END OF BOREHOLE		3.18			3.18m

SPT "N" Value (Scale (m): 0.0, -0.5, -1.0, -1.5, -2.0, -2.5, -3.0, -3.5, -4.0, -4.5, -5.0, -5.5, -6.0, -6.5, -7.0, -7.5, -8.0, -8.5, -9.0, -9.5, -10.0)

SPT "N" Value: 0 25 50 75 100

Soil Moisture (%): 0 25 50

GWL

Monitor Details

Notes:
1. On completion, borehole open to 3.18 m
2. Groundwater was encountered at 2.1 m during the drilling process
3. Monitoring Well was dry on August 28, 2022

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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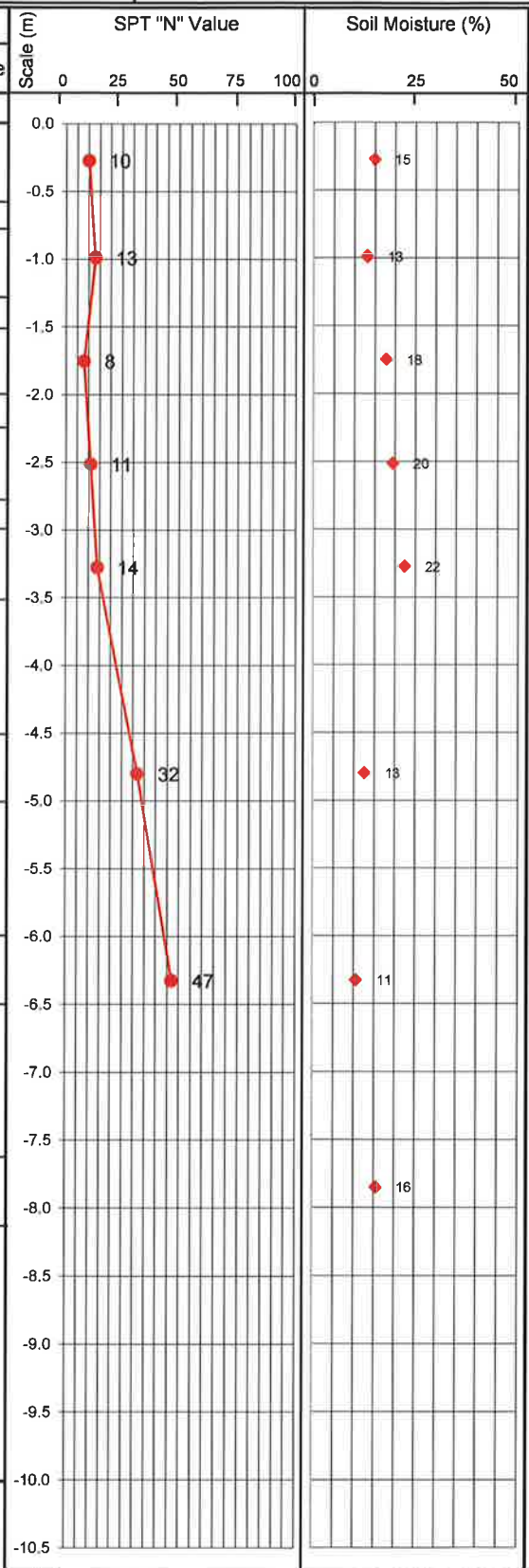
BH/MW 103

Project No.:	21261	Drill Date:	August 11, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		184.2			stick up = 0.70 m
±350 mm of Topsoil		183.8	1	SS	
FILL: clayey silt, trace sand, trace gravel. Brown, stiff, moist		0.35	2	SS	
...firm to stiff.			3	SS	
...stiff.			4	SS	
			5	SS	bentonite backfill to ground level
		180.1			
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		4.1	6	SS	
			7	SS	
SHALE: highly weathered, hard, dry to mois		6.6	8	AUG	sand backfill to 6.7 m; 7.0 m; 3.0 m of slotted 50 mm dia. PVC pipe
		174.2			
END OF BOREHOLE AT TARGET DEPTH		10.0			10.0 m



Notes:
1. Borehole open to approximately 10.0 m depth on completion.
2. Groundwater or water seepage was encountered at approximately 5.1 m below ground surface.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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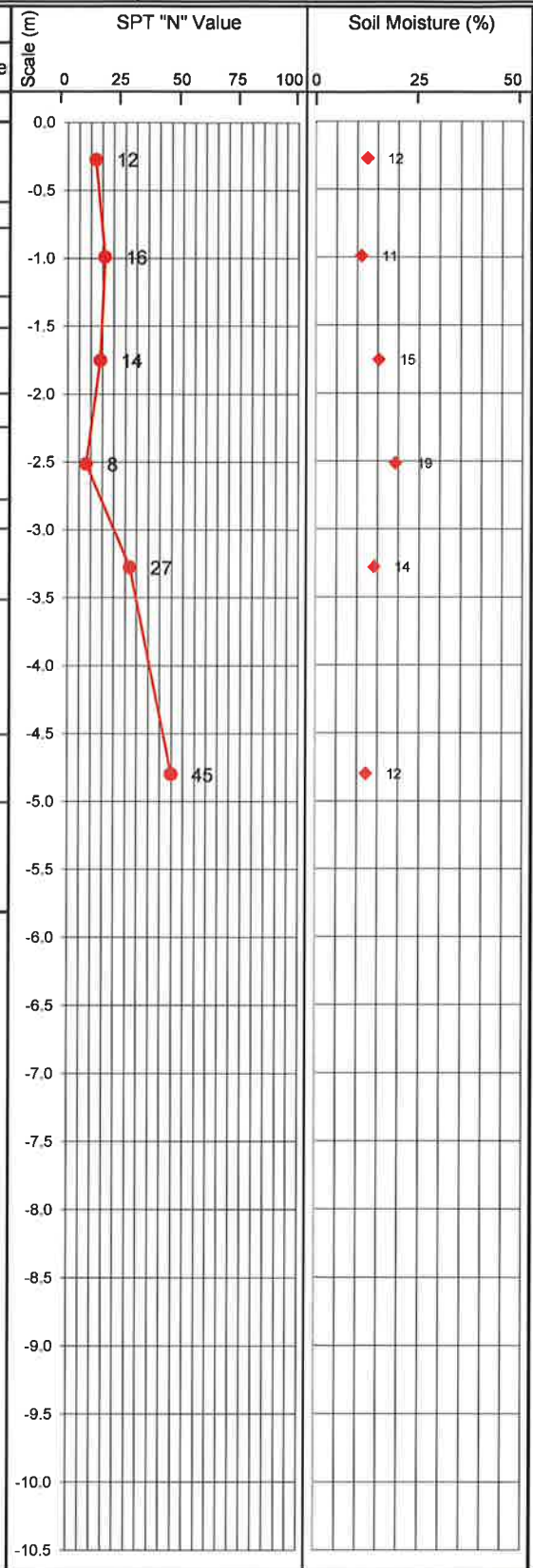
BH 104

Project No.:	21261	Drill Date:	August 10, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	SPT "N" Value	Soil Moisture (%)	GWL	Monitor Details	Test Data
Ground Surface		183.7							
±400 mm of Topsoil		183.3	1	SS	12	12			
FILL: clayey silt, trace gravel, trace sand. Brown, stiff, moist.		0.4							
...trace cobbles. Very stiff.			2	SS	16	11			
...stiff.			3	SS	14	15			
...silty clay, no cobbles.			4	SS	8	19			
		180.7							
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		3.0	5	SS	27	14			
...hard.			6	SS	45	12			
SHALE: highly weathered. Red and grey.		177.9							
END OF BOREHOLE AT AUGER REFUSAL		5.8							



Notes:
1. Borehole open to approximately 5.8 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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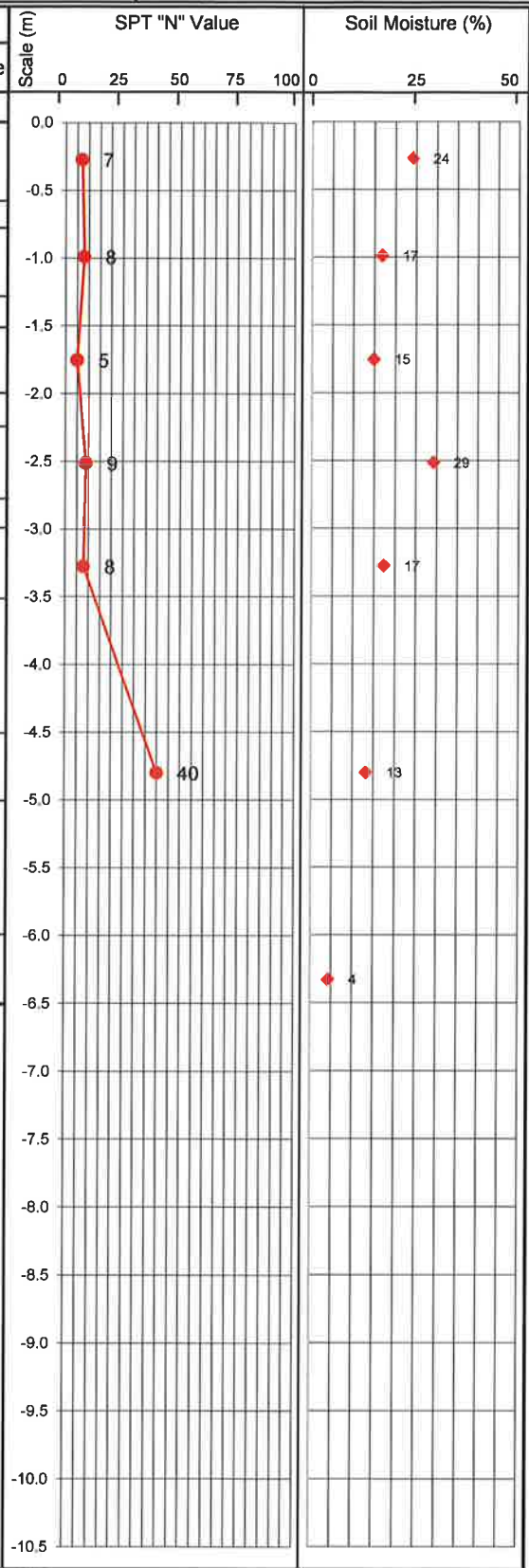
LANDTEK LIMITED

BH 105

Project No.:	21261	Drill Date:	August 10, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type
Ground Surface		182.8		
±350 mm of Topsoil		182.4	1	SS
FILL: silty sand, trace gravel. Brown, loose, moist.		0.35		
...changes to clayey silt, trace sand. Firm to stiff.			2	SS
...silty clay. Firm.			3	SS
...stiff.			4	SS
...firm to stiff.			5	SS
		179.2		
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		3.6	6	SS
		177.8		
SHALE: highly weathered, hard, dry to moist		5.0	7	AUG
		176.3		
END OF BOREHOLE AT TARGET DEPTH		6.5		



GWL | Monitor Details | Test Data

Notes:
1. Borehole open to approximately 6.5 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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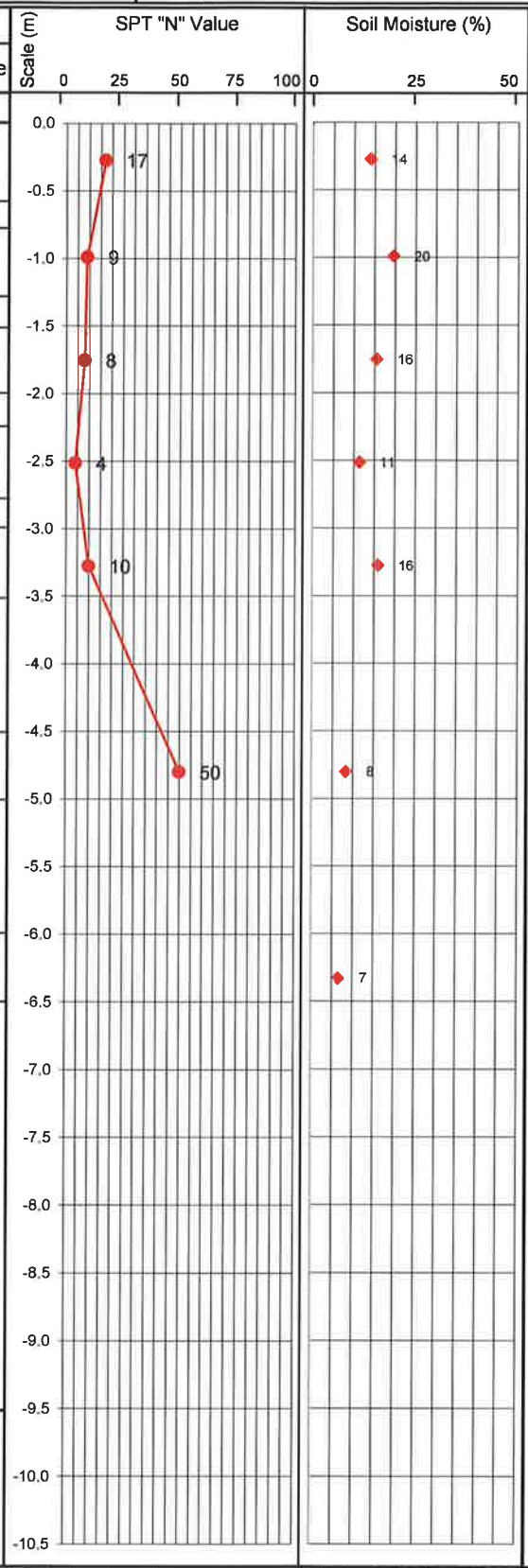
LANDTEK LIMITED

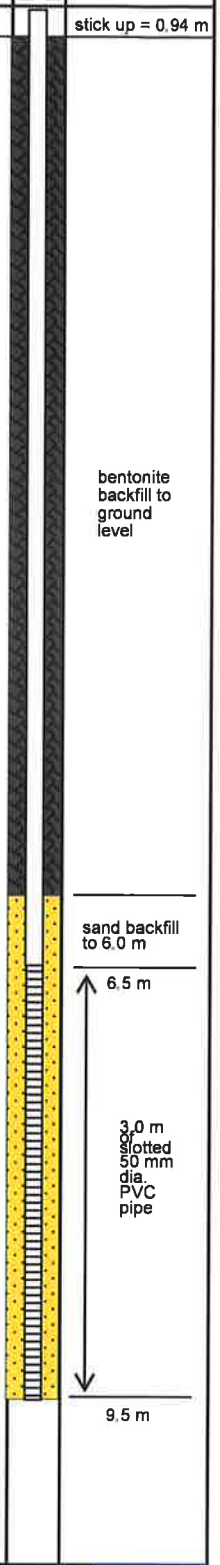
BH/MW 106

Project No.:	21261	Drill Date:	August 10, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Elev. Depth	Samples No.	Type
Ground Surface	182.5		
±350 mm of Topsoil	0.0 / 182.1	1	SS
FILL: silty sand, trace gravel. Brown, compact, moist.	0.35		
...changes to clayey silt, trace sand, trace gravel. Stiff.		2	SS
...silty clay. Firm to stiff.		3	SS
...soft to firm.		4	SS
...stiff.		5	SS
	178.4		
TILL: clayey silt, trace sand, trace gravel. Reddish brown, hard, moist.	4.1 / 177.6	6	SS
SHALE: highly weathered, hard, dry to mois	4.9	7	AUG
	173.0		
END OF BOREHOLE AT TARGET DEPTH	9.5		



GWL | Monitor Details | Test Data



Notes:
1. Borehole open to approximately 9.5 m depth on completion.
2. Groundwater or water seepage was encountered at approximately 7.1 m below ground surface.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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BH 110

Project No.:	21261	Drill Date:	August 9, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	SPT "N" Value	Soil Moisture (%)	GWL	Monitor Details	Test Data
Ground Surface		183.3							
±300 mm of Topsoil		0.0 / 183.0	1	SS	18	14			
FILL: silty sand, trace gravel. Brown, compact, moist.		0.3	2	SS	17	15			
...trace cobbles.			3	SS	6	12			
...clayey silt, no cobbles. Firm.		181.0							
CLAYEY SILT: trace gravel, trace sand, trace shale fragments. Reddish brown, stiff, moist.		2.3	4	SS	13	13			
			5	SS	9	22			
		178.9							
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		4.4	6	SS	32	12			
...trace grey shale fragments.		176.8	7	SS	64	8			
END OF BOREHOLE AT TARGET DEPTH		6.5							

SPT "N" Value scale: 0, 25, 50, 75, 100. Soil Moisture (%) scale: 0, 25, 50. Scale (m): 0.0, -0.5, -1.0, -1.5, -2.0, -2.5, -3.0, -3.5, -4.0, -4.5, -5.0, -5.5, -6.0, -6.5, -7.0, -7.5, -8.0, -8.5, -9.0, -9.5, -10.0, -10.5

Notes:
1. Borehole open to approximately 6.5 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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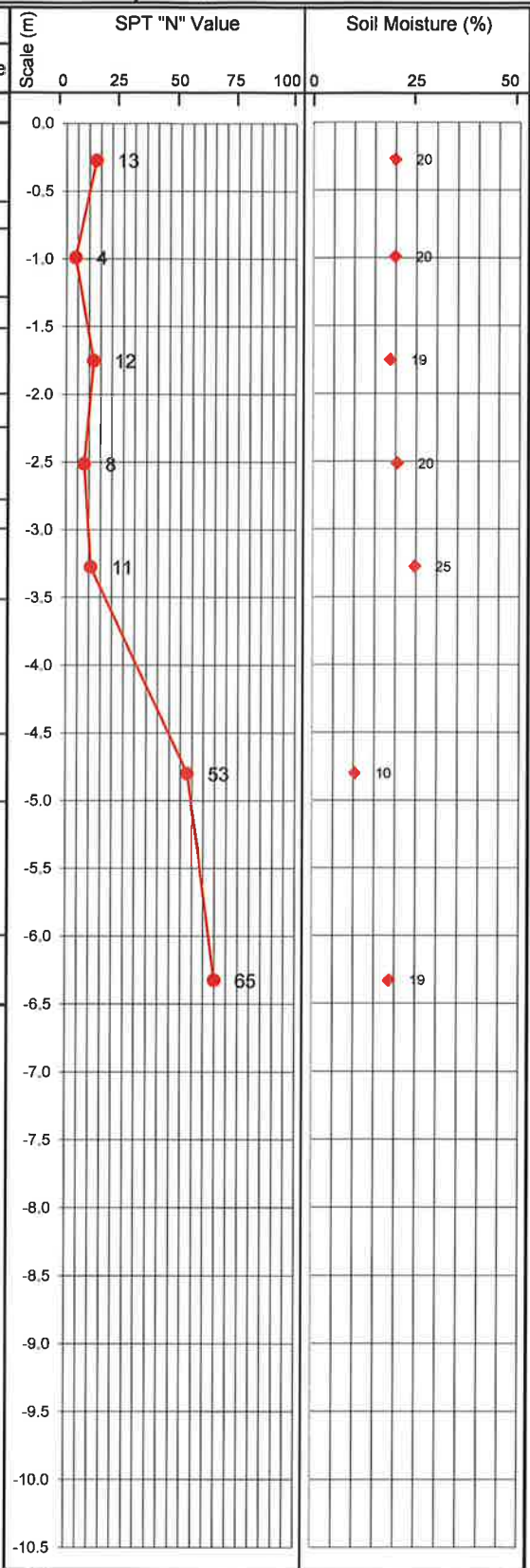
BH 111

Project No.:	21261	Drill Date:	August 9, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type
Ground Surface		183.3		
±300 mm of Topsoil		0.0 183.0	1	SS
FILL: silty sand, trace gravel. Brown, compact, moist.		0.3		
...silty clay, trace sand. Loose.			2	SS
...clayey silt, trace sand. Compact.			3	SS
...Loose.			4	SS
		180.3		
SILTY CLAY: trace gravel, trace sand. Brown, stiff, moist.		3.0	5	SS
		178.9		
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		4.4	6	SS
...reddish brown.			7	SS
		176.8		
END OF BOREHOLE AT TARGET DEPTH		6.5		



GWL	Monitor Details	Test Data

Notes:
1. Borehole open to approximately 6.5 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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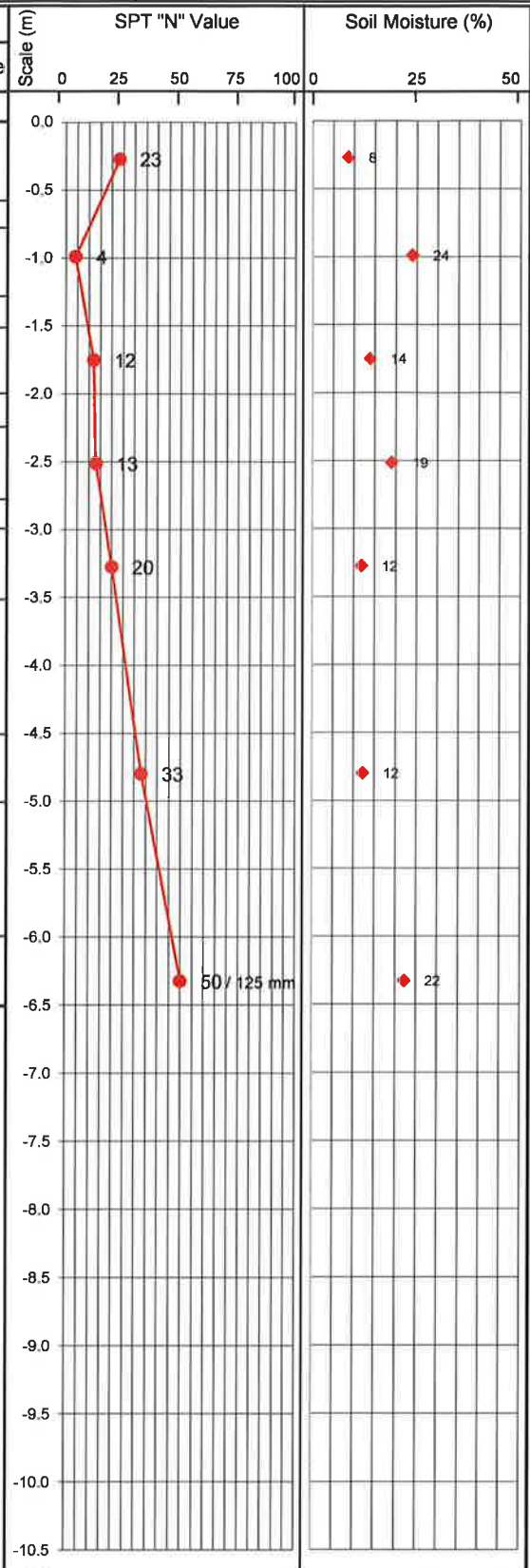
BH 112

Project No.:	21261	Drill Date:	August 9, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface	182.8			
±350 mm of Topsoil	0.0 182.4	1	SS	
FILL: silty sand, trace gravel. Brown, compact, moist.	0.35			
...clayey silt, trace sand, trace gravel. Loose.		2	SS	
...Compact.		3	SS	
		4	SS	
	179.4	5	SS	
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.	3.4			
...hard.		6	SS	
...trace shale fragments. Reddish brown.		7	SS	
	176.3			
END OF BOREHOLE AT TARGET DEPTH	6.5			



Notes:
1. Borehole open to approximately 6.5 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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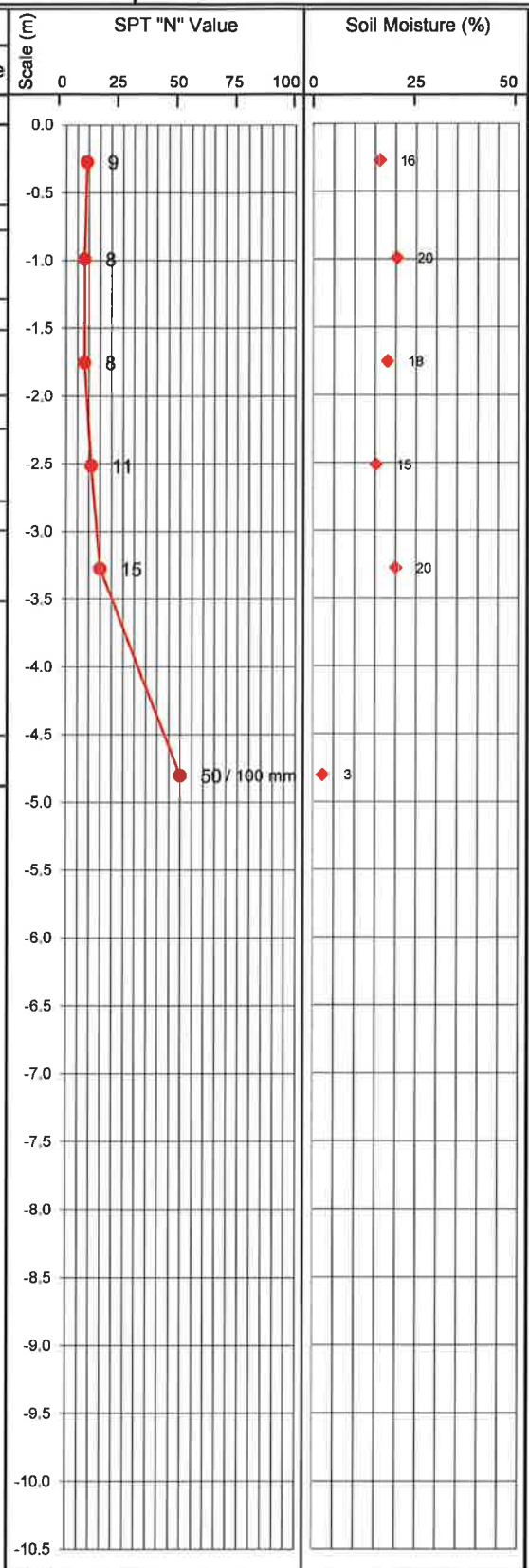
Project No.:	21261	Drill Date:	August 10, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		182.4			
±350 mm of Topsoil		0.0 182.0	1	SS	
FILL: silty sand, trace gravel. Brown, stiff, moist.		0.35			
...change to clayey silt, trace sand, trace gravel. Firm to stiff.			2	SS	
...silty clay.			3	SS	
...clayey silt. Stiff.			4	SS	
		179.1	5	SS	
TILL: clayey silt, trace sand, trace gravel. Brown, stiff to very stiff, moist.		3.3			
SHALE: highly weathered. Red and grey.		177.6	6	SS	
END OF BOREHOLE AT AUGER REFUSAL		4.8			



GWL | Monitor Details

Notes:
1. Borehole open to approximately 4.8 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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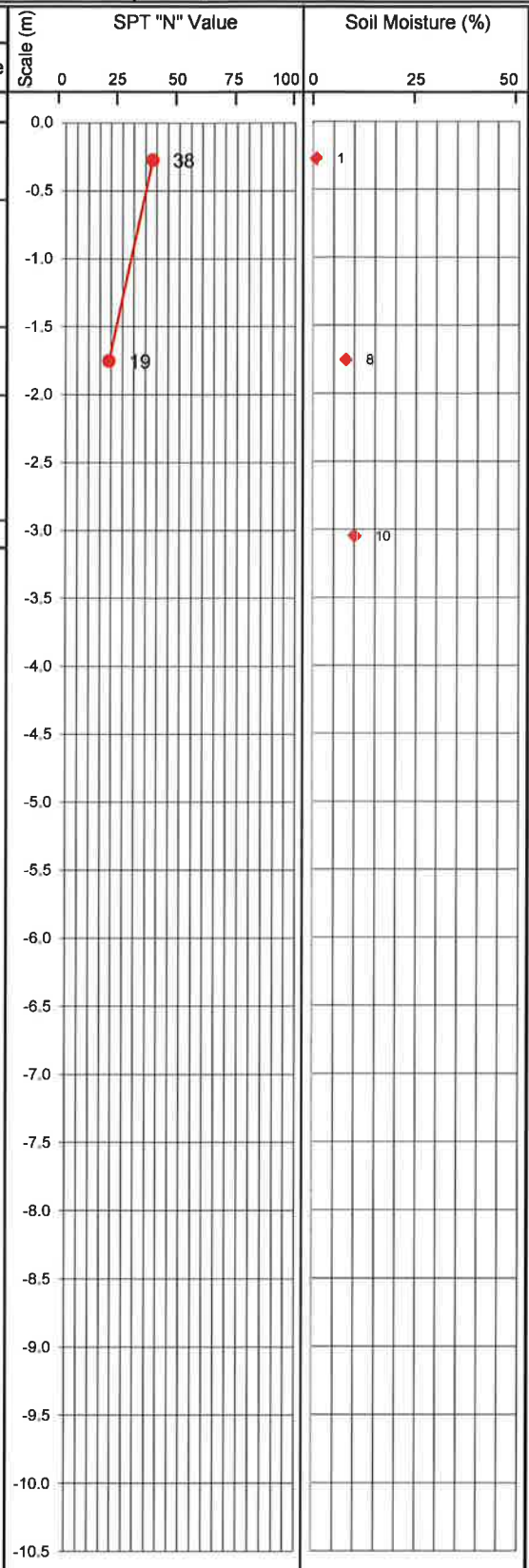
Project No.:	21261	Drill Date:	August 12, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		179.3			
±300 mm of Asphalt			1	SS	
±300 mm of Sand and Gravel		178.7			
FILL: clayey silt, trace gravel. Brown, hard, moist.		0.6 177.8			
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		1.5	2	SS	
SHALE: highly weathered. Red, hard, dry.		176.2	3	AUG	
END OF BOREHOLE AT TARGET DEPTH		3.1			



Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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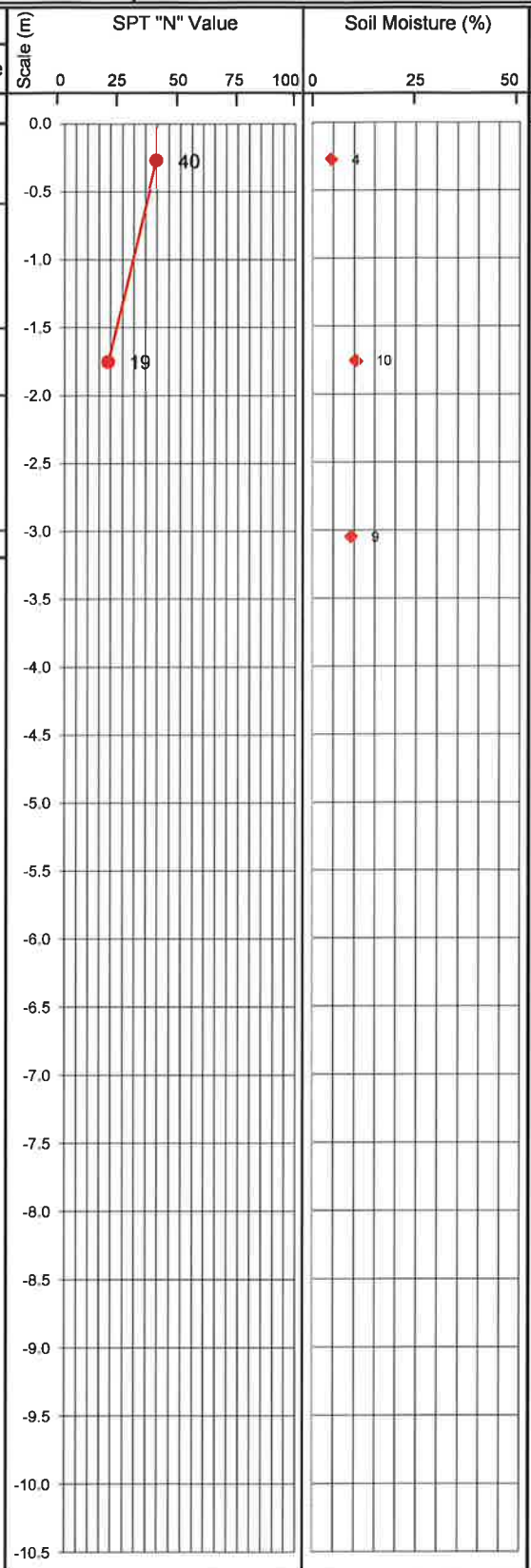
Project No.:	21261	Drill Date:	August 12, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type
Ground Surface		179.0		
±300 mm of Asphalt			1	SS
±300 mm of Sand and Gravel		178.4		
FILL: silty sand, trace gravel, trace clay. Brown, hard, moist.		0.6		
		177.2	2	SS
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		1.8		
SHALE: highly weathered. Red, hard, dry.		175.9	3	AUG
END OF BOREHOLE AT TARGET DEPTH		3.1		



GWL | Monitor Details | Test Data

Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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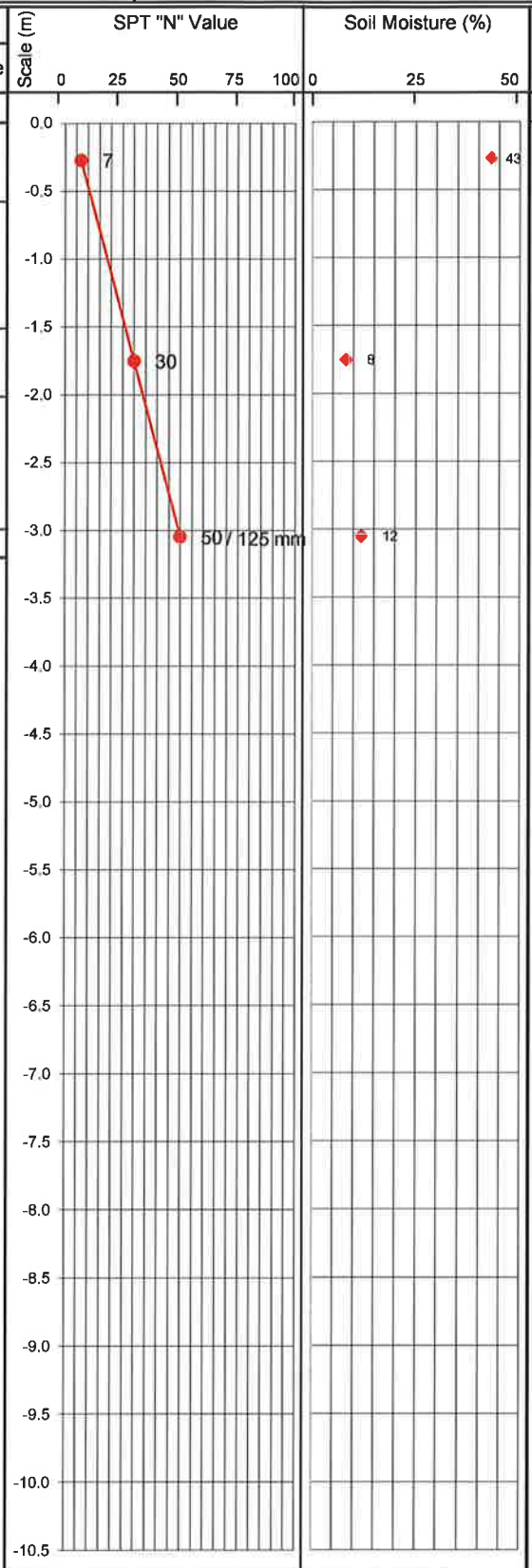
Project No.:	21261	Drill Date:	August 11, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type
Ground Surface		178.3		
±250 mm of Topsoil		0.0 / 178.1		
FILL: silty clay, trace sand. Brown, firm, moist.		0.25	1	SS
		176.8		
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		1.5	2	SS
SHALE: highly weathered. Red, hard, dry.		175.2	3	SS
		3.1		
END OF BOREHOLE AT TARGET DEPTH				



GWL | Monitor Details | Test Data

Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage encountered at approximately 2.7 m below ground surface.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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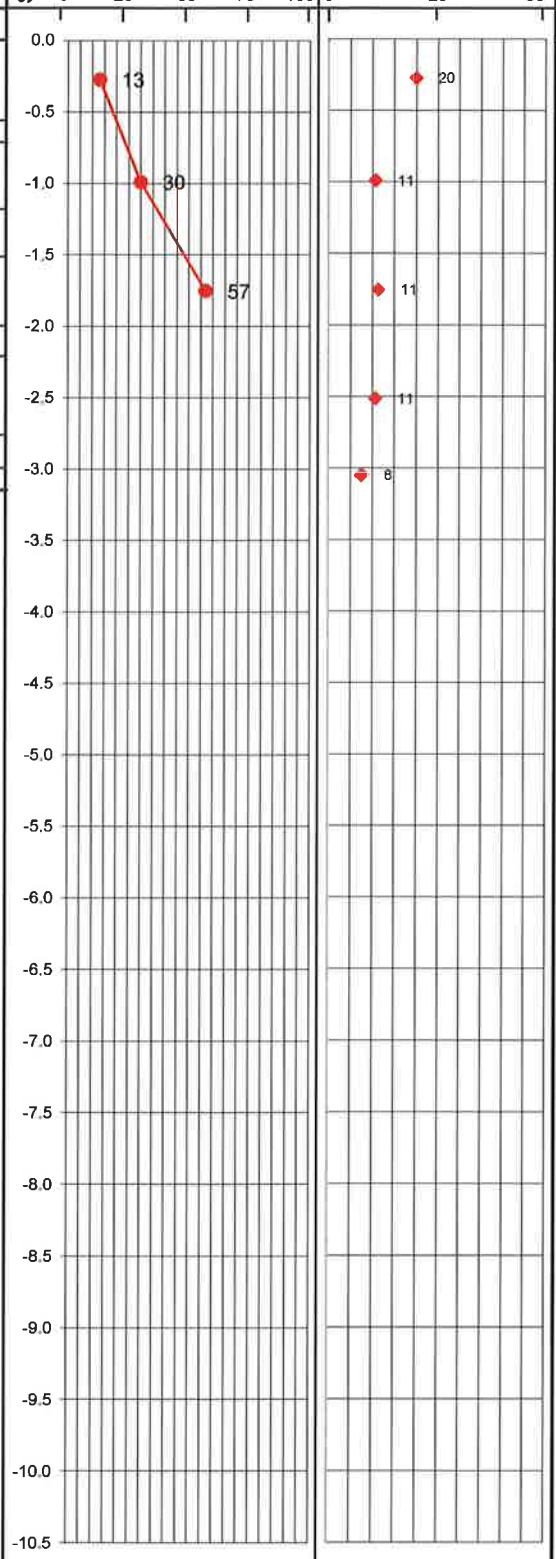
Project No.:	21261	Drill Date:	August 12, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		179.1			
±275 mm of Topsoil		178.8			
FILL: silty sand, trace gravel, trace clay, to clayey silt, trace sand, trace gravel. Brown, stiff, moist.		0.3 / 177.9	1	SS	
			2	SS	
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		0.9			
...trace grey shale fragments at 1.8 m.			3	SS	
		176.8			
SHALE: highly weathered. Red, hard, dry.		2.3	4	AUG	
		176.0	5	AUG	
END OF BOREHOLE AT TARGET DEPTH		3.1			



Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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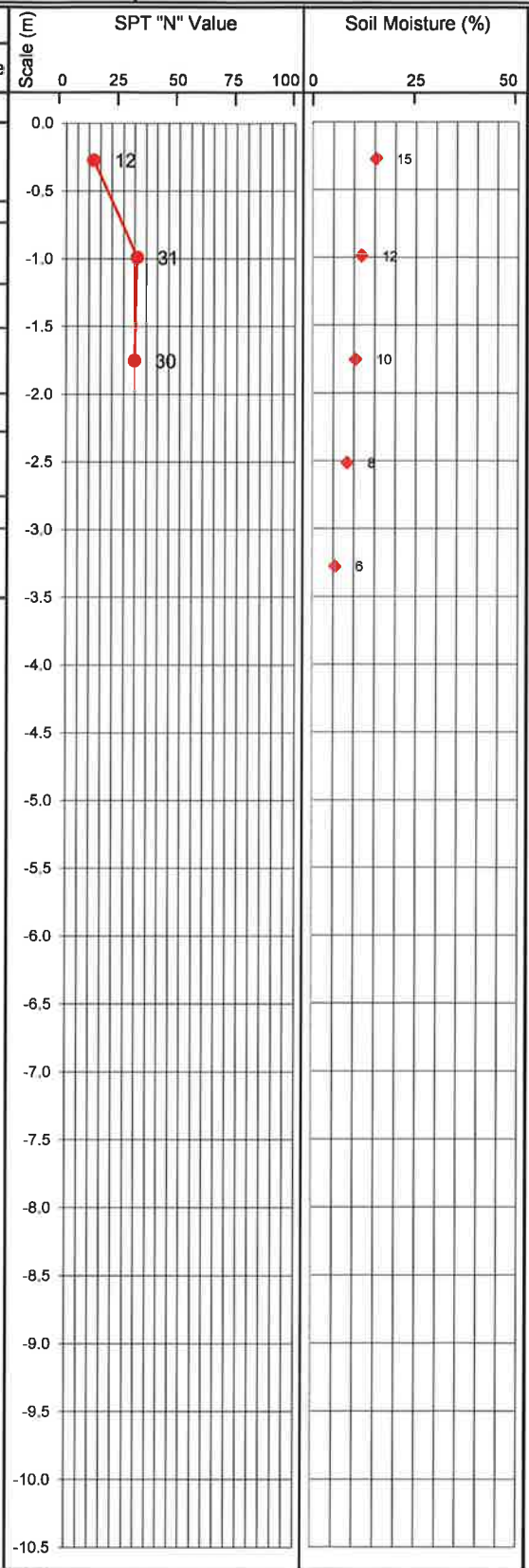
Project No.:	21261	Drill Date:	August 11, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Scale (m)
Ground Surface		179.4			
±150 mm of Topsoil		179.2			
FILL: clayey silt, trace gravel, trace sand. Brown, stiff, moist.		0.15	1	SS	
		178.5	2	SS	
TILL: clayey silt, trace sand, trace gravel. Brown, hard, moist.		0.9	3	SS	
		177.9	4	AUG	
SHALE: highly weathered. Reddish brown, hard, dry to moist.		1.8	5	AUG	
		175.9			
END OF BOREHOLE AT TARGET DEPTH		3.5			



GWL | Monitor Details | Test Data

Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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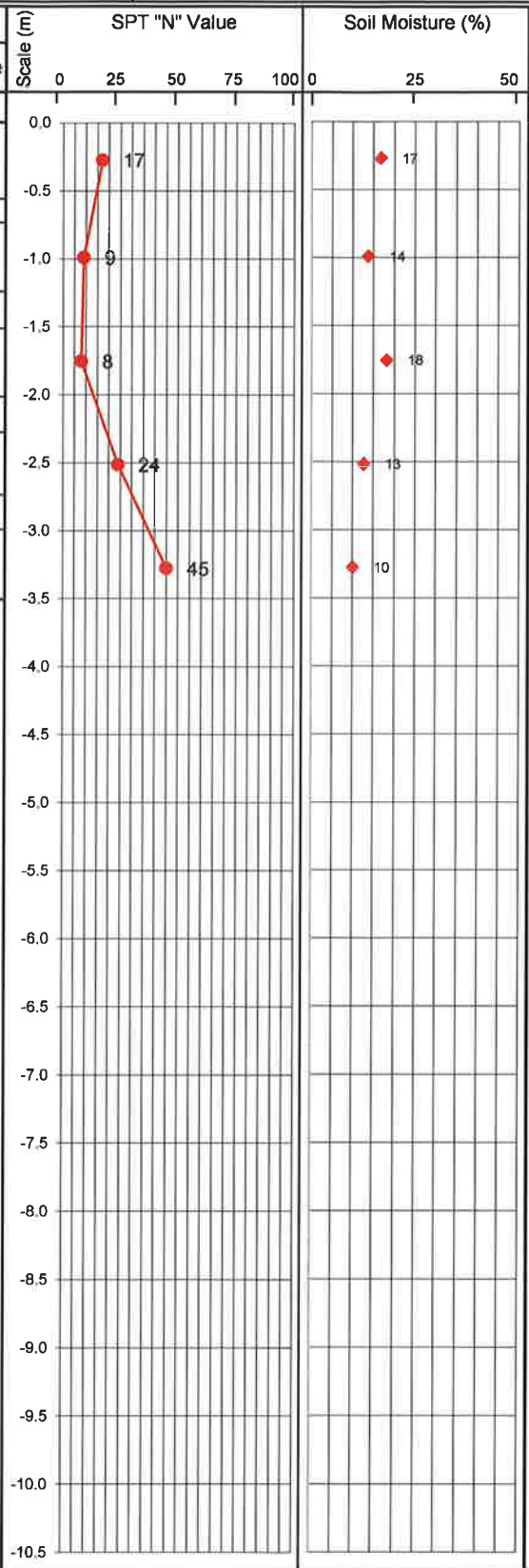
Project No.:	21261	Drill Date:	August 12, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type
Ground Surface		180.9		
±250 mm of Topsoil		180.6		
FILL: sandy silt, trace gravel, trace cobbles. Brown, compact, moist.		0.25	1	SS
...no cobbles, trace clay. Loose.		179.4	2	SS
SILTY CLAY: trace sand, trace gravel. Brown, firm to stiff, moist.		1.5	3	SS
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		178.6 2.3	4	SS
...hard.		177.4	5	SS
END OF BOREHOLE AT TARGET DEPTH		3.5		



GWL | Monitor Details | Test Data

Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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MW 120S

Project No.:	21260	Drill Date:	April 5, 2022
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Test Data
Ground Surface		178.5			stick up = 0.68 m
±600 mm of topsoil		0.0	1	SS	bentonite backfill to ground level
FILL: silty clay, brown trace sand trace gravel			2	SS	sand backfill to 0.6 m; 1.5 m of slotted 50 mm dia. PVC pipe
CLAYEY SILT TILL: trace sand trace gravel		1.8			
END OF BOREHOLE		2.4			2.4 m
		7.5			

SPT "N" Value (Scale (m)): 0 25 50 75 100

Soil Moisture (%): 0 25 50

GWL

Monitor Details

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0 -4.5 -5.0 -5.5 -6.0 -6.5 -7.0 -7.5 -8.0 -8.5 -9.0 -9.5 -10.0 -10.5 -11.0 -11.5 -12.0 -12.5 -13.0 -13.5 -14.0 -14.5 -15.0

Notes:
1. On completion, borehole open to 0.68 m
2. Groundwater was not encountered during the drilling process
3. Water level reading: WL at 0.34 m depth on April 28, 2022

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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MW 120D

Project No.:	21260	Drill Date:	August 9, 2021
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		178.5			stick up = 0.63 m
±600 mm of topsoil		0.0	1	SS	
FILL: silty clay, brown trace sand trace gravel			2	SS	
CLAYEY SILT TILL: trace sand trace gravel		1.8			
SHALE BEDROCK: redish, fractured		2.4	3	SS	
			4	SS	
			5	SS	
END OF BOREHOLE		7.5			

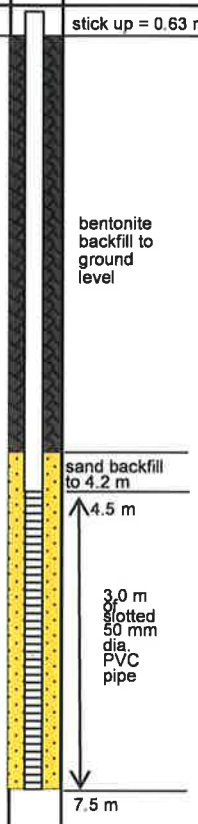
SPT "N" Value: 0 25 50 75 100

Soil Moisture (%): 0 25 50

Scale (m): 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0 -4.5 -5.0 -5.5 -6.0 -6.5 -7.0 -7.5 -8.0 -8.5 -9.0 -9.5 -10.0 -10.5 -11.0 -11.5 -12.0 -12.5 -13.0 -13.5 -14.0 -14.5 -15.0

GWL

Monitor Details



Notes:
1. On completion, borehole open to 7.5 m
2. Groundwater was not encountered during the drilling process
3. Water level reading: WL at 1.19 m depth on November 15, 2021

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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MW 121S

Project No.:	21260	Drill Date:	April 5, 2022
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Scale (m)	SPT "N" Value 0 25 50 75 100	Soil Moisture (%) 0 25 50	GWL	Monitor Details	Test Data
Ground Surface		178.3			0.0				stick up = 0.79 m	
±600 mm of topsoil		0.0	1	SS	-0.5				bentonite backfill to ground level	
FILL: silty clay, brown trace sand trace gravel			2	SS	-1.0				sand backfill to 0.6 m	
					-1.5				0.9 m	
					-2.0				1.5 m of slotted 50 mm dia. PVC pipe	
SHALE BEDROCK: redish, weathered		2.1			-2.5				2.4 m	
END OF BOREHOLE					-3.0					
					-3.5					
					-4.0					
					-4.5					
					-5.0					
					-5.5					
					-6.0					
					-6.5					
					-7.0					
					-7.5					
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					-10.0					
					-10.5					
					-11.0					
					-11.5					
					-12.0					
					-12.5					
					-13.0					
					-13.5					
					-14.0					
					-14.5					
					-15.0					

Notes:
1. On completion, borehole open to 6.5 m
2. Groundwater was encountered at 5.0 m during the drilling process
3. Monitoring Well was dry on August 28, 2022

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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MW 121D

Project No.:	21260	Drill Date:	August 9, 2021
Project:	Hydrogeological Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3201/3275 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Scale (m)	SPT "N" Value 0 25 50 75 100	Soil Moisture (%) 0 25 50	GWL	Monitor Details	Test Data
Ground Surface		178.3								stick up = 1.00 m
±600 mm of topsoil		0.0	1	SS						
FILL: silty clay, brown trace sand trace gravel			2	SS						
SHALE BEDROCK: redish, weathered		2.1	3	SS						
			4	SS						
unweathered		4.9	5	SS						
END OF BOREHOLE		6.5								

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0 -4.5 -5.0 -5.5 -6.0 -6.5 -7.0 -7.5 -8.0 -8.5 -9.0 -9.5 -10.0 -10.5 -11.0 -11.5 -12.0 -12.5 -13.0 -13.5 -14.0 -14.5 -15.0

bentonite backfill to ground level

sand backfill to 4.7 m

5.0 m

1.5 m of slotted 50 mm dia. PVC pipe

6.5 m

Notes:
1. On completion, borehole open to 6.5 m
2. Groundwater was encountered at 5.0 m during the drilling process
3. Water level reading: WL at 1.02 m depth on November 15, 2021

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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BH 122

Project No.:	21261	Drill Date:	August 11, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. / Depth	Samples No.	Samples Type	Scale (m)	SPT "N" Value	Soil Moisture (%)	GWL	Monitor Details	Test Data
Ground Surface		178.4								
±250 mm of Topsoil		178.1								
FILL: silty clay to clayey silt, trace sand, trace gravel. Brown, stiff, moist.		0.25	1	SS		9	21			
		176.9				21	14			
TILL: clayey silt, trace sand, trace gravel. Brown, very stiff, moist.		1.5	2	SS						
		175.9								
SHALE: highly weathered. Red, hard, dry.		2.5	3	SS		50/ 125 mm	8			
		175.3								
END OF BOREHOLE AT TARGET DEPTH		3.1								

SPT "N" Value: 0 25 50 75 100 | Soil Moisture (%): 0 25 50

Scale (m): 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0 -4.5 -5.0 -5.5 -6.0 -6.5 -7.0 -7.5 -8.0 -8.5 -9.0 -9.5 -10.0 -10.5

Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage encountered at approximately 2.7 m below ground surface.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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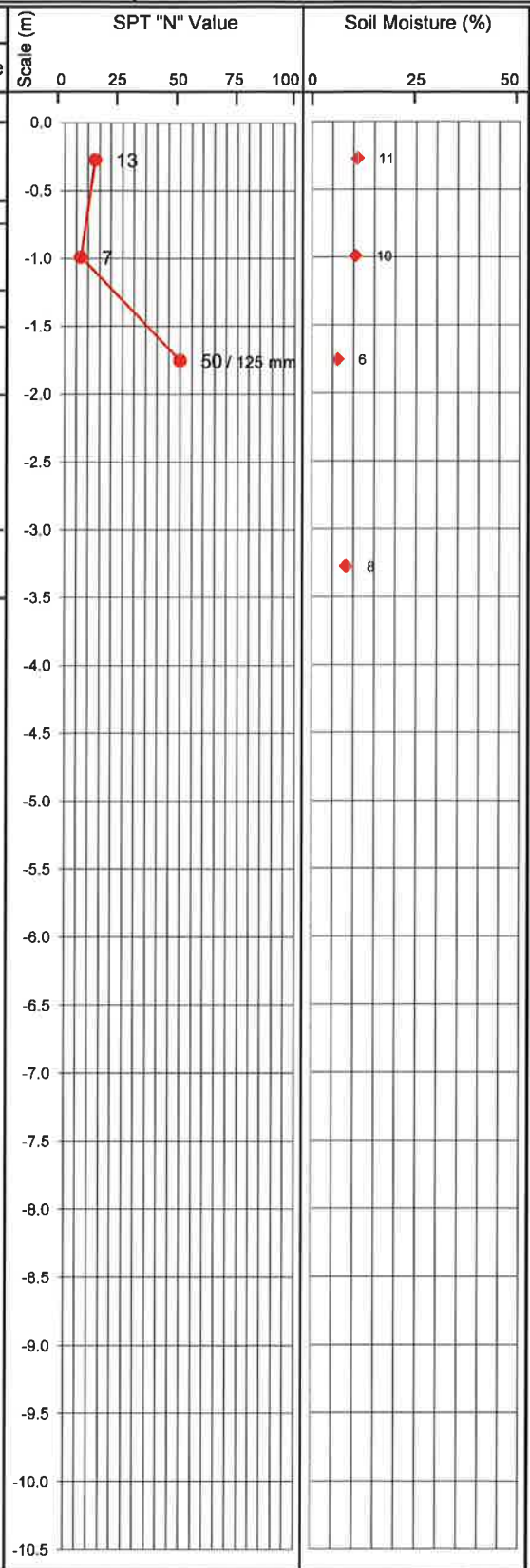
BH 123

Project No.:	21261	Drill Date:	August 11, 2021
Project:	Geotechnical Investigation	Drill Method:	[x] solid stem [ ] hollow stem [ ] vibratory
Location:	3275 & 3301 Trafalgar Road, Oakville, Ontario	Datum:	Geodetic Elevation

Material Description	Symbol	Elev. Depth	Samples No.	Samples Type	Test Data
Ground Surface		179.0			
±250 mm of Topsoil		178.7			
FILL: silty sand. Brown, compact, moist.		0.25	1	SS	
...clayey silt, trace sand. Firm.		177.5	2	SS	
SHALE: highly weathered. Reddish brown, hard, dry to moist.		1.5	3	SS	
		175.5	4	AUG	
END OF BOREHOLE AT TARGET DEPTH		3.5			



Notes:
1. Borehole open to approximately 3.0 m depth on completion.
2. Groundwater or water seepage not encountered.

PP = pocket penetrometer TCV = total combustible vapour BRD = bulk relative density
PL = plastic limit LL = liquid limit PI = plasticity index FV = field vane LV = lab vane VS = vane sensitivity

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
		180.0						Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
0			**Organic Material** ~250 mm Topsoil								24" Locking Vault		
		179.0	**Silty Clay** trace gravel, Brown, firm to stiff, moist.	1	SS	3 3 5 5	8		10.0				
1			**Silt Till** trace gravel, trace sand, trace clay, Brown, very stiff, moist.	2	SS	6 13 16	29		10.0				
		178.0	...very stiff to hard.	3	SS	7 12 18	30		10.0				
2													
		177.0											
3			**Shale** TCR = 100% RQD = 0%	4	SS	50-3"	50		10.0				
				5	CORE								
		176.0											
4			TCR = 100% RQD = 46%	6	CORE								GW Monitoring Level August 2021
		175.0											
5			TCR = 100% RQD = 55%	7	CORE								
		174.0											
6													
		173.0											
7			TCR = 100% RQD = 94%	8	CORE								
		172.0											
8													
		171.0	TCR = 100% RQD = 83%	9	CORE								
9													

3/8" Bentonite Pellets

4 m

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
10		170.0											
			TCR = 98% RQD = 83%	10	CORE								
		169.0											
11													
		168.0	TCR = 100% RQD = 91%	11	CORE								
12													
		167.0											
13			TCR = 100% RQD = 96%	12	CORE								
		166.0											
14													
		165.0	TCR = 100% RQD = 93%	13	CORE								
15													
		164.0											
16			TCR = 100% RQD = 99%	14	CORE					#10 Well Slot Sand			
		163.0											
17													
		162.0											
18			TCR = 100% RQD = 91%	15	CORE					2" Schedule 40 PVC Slot 10 Screen			
		161.0											
19			End of Log										

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
			Organic Material ~250 mm Topsoil					Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
			Clayey Silt trace sand. Brown, firm, moist.	1	SS	2 2 3 4	5	Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity 10 20 30 40				
1		178.0	...very stiff.	2	SS	8 12 12	24		10.0				
			Silt Till trace gravel, trace sand. Brown, dense, moist.	3	SS	8 19 20	39		10.0				
2		177.0		4	SS	10 20 28	48		10.0				
3		176.0	...trace clay. Very moist to wet.	5	SS	23 30 31	61		10.0				
4		175.0											
			Shale TCR = 100% RQD = 36%	6	CORE	50-2"	50		10.0				
5		174.0											
			TCR = 100% RQD = 63%	7	CORE								
6		173.0											
7		172.0	TCR = 100% RQD = 68%	8	CORE								
8		171.0											
			TCR = 100% RQD = 65%	9	CORE								
9		170.0											
10		169.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
11		168.0	TCR = 100% RQD = 78%	10	CORE								
12		167.0	TCR = 100% RQD = 86%	11	CORE								
13		166.0	TCR = 94% RQD = 87%	12	CORE								
14		165.0	TCR = 97% RQD = 91%	13	CORE								
15		164.0											
16		163.0	TCR = 100% RQD = 90%	14	CORE								
17		162.0											
18		161.0	TCR = 100% RQD = 90%	15	CORE								
19		160.0	End of Log										
20		159.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
			Organic Material ~250 mm Topsoil					Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
			Clayey Silt trace gravel. Brown, stiff, moist.	1	SS	7 6 4 4	10	Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
1		180.0	...very stiff.	2	SS	7 9 10	19		15.0 13.1				
		179.0	**Silt Till** trace gravel, trace sand, trace clay. Brown, hard, moist.	3	SS	7 12 21	33		13.2				
2				4	SS	11 25 29	54		10.1				
3		178.0		5	SS	14 22 27	49		11.1				
		177.0		6	SS	16 18 20	38		9.2				
4				7	SS	17 23 21	44		9.0				
5		176.0											
		175.0											
6			**Shale** TCR = 100% RQD = 56%	8	SS	50-2"	50		2.8				
				9	CORE								
7		174.0	TCR = 98% RQD = 63%	10	CORE								
		173.0											
8													
		172.0	TCR = 98% RQD = 67%	11	CORE								
9													
		171.0											
10			TCR = 100% RQD = 78%	12	CORE								
		170.0											
11													

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity 10 20 30 40				
12		169.0	TCR = 100% RQD = 67%	13	CORE								
13		168.0	TCR = 100% RQD = 78%	14	CORE								
14		167.0											
15		166.0	TCR = 100% RQD = 80%	15	CORE								
16		165.0	TCR = 100% RQD = 84%	16	CORE								
17		164.0											
18		163.0	TCR = 100% RQD = 92%	17	CORE								
19		162.0	End of Log										
20		161.0											
21		160.0											
22		159.0											

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville
Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation
Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength (kPa) / Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity (PL, MC, LL)	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
0		179.0	**Fill** Sand, some gravel, Brown, compact, moist.	1	SS	2 10 10 9	20		10.6				
1		178.0	...silty clay, trace gravel, Stiff.	2	SS	2 5 6	11		26.2				
2		177.0	**Silt Till** trace gravel, trace clay, Brown, very stiff, moist.	3	SS	4 10 12	22		14.3				
			...trace sand, Hard.	4	SS	7 15 24	39		14.4				
3		176.0	...no clay, trace cobbles, Dense.	5	SS	12 19 27	46		10.3				
4		175.0											GW Monitoring Level August 2021
			...trace clay, Hard.	6	SS	9 14 32	46		9.4				
5		174.0											
6		173.0	**Shale** TCR = 100% RQD = 33%	7	SS	50-2"	50		7.8				
7		172.0	TCR = 98% RQD = 83%	8	CORE								
8		171.0	TCR = 100% RQD = 84%	9	CORE								
9		170.0											

Penetration / Strength Results: Undrained Shear Strength Values (kPa) 40 80 120 160; Penetration Test Values (Blows / 0.3m) 20 40 60 80
Moisture / Plasticity: PL MC LL; Moisture / Plasticity 10 20 30 40
Well Details: 24" Locking Vault; 3/8" Bentonite Pellets; 19.4 m
Groundwater Conditions

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
10		169.0	TCR = 99% RQD = 76%	10	CORE								
11		168.0	TCR = 100% RQD = 95%	11	CORE								
12		167.0											
13		166.0	TCR = 97% RQD = 74%	12	CORE								
14		165.0	TCR = 100% RQD = 94%	13	CORE								
15		164.0											
16		163.0	TCR = 98% RQD = 98%	14	CORE					#10 Well Slot Sand			
17		162.0								2" Schedule 40 PVC Slot 10 Screen			
18		161.0	TCR = 98% RQD = 98%	15	CORE								
19		160.0	End of Log										

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville
Drill Date: 2023-03-24
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation
Northing: 43.497477
Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
0		179.0	**Organic Material** ~250 mm Topsoil										
			Silty Clay trace gravel, trace sand. Brown, stiff, moist.	1	SS	4 4 5 6	9		10.0				
1		178.0	...very stiff.	2	SS	5 7 9	16		10.0				
			Silt Till trace gravel, trace sand, trace grey shale fragments. Red and brown, dense, moist.	3	SS	10 19 33	52		10.0				
2		177.0		4	SS	48 50-3"	50						
3		176.0	**Shale** TCR = 100% RQD = 0%	5	SS	50-5"	50		10.0				
				6	CORE								
4		175.0	TCR = 100% RQD = 49%	7	CORE								GW Monitoring Level August 2021
5		174.0	TCR = 100% RQD = 86%	8	CORE								
6		173.0											
7		172.0	TCR = 100% RQD = %	9	CORE								
8		171.0	TCR = 100% RQD = %	10	CORE								
9		170.0											

Well Details: 24" Locking Vault; 3/8" Bentonite Pellets; 4.4 m

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-24
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

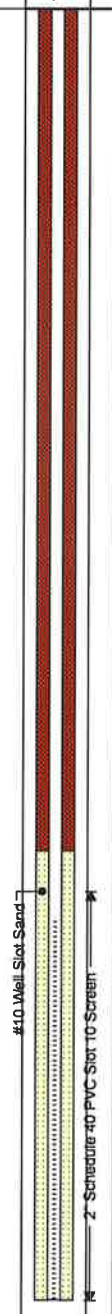
Northing: 43.497477
Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
10		169.0	TCR = 98% RQD = %	11	CORE			
11		168.0	TCR = 100% RQD = %	12	CORE			
12		167.0						
13		166.0	TCR = 100% RQD = %	13	CORE			
14		165.0	TCR = 100% RQD = %	14	CORE			
15		164.0						
16		163.0	TCR = 100% RQD = %	15	CORE			
17		162.0	TCR = 100% RQD = %	16	CORE			
18		161.0						
19		160.0	End of Log					

Subsurface Conditions | **Samples** | **Penetration / Strength Results** | **Moisture / Plasticity** | **Well Details** | **Groundwater Conditions** | **Headspace Vapor (ppm) [LEL(%)]**

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40



Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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APPENDIX C

SUMMARY OF MECP WELLS RECORDS

Summary of MECP Well Records

Well #	WELL_ID	DATE_COMPLETED	DATE_RECEIVED	EAST83	NORTH83	WATER_FOUND_DEPTH (FT)	Static Water Level (ft)	KIND	FINAL_STATUS	USE_1ST	USE_2ND	DEPTH_TO (ft)	DEPTH_TO (m)	Well Construction	STREET	CITY/TOWNSHIP
1	2802105	23-Jun-62	04-Sep-62	602683.6	4816675	20	8	Fresh	Water Supply	Domestic	NA	20	6.10	Bedrock	NA	Oakville Town
2	2802106	05-Oct-65	07-Dec-65	602509.6	4816850	65	9	Fresh	Water Supply	Domestic	NA	68	20.73	Bedrock	NA	Oakville Town
3	2802107	15-Apr-51	20-Sep-51	602936.6	4816358	63	18	Fresh	Water Supply	Public	NA	99	30.18	Bedrock	NA	Oakville Town
4	2802108	12-May-51	20-Sep-51	602936.6	4816363	65	15	Fresh	Water Supply	Public	NA	87	26.52	Bedrock	NA	Oakville Town
5	2802112	12-Oct-53	25-Nov-53	602564.6	4816547	40	8	Fresh	Water Supply	Public	NA	50	15.24	Bedrock	NA	Oakville Town
6	2806985	26-Jul-88	16-Aug-88	602670.2	4816688	48	9	NA	Water Supply	Domestic	NA	65	19.82	Bedrock	NA	Oakville Town
7	2808922	03-Jul-98	18-Feb-99	602641.6	4816383	28	17	Fresh	Water Supply	Domestic	NA	65	19.82	Bedrock	NA	Oakville Town
8	7132311	07-Oct-09	21-Oct-09	602559.0	4816814	NA	20	NA	Abandoned	NA	NA	NA	NA	NA	NA	3871 Trafalgar Road
9	7135929	19-Nov-09	14-Dec-09	602401.0	4817024	NA	8.5	NA	Abandoned	NA	NA	26.3	8.02	Overburden	NA	Oakville Town
10	7218875	11-Oct-13	02-Apr-14	603080.0	4816959	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Oakville Town
11	7224933	25-Jun-14	31-Jul-14	602585.0	4816717	NA	NA	NA	Observation	Monitoring	NA	30	9.15	Bedrock	Trafalgar Rd. S outh of Hwy 407 To Glenashton Dr.	Oakville Town
12	7224934	25-Jun-14	31-Jul-14	602875.0	4816427	NA	NA	NA	Observation	Monitoring	NA	21	6.40	Bedrock	Trafalgar Rd. S outh of Hwy 407 To Glenashton Dr.	Oakville Town
13	7323167	28-Sep-18	22-Nov-18	602898.0	4816533	NA	NA	NA	Observation	Monitoring	NA	30	9.15	Bedrock	Dundas Street East & Trafalgar Road	Oakville Town
14	7323168	28-Sep-18	22-Nov-18	603100.0	4816323	NA	NA	NA	Observation	Monitoring	NA	30	9.15	Bedrock	Dundas Street East & Trafalgar Road	Oakville Town
15	7345664	14-Jun-19	28-Oct-19	603177.0	4816202	NA	NA	NA	Observation	Monitoring	NA	31	9.45	Bedrock	Trafalgar Rd & Dundas Sttreet E	Oakville Town

APPENDIX D

GRAINSIZE ANALYSIS

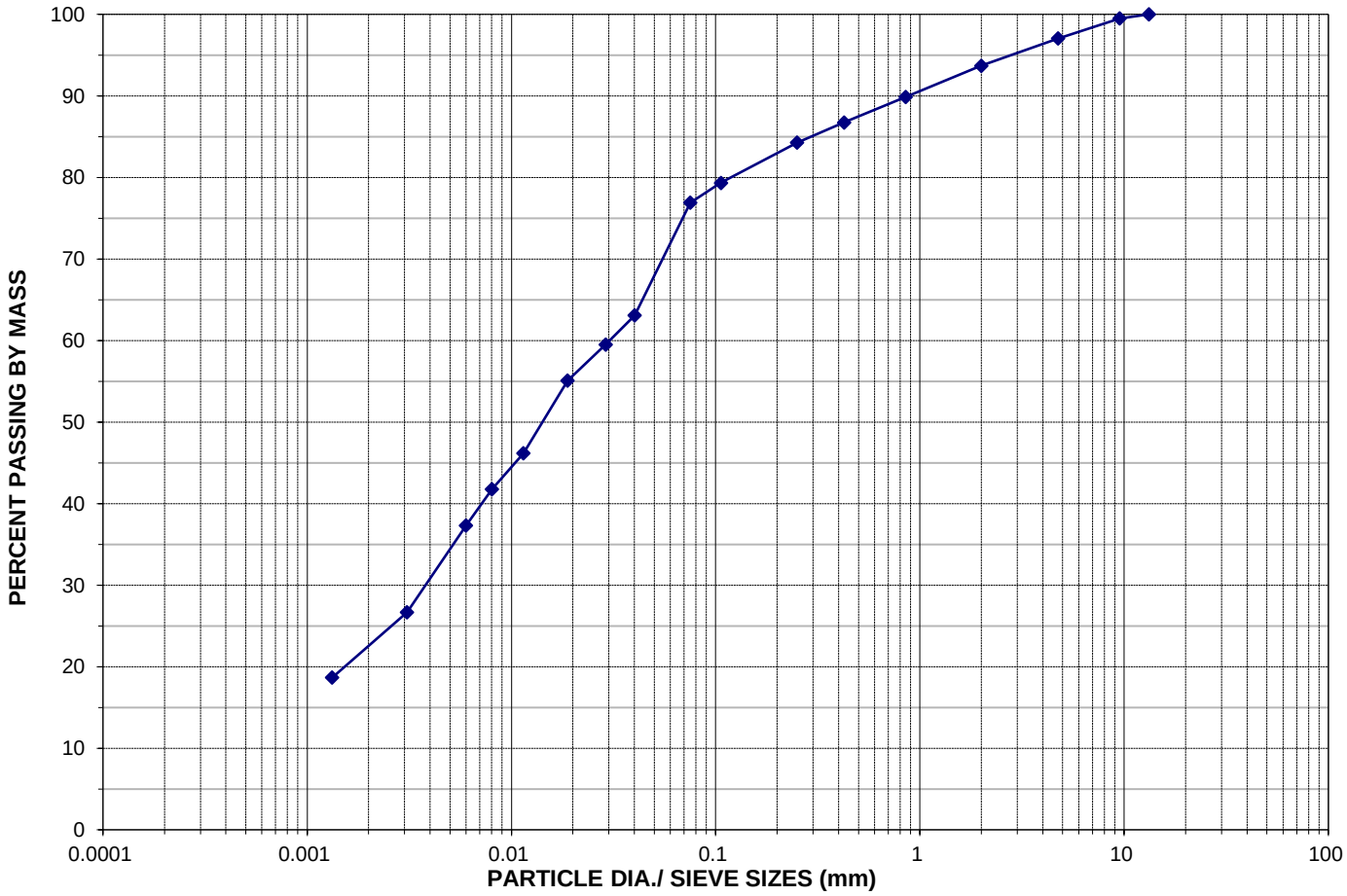
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 1-23 SS2

FILE NO.: 21261
LAB SAMPLE NO.: S-038F
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	100.0	3.9% Gravel 20.2% Sand 49.3% Silt 26.6% Clay
9.5	99.5	
4.75	97.1	
2.0	93.7	
0.850	89.9	
0.425	86.7	
0.250	84.3	
0.106	79.3	
0.075	76.9	
0.0401	63.1	
0.0290	59.5	
0.0188	55.1	
0.0115	46.2	
0.0080	41.7	
0.0060	37.3	
0.0031	26.6	
0.0013	18.7	

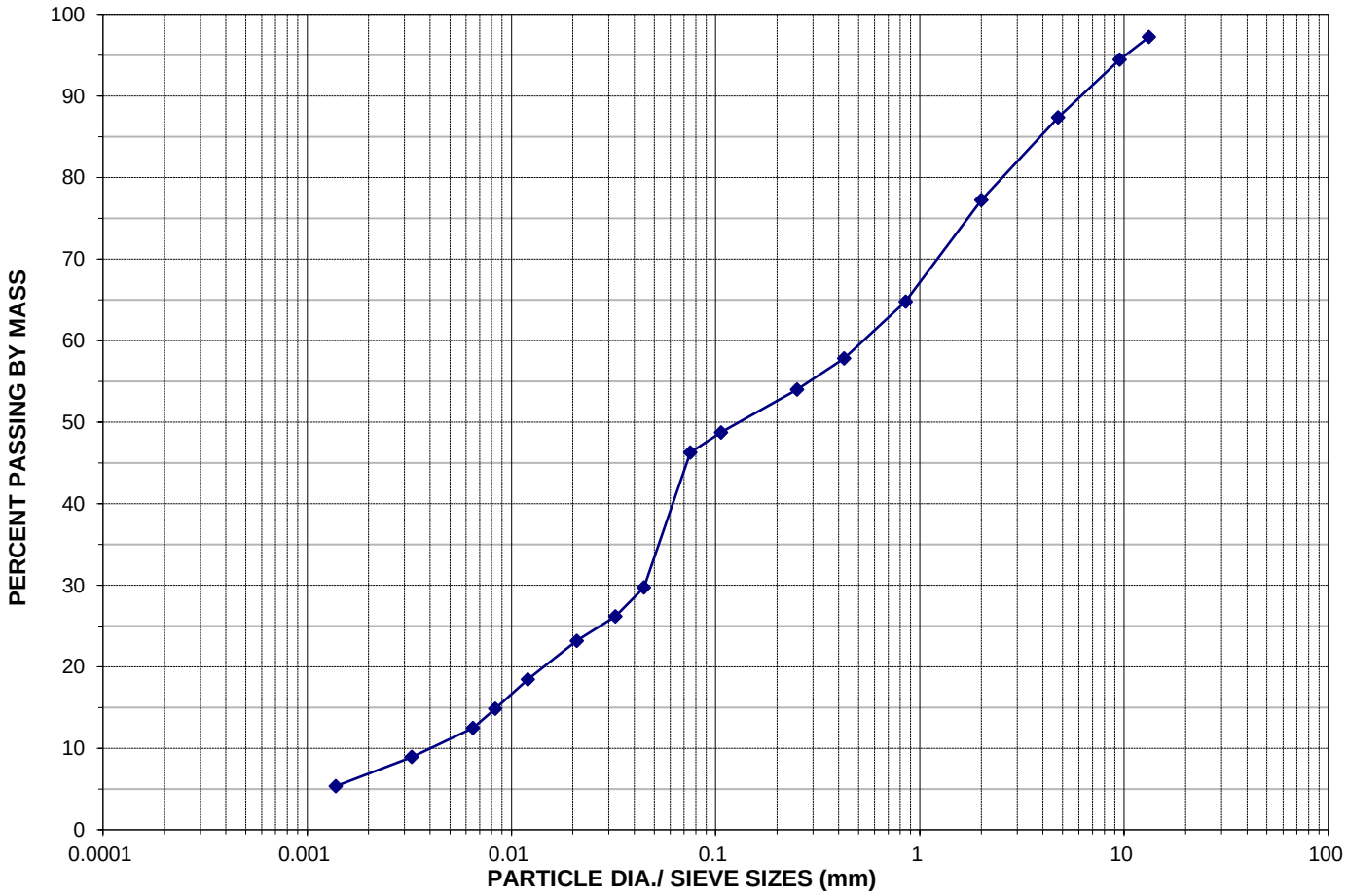
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: ML
SOURCE: BH 2-23 SS5

FILE NO.: 21261
LAB SAMPLE NO.: S-038D
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	97.2	12.7% Gravel 41.0% Sand 37.4% Silt 8.9% Clay
9.5	94.4	
4.75	87.3	
2.0	77.2	
0.850	64.8	
0.425	57.8	
0.250	54.0	
0.106	48.7	
0.075	46.3	
0.0445	29.7	
0.0323	26.2	
0.0209	23.2	
0.0120	18.4	
0.0083	14.9	
0.0065	12.5	
0.0032	8.9	
0.0014	5.3	

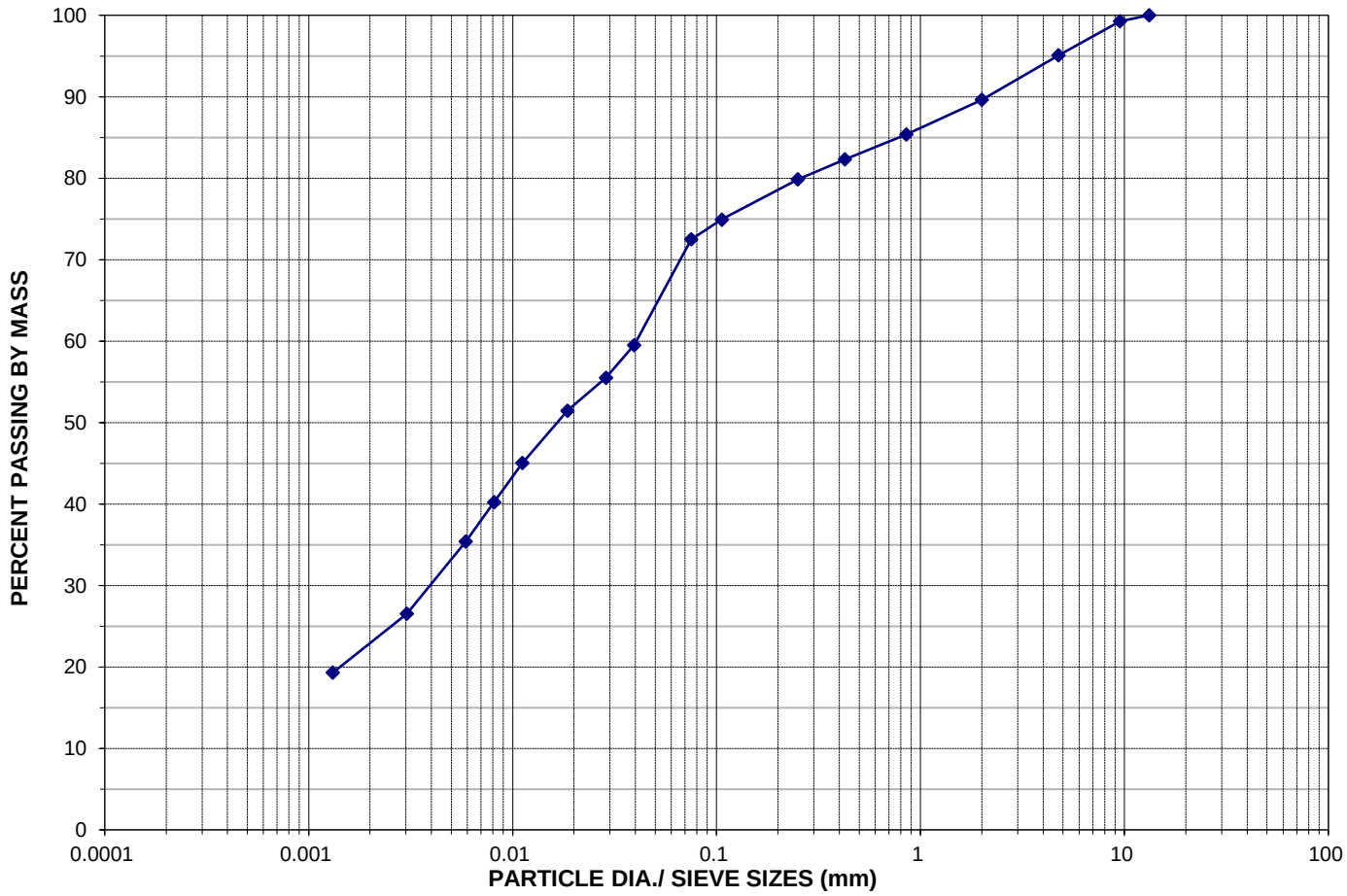
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 3-23 SS4

FILE NO.: 21261
LAB SAMPLE NO.: S-038C
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

22.6
54

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	100.0	4.9% Gravel 22.6% Sand 46% Silt 26.5% Clay
9.5	99.3	
4.75	95.1	
2.0	89.6	
0.850	85.4	
0.425	82.3	
0.250	79.8	
0.106	74.9	
0.075	72.5	
0.0394	59.5	
0.0286	55.5	
0.0186	51.5	
0.0112	45.0	
0.0081	40.2	
0.0059	35.4	
0.0030	26.5	
0.0013	19.3	

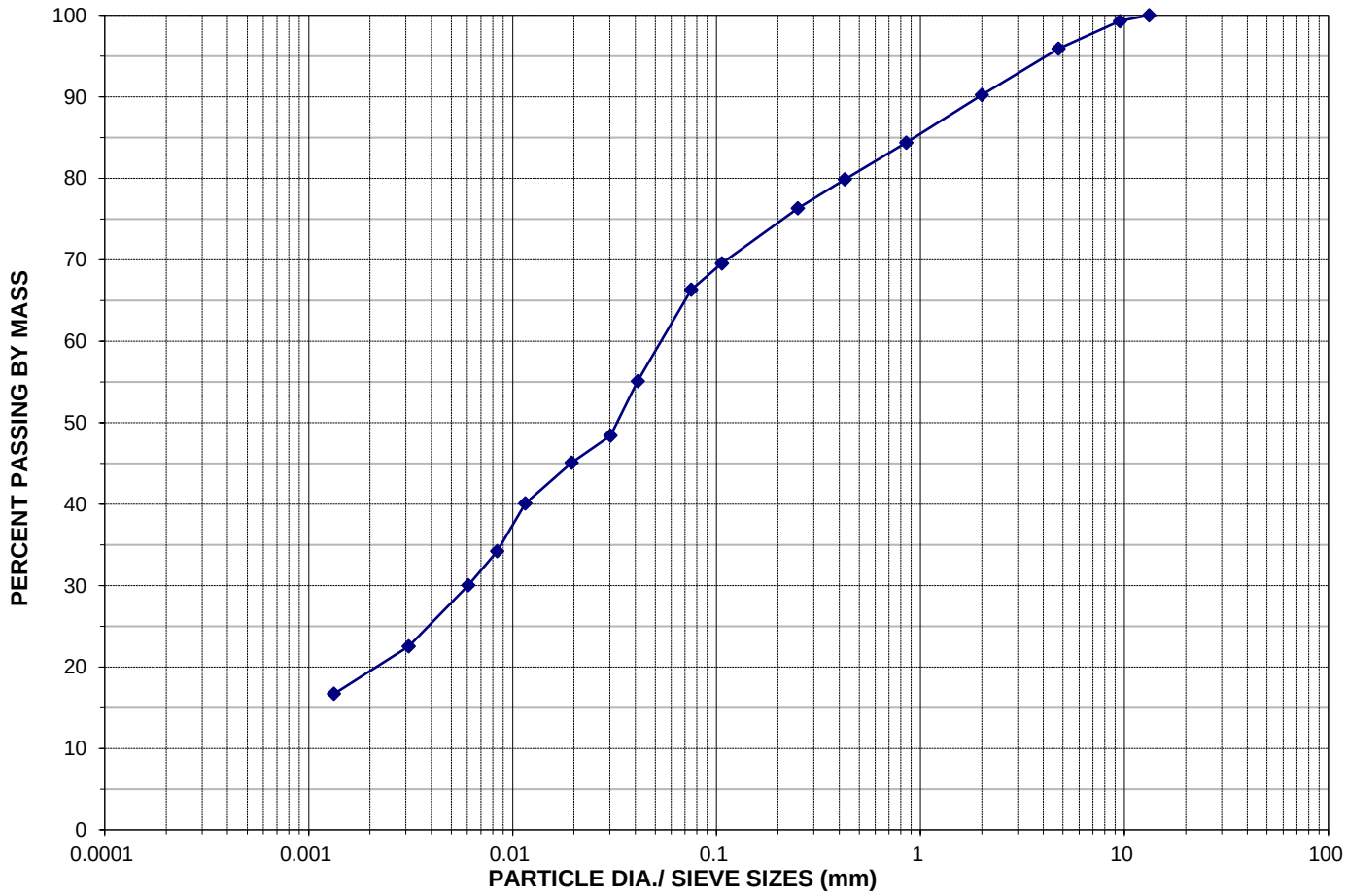
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 3-23 SS7

FILE NO.: 21261
LAB SAMPLE NO.: S-038B
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	100.0	4.1% Gravel 29.6% Sand 56.2% Silt 22.5% Clay
9.5	99.3	
4.75	95.9	
2.0	90.2	
0.850	84.4	
0.425	79.9	
0.250	76.3	
0.106	69.5	
0.075	66.3	
0.0411	55.1	
0.0302	48.4	
0.0195	45.1	
0.0115	40.1	
0.0084	34.2	
0.0061	30.0	
0.0031	22.5	
0.0013	16.7	

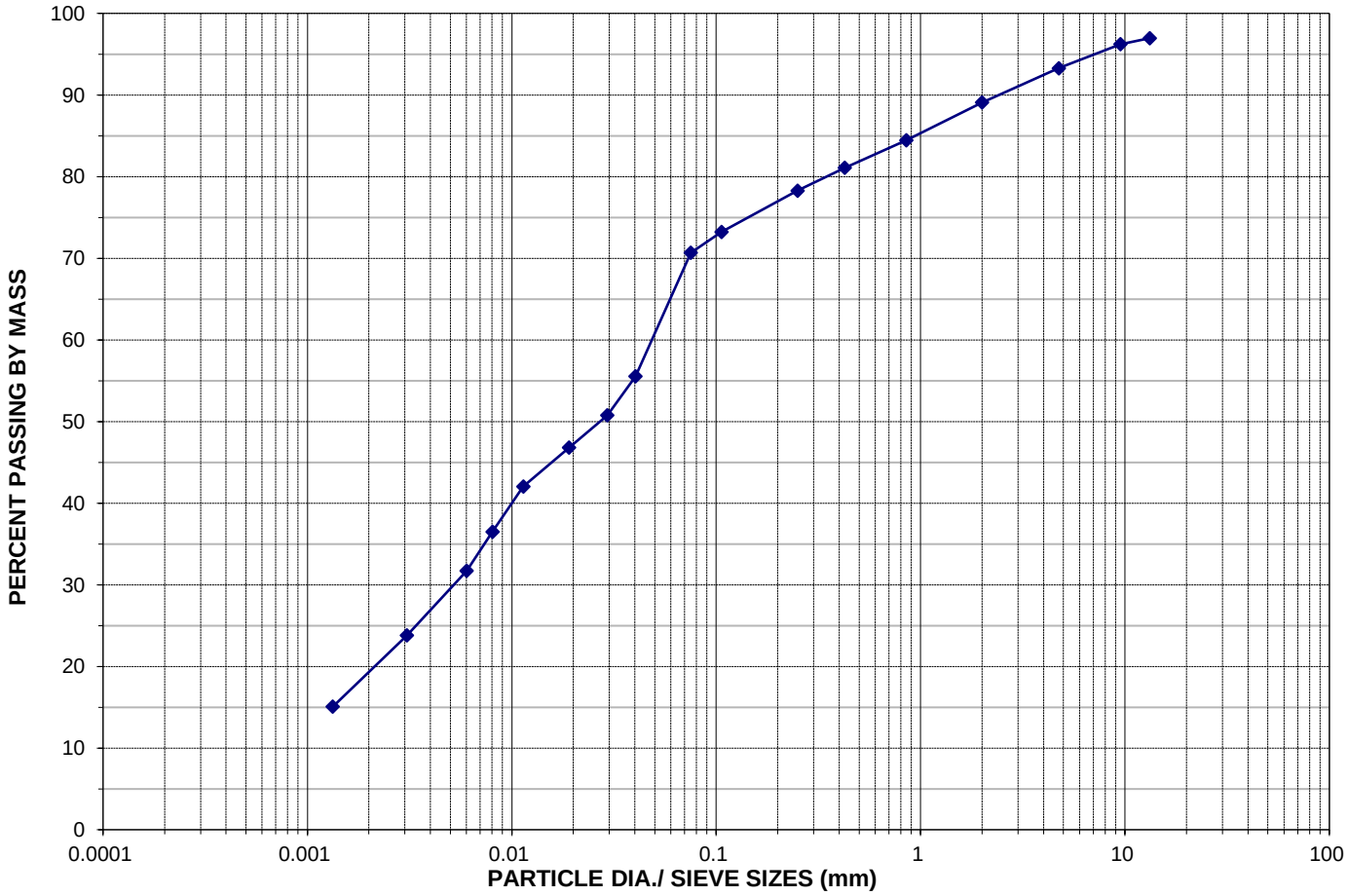
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 4-23 SS4

FILE NO.: 21261
LAB SAMPLE NO.: S-038G
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	97.0	6.7% Gravel 22.6% Sand 46.9% Silt 23.8% Clay
9.5	96.2	
4.75	93.3	
2.0	89.1	
0.850	84.4	
0.425	81.1	
0.250	78.3	
0.106	73.2	
0.075	70.7	
0.0402	55.5	
0.0294	50.8	
0.0190	46.8	
0.0114	42.0	
0.0080	36.5	
0.0060	31.7	
0.0031	23.8	
0.0013	15.1	

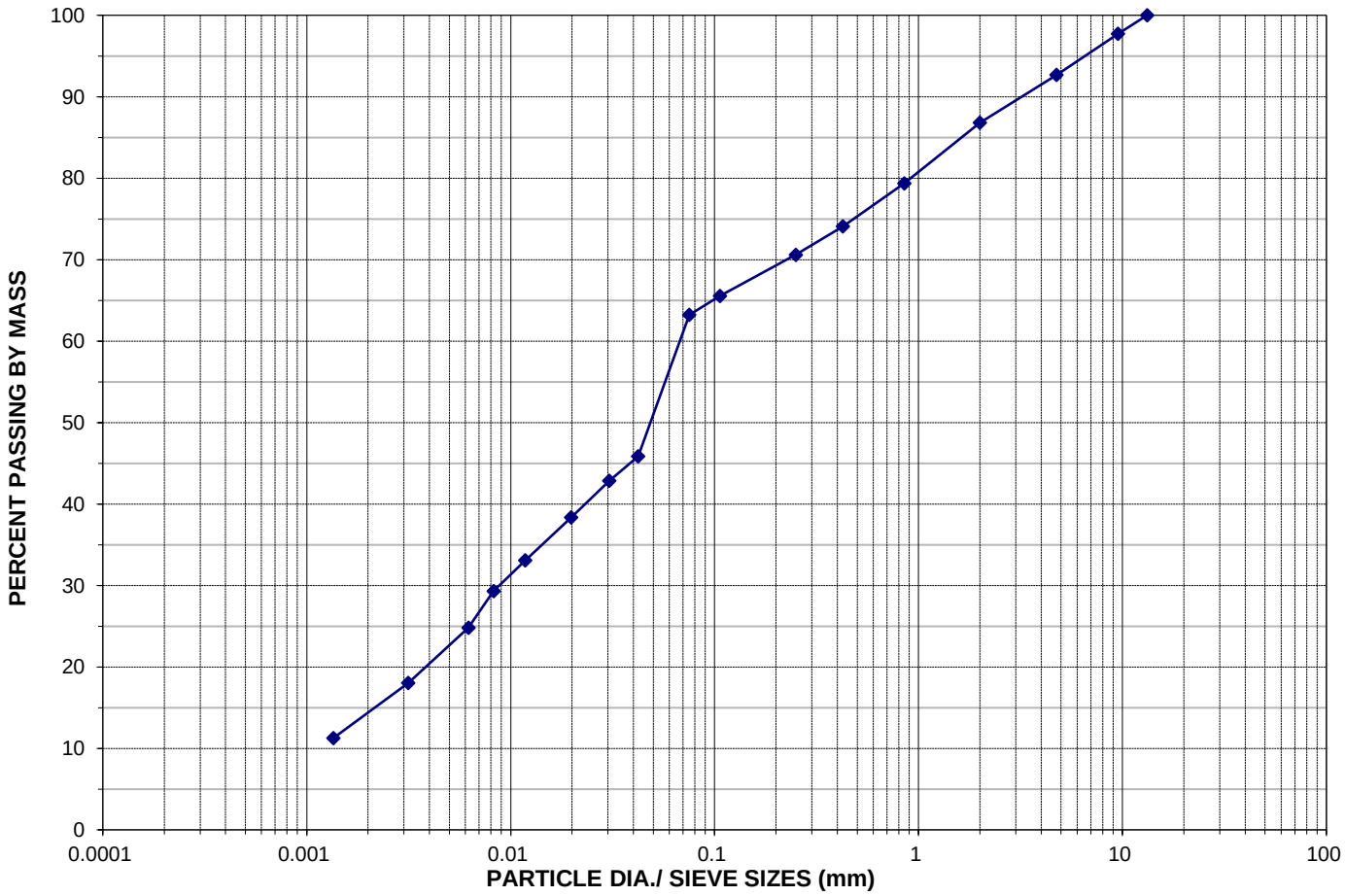
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 4-23 SS6

FILE NO.: 21261
LAB SAMPLE NO.: S-038E
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION



←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	100.0	7.3% Gravel 29.5% Sand 45.2% Silt 18.0 % Clay
9.5	97.7	
4.75	92.7	
2.0	86.8	
0.850	79.3	
0.425	74.1	
0.250	70.6	
0.106	65.5	
0.075	63.2	
0.0422	45.9	
0.0305	42.8	
0.0198	38.3	
0.0118	33.1	
0.0082	29.3	
0.0062	24.8	
0.0031	18.0	
0.0014	11.3	

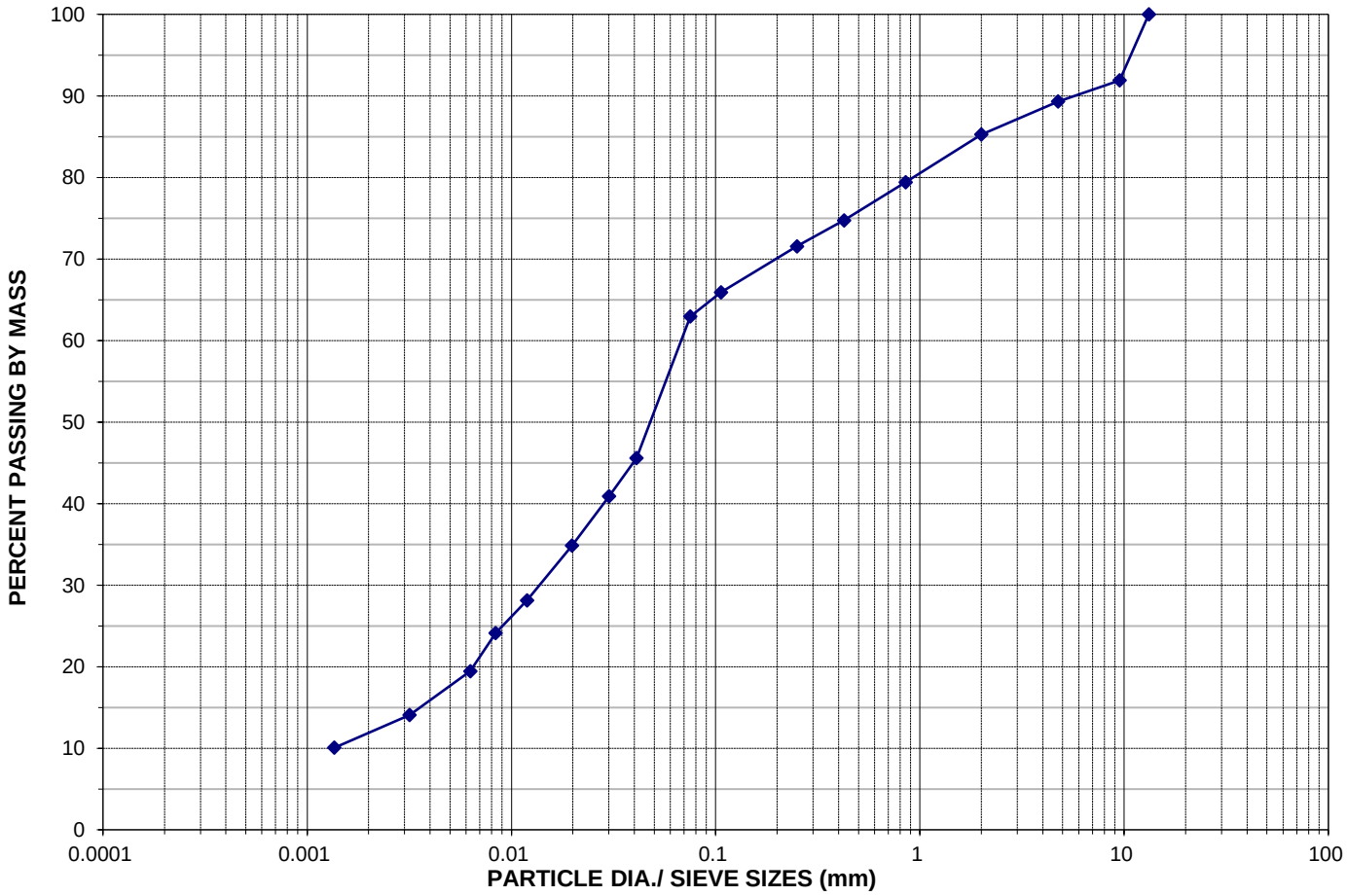
LANDTEK LIMITED
CONSULTING ENGINEERS

PARTICLE SIZE ANALYSIS

PROJECT: Residential Development
LOCATION: 3275/3301 Trafalgar Road, Oakville
CLIENT : New Horizon Development Group
SOIL TYPE: CL
SOURCE: BH 122D-23 SS3

FILE NO.: 21261
LAB SAMPLE NO.: S-038A
SAMPLE DATE: March 20, 2023
SAMPLED BY: Geo

PARTICLE SIZE DISTRIBUTION

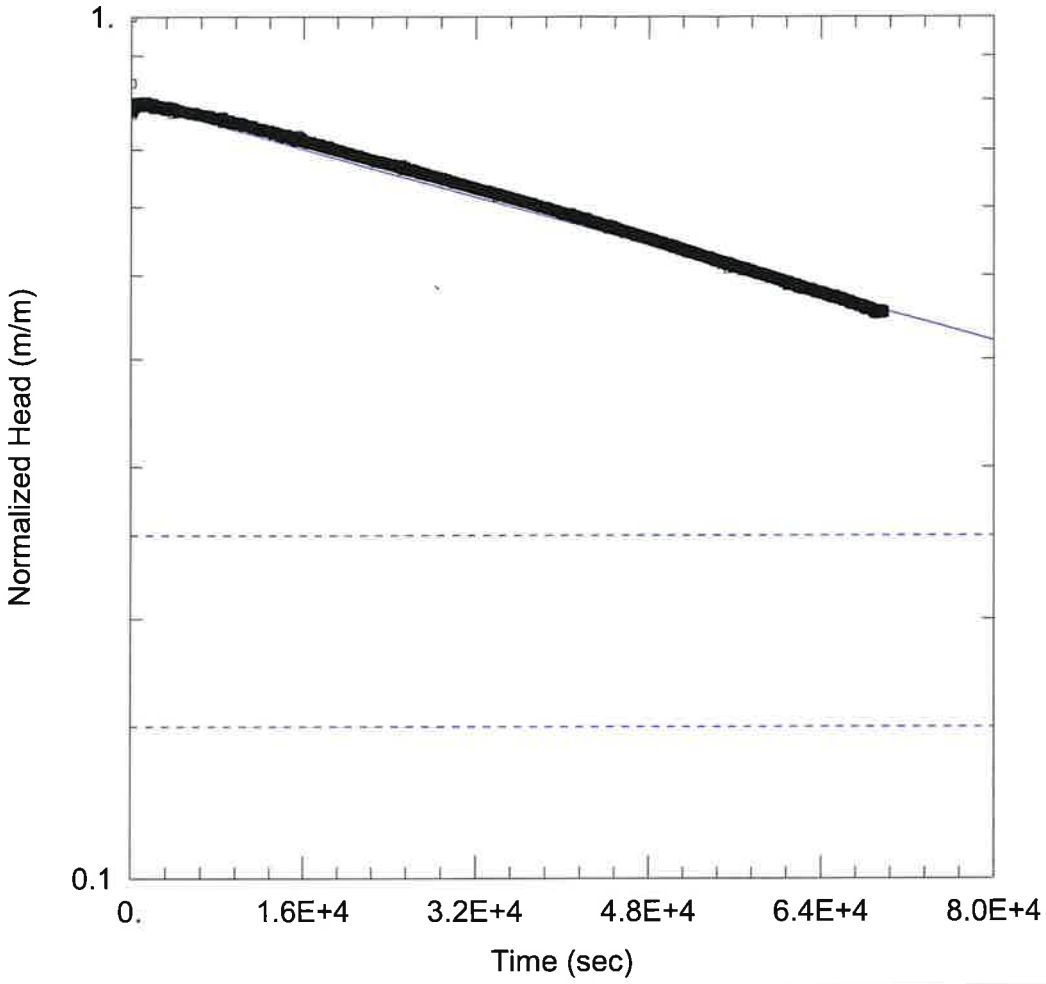


←	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	COARSE
CLAY	SILT			SAND			GRAVEL	

SIEVE SIZE /PARTICLE DIA. (mm)	PERCENT PASSING SAMPLE	COMMENTS
13.2	100.0	10.7% Gravel 26.3% Sand 48.9% Silt 14.1% Clay
9.5	91.9	
4.75	89.3	
2.0	85.3	
0.850	79.4	
0.425	74.7	
0.250	71.6	
0.106	65.9	
0.075	63.0	
0.0410	45.6	
0.0300	40.9	
0.0198	34.8	
0.0119	28.1	
0.0084	24.1	
0.0063	19.4	
0.0032	14.1	
0.0014	10.1	

APPENDIX E

HYDRAULIC CONDUCTIVITY TESTING ANALYSIS RESULTS



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW1D-23.aqt
Date: 12/22/23 Time: 12:16:06

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW1D-23
Test Date: April 17, 2023

AQUIFER DATA

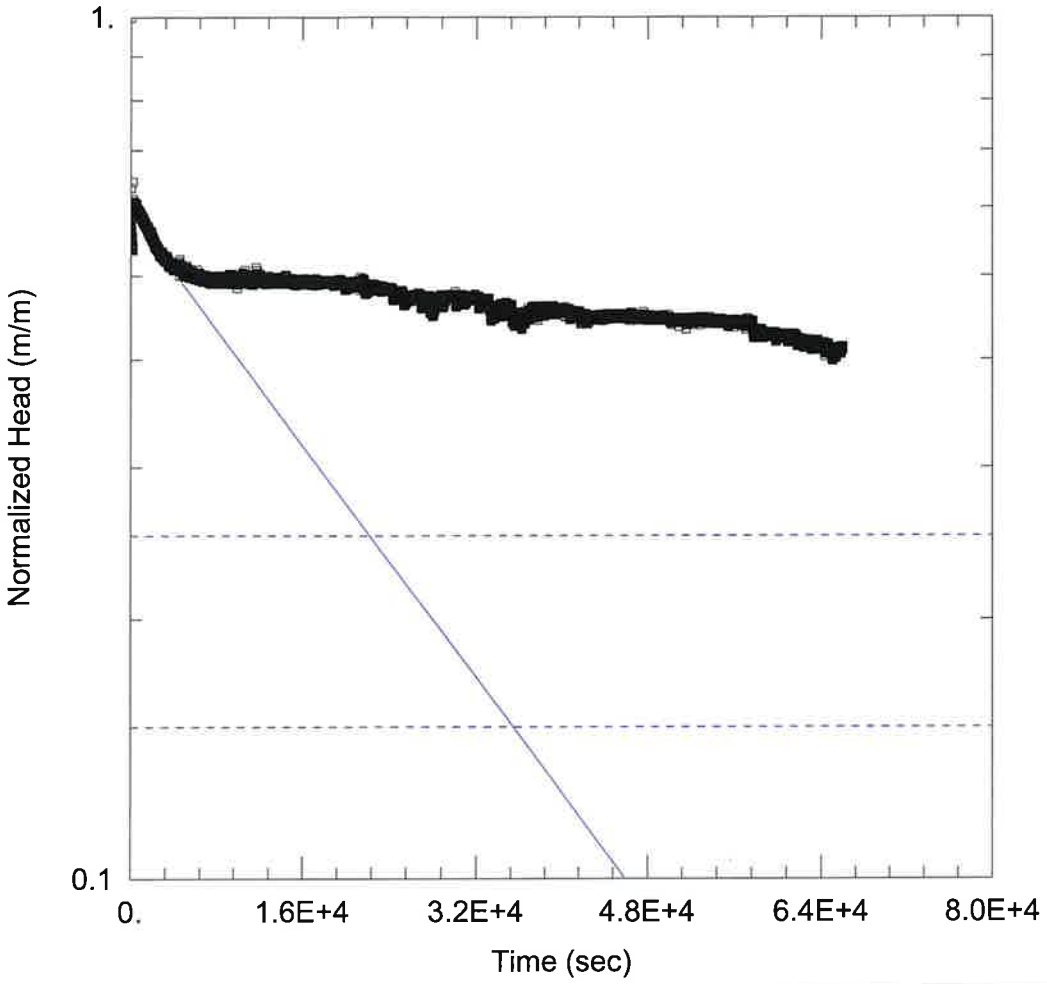
Saturated Thickness: 14.33 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1D-23)

Initial Displacement: 0.4905 m
Total Well Penetration Depth: 14.33 m
Casing Radius: 0.0254 m
Static Water Column Height: 14.33 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 4.682E-9 m/sec
y0 = 0.3902 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW4-23.aqt
Date: 12/22/23 Time: 12:17:12

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW4-23
Test Date: April 17, 2023

AQUIFER DATA

Saturated Thickness: 1.06 m Anisotropy Ratio (Kz/Kr): 1.

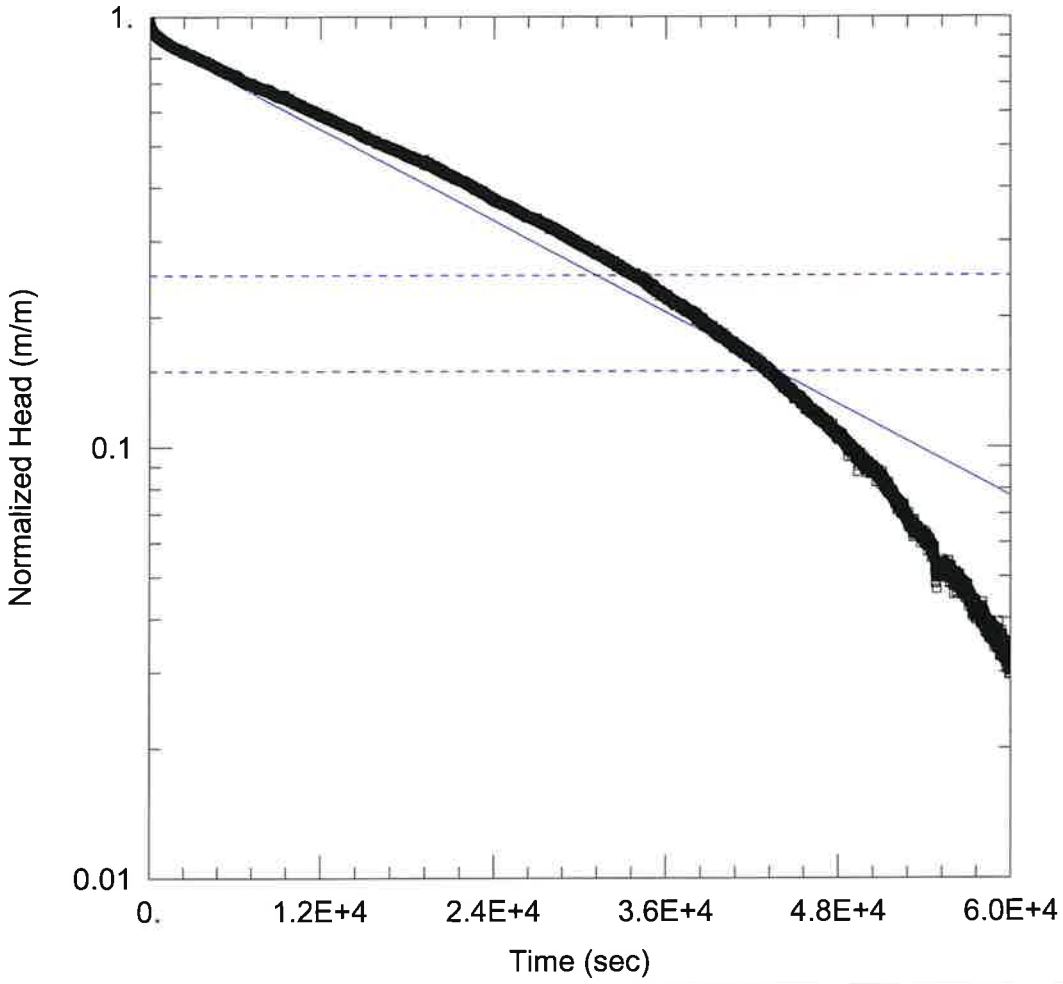
WELL DATA (MW4-23)

Initial Displacement: 0.2876 m
Total Well Penetration Depth: 1.06 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.06 m
Screen Length: 1.06 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 6.227E-8 m/sec y0 = 0.1694 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW102D.aqt
Date: 12/22/23 Time: 12:18:06

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW102D
Test Date: April 17, 2023

AQUIFER DATA

Saturated Thickness: 2.1 m Anisotropy Ratio (Kz/Kr): 1.

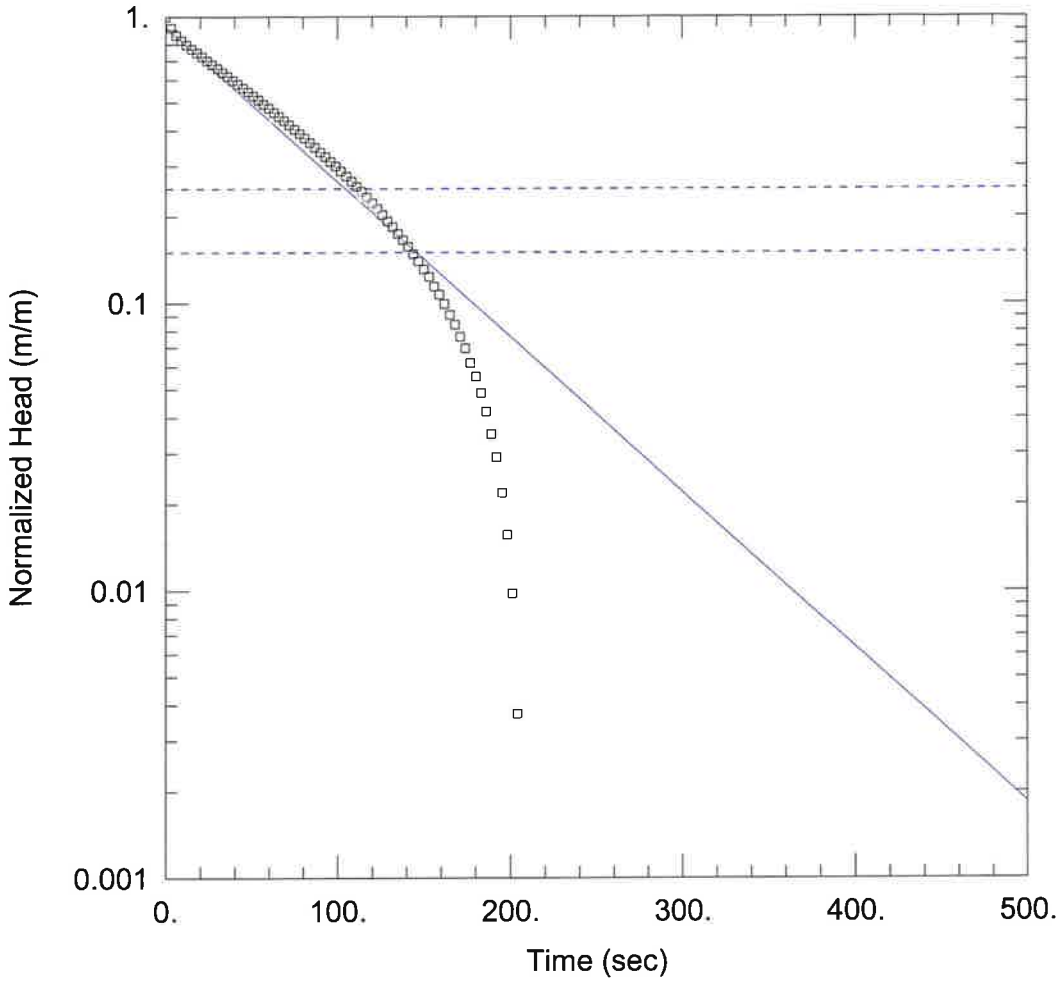
WELL DATA (MW102D)

Initial Displacement: 0.3869 m
Total Well Penetration Depth: 2.1 m
Casing Radius: 0.0254 m
Static Water Column Height: 2.1 m
Screen Length: 1.5 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 4.183E-8 m/sec y0 = 0.3443 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW106.aqt
Date: 12/22/23 Time: 12:19:06

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW106
Test Date: November 15, 2021

AQUIFER DATA

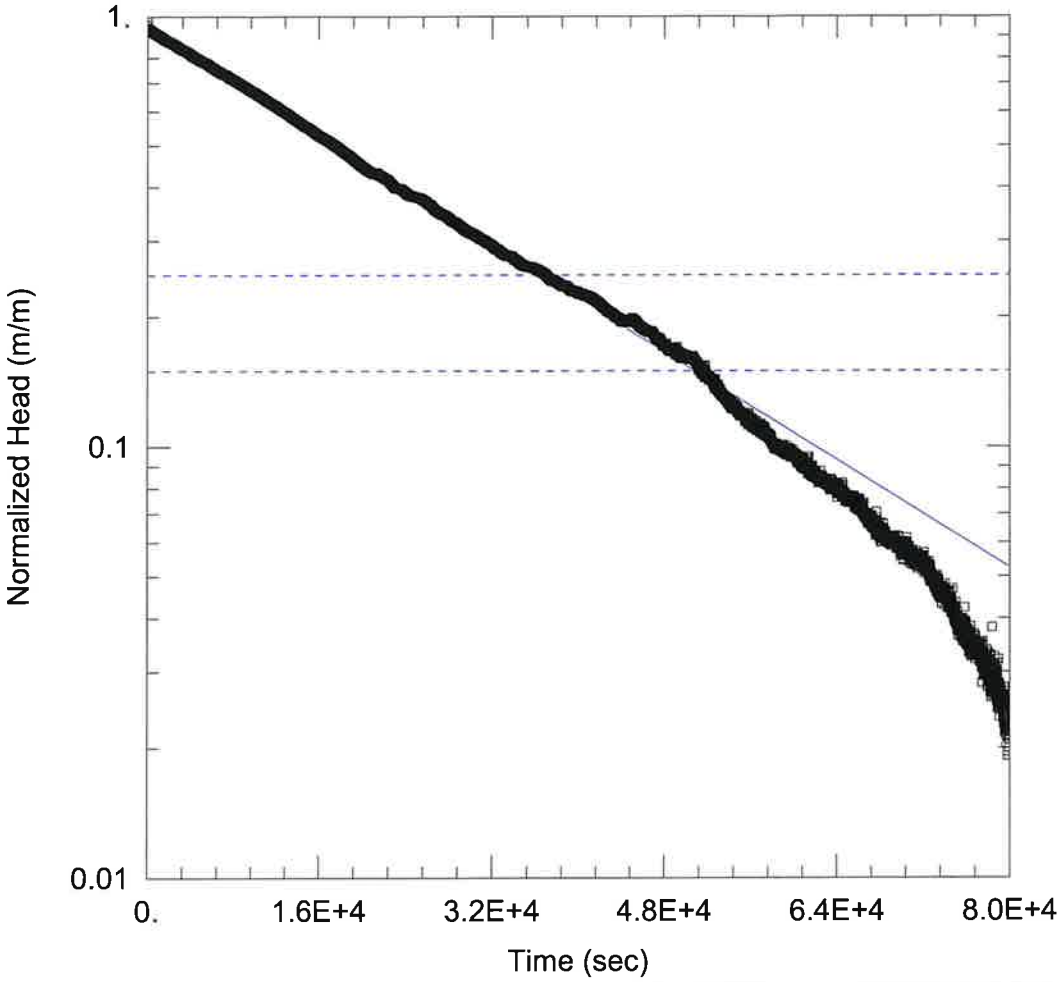
Saturated Thickness: 4.325 m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW106)

Initial Displacement: 0.4292 m
Total Well Penetration Depth: 4.325 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.325 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 7.298E-6 m/sec
y0 = 0.3928 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW120.aqt
Date: 12/22/23 Time: 12:19:55

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW120
Test Date: November 15, 2021

AQUIFER DATA

Saturated Thickness: 6.6 m Anisotropy Ratio (Kz/Kr): 1.

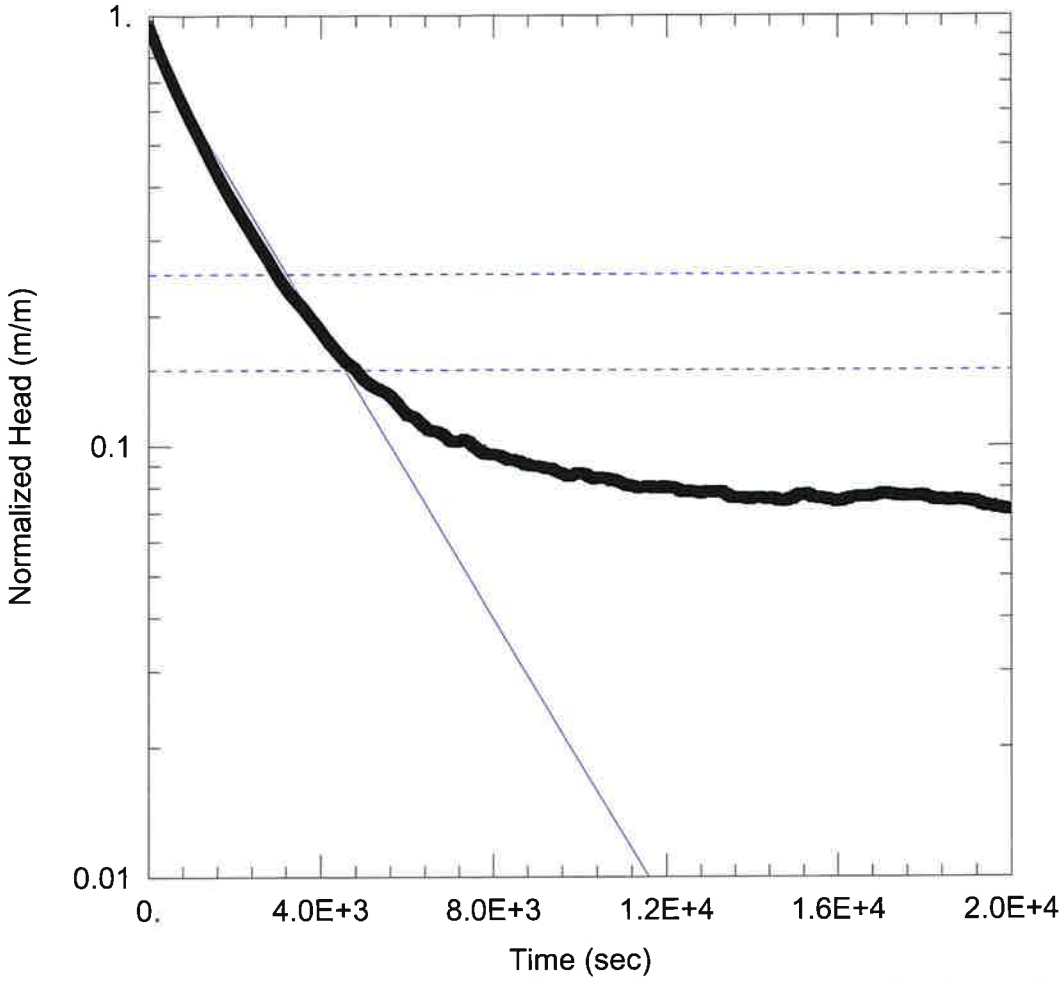
WELL DATA (MW120)

Initial Displacement: 0.4706 m
Total Well Penetration Depth: 6.6 m
Casing Radius: 0.0254 m
Static Water Column Height: 6.6 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 2.112E-8 m/sec y0 = 0.4379 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW121.aqt
Date: 12/22/23 Time: 12:20:50

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW121
Test Date: November 15, 2021

AQUIFER DATA

Saturated Thickness: 4.91 m Anisotropy Ratio (Kz/Kr): 1.

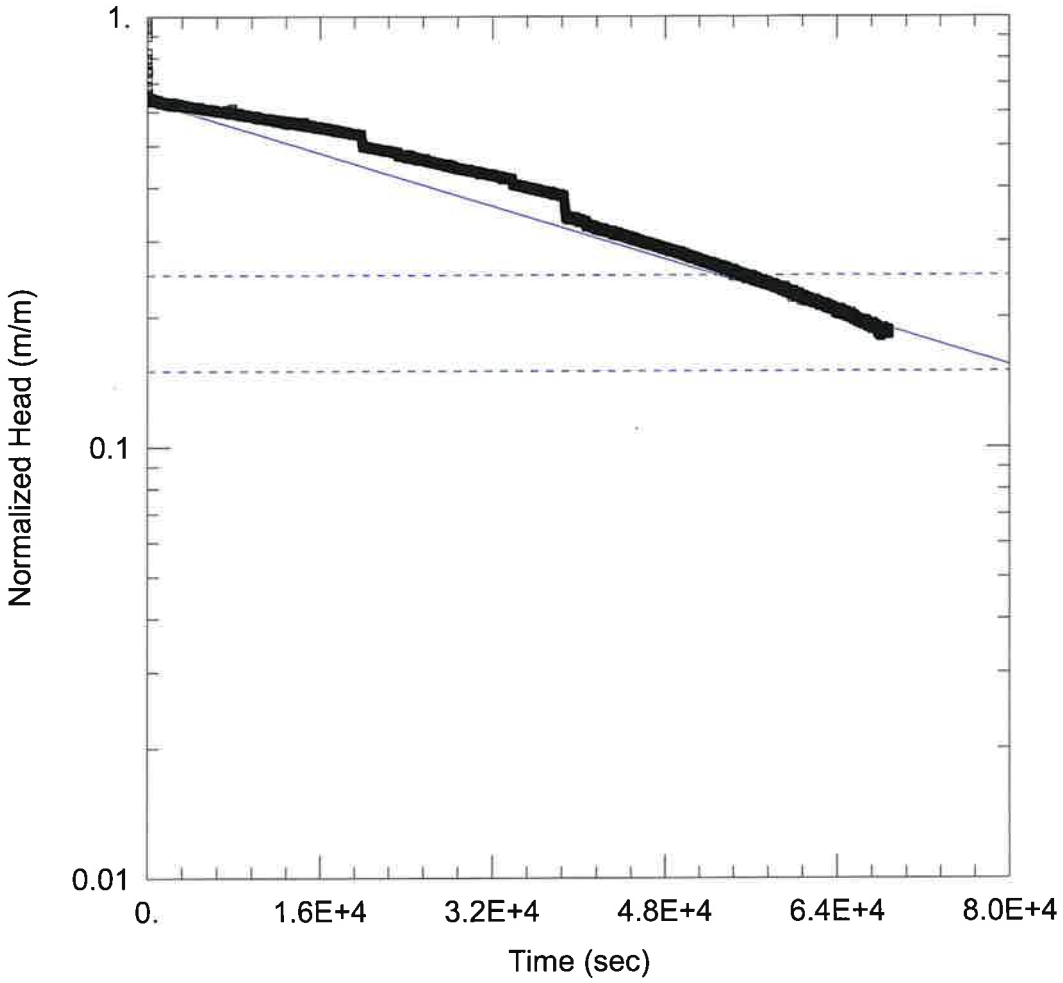
WELL DATA (MW121)

Initial Displacement: 0.478 m
Total Well Penetration Depth: 4.91 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.91 m
Screen Length: 1.5 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 3.944E-7 m/sec y0 = 0.4108 m



HDROGEOLOGICAL INVESTIGATION

Data Set: M:\...\MW122D-23.aqt
Date: 12/22/23 Time: 12:21:38

PROJECT INFORMATION

Company: Landtek Limited
Client: New Horizon Development Group
Project: 21260
Location: 3201/3275 Trafalgar Road
Test Well: MW122D-23
Test Date: April 17, 2023

AQUIFER DATA

Saturated Thickness: 10.01 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW122D-23)

Initial Displacement: 0.4538 m
Total Well Penetration Depth: 10.01 m
Casing Radius: 0.0254 m
Static Water Column Height: 10.01 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 1.036E-8 m/sec
y0 = 0.2883 m

APPENDIX F

LABORATORY CERTIFICATE OF ANALYSIS

LANDTEK LIMITED
ATTN: HENRY EREBOR
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1

Date Received: 30-NOV-21
Report Date: 08-DEC-21 07:10 (MT)
Version: FINAL

Client Phone: 905-383-3733

Certificate of Analysis

Lab Work Order #: L2667745

Project P.O. #: NOT SUBMITTED
Job Reference: 21260
C of C Numbers:
Legal Site Desc:

Costas Farassoglou
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1
L2667745-1 NMW120D						
Sampled By: CLIENT on 29-NOV-21						
Matrix: WATER						
Physical Tests						
pH	8.00		0.10	pH units	01-DEC-21	6.5-8.5
Total Suspended Solids	8.1		3.0	mg/L	03-DEC-21	15
Anions and Nutrients						
Phosphorus, Total	0.0081		0.0030	mg/L	02-DEC-21	0.4
Cyanides						
Cyanide, Total	<0.0020		0.0020	mg/L	01-DEC-21	0.02
Bacteriological Tests						
E. Coli	0		0	CFU/100mL	01-DEC-21	200
Total Metals						
Arsenic (As)-Total	0.0017	DLHC	0.0010	mg/L	01-DEC-21	0.02
Cadmium (Cd)-Total	<0.000050	DLHC	0.000050	mg/L	01-DEC-21	0.008
Chromium (Cr)-Total	<0.0050	DLHC	0.0050	mg/L	01-DEC-21	0.08
Copper (Cu)-Total	<0.0050	DLHC	0.0050	mg/L	01-DEC-21	0.04
Lead (Pb)-Total	<0.00050	DLHC	0.00050	mg/L	01-DEC-21	0.12
Manganese (Mn)-Total	0.0303	DLHC	0.0050	mg/L	01-DEC-21	0.05
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	02-DEC-21	0.0004
Nickel (Ni)-Total	<0.0050	DLHC	0.0050	mg/L	01-DEC-21	0.08
Selenium (Se)-Total	<0.00050	DLHC	0.00050	mg/L	01-DEC-21	0.02
Silver (Ag)-Total	<0.00050	DLHC	0.00050	mg/L	01-DEC-21	0.12
Zinc (Zn)-Total	<0.030	DLHC	0.030	mg/L	01-DEC-21	0.04
Speciated Metals						
Chromium, Hexavalent	<0.50		0.50	ug/L	01-DEC-21	40
Aggregate Organics						
BOD	4.4		2.0	mg/L	01-DEC-21	15
Phenols (4AAP)	<0.0010		0.0010	mg/L	03-DEC-21	0.008
Volatile Organic Compounds						
Benzene	<0.50		0.50	ug/L	02-DEC-21	2
Chloroform	<1.0		1.0	ug/L	02-DEC-21	2
1,2-Dichlorobenzene	<0.50		0.50	ug/L	02-DEC-21	5.6
1,4-Dichlorobenzene	<0.50		0.50	ug/L	02-DEC-21	6.8
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	02-DEC-21	5.6
Dichloromethane	<2.0		2.0	ug/L	02-DEC-21	5.2
trans-1,3-Dichloropropene	<0.50		0.50	ug/L	02-DEC-21	
Ethylbenzene	<0.50		0.50	ug/L	02-DEC-21	2
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	02-DEC-21	17
Tetrachloroethylene	<0.50		0.50	ug/L	02-DEC-21	4.4
Toluene	<0.50		0.50	ug/L	02-DEC-21	2
Trichloroethylene	1.41		0.50	ug/L	02-DEC-21	7.6
o-Xylene	<0.50		0.50	ug/L	02-DEC-21	
m+p-Xylenes	<1.0		1.0	ug/L	02-DEC-21	
Xylenes (Total)	<1.1		1.1	ug/L	02-DEC-21	4.4
Surrogate: 4-Bromofluorobenzene	86.3		70-130	%	02-DEC-21	
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	02-DEC-21	
Polycyclic Aromatic Hydrocarbons						

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Oakville Storm Sewer By-Law (2009-031)

#1: Oakville Storm Sewer By-Law (2009-031)

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1
L2667745-1 NMW120D						
Sampled By: CLIENT on 29-NOV-21						
Matrix: WATER						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	<0.010		0.010	ug/L	07-DEC-21	
Acenaphthylene	<0.010		0.010	ug/L	07-DEC-21	
Anthracene	<0.010		0.010	ug/L	07-DEC-21	
Benzo(a)anthracene	<0.010		0.010	ug/L	07-DEC-21	
Benzo(a)pyrene	<0.010		0.010	ug/L	07-DEC-21	
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	07-DEC-21	
Benzo(ghi)perylene	<0.010		0.010	ug/L	07-DEC-21	
Benzo(k)fluoranthene	<0.010		0.010	ug/L	07-DEC-21	
Chrysene	<0.010		0.010	ug/L	07-DEC-21	
Dibenz(a,h)anthracene	<0.010		0.010	ug/L	07-DEC-21	
Fluoranthene	<0.010		0.010	ug/L	07-DEC-21	
Fluorene	<0.010		0.010	ug/L	07-DEC-21	
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	07-DEC-21	
1-Methylnaphthalene	<0.010		0.010	ug/L	07-DEC-21	
2-Methylnaphthalene	<0.010		0.010	ug/L	07-DEC-21	
Naphthalene	<0.010		0.010	ug/L	07-DEC-21	
Perylene	<0.010		0.010	ug/L	07-DEC-21	
Phenanthrene	<0.010		0.010	ug/L	07-DEC-21	
Pyrene	0.022		0.010	ug/L	07-DEC-21	
Surrogate: 2-Fluorobiphenyl	85.8		40-130	%	07-DEC-21	
Surrogate: D14-Terphenyl	86.3		40-130	%	07-DEC-21	
Total PAHs	<0.044		0.044	ug/L	07-DEC-21	2
Phthalate Esters						
Bis(2-ethylhexyl)phthalate	<2.0		2.0	ug/L	07-DEC-21	8.8
Surrogate: 2-fluorobiphenyl	89.5		40-130	%	07-DEC-21	
Surrogate: p-Terphenyl d14	77.5		40-130	%	07-DEC-21	
Semi-Volatile Organics						
3,3-Dichlorobenzidine	<0.40		0.40	ug/L	07-DEC-21	0.8
Di-n-butylphthalate	<1.0		1.0	ug/L	07-DEC-21	15
Surrogate: 2-Fluorobiphenyl	89.5		40-130	%	07-DEC-21	
Surrogate: p-Terphenyl d14	77.5		40-130	%	07-DEC-21	
Surrogate: p-Terphenyl d14	77.9		40-130	%	07-DEC-21	
Phenolics						
Pentachlorophenol	<0.50		0.50	ug/L	07-DEC-21	2
Surrogate: 2,4,6-Tribromophenol	100.4		40-150	%	07-DEC-21	
Polychlorinated Biphenyls						
Aroclor 1242	<0.020		0.020	ug/L	02-DEC-21	
Aroclor 1248	<0.020		0.020	ug/L	02-DEC-21	
Aroclor 1254	<0.020		0.020	ug/L	02-DEC-21	
Aroclor 1260	<0.020		0.020	ug/L	02-DEC-21	
Surrogate: Decachlorobiphenyl	132.9		50-150	%	02-DEC-21	
Total PCBs	<0.040		0.040	ug/L	02-DEC-21	0.4
Surrogate: Tetrachloro-m-xylene	108.9		50-150	%	02-DEC-21	
Organochlorine Pesticides						
Aldrin	<0.0080		0.0080	ug/L	03-DEC-21	

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Oakville Storm Sewer By-Law (2009-031)

#1: Oakville Storm Sewer By-Law (2009-031)

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2667745-1	NMW120D									
Sampled By:	CLIENT on 29-NOV-21									
Matrix:	WATER						#1			
Organochlorine Pesticides										
	alpha-BHC	<0.0080		0.0080	ug/L	03-DEC-21				
	beta-BHC	<0.0080		0.0080	ug/L	03-DEC-21				
	gamma-hexachlorocyclohexane	<0.0080		0.0080	ug/L	03-DEC-21	40			
	a-chlordane	<0.0080		0.0080	ug/L	03-DEC-21				
	g-chlordane	<0.0080		0.0080	ug/L	03-DEC-21				
	o,p-DDD	<0.0040		0.0040	ug/L	03-DEC-21				
	pp-DDD	<0.0040		0.0040	ug/L	03-DEC-21				
	o,p-DDE	<0.0040		0.0040	ug/L	03-DEC-21				
	pp-DDE	<0.0040		0.0040	ug/L	03-DEC-21				
	op-DDT	<0.0040		0.0040	ug/L	03-DEC-21				
	pp-DDT	<0.0040		0.0040	ug/L	03-DEC-21				
	Dieldrin	<0.0080		0.0080	ug/L	03-DEC-21				
	Hexachlorobenzene	<0.0080		0.0080	ug/L	03-DEC-21	0.04			
	Mirex	<0.0080		0.0080	ug/L	03-DEC-21	40			
	Oxychlordane	<0.0080		0.0080	ug/L	03-DEC-21				
	Pentachloronitrobenzene	<0.010		0.010	ug/L	03-DEC-21				
	Surrogate: Decachlorobiphenyl	124.0		40-130	%	03-DEC-21				
	Surrogate: Tetrachloro-m-xylene	113.3		40-130	%	03-DEC-21				
Organic Parameters										
	Nonylphenol	<1.0		1.0	ug/L	02-DEC-21	1			
	Nonylphenol Diethoxylates	<0.10		0.10	ug/L	02-DEC-21				
	Total Nonylphenol Ethoxylates	<2.0		2.0	ug/L	02-DEC-21	10			
	Nonylphenol Monoethoxylates	<2.0		2.0	ug/L	02-DEC-21				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Oakville Storm Sewer By-Law (2009-031)

#1: Oakville Storm Sewer By-Law (2009-031)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
625-33DCBENZIDINE-WT	Water	3,3-Dichlorobenzidine	SW846 8270
Aqueous samples are extracted and extracts are analyzed on GC/MSD.			
625-BIS-2-PHTH-WT	Water	Bis(2-ethylhexyl)phthalate	SW846 8270
Aqueous samples are extracted and extracts are analyzed on GC/MSD.			
625-DNB-PHTH-WT	Water	Di-n-Butyl Phthalate	SW846 8270
Aqueous samples are extracted and extracts are analyzed on GC/MSD.			
625-PAH-LOW-WT	Water	EPA 8270 PAH (Low Level)	SW846 8270
Aqueous samples are extracted and extracts are analyzed on GC/MSD. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.			
625-PCP-WT	Water	Pentachlorophenol	SW846 8270
BOD-WT	Water	BOD	APHA 5210 B
This analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2
Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference			
CR-CR6-PWQO-IC-WT	Water	Chromium +6	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.			
EC-WW-MF-WT	Water	E. Coli	SM 9222D
A 100 mL volume of sample is filtered through a membrane, the membrane is placed on mFC-BCIG agar and incubated at 44.5 –0 .2 °C for 24 – 2 h. Method ID: WT-TM-1200			
HG-T-CVAA-WT	Water	Total Mercury in Water by CVAAS	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
NP,NPE-LCMS-WT	Water	Nonylphenols and Ethoxylates by LC/MS-MS	J. Chrom A849 (1999) p.467-482
Water samples are filtered and analyzed on LCMS/MS by direct injection.			
OCP-ROUTINE-WT	Water	Pesticides, Organochlorine in Water	SW846 8270
Samples are extracted using a solvent mixture and the resulting extracts are analyzed on GC/MSD			

Reference Information

P-T-COL-WT	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is deteremined colourimetrically after persulphate digestion of the sample.

PAH-SUM-CALC-WT	Water	TOTAL PAH's	CALCULATION

Total PAH represents the sum of all PAH analytes reported for a given sample. Note that regulatory agencies and criteria differ in their definitions of Total PAH in terms of the individual PAH analytes to be included.

PCB-WT	Water	Polychlorinated Biphenyls	EPA 8082

PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

VOC-ROU-HS-WT	Water	Volatile Organic Compounds	SW846 8260

Aqueous samples are analyzed by headspace-GC/MS.

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-33DCBENZIDINE-WT	**Water**							
Batch	**R5668839**							
WG3670311-2	**LCS**							
3,3-Dichlorobenzidine			21.0	RRQC	%		50-140	07-DEC-21
COMMENTS: RRQC: Recovery is below ALS control limits. Reported non-detect results for associated samples have not been affected.								
WG3670311-1	**MB**							
3,3-Dichlorobenzidine			<0.40		ug/L		0.4	07-DEC-21
Surrogate: p-Terphenyl d14			95.1		%		40-130	07-DEC-21
625-BIS-2-PHTH-WT	**Water**							
Batch	**R5668839**							
WG3670311-2	**LCS**							
Bis(2-ethylhexyl)phthalate			138.0		%		50-140	07-DEC-21
WG3670311-1	**MB**							
Bis(2-ethylhexyl)phthalate			<2.0		ug/L		2	07-DEC-21
Surrogate: 2-fluorobiphenyl			83.3		%		40-130	07-DEC-21
Surrogate: p-Terphenyl d14			95.1		%		40-130	07-DEC-21
625-DNB-PHTH-WT	**Water**							
Batch	**R5668839**							
WG3670311-2	**LCS**							
Di-n-butylphthalate			142.0		%		50-150	07-DEC-21
WG3670311-1	**MB**							
Di-n-butylphthalate			<1.0		ug/L		1	07-DEC-21
Surrogate: 2-Fluorobiphenyl			83.3		%		40-130	07-DEC-21
Surrogate: p-Terphenyl d14			95.1		%		40-130	07-DEC-21
625-PAH-LOW-WT	**Water**							
Batch	**R5667840**							
WG3670311-2	**LCS**							
1-Methylnaphthalene			70.5		%		50-130	07-DEC-21
2-Methylnaphthalene			72.2		%		50-130	07-DEC-21
Acenaphthene			77.7		%		50-130	07-DEC-21
Acenaphthylene			76.2		%		50-130	07-DEC-21
Anthracene			86.8		%		60-130	07-DEC-21
Benzo(a)anthracene			90.1		%		60-140	07-DEC-21
Benzo(a)pyrene			84.0		%		60-130	07-DEC-21
Benzo(b&j)fluoranthene			83.1		%		60-130	07-DEC-21
Benzo(ghi)perylene			74.1		%		50-140	07-DEC-21
Benzo(k)fluoranthene			84.9		%		60-130	07-DEC-21
Chrysene			86.2		%		60-140	07-DEC-21

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-PAH-LOW-WT	**Water**							
Batch R5667840								
WG3670311-2 LCS								
Dibenz(a,h)anthracene			74.7		%		60-130	07-DEC-21
Fluoranthene			86.8		%		60-130	07-DEC-21
Fluorene			82.8		%		60-130	07-DEC-21
Indeno(1,2,3-cd)pyrene			79.1		%		60-140	07-DEC-21
Naphthalene			78.8		%		50-130	07-DEC-21
Perylene			83.3		%		60-130	07-DEC-21
Phenanthrene			84.4		%		60-130	07-DEC-21
Pyrene			89.0		%		60-130	07-DEC-21
WG3670311-1 MB								
1-Methylnaphthalene			<0.010		ug/L		0.01	07-DEC-21
2-Methylnaphthalene			<0.010		ug/L		0.01	07-DEC-21
Acenaphthene			<0.010		ug/L		0.01	07-DEC-21
Acenaphthylene			<0.010		ug/L		0.01	07-DEC-21
Anthracene			<0.010		ug/L		0.01	07-DEC-21
Benzo(a)anthracene			<0.010		ug/L		0.01	07-DEC-21
Benzo(a)pyrene			<0.010		ug/L		0.01	07-DEC-21
Benzo(b&j)fluoranthene			<0.010		ug/L		0.01	07-DEC-21
Benzo(ghi)perylene			<0.010		ug/L		0.01	07-DEC-21
Benzo(k)fluoranthene			<0.010		ug/L		0.01	07-DEC-21
Chrysene			<0.010		ug/L		0.01	07-DEC-21
Dibenz(a,h)anthracene			<0.010		ug/L		0.01	07-DEC-21
Fluoranthene			<0.010		ug/L		0.01	07-DEC-21
Fluorene			<0.010		ug/L		0.01	07-DEC-21
Indeno(1,2,3-cd)pyrene			<0.010		ug/L		0.01	07-DEC-21
Naphthalene			<0.010		ug/L		0.01	07-DEC-21
Perylene			<0.010		ug/L		0.01	07-DEC-21
Phenanthrene			<0.010		ug/L		0.01	07-DEC-21
Pyrene			<0.010		ug/L		0.01	07-DEC-21
Surrogate: 2-Fluorobiphenyl			77.0		%		40-130	07-DEC-21
Surrogate: D14-Terphenyl			91.5		%		40-130	07-DEC-21
625-PCP-WT	**Water**							

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-PCP-WT	**Water**							
Batch R5668839								
WG3670311-1 MB								
Pentachlorophenol			<0.50		ug/L		0.5	07-DEC-21
Surrogate: 2,4,6-Tribromophenol			95.6		%		40-150	07-DEC-21
BOD-WT	**Water**							
Batch R5666540								
WG3668460-2 DUP		**L2667552-3**						
BOD		<2.0	<2.0	RPD-NA	mg/L	N/A	30	01-DEC-21
WG3668460-3 LCS								
BOD			104.0		%		85-115	01-DEC-21
WG3668460-1 MB								
BOD			<2.0		mg/L		2	01-DEC-21
CN-TOT-WT	**Water**							
Batch R5660496								
WG3668154-3 DUP		**WG3668154-5**						
Cyanide, Total		0.0058	0.0058		mg/L	0.2	20	01-DEC-21
WG3668154-2 LCS								
Cyanide, Total			89.1		%		80-120	01-DEC-21
WG3668154-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	01-DEC-21
WG3668154-4 MS		**WG3668154-5**						
Cyanide, Total			91.4		%		70-130	01-DEC-21
CR-CR6-PWQO-IC-WT	**Water**							
Batch R5660596								
WG3668600-4 DUP		**WG3668600-3**						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	01-DEC-21
WG3668600-2 LCS								
Chromium, Hexavalent			98.3		%		80-120	01-DEC-21
WG3668600-1 MB								
Chromium, Hexavalent			<0.50		ug/L		0.5	01-DEC-21
WG3668600-5 MS		**WG3668600-3**						
Chromium, Hexavalent			98.3		%		70-130	01-DEC-21
EC-WW-MF-WT	**Water**							
Batch R5660876								
WG3668112-1 MB								
E. Coli			0		CFU/100mL		1	01-DEC-21
HG-T-CVAA-WT	**Water**							

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WT	**Water**							
Batch R5661756								
WG3668232-4 DUP		**WG3668232-3**						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	02-DEC-21
WG3668232-2 LCS								
Mercury (Hg)-Total			95.3		%		80-120	02-DEC-21
WG3668232-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	02-DEC-21
WG3668232-6 MS		**WG3668232-5**						
Mercury (Hg)-Total			97.1		%		70-130	02-DEC-21
MET-T-CCMS-WT	**Water**							
Batch R5659992								
WG3667817-4 DUP		**WG3667817-3**						
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-DEC-21
Cadmium (Cd)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	01-DEC-21
Chromium (Cr)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-DEC-21
Copper (Cu)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-DEC-21
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-DEC-21
Manganese (Mn)-Total		0.380	0.372		mg/L	2.1	20	01-DEC-21
Nickel (Ni)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-DEC-21
Selenium (Se)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-DEC-21
Silver (Ag)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-DEC-21
Zinc (Zn)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	01-DEC-21
WG3667817-2 LCS								
Arsenic (As)-Total			103.5		%		80-120	01-DEC-21
Cadmium (Cd)-Total			99.97		%		80-120	01-DEC-21
Chromium (Cr)-Total			101.3		%		80-120	01-DEC-21
Copper (Cu)-Total			101.1		%		80-120	01-DEC-21
Lead (Pb)-Total			103.6		%		80-120	01-DEC-21
Manganese (Mn)-Total			101.0		%		80-120	01-DEC-21
Nickel (Ni)-Total			100.7		%		80-120	01-DEC-21
Selenium (Se)-Total			102.4		%		80-120	01-DEC-21
Silver (Ag)-Total			98.6		%		80-120	01-DEC-21
Zinc (Zn)-Total			101.8		%		80-120	01-DEC-21
WG3667817-1 MB								
Arsenic (As)-Total			<0.00010		mg/L		0.0001	01-DEC-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	01-DEC-21

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5659992								
WG3667817-1 MB								
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	01-DEC-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	01-DEC-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	01-DEC-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	01-DEC-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	01-DEC-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	01-DEC-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	01-DEC-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	01-DEC-21
WG3667817-5 MS		**WG3667817-3**						
Arsenic (As)-Total			101.4		%		70-130	01-DEC-21
Cadmium (Cd)-Total			103.2		%		70-130	01-DEC-21
Chromium (Cr)-Total			102.0		%		70-130	01-DEC-21
Copper (Cu)-Total			103.1		%		70-130	01-DEC-21
Lead (Pb)-Total			101.9		%		70-130	01-DEC-21
Manganese (Mn)-Total			N/A	MS-B	%		-	01-DEC-21
Nickel (Ni)-Total			98.6		%		70-130	01-DEC-21
Selenium (Se)-Total			100.1		%		70-130	01-DEC-21
Silver (Ag)-Total			100.4		%		70-130	01-DEC-21
Zinc (Zn)-Total			107.6		%		70-130	01-DEC-21
NP,NPE-LCMS-WT	**Water**							
Batch R5661876								
WG3668160-3 DUP		**L2667468-1**						
Nonylphenol		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-DEC-21
Nonylphenol Monoethoxylates		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-DEC-21
Nonylphenol Diethoxylates		<0.10	<0.10	RPD-NA	ug/L	N/A	30	02-DEC-21
WG3668160-2 LCS								
Nonylphenol			76.9		%		75-125	02-DEC-21
Nonylphenol Monoethoxylates			93.4		%		75-125	02-DEC-21
Nonylphenol Diethoxylates			92.5		%		75-125	02-DEC-21
WG3668160-1 MB								
Nonylphenol			<1.0		ug/L		1	02-DEC-21
Nonylphenol Monoethoxylates			<2.0		ug/L		2	02-DEC-21
Nonylphenol Diethoxylates			<0.10		ug/L		0.1	02-DEC-21
WG3668160-4 MS		**L2667468-1**						

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NP,NPE-LCMS-WT	**Water**							
Batch R5661876								
WG3668160-4 MS		**L2667468-1**						
Nonylphenol			117.3		%		60-140	02-DEC-21
Nonylphenol Monoethoxylates			115.4		%		60-140	02-DEC-21
Nonylphenol Diethoxylates			97.6		%		60-140	02-DEC-21
OCP-ROUTINE-WT	**Water**							
Batch R5660108								
WG3667876-2 LCS								
Aldrin			125.3		%		50-150	01-DEC-21
gamma-hexachlorocyclohexane			122.2		%		50-150	01-DEC-21
a-chlordane			122.0		%		50-150	01-DEC-21
g-chlordane			126.2		%		50-150	01-DEC-21
alpha-BHC			129.3		%		50-150	01-DEC-21
beta-BHC			93.9		%		50-150	01-DEC-21
o,p-DDD			108.2		%		50-150	01-DEC-21
pp-DDD			102.5		%		50-150	01-DEC-21
o,p-DDE			109.6		%		50-150	01-DEC-21
pp-DDE			119.6		%		50-150	01-DEC-21
op-DDT			148.2		%		50-150	01-DEC-21
pp-DDT			135.6		%		50-150	01-DEC-21
Dieldrin			127.9		%		50-150	01-DEC-21
Hexachlorobenzene			115.5		%		50-150	01-DEC-21
Mirex			159.1	LCS-H	%		50-150	01-DEC-21
Oxychlordane			127.3		%		50-150	01-DEC-21
Pentachloronitrobenzene			122.9		%		50-150	01-DEC-21
WG3667876-1 MB								
Aldrin			<0.0080		ug/L		0.008	01-DEC-21
gamma-hexachlorocyclohexane			<0.0080		ug/L		0.008	01-DEC-21
a-chlordane			<0.0080		ug/L		0.008	01-DEC-21
g-chlordane			<0.0080		ug/L		0.008	01-DEC-21
alpha-BHC			<0.0080		ug/L		0.008	01-DEC-21
beta-BHC			<0.0080		ug/L		0.008	01-DEC-21
o,p-DDD			<0.0040		ug/L		0.004	01-DEC-21
pp-DDD			<0.0040		ug/L		0.004	01-DEC-21
o,p-DDE			<0.0040		ug/L		0.004	01-DEC-21
pp-DDE			<0.0040		ug/L		0.004	01-DEC-21

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCP-ROUTINE-WT	**Water**							
Batch R5660108								
WG3667876-1 MB								
op-DDT			<0.0040		ug/L		0.004	01-DEC-21
pp-DDT			<0.0040		ug/L		0.004	01-DEC-21
Dieldrin			<0.0080		ug/L		0.008	01-DEC-21
Hexachlorobenzene			<0.0080		ug/L		0.008	01-DEC-21
Mirex			<0.0080		ug/L		0.008	01-DEC-21
Oxychlordane			<0.0080		ug/L		0.008	01-DEC-21
Pentachloronitrobenzene			<0.010		ug/L		0.01	01-DEC-21
Surrogate: Decachlorobiphenyl			129.3		%		40-130	01-DEC-21
Surrogate: Tetrachloro-m-xylene			90.3		%		40-130	01-DEC-21
P-T-COL-WT	**Water**							
Batch R5660859								
WG3668291-3 DUP		**L2667974-4**						
Phosphorus, Total		0.0223	0.0203		mg/L	9.2	20	02-DEC-21
WG3668291-2 LCS								
Phosphorus, Total			101.2		%		80-120	02-DEC-21
WG3668291-1 MB								
Phosphorus, Total			<0.0030		mg/L		0.003	02-DEC-21
WG3668291-4 MS		**L2667974-4**						
Phosphorus, Total			101.1		%		70-130	02-DEC-21
PCB-WT	**Water**							
Batch R5661504								
WG3667876-2 LCS								
Aroclor 1242			117.8		%		65-130	02-DEC-21
Aroclor 1248			112.2		%		65-130	02-DEC-21
Aroclor 1254			116.7		%		65-130	02-DEC-21
Aroclor 1260			120.7		%		65-130	02-DEC-21
WG3667876-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	02-DEC-21
Aroclor 1248			<0.020		ug/L		0.02	02-DEC-21
Aroclor 1254			<0.020		ug/L		0.02	02-DEC-21
Aroclor 1260			<0.020		ug/L		0.02	02-DEC-21
Surrogate: Decachlorobiphenyl			129.5		%		50-150	02-DEC-21
Surrogate: Tetrachloro-m-xylene			77.9		%		50-150	02-DEC-21
PH-WT	**Water**							

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5659948								
WG3668028-4 DUP		**WG3668028-3**						
pH		7.94	8.01	J	pH units	0.07	0.2	01-DEC-21
WG3668028-2 LCS								
pH			7.03		pH units		6.9-7.1	01-DEC-21
PHENOLS-4AAP-WT	**Water**							
Batch R5666236								
WG3668316-3 DUP		**L2667878-1**						
Phenols (4AAP)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	03-DEC-21
WG3668316-2 LCS								
Phenols (4AAP)			99.2		%		85-115	03-DEC-21
WG3668316-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	03-DEC-21
WG3668316-4 MS		**L2667878-1**						
Phenols (4AAP)			98.6		%		75-125	03-DEC-21
SOLIDS-TSS-WT	**Water**							
Batch R5663596								
WG3669001-3 DUP		**L2668522-1**						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	03-DEC-21
WG3669001-2 LCS								
Total Suspended Solids			102.2		%		85-115	03-DEC-21
WG3669001-1 MB								
Total Suspended Solids			<3.0		mg/L		3	03-DEC-21
VOC-ROU-HS-WT	**Water**							
Batch R5661813								
WG3668101-4 DUP		**WG3668101-3**						
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-DEC-21
cis-1,2-Dichloroethylene		56.0	55.9		ug/L	0.1	30	02-DEC-21
Dichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-DEC-21
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-DEC-21
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-DEC-21
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-DEC-21

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Water**							
Batch R5661813								
WG3668101-4 DUP		**WG3668101-3**						
Toluene		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-DEC-21
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-DEC-21
Trichloroethylene		1310	1340		ug/L	1.5	30	03-DEC-21
WG3668101-1 LCS								
1,1,2,2-Tetrachloroethane			84.2		%		70-130	02-DEC-21
1,2-Dichlorobenzene			99.6		%		70-130	02-DEC-21
1,4-Dichlorobenzene			107.4		%		70-130	02-DEC-21
Benzene			93.7		%		70-130	02-DEC-21
Chloroform			96.8		%		70-130	02-DEC-21
cis-1,2-Dichloroethylene			93.5		%		70-130	02-DEC-21
Dichloromethane			98.2		%		70-130	02-DEC-21
Ethylbenzene			93.7		%		70-130	02-DEC-21
m+p-Xylenes			97.7		%		70-130	02-DEC-21
o-Xylene			93.2		%		70-130	02-DEC-21
Tetrachloroethylene			97.8		%		70-130	02-DEC-21
Toluene			95.1		%		70-130	02-DEC-21
trans-1,3-Dichloropropene			95.9		%		70-130	02-DEC-21
Trichloroethylene			95.9		%		70-130	02-DEC-21
WG3668101-2 MB								
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-DEC-21
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-DEC-21
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-DEC-21
Benzene			<0.50		ug/L		0.5	02-DEC-21
Chloroform			<1.0		ug/L		1	02-DEC-21
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-DEC-21
Dichloromethane			<2.0		ug/L		2	02-DEC-21
Ethylbenzene			<0.50		ug/L		0.5	02-DEC-21
m+p-Xylenes			<0.40		ug/L		0.4	02-DEC-21
o-Xylene			<0.30		ug/L		0.3	02-DEC-21
Tetrachloroethylene			<0.50		ug/L		0.5	02-DEC-21
Toluene			<0.40		ug/L		0.4	02-DEC-21
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-DEC-21
Trichloroethylene			<0.50		ug/L		0.5	02-DEC-21
Surrogate: 1,4-Difluorobenzene			101.2		%		70-130	02-DEC-21

Quality Control Report

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	**Water**							
Batch R5661813								
WG3668101-2 MB								
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	02-DEC-21
WG3668101-5 MS		**WG3668101-3**						
1,1,2,2-Tetrachloroethane			88.7		%		50-150	02-DEC-21
1,2-Dichlorobenzene			99.6		%		50-150	02-DEC-21
1,4-Dichlorobenzene			104.0		%		50-150	02-DEC-21
Benzene			94.4		%		50-150	02-DEC-21
Chloroform			99.4		%		50-150	02-DEC-21
cis-1,2-Dichloroethylene			94.8		%		50-150	02-DEC-21
Dichloromethane			104.6		%		50-150	02-DEC-21
Ethylbenzene			89.0		%		50-150	02-DEC-21
m+p-Xylenes			92.9		%		50-150	02-DEC-21
o-Xylene			90.4		%		50-150	02-DEC-21
Tetrachloroethylene			91.4		%		50-150	02-DEC-21
Toluene			93.0		%		50-150	02-DEC-21
trans-1,3-Dichloropropene			101.4		%		50-150	02-DEC-21
Trichloroethylene			N/A	MS-B	%		-	02-DEC-21

Quality Control Report

Workorder: L2667745 Report Date: 08-DEC-21

Client: LANDTEK LIMITED
205 NEBO ROAD, UNIT 4B
HAMILTON ON L8W 2E1
Contact: HENRY EREBOR

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRQC	Refer to report remarks for information regarding this QC result.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2667745-COFC

COC Number: 17 - 802478

Page 1 of 1

HD

Report To	Contact and company name below will appear on the final report
Company:	Landtek Limited
Contact:	Henry Erebor
Phone:	289-880-3992
	Company address below will appear on the final report
Street:	205 Nebo Road, Unit 3
City/Province:	Hamilton, ON
Postal Code:	L8W 2E1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	Landtek Limited
Contact:	Henry Erebor

Report Format	
Select Report Format:	☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☐ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	henry@landtek.ca
Email 2	kathy@landtek.ca
Email 3	engineering@landtek.ca
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	21260
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2667745 **ALS Contact:** MLP **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Ontario Storm Oakville	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	NMW120D	29-Nov-21		Water	1	X		
	Note: No Field and Laboratory Filtration							

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

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

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

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				3.7			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Erebor	Date: Nov. 30/21	Time:	Received by:	Date:	Time:	Received by: FHI	Date: 2021-11-30	Time: 17:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY NOV 2018 FRONT

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

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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CLIENT NAME: LANDTEK LTD.
205 NEBO ROAD, UNIT 3
HAMILTON, ON L8W2E1
(905) 383-3733

ATTENTION TO: Henry Erebor

PROJECT: 21260

AGAT WORK ORDER: 23H012142

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

MISCELLANEOUS ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Dylan McCarthy, Trace Organics Lab Technician

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Apr 25, 2023

PAGES (INCLUDING COVER): 43

VERSION*: 1

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

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

E. Coli (MI-Agar)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

				SAMPLE DESCRIPTION:	MW106	MW4-23	MW111-20
				SAMPLE TYPE:	Water	Water	Water
				DATE SAMPLED:	2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL		4900042	4900057	4900058
Escherichia coli	CFU/100mL	100			0	0	4

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

4900042 Escherichia coli RDL = 1 CFU/100mL.

Presence of sediments was observed upon receipt.

4900057 Escherichia coli RDL = 10 CFU/100mL.
RDL > 1 indicates dilutions of the sample.

The sample was diluted prior to filtration due to the presence of sediments.

4900058 Escherichia coli RDL = 1 CFU/100mL.

Presence of sediments was observed upon receipt.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Base Neutrals and Acids [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Naphthalene	µg/L	7	0.30	<0.30	<0.30	<0.30
Acenaphthylene	µg/L		0.31	<0.31	<0.31	<0.31
Acenaphthene	µg/L		0.30	<0.30	<0.30	<0.30
Fluorene	µg/L	0.2	0.31	<0.31	<0.31	<0.31
Phenanthrene	µg/L	0.03	0.32	<0.32	<0.32	<0.32
Anthracene	µg/L	0.0008	0.30	<0.30	<0.30	<0.30
Fluoranthene	µg/L	0.0008	0.27	<0.27	<0.27	<0.27
Pyrene	µg/L		0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L	0.0004	0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	0.0001	0.27	<0.27	<0.27	<0.27
Benzo(b)fluoranthene	µg/L		0.20	<0.20	<0.20	<0.20
Benzo(k)fluoranthene	µg/L	0.0002	0.20	<0.20	<0.20	<0.20
Benzo(a)pyrene	µg/L		0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.20	<0.20	<0.20	<0.20
Dibenzo(a,h)anthracene	µg/L	0.002	0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.00002	0.20	<0.20	<0.20	<0.20
Phenol	µg/L		1.0	<1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/L		0.5	<0.5	<0.5	<0.5
2-Chlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
o-Cresol	µg/L	1	0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether	µg/L		0.5	<0.5	<0.5	<0.5
m&p-Cresol	µg/L		0.5	<0.5	<0.5	<0.5
Hexachloroethane	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L		0.3	<0.3	<0.3	<0.3
1,2,4-Trichlorobenzene	µg/L		0.5	<0.5	<0.5	<0.5
p-Chloroaniline	µg/L		1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	µg/L		0.4	<0.4	<0.4	<0.4
2-and 1-methyl Napthalene	µg/L	2	0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	0.2	<0.2	<0.2	<0.2

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Base Neutrals and Acids [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
2,4,5-Trichlorophenol	µg/L	18	0.2	<0.2	<0.2	<0.2
1,1-Biphenyl	µg/L		0.5	<0.5	<0.5	<0.5
Dimethyl phthalate	µg/L		0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dinitrotoluene	µg/L		0.5	<0.5	<0.5	<0.5
2,3,4,6-Tetrachlorophenol	µg/L	1	0.5	<0.5	<0.5	<0.5
Diethyl phthalate	µg/L		0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	0.5	<0.5	<0.5	<0.5
Pentachlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
3,3'-dichlorobenzidine	µg/L		0.5	<0.5	<0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dinitrophenol	µg/L		10	<10	<10	<10
Sediment				NO	NO	NO
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-140		88	67	65
phenol-d6 surrogate	%	50-140		97	84	84
2,4,6-Tribromophenol	%	50-140		68	81	81
Chrysene-d12	%	50-140		106	92	103

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

4900042-4900058 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Carbamate Pesticides (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Aldicarb	µg/L			<2.0	<2.0	<2.0
Bendiocarb	µg/L		2	<2	<2	<2
Carbofuran	µg/L		5	<5	<5	<5
Carbaryl	µg/L		5	<5	<5	<5
Diuron	µg/L		10	<10	<10	<10
Triallate	µg/L		1	<1	<1	<1
Temephos	µg/L		10	<10	<10	<10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Diquat/Paraquat

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Diquat	µg/L		5	<5	<5	<5
Paraquat	µg/L		1	<1	<1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Ethanolamines in Water by HPLC - Low Level

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Diethanolamine (DEA)	mg/L		0.04	<0.04	<0.04	<0.04
Ethanolamine (MEA)	mg/L		0.05	<0.05	<0.05	<0.05
Diisopropanolamine (DIPA)	mg/L		0.1	<0.1	<0.1	<0.1
Monoisopropanolamine (MIPA)	mg/L		0.1	<0.1	<0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Glycols Analysis in Water

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Propylene Glycol	mg/L		10	<10	<10	<10
Monoethylene Glycol	mg/L		8	<8	<8	<8
Diethylene Glycol	mg/L		5	<5	<5	<5
Triethylene Glycol	mg/L		8	<8	<8	<8
Tetraethylene Glycol	mg/L		10	<10	<10	<10
Surrogate	Unit	Acceptable Limits				
Heptanol	%	50-140		98	129	138

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Analysis by GC/FID.
Identification based on retention time relative to standards.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Gamma-Hexachlorocyclohexane	ug/L		0.01	<0.01	<0.01	<0.01
Heptachlor	ug/L		0.01	<0.01	<0.01	<0.01
Aldrin	ug/L		0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	ug/L		0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L		0.05	<0.05	<0.05	<0.05
Endosulfan II	µg/L		0.05	<0.05	<0.05	<0.05
Endosulfan	ug/L		0.05	<0.05	<0.05	<0.05
alpha - chlordane	µg/L		0.1	<0.1	<0.1	<0.1
gamma-Chlordane	µg/L		0.2	<0.2	<0.2	<0.2
Chlordane	ug/L		0.04	<0.04	<0.04	<0.04
op'-DDE	µg/L		0.01	<0.01	<0.01	<0.01
pp'-DDE	µg/L		0.01	<0.01	<0.01	<0.01
DDE	ug/L		0.01	<0.01	<0.01	<0.01
op'-DDD	µg/L		0.05	<0.05	<0.05	<0.05
pp'-DDD	µg/L		0.05	<0.05	<0.05	<0.05
DDD	ug/L		0.05	<0.05	<0.05	<0.05
op'-DDT	µg/L		0.04	<0.04	<0.04	<0.04
pp'-DDT	µg/L		0.05	<0.05	<0.05	<0.05
DDT	ug/L		0.04	<0.04	<0.04	<0.04
Dieldrin	ug/L		0.02	<0.02	<0.02	<0.02
Endrin	ug/L		0.05	<0.05	<0.05	<0.05
Methoxychlor	ug/L		0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	ug/L		0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L		0.01	<0.01	<0.01	<0.01
Hexachloroethane	ug/L		0.01	<0.01	<0.01	<0.01
Aroclor 1242	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1248	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1254	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1260	ug/L		0.1	<0.1	<0.1	<0.1
Polychlorinated Biphenyls	ug/L		0.1	<0.1	<0.1	<0.1

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:	MW106	MW4-23	MW111-20
		SAMPLE TYPE:	Water	Water	Water
		DATE SAMPLED:	2023-04-05	2023-04-05	2023-04-05
Surrogate	Unit	Acceptable Limits	4900042	4900057	4900058
TCMX	%	50-140	112	92	88
Decachlorobiphenyl	%	50-140	116	113	103

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.
PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Oil and Grease (Total) in water

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Total Oil and Grease in water	mg/L		0.5	1.20	<0.5	1.59

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Phenoxy Acid Herbicides (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
2,4-D	µg/L		0.5	<0.5	<0.5	<0.5
2,4,5-T	µg/L		0.5	<0.5	<0.5	<0.5
2,4,5-TP	µg/L		0.5	<0.5	<0.5	<0.5
Dicamba	µg/L		0.5	<0.5	<0.5	<0.5
Dichlorprop	µg/L		0.5	<0.5	<0.5	<0.5
Dinoseb	µg/L		0.5	<0.5	<0.5	<0.5
Picloram	µg/L		0.5	<0.5	<0.5	<0.5
Diclofop-methyl	µg/L		0.5	<0.5	<0.5	<0.5
2,3,4,6-Tetrachlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L		0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
Bromoxynil	µg/L		0.3	<0.3	<0.3	<0.3
MCPA	µg/L		5.0	<5.0	<5.0	<5.0
MCPP	µg/L		5.0	<5.0	<5.0	<5.0
Pentachlorophenol	µg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
DCAA	%	50-140		90	80	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
1-Methylnaphthalene, Ultra-low	µg/L		0.001	0.008	0.011	0.004
2-Methylnaphthalene, Ultra-low	µg/L		0.001	0.016	0.018	0.006
Acenaphthene, Ultra-low	µg/L		0.001	0.014	<0.001	<0.001
Acenaphthylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Acridine, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(a)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(b)fluoranthene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(j+k)fluoranthene	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(e)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(ghi)perylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Chrysene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Fluoranthene, Ultra-low	µg/L		0.001	0.073	0.025	0.025
Fluorene, Ultra-low	µg/L		0.001	0.023	0.007	0.008
Indeno(1,2,3-cd)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Naphthalene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Perylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Phenanthrene, Ultra-low	µg/L		0.001	0.158	0.042	0.053
Pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Quinoline, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Sediment				YES	YES	TRACE
PAH - Extraction (Ultra-low)				Y	Y	Y
Surrogate	Unit	Acceptable Limits				
Naphthalene-d8	%	50-140		57	68	65
Terphenyl-d14	%	50-140		45	44	52
Pyrene-d10	%	50-140		65	79	73

Certified By:

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AGAT WORK ORDER: 23H012142
PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900057 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Surrogate not within acceptance limits due to matrix interference. Analysis was repeated with similar results.

4900058 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Halifax (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Resin and Fatty acid (water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Linoleic acid	µg/L		10	<10	<10	<10
Linolenic acid	µg/L		10	<10	<10	<10
Oleic acid	µg/L		10	<10	<10	<10
9,10-Dichlorostearic acid	µg/L		10	<10	<10	<10
Stearic acid	µg/L		10	<10	12	43
Fatty acid total	µg/L		10	<10	12	43
Pimaric acid	µg/L		10	<10	<10	<10
Sandaracopimaric acid	µg/L		10	<10	<10	<10
Isopimaric acid	µg/L		10	<10	<10	<10
Palustric acid	µg/L		10	<10	<10	<10
Levopimaric acid	µg/L		10	<10	<10	<10
Dehydroabietic acid	µg/L		10	<10	<10	<10
Abietic acid	µg/L		10	<10	<10	<10
Neoabietic acid	µg/L		10	<10	<10	<10
14-Chlorodehydroabietic acid	µg/L		10	<10	<10	<10
12-Chlorodehydroabietic acid	µg/L		10	<10	<10	<10
12,14-Dichlorodehydroabietic acid	µg/L		10	<10	<10	<10
Resin acid total	µg/L		10	<10	<10	<10
Resin and Fatty acid total	µg/L		10	<10	12	43
Surrogate	Unit	Acceptable Limits				
O-methylpodocarpic	%	40-140		54	63	64

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range or reduce matrix interference. Sample was analyzed in Montreal.

Analysis performed at AGAT Montréal (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Triazine Pesticides [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Trifluralin	µg/L		1.0	<1.0	<1.0	<1.0
Simazine	µg/L		1.0	<1.0	<1.0	<1.0
Atrazine	µg/L		0.5	<0.5	<0.5	<0.5
Metribuzin	µg/L		0.25	<0.25	<0.25	<0.25
Prometryne	µg/L		0.25	<0.25	<0.25	<0.25
Metolachlor	µg/L		0.11	<0.11	<0.11	<0.11
Alachlor	µg/L		0.5	<0.5	<0.5	<0.5
Cyanazine	µg/L		1.0	<1.0	<1.0	<1.0
Surrogate	Unit	Acceptable Limits				
Triphenyl phosphate (surr)	%	30-130		67	88	95

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

4900042-4900058 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Dichlorodifluoromethane	µg/L		0.40	<0.40	<0.40	<0.40
Chloromethane	µg/L	700	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.9	0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L	100	0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L	200	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	200	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	200	0.20	8.85	<0.20	<0.20
Chloroform	µg/L		0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	100	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	10	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	<0.20	<0.20	<0.20
Benzene	µg/L	100	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.7	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	20	0.20	1.63	1.24	<0.20
Bromodichloromethane	µg/L	200	0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L	7	0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L	800	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L	40	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	5	0.10	<0.10	<0.10	<0.10

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Tetrachloroethylene	µg/L	50	0.20	0.32	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	20	0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	15	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	8	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L	32	0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	60	0.10	<0.10	<0.10	<0.10
Styrene	µg/L	4	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	70	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40	0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	2.5	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	2.5	0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits				
Toluene-d8	% Recovery	50-140		100	87	101
4-Bromofluorobenzene	% Recovery	50-140		76	84	72

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

4900042-4900058 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Dissolved Oxygen in Water- mg/L

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

SAMPLE DESCRIPTION:				MW106	MW4-23	MW111-20
SAMPLE TYPE:				Water	Water	Water
DATE SAMPLED:				2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Dissolved Oxygen	mg/L		0.05	9.13	4.60	7.16

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Dissolved Oxygen was measured on as received sample. Due to the potential for rapid change in sample equilibrium chemistry laboratory results may differ from field measured results.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PWQO Parameters

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23		MW111-20
		SAMPLE TYPE:		Water	Water		Water
		DATE SAMPLED:		2023-04-05	2023-04-05		2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	RDL	4900058
pH	pH Units	6.5-8.5	NA	7.70	7.74	NA	7.79
Alkalinity (as CaCO3)	mg/L		5	635	551	5	63
Ammonia as N	mg/L		0.02	<0.02	<0.02	0.02	4.14
Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.000002	<0.000002	<0.000002	0.000002	0.166
Total Phosphorus	mg/L	*	0.02	0.47	1.26	0.02	1.34
Turbidity	NTU		0.5	1140	1140	0.5	50.0
Cyanide, WAD	mg/L	0.005	0.002	<0.002	<0.002	0.002	<0.002
Sulphide	mg/L		0.01	<0.01	<0.01	0.01	<0.01
Phenols	mg/L	0.001	0.002	0.017	0.013	0.001	0.002
Aluminum-dissolved	mg/L	*	0.004	<0.004	<0.004	0.004	<0.004
Total Antimony	mg/L	0.020	0.002	<0.002	<0.002	0.001	0.001
Total Arsenic	mg/L	0.1	0.006	0.009	0.010	0.003	0.004
Total Beryllium	mg/L	*	0.002	<0.002	<0.002	0.001	<0.001
Total Boron	mg/L	0.2	0.020	0.133	1.17	0.010	6.52
Total Cadmium	mg/L	0.0002	0.0002	<0.0002	<0.0002	0.0001	<0.0001
Total Chromium	mg/L		0.006	0.030	0.026	0.003	0.003
Total Cobalt	mg/L	0.0009	0.0010	0.0077	0.0126	0.0005	0.0009
Total Copper	mg/L	0.005	0.002	0.028	0.015	0.001	0.004
Total Iron	mg/L	0.3	0.020	20.2	23.3	0.010	2.83
Total Lead	mg/L	*	0.002	0.014	0.012	0.001	0.003
Dissolved Mercury	mg/L	0.0002	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Total Molybdenum	mg/L	0.040	0.004	<0.004	0.007	0.002	0.030
Total Nickel	mg/L	0.025	0.006	0.026	0.034	0.003	0.005
Total Selenium	mg/L	0.1	0.004	<0.004	<0.004	0.002	0.007
Total Silver	mg/L	0.0001	0.0002	<0.0002	<0.0002	0.0001	<0.0001
Total Thallium	mg/L	0.0003	0.0006	<0.0006	<0.0006	0.0003	<0.0003
Total Tungsten	mg/L	0.030	0.020	<0.020	<0.020	0.010	<0.010
Total Uranium	mg/L	0.005	0.004	0.027	0.015	0.002	<0.002
Total Vanadium	mg/L	0.006	0.004	0.035	0.036	0.002	0.003
Total Zinc	mg/L	0.030	0.040	0.059	0.078	0.020	0.028

Certified By: Iris Verástegui

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PWQO Parameters

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23		MW111-20
		SAMPLE TYPE:		Water	Water		Water
		DATE SAMPLED:		2023-04-05	2023-04-05		2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	RDL	4900058
Total Zirconium	mg/L	0.004	0.008	<0.008	0.010	0.004	<0.004
Lab Filtration Aluminum Dissolved				2023/04/11	2023/04/11		2023/04/11
Lab Filtration mercury				2023/04/11	2023/04/11		2023/04/11

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

4900042-4900057 Dilution required, RDL has been increased accordingly.
Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

4900058 Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Residual Chlorine

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Total Residual Chlorine	mg/L		0.01	0.27	0.11	0.17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Due to the instability of chlorine in aqueous solutions, the results reported may be biased low and should be reviewed with discretion.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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Exceedance Summary

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
4900042	MW106	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.017
4900042	MW106	ON PWQO	PWQO Parameters	Total Cobalt	mg/L	0.0009	0.0077
4900042	MW106	ON PWQO	PWQO Parameters	Total Copper	mg/L	0.005	0.028
4900042	MW106	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	20.2
4900042	MW106	ON PWQO	PWQO Parameters	Total Nickel	mg/L	0.025	0.026
4900042	MW106	ON PWQO	PWQO Parameters	Total Uranium	mg/L	0.005	0.027
4900042	MW106	ON PWQO	PWQO Parameters	Total Vanadium	mg/L	0.006	0.035
4900042	MW106	ON PWQO	PWQO Parameters	Total Zinc	mg/L	0.030	0.059
4900057	MW4-23	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.013
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Boron	mg/L	0.2	1.17
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Cobalt	mg/L	0.0009	0.0126
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Copper	mg/L	0.005	0.015
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	23.3
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Nickel	mg/L	0.025	0.034
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Uranium	mg/L	0.005	0.015
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Vanadium	mg/L	0.006	0.036
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Zinc	mg/L	0.030	0.078
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Zirconium	mg/L	0.004	0.010
4900058	MW111-20	ON PWQO	PWQO Parameters	Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.166
4900058	MW111-20	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.002
4900058	MW111-20	ON PWQO	PWQO Parameters	Total Boron	mg/L	0.2	6.52
4900058	MW111-20	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	2.83

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

Microbiology Analysis

RPT Date: Apr 25, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
E. Coli (MI-Agar)															
Escherichia coli	4900042	4900042	0	0	NA										

Comments: NA - % RPD Not Applicable.

Certified By:

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

Trace Organics Analysis

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Oil and Grease (Total) in water															
Total Oil and Grease in water	4883505		< 0.5	< 0.5	NA	< 0.5	99%	70%	130%	97%	70%	130%	94%	70%	130%
OC Pesticides + PCBs (Water)															
Gamma-Hexachlorocyclohexane	4903389		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	103%	50%	140%	97%	50%	140%
Heptachlor	4903389		< 0.01	< 0.01	NA	< 0.01	112%	50%	140%	109%	50%	140%	107%	50%	140%
Aldrin	4903389		< 0.01	< 0.01	NA	< 0.01	101%	50%	140%	105%	50%	140%	103%	50%	140%
Heptachlor Epoxide	4903389		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	116%	50%	140%	101%	50%	140%
Endosulfan I	4903389		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	97%	50%	140%	89%	50%	140%
Endosulfan II	4903389		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	109%	50%	140%	113%	50%	140%
alpha - chlordane	4903389		< 0.1	< 0.1	NA	< 0.1	102%	50%	140%	105%	50%	140%	102%	50%	140%
gamma-Chlordane	4903389		< 0.2	< 0.2	NA	< 0.2	105%	50%	140%	103%	50%	140%	108%	50%	140%
op'-DDE	4903389		< 0.01	< 0.01	NA	< 0.01	114%	50%	140%	114%	50%	140%	108%	50%	140%
pp'-DDE	4903389		< 0.01	< 0.01	NA	< 0.01	100%	50%	140%	105%	50%	140%	102%	50%	140%
op'-DDD	4903389		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	106%	50%	140%	111%	50%	140%
pp'-DDD	4903389		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	93%	50%	140%	100%	50%	140%
op'-DDT	4903389		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	105%	50%	140%	109%	50%	140%
pp'-DDT	4903389		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	110%	50%	140%	104%	50%	140%
Dieldrin	4903389		< 0.02	< 0.02	NA	< 0.02	100%	50%	140%	103%	50%	140%	109%	50%	140%
Endrin	4903389		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	104%	50%	140%	112%	50%	140%
Methoxychlor	4903389		< 0.04	< 0.04	NA	< 0.04	113%	50%	140%	103%	50%	140%	106%	50%	140%
Hexachlorobenzene	4903389		< 0.01	< 0.01	NA	< 0.01	109%	50%	140%	97%	50%	140%	108%	50%	140%
Hexachlorobutadiene	4903389		< 0.01	< 0.01	NA	< 0.01	107%	50%	140%	86%	50%	140%	83%	50%	140%
Hexachloroethane	4903389		< 0.01	< 0.01	NA	< 0.01	93%	50%	140%	99%	50%	140%	98%	50%	140%
Aroclor 1242	4903389		< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	4903389		< 0.1	< 0.1	NA	< 0.1	103%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	4903389		< 0.1	< 0.1	NA	< 0.1	98%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	4903389		< 0.1	< 0.1	NA	< 0.1	106%	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	4903389		< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	107%	60%	140%	108%	60%	140%
Volatile Organic Compounds in Water (ug/L)															
Dichlorodifluoromethane	4900057	4900057	< 0.40	< 0.40	NA	< 0.40	114%	50%	140%	100%	50%	140%	71%	50%	140%
Chloromethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	117%	50%	140%	89%	50%	140%
Vinyl Chloride	4900057	4900057	< 0.17	< 0.17	NA	< 0.17	100%	50%	140%	119%	50%	140%	105%	50%	140%
Bromomethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	111%	50%	140%	83%	50%	140%
Chloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	112%	50%	140%	96%	50%	140%
Trichlorofluoromethane	4900057	4900057	< 0.40	< 0.40	NA	< 0.40	92%	50%	140%	88%	50%	140%	99%	50%	140%
Acetone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	98%	50%	140%	89%	50%	140%	90%	50%	140%
1,1-Dichloroethylene	4900057	4900057	< 0.2	< 0.2	NA	< 0.2	94%	50%	140%	90%	60%	130%	88%	50%	140%
Methylene Chloride	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	88%	50%	140%	100%	60%	130%	109%	50%	140%
trans- 1,2-dichloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	89%	60%	130%	82%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
PROJECT: 21260
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

AGAT WORK ORDER: 23H012142
ATTENTION TO: Henry Erebor
SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl tert-butyl ether	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	81%	60%	130%	90%	50%	140%
1,1-Dichloroethane	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	93%	60%	130%	105%	50%	140%
Methyl Ethyl Ketone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	89%	50%	140%	113%	50%	140%	93%	50%	140%
cis- 1,2-Dichloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	77%	60%	130%	109%	50%	140%
Chloroform	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	86%	60%	130%	114%	50%	140%
1,2-Dichloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	118%	50%	140%	99%	60%	130%	116%	50%	140%
1,1,1-Trichloroethane	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	111%	50%	140%	92%	60%	130%	96%	50%	140%
Carbon Tetrachloride	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	82%	60%	130%	108%	50%	140%
Benzene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	97%	60%	130%	92%	50%	140%
1,2-Dichloropropane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	108%	60%	130%	111%	50%	140%
Trichloroethylene	4900057	4900057	1.24	1.43	14.2%	< 0.20	90%	50%	140%	77%	60%	130%	114%	50%	140%
Bromodichloromethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	96%	60%	130%	117%	50%	140%
cis-1,3-Dichloropropene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	103%	60%	130%	84%	50%	140%
Methyl Isobutyl Ketone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	104%	50%	140%	109%	50%	140%	100%	50%	140%
trans-1,3-Dichloropropene	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	93%	50%	140%	80%	60%	130%	78%	50%	140%
1,1,2-Trichloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	106%	60%	130%	116%	50%	140%
Toluene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	90%	60%	130%	111%	50%	140%
2-Hexanone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	100%	50%	140%	78%	50%	140%	95%	50%	140%
Dibromochloromethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	82%	60%	130%	85%	50%	140%
Ethylene Dibromide	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	95%	60%	130%	98%	50%	140%
Tetrachloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	101%	60%	130%	90%	50%	140%
1,1,1,2-Tetrachloroethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	79%	60%	130%	92%	50%	140%
Chlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	86%	60%	130%	110%	50%	140%
Ethylbenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	79%	60%	130%	109%	50%	140%
m & p-Xylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	87%	60%	130%	117%	50%	140%
Bromoform	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	78%	50%	140%	78%	60%	130%	79%	50%	140%
Styrene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	81%	60%	130%	84%	50%	140%
1,1,2,2-Tetrachloroethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	110%	60%	130%	104%	50%	140%
o-Xylene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	90%	60%	130%	117%	50%	140%
1,3-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	80%	60%	130%	100%	50%	140%
1,4-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	79%	60%	130%	93%	50%	140%
1,2-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	76%	60%	130%	90%	50%	140%
1,2,4-Trichlorobenzene	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	99%	60%	130%	97%	50%	140%
n-Hexane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	115%	60%	130%	120%	50%	140%
Diquat/Paraquat															
Diquat			< 5	< 5	NA	< 5	101%	50%	140%	86%	50%	140%	86%	50%	140%
Paraquat			< 1	< 1	NA	< 1	109%	50%	140%	92%	50%	140%	93%	50%	140%
Carbamate Pesticides (Water)															
Aldicarb			< 2.0	< 2.0	NA	< 2.0	103%	50%	140%	90%	50%	140%	101%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Bendiocarb			< 2	< 2	NA	< 2	85%	50%	140%	94%	50%	140%	95%	50%	140%
Carbofuran			< 5	< 5	NA	< 5	85%	50%	140%	94%	50%	140%	95%	50%	140%
Carbaryl			< 5	< 5	NA	< 5	75%	50%	140%	111%	50%	140%	110%	50%	140%
Diuron			< 10	< 10	NA	< 10	94%	50%	140%	101%	50%	140%	101%	50%	140%
Triallate			< 1	< 1	NA	< 1	99%	50%	140%	82%	50%	140%	90%	50%	140%
Temephos			< 10	< 10	NA	< 10	102%	60%	130%	103%	60%	130%	104%	60%	130%
Triazine Pesticides [water]															
Trifluralin	4900042		<0.2	<0.2	NA	< 1.0	89%	50%	140%	111%	50%	140%	113%	50%	140%
Simazine	4900042		<0.5	<0.5	NA	< 1.0	85%	50%	140%	92%	50%	140%	79%	50%	140%
Atrazine	4900042		<0.5	<0.5	NA	< 0.5	84%	50%	140%	92%	50%	140%	112%	50%	140%
Metribuzin	4900042		<0.25	<0.25	NA	< 0.25	79%	50%	140%	111%	50%	140%	104%	50%	140%
Prometryne	4900042		<0.25	<0.25	NA	< 0.25	82%	50%	140%	83%	50%	140%	110%	50%	140%
Metolachlor	4900042		<0.11	<0.11	NA	< 0.11	105%	50%	140%	91%	50%	140%	112%	50%	140%
Alachlor	4900042		<0.5	<0.5	NA	< 0.5	79%	50%	140%	80%	50%	140%	88%	50%	140%
Cyanazine	4900042		<0.5	<0.5	NA	< 1.0	85%	50%	140%	81%	50%	140%	73%	50%	140%
Base Neutrals and Acids [water]															
Naphthalene	4867188		< 0.30	< 0.30	NA	< 0.30	92%	50%	140%	96%	50%	140%	87%	50%	140%
Acenaphthylene	4867188		< 0.31	< 0.31	NA	< 0.31	91%	50%	140%	105%	50%	140%	82%	50%	140%
Acenaphthene	4867188		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	93%	50%	140%	82%	50%	140%
Fluorene	4867188		< 0.31	< 0.31	NA	< 0.31	69%	50%	140%	87%	50%	140%	89%	50%	140%
Phenanthrene	4867188		< 0.32	< 0.32	NA	< 0.32	78%	50%	140%	103%	50%	140%	92%	50%	140%
Anthracene	4867188		< 0.30	< 0.30	NA	< 0.30	93%	50%	140%	94%	50%	140%	91%	50%	140%
Fluoranthene	4867188		< 0.27	< 0.27	NA	< 0.27	107%	50%	140%	103%	50%	140%	101%	50%	140%
Pyrene	4867188		< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	72%	50%	140%	78%	50%	140%
Benzo(a)anthracene	4867188		< 0.20	< 0.20	NA	< 0.20	65%	50%	140%	75%	50%	140%	76%	50%	140%
Chrysene	4867188		< 0.27	< 0.27	NA	< 0.27	94%	50%	140%	88%	50%	140%	76%	50%	140%
Benzo(b)fluoranthene	4867188		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	89%	50%	140%	97%	50%	140%
Benzo(k)fluoranthene	4867188		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	81%	50%	140%	74%	50%	140%
Benzo(a)pyrene	4867188		< 0.01	< 0.01	NA	< 0.01	75%	50%	140%	79%	50%	140%	65%	50%	140%
Indeno(1,2,3-cd)pyrene	4867188		< 0.20	< 0.20	NA	< 0.20	111%	50%	140%	92%	50%	140%	98%	50%	140%
Dibenzo(a,h)anthracene	4867188		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	84%	50%	140%	90%	50%	140%
Benzo(g,h,i)perylene	4867188		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	97%	50%	140%	101%	50%	140%
Phenol	4867188		< 1.0	< 1.0	NA	< 1.0	71%	50%	140%	64%	50%	140%	67%	50%	140%
Bis(2-chloroethyl)ether	4867188		< 0.5	< 0.5	NA	< 0.5	68%	50%	140%	80%	50%	140%	89%	50%	140%
2-Chlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	65%	50%	140%	73%	50%	140%	78%	50%	140%
o-Cresol	4867188		< 0.5	< 0.5	NA	< 0.5	72%	50%	140%	66%	50%	140%	77%	50%	140%
Bis(2-chloroisopropyl)ether	4867188		< 0.5	< 0.5	NA	< 0.5	87%	50%	140%	80%	50%	140%	102%	50%	140%
m&p-Cresol	4867188		< 0.5	< 0.5	NA	< 0.5	95%	50%	140%	79%	50%	140%	68%	50%	140%
Hexachloroethane	4867188		< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	116%	50%	140%	107%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4-Dimethylphenol	4867188		< 0.5	< 0.5	NA	< 0.5	66%	30%	130%	88%	30%	130%	81%	30%	130%
2,4-Dichlorophenol	4867188		< 0.3	< 0.3	NA	< 0.3	82%	50%	140%	73%	50%	140%	98%	50%	140%
1,2,4-Trichlorobenzene	4867188		< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	70%	50%	140%	65%	50%	140%
p-Chloroaniline	4867188		< 1.0	< 1.0	NA	< 1.0	66%	50%	140%	89%	50%	140%	74%	50%	140%
2,4,6-Trichlorophenol	4867188		< 0.2	< 0.2	NA	< 0.2	76%	50%	140%	80%	50%	140%	97%	50%	140%
2,4,5-Trichlorophenol	4867188		< 0.2	< 0.2	NA	< 0.2	80%	50%	140%	73%	50%	140%	67%	50%	140%
1,1-Biphenyl	4867188		< 0.5	< 0.5	NA	< 0.5	73%	50%	140%	65%	50%	140%	89%	50%	140%
Dimethyl phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	68%	50%	140%	86%	50%	140%	105%	50%	140%
2,6-Dinitrotoluene	4867188		< 0.5	< 0.5	NA	< 0.5	75%	50%	140%	98%	50%	140%	70%	50%	140%
2,4-Dinitrotoluene	4867188		< 0.5	< 0.5	NA	< 0.5	74%	50%	140%	76%	50%	140%	65%	50%	140%
2,3,4,6-Tetrachlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	96%	50%	140%	88%	50%	140%
Diethyl phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	65%	50%	140%	77%	50%	140%
Hexachlorobenzene	4867188		< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	87%	50%	140%	81%	50%	140%
Pentachlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	65%	50%	140%	98%	50%	140%	73%	50%	140%
3,3'-dichlorobenzidine	4867188		< 0.5	< 0.5	NA	< 0.5	72%	30%	130%	73%	30%	130%	108%	30%	130%
Bis(2-Ethylhexyl)phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	105%	50%	140%	67%	50%	140%
2,4-Dinitrophenol	4867188		< 10	< 10	NA	< 10	75%	30%	130%	116%	30%	130%	89%	30%	130%
Phenoxy Acid Herbicides (Water)															
2,4-D		TW	< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	92%	50%	140%	82%	50%	140%
2,4,5-T		TW	< 0.5	< 0.5	NA	< 0.5	80%	50%	140%	85%	50%	140%	82%	50%	140%
2,4,5-TP		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	84%	50%	140%	80%	50%	140%
Dicamba		TW	< 0.5	< 0.5	NA	< 0.5	96%	50%	140%	72%	50%	140%	75%	50%	140%
Dichlorprop		TW	< 0.5	< 0.5	NA	< 0.5	80%	50%	140%	78%	50%	140%	70%	50%	140%
Dinoseb		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	82%	50%	140%	70%	50%	140%
Picloram		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	80%	50%	140%	71%	50%	140%
Diclofop-methyl		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	76%	50%	140%	75%	50%	140%
2,3,4,6-Tetrachlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	70%	50%	140%	NA	50%	140%
2,4-Dichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	90%	50%	140%	81%	50%	140%	NA	50%	140%
2,4,5-Trichlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	84%	50%	140%	NA	50%	140%
2,4,6-Trichlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	76%	50%	140%	NA	50%	140%
Bromoxynil		TW	< 0.3	< 0.3	NA	< 0.3	99%	50%	140%	91%	50%	140%	NA	50%	140%
MCPA		TW	< 5.0	< 5.0	NA	< 5.0	86%	50%	140%	82%	50%	140%	72%	50%	140%
MCPP		TW	< 5.0	< 5.0	NA	< 5.0	98%	50%	140%	75%	50%	140%	78%	50%	140%
Pentachlorophenol		TW	< 0.1	< 0.1	NA	< 0.1	100%	50%	140%	95%	50%	140%	NA	50%	140%
Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level															
1-Methylnaphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	92%	50%	140%	107%	50%	140%	122%	50%	140%
2-Methylnaphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	84%	50%	140%	95%	50%	140%	109%	50%	140%
Acenaphthene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	84%	50%	140%	109%	50%	140%	122%	50%	140%
Acenaphthylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	79%	50%	140%	102%	50%	140%	112%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Acridine, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	124%	50%	140%	123%	50%	140%
Anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	113%	50%	140%	122%	50%	140%
Benzo(a)anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	115%	50%	140%	120%	50%	140%
Benzo(a)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	74%	50%	140%	109%	50%	140%	112%	50%	140%
Benzo(b)fluoranthene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	88%	50%	140%	92%	50%	140%	114%	50%	140%
Benzo(j+k)fluoranthene	1	4906036	< 0.001	< 0.001	NA	< 0.001	89%	50%	140%	117%	50%	140%	120%	50%	140%
Benzo(e)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	125%	50%	140%	125%	50%	140%
Benzo(ghi)perylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	120%	50%	140%	115%	50%	140%
Chrysene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	129%	50%	140%	137%	50%	140%
Dibenzo(a,h)anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	74%	50%	140%	109%	50%	140%	106%	50%	140%
Fluoranthene, Ultra-low	1	4906036	0.174	< 0.001	NA	< 0.001	86%	50%	140%	128%	50%	140%	137%	50%	140%
Fluorene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	82%	50%	140%	113%	50%	140%	127%	50%	140%
Indeno(1,2,3-cd)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	71%	50%	140%	98%	50%	140%	103%	50%	140%
Naphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	103%	50%	140%	114%	50%	140%
Perylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	121%	50%	140%	116%	50%	140%
Phenanthrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	126%	50%	140%	137%	50%	140%
Pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	90%	50%	140%	136%	50%	140%	139%	50%	140%
Quinoline, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	85%	50%	140%	125%	50%	140%	130%	50%	140%
Sediment	1	4906036	<	<	NA	<									

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution. Matrix spike performed on a different sample than the duplicate.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.
Duplicate: More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits.

Resin and Fatty acid (water)

Fatty acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	71%	70%	130%	NA	70%	130%
Resin acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	86%	70%	130%	NA	70%	130%
Resin and Fatty acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	79%	70%	130%	NA	70%	130%
O-methylpodocarpic	4900042	NA	NA	NA	0.0%	57	NA	40%	140%	70%	40%	140%	NA	40%	140%

Comments: The QC criteria are only applicable to the total resins and total fatty acids.

NA : Non applicable.

If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

NA in the spike blank or CRM indicates that it is not required by the procedure.

Glycols Analysis in Water

Propylene Glycol	671	4900042	<10	<10	NA	< 10	106%	50%	140%	87%	50%	140%	104%	50%	140%
Monoethylene Glycol	671	4900042	<8	<8	NA	< 8	107%	50%	140%	87%	50%	140%	106%	50%	140%
Diethylene Glycol	671	4900042	<5	<5	NA	< 5	103%	50%	140%	92%	50%	140%	105%	50%	140%
Triethylene Glycol	671	4900042	<8	<8	NA	< 8	99%	50%	140%	96%	50%	140%	106%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Tetraethylene Glycol	671	4900042	<10	<10	NA	< 10	90%	50%	140%	88%	50%	140%	89%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Ethanolamines in Water by HPLC - Low Level															
Diethanolamine (DEA)	1137	4896467	<0.04	<0.04	NA	< 0.04	98%	80%	120%	100%	70%	130%	104%	60%	140%
Ethanolamine (MEA)	1137	4896467	<0.05	<0.05	NA	< 0.05	103%	80%	120%	104%	70%	130%	103%	60%	140%
Diisopropanolamine (DIPA)	1137	4896467	<0.1	<0.1	NA	< 0.1	107%	80%	120%	110%	70%	130%	100%	60%	140%
Monoisopropanolamine (MIPA)	1137	4896467	<0.1	<0.1	NA	< 0.1	95%	80%	120%	97%	70%	130%	94%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By:

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
PROJECT: 21260
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

AGAT WORK ORDER: 23H012142
ATTENTION TO: Henry Erebor
SAMPLED BY:LB

Water Analysis

RPT Date: Apr 25, 2023

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Residual Chlorine															
Total Residual Chlorine	4900996		0.03	0.04	NA	< 0.01	92%	80%	120%	95%	90%	110%	96%	80%	120%
PWQO Parameters															
pH	4900964		7.96	8.06	1.2%	NA	100%	90%	110%						
Alkalinity (as CaCO3)	4900964		68	70	2.9%	< 5	95%	80%	120%						
Ammonia as N	4898634		<0.02	<0.02	NA	< 0.02	100%	70%	130%	101%	80%	120%	95%	70%	130%
Total Phosphorus	4900042	4900042	0.47	0.47	0.0%	< 0.02	102%	70%	130%	100%	80%	120%	97%	70%	130%
Turbidity	4900964		1.2	1.8	NA	< 0.5	101%	80%	120%						
Cyanide, WAD	4900360		<0.002	<0.002	NA	< 0.002	91%	70%	130%	95%	80%	120%	93%	70%	130%
Sulphide	4904651		<0.01	<0.01	NA	< 0.01	102%	90%	110%	102%	90%	110%	99%	80%	120%
Phenols	4898643		0.002	0.001	NA	< 0.001	99%	90%	110%	99%	90%	110%	101%	80%	120%
Aluminum-dissolved	4906489		<0.004	<0.004	NA	< 0.004	98%	70%	130%	102%	80%	120%	97%	70%	130%
Total Antimony	4900987		<0.001	<0.001	NA	< 0.001	103%	70%	130%	110%	80%	120%	103%	70%	130%
Total Arsenic	4900987		<0.003	<0.003	NA	< 0.003	97%	70%	130%	102%	80%	120%	99%	70%	130%
Total Beryllium	4900987		<0.001	<0.001	NA	< 0.001	98%	70%	130%	100%	80%	120%	100%	70%	130%
Total Boron	4900987		0.017	0.020	NA	< 0.010	99%	70%	130%	103%	80%	120%	99%	70%	130%
Total Cadmium	4900987		<0.0001	<0.0001	NA	< 0.0001	99%	70%	130%	101%	80%	120%	100%	70%	130%
Total Chromium	4900987		<0.003	<0.003	NA	< 0.003	99%	70%	130%	103%	80%	120%	103%	70%	130%
Total Cobalt	4900987		<0.0005	<0.0005	NA	< 0.0005	103%	70%	130%	104%	80%	120%	103%	70%	130%
Total Copper	4900987		0.002	0.002	NA	< 0.001	101%	70%	130%	96%	80%	120%	99%	70%	130%
Total Iron	4900987		0.073	0.076	4.0%	< 0.010	106%	70%	130%	104%	80%	120%	101%	70%	130%
Total Lead	4900987		<0.001	<0.001	NA	< 0.001	106%	70%	130%	102%	80%	120%	94%	70%	130%
Dissolved Mercury	4900042	4900042	<0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	97%	80%	120%	87%	70%	130%
Total Molybdenum	4900987		0.003	<0.002	NA	< 0.002	104%	70%	130%	111%	80%	120%	102%	70%	130%
Total Nickel	4900987		<0.003	<0.003	NA	< 0.003	100%	70%	130%	101%	80%	120%	102%	70%	130%
Total Selenium	4900987		<0.002	<0.002	NA	< 0.002	96%	70%	130%	102%	80%	120%	93%	70%	130%
Total Silver	4900987		0.0001	<0.0001	NA	< 0.0001	108%	70%	130%	101%	80%	120%	93%	70%	130%
Total Thallium	4900987		<0.0003	<0.0003	NA	< 0.0003	105%	70%	130%	105%	80%	120%	97%	70%	130%
Total Tungsten	4900987		<0.010	<0.010	NA	< 0.010	99%	70%	130%	95%	80%	120%	95%	70%	130%
Total Uranium	4900987		<0.002	<0.002	NA	< 0.002	107%	70%	130%	97%	80%	120%	95%	70%	130%
Total Vanadium	4900987		<0.002	<0.002	NA	< 0.002	97%	70%	130%	103%	80%	120%	103%	70%	130%
Total Zinc	4900987		<0.020	0.030	NA	< 0.020	108%	70%	130%	117%	80%	120%	106%	70%	130%
Total Zirconium	4900987		<0.004	<0.004	NA	< 0.004	117%	70%	130%	112%	80%	120%	106%	70%	130%

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: Iris Verástegui

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

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http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration

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Method Summary

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluorene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenanthrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dibenzo(a,h)anthracene	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Chlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
o-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
m&p-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachloroethane	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dimethylphenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
p-Chloroaniline	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Hexachlorobutadiene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-and 1-methyl Napthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,1-Biphenyl	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dimethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,6-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,3,4,6-Tetrachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Diethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pentachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene-d12	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Sediment			N/A
Aldicarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Bendiocarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbofuran	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbaryl	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diuron	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Triallate	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Temephos	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diquat	ORG-91-5102	EPA 549.1	HPLC
Paraquat	ORG-91-5102	EPA 549.1	HPLC
Diethanolamine (DEA)	TO-2240	"In house" developed method	HPLC/UV
Ethanolamine (MEA)	TO-2240	"In house" developed method	HPLC/UV
Diisopropanolamine (DIPA)	TO-2240	"In house" developed method	HPLC/UV
Monoisopropanolamine (MIPA)	TO-2240	"In house" developed method	HPLC/UV
Propylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Monoethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID

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Method Summary

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 23H012142
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville
SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Diethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Triethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Tetraethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Heptanol	TO-1410	EPA SW-846 8015	GC/FID
Gamma-Hexachlorocyclohexane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor Epoxide	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan I	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan II	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
alpha - chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
gamma-Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
Dieldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Methoxychlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobenzene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobutadiene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachloroethane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aroclor 1242	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Aroclor 1248	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1254	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1260	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Polychlorinated Biphenyls	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Total Oil and Grease in water	VOL-91-5011	SM 5520 & EPA SW846 3510C & EPA 1664	BALANCE
2,4-D	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4,5-T	ORG-91-5510	EPA SW846 8151A	GC/ECD
2,4,5-TP	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dicamba	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dichlorprop	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dinoseb	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Picloram	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Diclofop-methyl	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,3,4,6-Tetrachlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4-Dichlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4,5-Trichlorophenol	ORG-91-5100	EPA SW-846 8151A	GC/ECD
2,4,6-Trichlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Bromoxynil	ORG-91-5110	EPA SW-846 8151A	GC/ECD
MCPA	ORG-91-5110	EPA SW-846 8151A	GC/ECD
MCPP	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Pentachlorophenol	ORG-91-5110	EPA SW-846 3510 & 8151	GC/ECD
DCAA	ORG-91-5110	EPA SW-846 8151	GC/ECD
1-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
2-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acridine, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(b)fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(j+k)fluoranthene	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(e)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(ghi)perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Chrysene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Dibenzo(a,h)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluorene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Indeno(1,2,3-cd)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Naphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Phenanthrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Quinoline, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Sediment			GC/MS/FID
Naphthalene-d8	ORG-120-5119	EPA 3510C/8270E	GC/MS
Terphenyl-d14	ORG-120-5119	EPA 3510C/8270E	GC/MS
Pyrene-d10	ORG-120-5119	EPA 3510C/8270E	GC/MS
PAH - Extraction (Ultra-low)			GC/MS
Linoleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Linolenic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Oleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
9,10-Dichlorostearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Stearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Pimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Sandaracopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Isopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Palustric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Levopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Dehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Abietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Neoabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
14-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12,14-Dichlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin and Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
O-methylpodocarpic	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Trifluralin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Simazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Atrazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metribuzin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Prometryne	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metolachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Alachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Cyanazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Triphenyl phosphate (surr)	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
2-Hexanone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2,4-Trichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Oxygen	INOR-93-6006	Modified from SM 4500-O G	DO METER
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Alkalinity (as CaCO3)	INOR-93-6000	Modified from SM 2320 B	PC TITRATE
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Ammonia-Un-ionized (Calculated)		MOE REFERENCE, PWQOs Tab 2	CALCULATION
Total Phosphorus	INOR-93-6057	modified from LACHAT 10-115-01-3A	LACHAT FIA
Turbidity	INOR-93-6000	modified from SM 2130 B	PC TITRATE
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015,SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Sulphide	INOR-93-6054	modified from SM 4500 S2- D	SPECTROPHOTOMETER
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA
Aluminum-dissolved	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Beryllium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Boron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Iron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Dissolved Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Thallium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tungsten	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Uranium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Vanadium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

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5835 COOPERS AVENUE
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TEL (905)712-5100
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http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Zirconium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Lab Filtration Aluminum Dissolved	SR-78-9001		FILTRATION
Lab Filtration mercury	SR-78-9001		FILTRATION
Total Residual Chlorine	INOR-93-6060	modified from SM 4500-CL- G	SPECTROPHOTOMETER

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

Short Holding Time

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

Chain of Custody Record

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

Report Information:

Company: LANDTEK LIMITED
Contact: HENRY EREBOR
Address: 205 NEBO ROAD, HAMILTON, ON L8W 2E1
Phone: 289-880-3992 Fax:
Reports to be sent to:
1. Email: henry@landtek.ca
2. Email:

Project Information:

Project: 21260
Site Location: 3275/3201 TRAFALGAR RD. OAKVILLE
Sampled By: L.B
AGAT Quote #: 854148 PO:
Please note: if quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company: ~~LAN~~ LANDTEK LIMITED
Contact: KATHY CRISTOI
Address: 205 NEBO ROAD, HAMILTON ON
Email: kathyc@landtek.ca

Regulatory Requirements:

(Please check all applicable boxes)

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

☐ Excess Soils R406
Table ____ *Indicate One*
☐ Regulation 558
☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
____ *Region*
☐ Prov. Water Quality Objectives (PWQO)
☒ Other
____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☒ No

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

Laboratory Use Only

Work Order #: 23H012142
Cooler Quantity: 6 LG COOLERS
Arrival Temperatures: SEE ATTACHED
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: NO ICE

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

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

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 153: Aroclors	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package SPLP: ☐ Metals pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: Include Moisture ☐ Sulphide ☐	PWQO						Potentially Hazardous or High Concentration (Y/N)
MW106	April 5	AM PM		GW		✓												X						
MW4-23	April 5	AM PM		GW		✓												X						
MW111-20	April 5	AM PM		GW		✓												X						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						

Samples Relinquished By (Print Name and Sign): Lauren Blair	Date: Apr. 5/23	Time: PM	Samples Received By (Print Name and Sign): DTAIC	Date: APR 5/23	Time: 2:30pm		
Samples Relinquished By (Print Name and Sign): DTAIC	Date: APR 5/23	Time: 3pm	Samples Received By (Print Name and Sign): Rhiana C	Date: Apr 5	Time: 4:40	Page ____ of ____	
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:	N°: T - 140693	

AGAT Laboratories

Sample Temperature Log

Client: LANDTEK

Work Order #:

Arrival Temperatures - Branch/Driver

Cooler #1:	9.2	9.1	9.0
Cooler #2:	10.0	10.2	10.5
Cooler #3:	9.9	9.7	9.5
Cooler #4:	8.7	8.8	8.2
Cooler #5:	10.1	10.7	10.6
Cooler #6:	9.1	8.9	8.7
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By:

Date

Time: AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	6.2	6.0	6.8
Cooler #2:	6.8	6.0	6.5
Cooler #3:	2.3	2.9	3.0
Cooler #4:	4.4	4.0	4.7
Cooler #5:	6.2	6.0	6.3
Cooler #6:	7.4	7.0	6.9
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

loose ice

IR Gun ID:

Taken By: Rhiana C

2nd

Date

Time: AM / PM

Document ID: SR-78-9511.001
Date Issued: February 24, 2015

Page:

AGAT Laboratories

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

CLIENT NAME: LANDTEK LTD.
205 NEBO ROAD, UNIT 3
HAMILTON, ON L8W2E1
(905) 383-3733
ATTENTION TO: Henry Erebor
PROJECT: 21260
AGAT WORK ORDER: 23H012142
MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
MISCELLANEOUS ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Dylan McCarthy, Trace Organics Lab Technician
WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer
DATE REPORTED: Apr 25, 2023
PAGES (INCLUDING COVER): 43
VERSION*: 1

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

*Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. Measurement Uncertainty is not taken into consideration when stating conformity with a specified requirement.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

E. Coli (MI-Agar)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

				SAMPLE DESCRIPTION:	MW106	MW4-23	MW111-20
				SAMPLE TYPE:	Water	Water	Water
				DATE SAMPLED:	2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL		4900042	4900057	4900058
Escherichia coli	CFU/100mL	100			0	0	4

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

4900042 Escherichia coli RDL = 1 CFU/100mL.

Presence of sediments was observed upon receipt.

4900057 Escherichia coli RDL = 10 CFU/100mL.
RDL > 1 indicates dilutions of the sample.

The sample was diluted prior to filtration due to the presence of sediments.

4900058 Escherichia coli RDL = 1 CFU/100mL.

Presence of sediments was observed upon receipt.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Base Neutrals and Acids [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Naphthalene	µg/L	7	0.30	<0.30	<0.30	<0.30
Acenaphthylene	µg/L		0.31	<0.31	<0.31	<0.31
Acenaphthene	µg/L		0.30	<0.30	<0.30	<0.30
Fluorene	µg/L	0.2	**0.31**	<0.31	<0.31	<0.31
Phenanthrene	µg/L	0.03	**0.32**	<0.32	<0.32	<0.32
Anthracene	µg/L	0.0008	**0.30**	<0.30	<0.30	<0.30
Fluoranthene	µg/L	0.0008	**0.27**	<0.27	<0.27	<0.27
Pyrene	µg/L		0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L	0.0004	**0.20**	<0.20	<0.20	<0.20
Chrysene	µg/L	0.0001	**0.27**	<0.27	<0.27	<0.27
Benzo(b)fluoranthene	µg/L		0.20	<0.20	<0.20	<0.20
Benzo(k)fluoranthene	µg/L	0.0002	**0.20**	<0.20	<0.20	<0.20
Benzo(a)pyrene	µg/L		0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.20	<0.20	<0.20	<0.20
Dibenzo(a,h)anthracene	µg/L	0.002	**0.20**	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.00002	**0.20**	<0.20	<0.20	<0.20
Phenol	µg/L		1.0	<1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/L		0.5	<0.5	<0.5	<0.5
2-Chlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
o-Cresol	µg/L	1	0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether	µg/L		0.5	<0.5	<0.5	<0.5
m&p-Cresol	µg/L		0.5	<0.5	<0.5	<0.5
Hexachloroethane	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L		0.3	<0.3	<0.3	<0.3
1,2,4-Trichlorobenzene	µg/L		0.5	<0.5	<0.5	<0.5
p-Chloroaniline	µg/L		1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	µg/L		0.4	<0.4	<0.4	<0.4
2-and 1-methyl Napthalene	µg/L	2	0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	0.2	<0.2	<0.2	<0.2

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Base Neutrals and Acids [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
2,4,5-Trichlorophenol	µg/L	18	0.2	<0.2	<0.2	<0.2
1,1-Biphenyl	µg/L		0.5	<0.5	<0.5	<0.5
Dimethyl phthalate	µg/L		0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dinitrotoluene	µg/L		0.5	<0.5	<0.5	<0.5
2,3,4,6-Tetrachlorophenol	µg/L	1	0.5	<0.5	<0.5	<0.5
Diethyl phthalate	µg/L		0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	**0.5**	<0.5	<0.5	<0.5
Pentachlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
3,3'-dichlorobenzidine	µg/L		0.5	<0.5	<0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dinitrophenol	µg/L		10	<10	<10	<10
Sediment				NO	NO	NO
Surrogate	**Unit**	**Acceptable Limits**				
2-Fluorophenol	%	50-140		88	67	65
phenol-d6 surrogate	%	50-140		97	84	84
2,4,6-Tribromophenol	%	50-140		68	81	81
Chrysene-d12	%	50-140		106	92	103

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

4900042-4900058 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Carbamate Pesticides (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Aldicarb	µg/L			<2.0	<2.0	<2.0
Bendiocarb	µg/L		2	<2	<2	<2
Carbofuran	µg/L		5	<5	<5	<5
Carbaryl	µg/L		5	<5	<5	<5
Diuron	µg/L		10	<10	<10	<10
Triallate	µg/L		1	<1	<1	<1
Temephos	µg/L		10	<10	<10	<10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Diquat/Paraquat

DATE RECEIVED: 2023-04-05 **DATE REPORTED: 2023-04-25**

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Diquat	µg/L		5	<5	<5	<5
Paraquat	µg/L		1	<1	<1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Ethanolamines in Water by HPLC - Low Level

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Diethanolamine (DEA)	mg/L		0.04	<0.04	<0.04	<0.04
Ethanolamine (MEA)	mg/L		0.05	<0.05	<0.05	<0.05
Diisopropanolamine (DIPA)	mg/L		0.1	<0.1	<0.1	<0.1
Monoisopropanolamine (MIPA)	mg/L		0.1	<0.1	<0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Glycols Analysis in Water

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	**Unit**	**G / S**	**RDL**	**4900042**	**4900057**	**4900058**
Propylene Glycol	mg/L		10	<10	<10	<10
Monoethylene Glycol	mg/L		8	<8	<8	<8
Diethylene Glycol	mg/L		5	<5	<5	<5
Triethylene Glycol	mg/L		8	<8	<8	<8
Tetraethylene Glycol	mg/L		10	<10	<10	<10
Surrogate	**Unit**	**Acceptable Limits**				
Heptanol	%	50-140		98	129	138

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Analysis by GC/FID.
Identification based on retention time relative to standards.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Gamma-Hexachlorocyclohexane	ug/L		0.01	<0.01	<0.01	<0.01
Heptachlor	ug/L		0.01	<0.01	<0.01	<0.01
Aldrin	ug/L		0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	ug/L		0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L		0.05	<0.05	<0.05	<0.05
Endosulfan II	µg/L		0.05	<0.05	<0.05	<0.05
Endosulfan	ug/L		0.05	<0.05	<0.05	<0.05
alpha - chlordane	µg/L		0.1	<0.1	<0.1	<0.1
gamma-Chlordane	µg/L		0.2	<0.2	<0.2	<0.2
Chlordane	ug/L		0.04	<0.04	<0.04	<0.04
op'-DDE	µg/L		0.01	<0.01	<0.01	<0.01
pp'-DDE	µg/L		0.01	<0.01	<0.01	<0.01
DDE	ug/L		0.01	<0.01	<0.01	<0.01
op'-DDD	µg/L		0.05	<0.05	<0.05	<0.05
pp'-DDD	µg/L		0.05	<0.05	<0.05	<0.05
DDD	ug/L		0.05	<0.05	<0.05	<0.05
op'-DDT	µg/L		0.04	<0.04	<0.04	<0.04
pp'-DDT	µg/L		0.05	<0.05	<0.05	<0.05
DDT	ug/L		0.04	<0.04	<0.04	<0.04
Dieldrin	ug/L		0.02	<0.02	<0.02	<0.02
Endrin	ug/L		0.05	<0.05	<0.05	<0.05
Methoxychlor	ug/L		0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	ug/L		0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L		0.01	<0.01	<0.01	<0.01
Hexachloroethane	ug/L		0.01	<0.01	<0.01	<0.01
Aroclor 1242	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1248	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1254	ug/L		0.1	<0.1	<0.1	<0.1
Aroclor 1260	ug/L		0.1	<0.1	<0.1	<0.1
Polychlorinated Biphenyls	ug/L		0.1	<0.1	<0.1	<0.1

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:	MW106	MW4-23	MW111-20
		SAMPLE TYPE:	Water	Water	Water
		DATE SAMPLED:	2023-04-05	2023-04-05	2023-04-05
Surrogate	Unit	Acceptable Limits	4900042	4900057	4900058
TCMX	%	50-140	112	92	88
Decachlorobiphenyl	%	50-140	116	113	103

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.
PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Oil and Grease (Total) in water

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Total Oil and Grease in water	mg/L		0.5	1.20	<0.5	1.59

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Phenoxy Acid Herbicides (Water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	**Unit**	**G / S**	**RDL**	**4900042**	**4900057**	**4900058**
2,4-D	µg/L		0.5	<0.5	<0.5	<0.5
2,4,5-T	µg/L		0.5	<0.5	<0.5	<0.5
2,4,5-TP	µg/L		0.5	<0.5	<0.5	<0.5
Dicamba	µg/L		0.5	<0.5	<0.5	<0.5
Dichlorprop	µg/L		0.5	<0.5	<0.5	<0.5
Dinoseb	µg/L		0.5	<0.5	<0.5	<0.5
Picloram	µg/L		0.5	<0.5	<0.5	<0.5
Diclofop-methyl	µg/L		0.5	<0.5	<0.5	<0.5
2,3,4,6-Tetrachlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L		0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L		0.5	<0.5	<0.5	<0.5
Bromoxynil	µg/L		0.3	<0.3	<0.3	<0.3
MCPA	µg/L		5.0	<5.0	<5.0	<5.0
MCPP	µg/L		5.0	<5.0	<5.0	<5.0
Pentachlorophenol	µg/L		0.1	<0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**				
DCAA	%	50-140		90	80	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
1-Methylnaphthalene, Ultra-low	µg/L		0.001	0.008	0.011	0.004
2-Methylnaphthalene, Ultra-low	µg/L		0.001	0.016	0.018	0.006
Acenaphthene, Ultra-low	µg/L		0.001	0.014	<0.001	<0.001
Acenaphthylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Acridine, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(a)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(b)fluoranthene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(j+k)fluoranthene	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(e)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Benzo(ghi)perylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Chrysene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Fluoranthene, Ultra-low	µg/L		0.001	0.073	0.025	0.025
Fluorene, Ultra-low	µg/L		0.001	0.023	0.007	0.008
Indeno(1,2,3-cd)pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Naphthalene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Perylene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Phenanthrene, Ultra-low	µg/L		0.001	0.158	0.042	0.053
Pyrene, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Quinoline, Ultra-low	µg/L		0.001	<0.001	<0.001	<0.001
Sediment				YES	YES	TRACE
PAH - Extraction (Ultra-low)				Y	Y	Y
Surrogate	**Unit**	**Acceptable Limits**				
Naphthalene-d8	%	50-140		57	68	65
Terphenyl-d14	%	50-140		**45**	**44**	52
Pyrene-d10	%	50-140		65	79	73

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2023-04-05 **DATE REPORTED: 2023-04-25**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900057 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Surrogate not within acceptance limits due to matrix interference. Analysis was repeated with similar results.

4900058 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Halifax (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Resin and Fatty acid (water)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	**Unit**	**G / S**	**RDL**	**4900042**	**4900057**	**4900058**
Linoleic acid	µg/L		10	<10	<10	<10
Linolenic acid	µg/L		10	<10	<10	<10
Oleic acid	µg/L		10	<10	<10	<10
9,10-Dichlorostearic acid	µg/L		10	<10	<10	<10
Stearic acid	µg/L		10	<10	12	43
Fatty acid total	µg/L		10	<10	12	43
Pimaric acid	µg/L		10	<10	<10	<10
Sandaracopimaric acid	µg/L		10	<10	<10	<10
Isopimaric acid	µg/L		10	<10	<10	<10
Palustric acid	µg/L		10	<10	<10	<10
Levopimaric acid	µg/L		10	<10	<10	<10
Dehydroabietic acid	µg/L		10	<10	<10	<10
Abietic acid	µg/L		10	<10	<10	<10
Neoabietic acid	µg/L		10	<10	<10	<10
14-Chlorodehydroabietic acid	µg/L		10	<10	<10	<10
12-Chlorodehydroabietic acid	µg/L		10	<10	<10	<10
12,14-Dichlorodehydroabietic acid	µg/L		10	<10	<10	<10
Resin acid total	µg/L		10	<10	<10	<10
Resin and Fatty acid total	µg/L		10	<10	12	43
Surrogate	**Unit**	**Acceptable Limits**				
O-methylpodocarpic	%	40-140		54	63	64

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range or reduce matrix interference. Sample was analyzed in Montreal.

Analysis performed at AGAT Montréal (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories
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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Triazine Pesticides [water]

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Trifluralin	µg/L		1.0	<1.0	<1.0	<1.0
Simazine	µg/L		1.0	<1.0	<1.0	<1.0
Atrazine	µg/L		0.5	<0.5	<0.5	<0.5
Metribuzin	µg/L		0.25	<0.25	<0.25	<0.25
Prometryne	µg/L		0.25	<0.25	<0.25	<0.25
Metolachlor	µg/L		0.11	<0.11	<0.11	<0.11
Alachlor	µg/L		0.5	<0.5	<0.5	<0.5
Cyanazine	µg/L		1.0	<1.0	<1.0	<1.0
Surrogate	**Unit**	**Acceptable Limits**				
Triphenyl phosphate (surr)	%	30-130		67	88	95

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

4900042-4900058 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Dichlorodifluoromethane	µg/L		0.40	<0.40	<0.40	<0.40
Chloromethane	µg/L	700	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.9	0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L	100	0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L	200	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	200	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	200	0.20	8.85	<0.20	<0.20
Chloroform	µg/L		0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	100	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	10	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	<0.20	<0.20	<0.20
Benzene	µg/L	100	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.7	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	20	0.20	1.63	1.24	<0.20
Bromodichloromethane	µg/L	200	0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L	7	0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L	800	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L	40	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	5	0.10	<0.10	<0.10	<0.10

Certified By:

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Tetrachloroethylene	µg/L	50	0.20	0.32	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	20	0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	15	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	8	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L	32	0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	60	0.10	<0.10	<0.10	<0.10
Styrene	µg/L	4	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	70	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40	0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	2.5	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	2.5	0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		100	87	101
4-Bromofluorobenzene	% Recovery	50-140		76	84	72

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

4900042-4900058 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Dissolved Oxygen in Water- mg/L

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Dissolved Oxygen	mg/L		0.05	9.13	4.60	7.16

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Dissolved Oxygen was measured on as received sample. Due to the potential for rapid change in sample equilibrium chemistry laboratory results may differ from field measured results.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PWQO Parameters

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23		MW111-20
		SAMPLE TYPE:		Water	Water		Water
		DATE SAMPLED:		2023-04-05	2023-04-05		2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	RDL	4900058
pH	pH Units	6.5-8.5	NA	7.70	7.74	NA	7.79
Alkalinity (as CaCO3)	mg/L		5	635	551	5	63
Ammonia as N	mg/L		0.02	<0.02	<0.02	0.02	4.14
Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.000002	<0.000002	<0.000002	0.000002	**0.166**
Total Phosphorus	mg/L	*	0.02	0.47	1.26	0.02	1.34
Turbidity	NTU		0.5	1140	1140	0.5	50.0
Cyanide, WAD	mg/L	0.005	0.002	<0.002	<0.002	0.002	<0.002
Sulphide	mg/L		0.01	<0.01	<0.01	0.01	<0.01
Phenols	mg/L	0.001	**0.002**	**0.017**	**0.013**	0.001	**0.002**
Aluminum-dissolved	mg/L	*	0.004	<0.004	<0.004	0.004	<0.004
Total Antimony	mg/L	0.020	0.002	<0.002	<0.002	0.001	0.001
Total Arsenic	mg/L	0.1	0.006	0.009	0.010	0.003	0.004
Total Beryllium	mg/L	*	0.002	<0.002	<0.002	0.001	<0.001
Total Boron	mg/L	0.2	0.020	0.133	**1.17**	0.010	**6.52**
Total Cadmium	mg/L	0.0002	0.0002	<0.0002	<0.0002	0.0001	<0.0001
Total Chromium	mg/L		0.006	0.030	0.026	0.003	0.003
Total Cobalt	mg/L	0.0009	**0.0010**	**0.0077**	**0.0126**	0.0005	0.0009
Total Copper	mg/L	0.005	0.002	**0.028**	**0.015**	0.001	0.004
Total Iron	mg/L	0.3	0.020	**20.2**	**23.3**	0.010	**2.83**
Total Lead	mg/L	*	0.002	0.014	0.012	0.001	0.003
Dissolved Mercury	mg/L	0.0002	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Total Molybdenum	mg/L	0.040	0.004	<0.004	0.007	0.002	0.030
Total Nickel	mg/L	0.025	0.006	**0.026**	**0.034**	0.003	0.005
Total Selenium	mg/L	0.1	0.004	<0.004	<0.004	0.002	0.007
Total Silver	mg/L	0.0001	**0.0002**	<0.0002	<0.0002	0.0001	<0.0001
Total Thallium	mg/L	0.0003	**0.0006**	<0.0006	<0.0006	0.0003	<0.0003
Total Tungsten	mg/L	0.030	0.020	<0.020	<0.020	0.010	<0.010
Total Uranium	mg/L	0.005	0.004	**0.027**	**0.015**	0.002	<0.002
Total Vanadium	mg/L	0.006	0.004	**0.035**	**0.036**	0.002	0.003
Total Zinc	mg/L	0.030	**0.040**	**0.059**	**0.078**	0.020	0.028

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PWQO Parameters

DATE RECEIVED: 2023-04-05

DATE REPORTED: 2023-04-25

		SAMPLE DESCRIPTION:		MW106	MW4-23		MW111-20
		SAMPLE TYPE:		Water	Water		Water
		DATE SAMPLED:		2023-04-05	2023-04-05		2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	RDL	4900058
Total Zirconium	mg/L	0.004	**0.008**	<0.008	**0.010**	0.004	<0.004
Lab Filtration Aluminum Dissolved				2023/04/11	2023/04/11		2023/04/11
Lab Filtration mercury				2023/04/11	2023/04/11		2023/04/11

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

4900042-4900057 Dilution required, RDL has been increased accordingly.
Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

4900058 Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Residual Chlorine

DATE RECEIVED: 2023-04-05 **DATE REPORTED: 2023-04-25**

		SAMPLE DESCRIPTION:		MW106	MW4-23	MW111-20
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-04-05	2023-04-05	2023-04-05
Parameter	Unit	G / S	RDL	4900042	4900057	4900058
Total Residual Chlorine	mg/L		0.01	0.27	0.11	0.17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4900042-4900058 Due to the instability of chlorine in aqueous solutions, the results reported may be biased low and should be reviewed with discretion.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Exceedance Summary

AGAT WORK ORDER: 23H012142

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
4900042	MW106	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.017
4900042	MW106	ON PWQO	PWQO Parameters	Total Cobalt	mg/L	0.0009	0.0077
4900042	MW106	ON PWQO	PWQO Parameters	Total Copper	mg/L	0.005	0.028
4900042	MW106	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	20.2
4900042	MW106	ON PWQO	PWQO Parameters	Total Nickel	mg/L	0.025	0.026
4900042	MW106	ON PWQO	PWQO Parameters	Total Uranium	mg/L	0.005	0.027
4900042	MW106	ON PWQO	PWQO Parameters	Total Vanadium	mg/L	0.006	0.035
4900042	MW106	ON PWQO	PWQO Parameters	Total Zinc	mg/L	0.030	0.059
4900057	MW4-23	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.013
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Boron	mg/L	0.2	1.17
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Cobalt	mg/L	0.0009	0.0126
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Copper	mg/L	0.005	0.015
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	23.3
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Nickel	mg/L	0.025	0.034
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Uranium	mg/L	0.005	0.015
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Vanadium	mg/L	0.006	0.036
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Zinc	mg/L	0.030	0.078
4900057	MW4-23	ON PWQO	PWQO Parameters	Total Zirconium	mg/L	0.004	0.010
4900058	MW111-20	ON PWQO	PWQO Parameters	Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.166
4900058	MW111-20	ON PWQO	PWQO Parameters	Phenols	mg/L	0.001	0.002
4900058	MW111-20	ON PWQO	PWQO Parameters	Total Boron	mg/L	0.2	6.52
4900058	MW111-20	ON PWQO	PWQO Parameters	Total Iron	mg/L	0.3	2.83

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Microbiology Analysis

RPT Date: Apr 25, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
E. Coli (MI-Agar)															
Escherichia coli	4900042	4900042	0	0	NA										

Comments: NA - % RPD Not Applicable.

Certified By:

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Trace Organics Analysis

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Oil and Grease (Total) in water															
Total Oil and Grease in water	4883505		< 0.5	< 0.5	NA	< 0.5	99%	70%	130%	97%	70%	130%	94%	70%	130%
OC Pesticides + PCBs (Water)															
Gamma-Hexachlorocyclohexane	4903389		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	103%	50%	140%	97%	50%	140%
Heptachlor	4903389		< 0.01	< 0.01	NA	< 0.01	112%	50%	140%	109%	50%	140%	107%	50%	140%
Aldrin	4903389		< 0.01	< 0.01	NA	< 0.01	101%	50%	140%	105%	50%	140%	103%	50%	140%
Heptachlor Epoxide	4903389		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	116%	50%	140%	101%	50%	140%
Endosulfan I	4903389		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	97%	50%	140%	89%	50%	140%
Endosulfan II	4903389		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	109%	50%	140%	113%	50%	140%
alpha - chlordane	4903389		< 0.1	< 0.1	NA	< 0.1	102%	50%	140%	105%	50%	140%	102%	50%	140%
gamma-Chlordane	4903389		< 0.2	< 0.2	NA	< 0.2	105%	50%	140%	103%	50%	140%	108%	50%	140%
op'-DDE	4903389		< 0.01	< 0.01	NA	< 0.01	114%	50%	140%	114%	50%	140%	108%	50%	140%
pp'-DDE	4903389		< 0.01	< 0.01	NA	< 0.01	100%	50%	140%	105%	50%	140%	102%	50%	140%
op'-DDD	4903389		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	106%	50%	140%	111%	50%	140%
pp'-DDD	4903389		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	93%	50%	140%	100%	50%	140%
op'-DDT	4903389		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	105%	50%	140%	109%	50%	140%
pp'-DDT	4903389		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	110%	50%	140%	104%	50%	140%
Dieldrin	4903389		< 0.02	< 0.02	NA	< 0.02	100%	50%	140%	103%	50%	140%	109%	50%	140%
Endrin	4903389		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	104%	50%	140%	112%	50%	140%
Methoxychlor	4903389		< 0.04	< 0.04	NA	< 0.04	113%	50%	140%	103%	50%	140%	106%	50%	140%
Hexachlorobenzene	4903389		< 0.01	< 0.01	NA	< 0.01	109%	50%	140%	97%	50%	140%	108%	50%	140%
Hexachlorobutadiene	4903389		< 0.01	< 0.01	NA	< 0.01	107%	50%	140%	86%	50%	140%	83%	50%	140%
Hexachloroethane	4903389		< 0.01	< 0.01	NA	< 0.01	93%	50%	140%	99%	50%	140%	98%	50%	140%
Aroclor 1242	4903389		< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	4903389		< 0.1	< 0.1	NA	< 0.1	103%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	4903389		< 0.1	< 0.1	NA	< 0.1	98%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	4903389		< 0.1	< 0.1	NA	< 0.1	106%	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	4903389		< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	107%	60%	140%	108%	60%	140%
Volatile Organic Compounds in Water (ug/L)															
Dichlorodifluoromethane	4900057	4900057	< 0.40	< 0.40	NA	< 0.40	114%	50%	140%	100%	50%	140%	71%	50%	140%
Chloromethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	117%	50%	140%	89%	50%	140%
Vinyl Chloride	4900057	4900057	< 0.17	< 0.17	NA	< 0.17	100%	50%	140%	119%	50%	140%	105%	50%	140%
Bromomethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	111%	50%	140%	83%	50%	140%
Chloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	112%	50%	140%	96%	50%	140%
Trichlorofluoromethane	4900057	4900057	< 0.40	< 0.40	NA	< 0.40	92%	50%	140%	88%	50%	140%	99%	50%	140%
Acetone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	98%	50%	140%	89%	50%	140%	90%	50%	140%
1,1-Dichloroethylene	4900057	4900057	< 0.2	< 0.2	NA	< 0.2	94%	50%	140%	90%	60%	130%	88%	50%	140%
Methylene Chloride	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	88%	50%	140%	100%	60%	130%	109%	50%	140%
trans- 1,2-dichloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	89%	60%	130%	82%	50%	140%

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PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl tert-butyl ether	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	81%	60%	130%	90%	50%	140%
1,1-Dichloroethane	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	93%	60%	130%	105%	50%	140%
Methyl Ethyl Ketone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	89%	50%	140%	113%	50%	140%	93%	50%	140%
cis- 1,2-Dichloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	77%	60%	130%	109%	50%	140%
Chloroform	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	86%	60%	130%	114%	50%	140%
1,2-Dichloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	118%	50%	140%	99%	60%	130%	116%	50%	140%
1,1,1-Trichloroethane	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	111%	50%	140%	92%	60%	130%	96%	50%	140%
Carbon Tetrachloride	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	82%	60%	130%	108%	50%	140%
Benzene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	97%	60%	130%	92%	50%	140%
1,2-Dichloropropane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	108%	60%	130%	111%	50%	140%
Trichloroethylene	4900057	4900057	1.24	1.43	14.2%	< 0.20	90%	50%	140%	77%	60%	130%	114%	50%	140%
Bromodichloromethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	96%	60%	130%	117%	50%	140%
cis-1,3-Dichloropropene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	103%	60%	130%	84%	50%	140%
Methyl Isobutyl Ketone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	104%	50%	140%	109%	50%	140%	100%	50%	140%
trans-1,3-Dichloropropene	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	93%	50%	140%	80%	60%	130%	78%	50%	140%
1,1,2-Trichloroethane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	106%	60%	130%	116%	50%	140%
Toluene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	90%	60%	130%	111%	50%	140%
2-Hexanone	4900057	4900057	< 1.0	< 1.0	NA	< 1.0	100%	50%	140%	78%	50%	140%	95%	50%	140%
Dibromochloromethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	82%	60%	130%	85%	50%	140%
Ethylene Dibromide	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	95%	60%	130%	98%	50%	140%
Tetrachloroethylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	101%	60%	130%	90%	50%	140%
1,1,1,2-Tetrachloroethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	79%	60%	130%	92%	50%	140%
Chlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	86%	60%	130%	110%	50%	140%
Ethylbenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	79%	60%	130%	109%	50%	140%
m & p-Xylene	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	87%	60%	130%	117%	50%	140%
Bromoform	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	78%	50%	140%	78%	60%	130%	79%	50%	140%
Styrene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	81%	60%	130%	84%	50%	140%
1,1,2,2-Tetrachloroethane	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	110%	60%	130%	104%	50%	140%
o-Xylene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	90%	60%	130%	117%	50%	140%
1,3-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	80%	60%	130%	100%	50%	140%
1,4-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	79%	60%	130%	93%	50%	140%
1,2-Dichlorobenzene	4900057	4900057	< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	76%	60%	130%	90%	50%	140%
1,2,4-Trichlorobenzene	4900057	4900057	< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	99%	60%	130%	97%	50%	140%
n-Hexane	4900057	4900057	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	115%	60%	130%	120%	50%	140%
Diquat/Paraquat															
Diquat			< 5	< 5	NA	< 5	101%	50%	140%	86%	50%	140%	86%	50%	140%
Paraquat			< 1	< 1	NA	< 1	109%	50%	140%	92%	50%	140%	93%	50%	140%
Carbamate Pesticides (Water)															
Aldicarb			< 2.0	< 2.0	NA	< 2.0	103%	50%	140%	90%	50%	140%	101%	50%	140%

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Trace Organics Analysis (Continued)

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PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Bendiocarb			< 2	< 2	NA	< 2	85%	50%	140%	94%	50%	140%	95%	50%	140%
Carbofuran			< 5	< 5	NA	< 5	85%	50%	140%	94%	50%	140%	95%	50%	140%
Carbaryl			< 5	< 5	NA	< 5	75%	50%	140%	111%	50%	140%	110%	50%	140%
Diuron			< 10	< 10	NA	< 10	94%	50%	140%	101%	50%	140%	101%	50%	140%
Triallate			< 1	< 1	NA	< 1	99%	50%	140%	82%	50%	140%	90%	50%	140%
Temephos			< 10	< 10	NA	< 10	102%	60%	130%	103%	60%	130%	104%	60%	130%
Triazine Pesticides [water]															
Trifluralin	4900042		<0.2	<0.2	NA	< 1.0	89%	50%	140%	111%	50%	140%	113%	50%	140%
Simazine	4900042		<0.5	<0.5	NA	< 1.0	85%	50%	140%	92%	50%	140%	79%	50%	140%
Atrazine	4900042		<0.5	<0.5	NA	< 0.5	84%	50%	140%	92%	50%	140%	112%	50%	140%
Metribuzin	4900042		<0.25	<0.25	NA	< 0.25	79%	50%	140%	111%	50%	140%	104%	50%	140%
Prometryne	4900042		<0.25	<0.25	NA	< 0.25	82%	50%	140%	83%	50%	140%	110%	50%	140%
Metolachlor	4900042		<0.11	<0.11	NA	< 0.11	105%	50%	140%	91%	50%	140%	112%	50%	140%
Alachlor	4900042		<0.5	<0.5	NA	< 0.5	79%	50%	140%	80%	50%	140%	88%	50%	140%
Cyanazine	4900042		<0.5	<0.5	NA	< 1.0	85%	50%	140%	81%	50%	140%	73%	50%	140%
Base Neutrals and Acids [water]															
Naphthalene	4867188		< 0.30	< 0.30	NA	< 0.30	92%	50%	140%	96%	50%	140%	87%	50%	140%
Acenaphthylene	4867188		< 0.31	< 0.31	NA	< 0.31	91%	50%	140%	105%	50%	140%	82%	50%	140%
Acenaphthene	4867188		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	93%	50%	140%	82%	50%	140%
Fluorene	4867188		< 0.31	< 0.31	NA	< 0.31	69%	50%	140%	87%	50%	140%	89%	50%	140%
Phenanthrene	4867188		< 0.32	< 0.32	NA	< 0.32	78%	50%	140%	103%	50%	140%	92%	50%	140%
Anthracene	4867188		< 0.30	< 0.30	NA	< 0.30	93%	50%	140%	94%	50%	140%	91%	50%	140%
Fluoranthene	4867188		< 0.27	< 0.27	NA	< 0.27	107%	50%	140%	103%	50%	140%	101%	50%	140%
Pyrene	4867188		< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	72%	50%	140%	78%	50%	140%
Benzo(a)anthracene	4867188		< 0.20	< 0.20	NA	< 0.20	65%	50%	140%	75%	50%	140%	76%	50%	140%
Chrysene	4867188		< 0.27	< 0.27	NA	< 0.27	94%	50%	140%	88%	50%	140%	76%	50%	140%
Benzo(b)fluoranthene	4867188		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	89%	50%	140%	97%	50%	140%
Benzo(k)fluoranthene	4867188		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	81%	50%	140%	74%	50%	140%
Benzo(a)pyrene	4867188		< 0.01	< 0.01	NA	< 0.01	75%	50%	140%	79%	50%	140%	65%	50%	140%
Indeno(1,2,3-cd)pyrene	4867188		< 0.20	< 0.20	NA	< 0.20	111%	50%	140%	92%	50%	140%	98%	50%	140%
Dibenzo(a,h)anthracene	4867188		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	84%	50%	140%	90%	50%	140%
Benzo(g,h,i)perylene	4867188		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	97%	50%	140%	101%	50%	140%
Phenol	4867188		< 1.0	< 1.0	NA	< 1.0	71%	50%	140%	64%	50%	140%	67%	50%	140%
Bis(2-chloroethyl)ether	4867188		< 0.5	< 0.5	NA	< 0.5	68%	50%	140%	80%	50%	140%	89%	50%	140%
2-Chlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	65%	50%	140%	73%	50%	140%	78%	50%	140%
o-Cresol	4867188		< 0.5	< 0.5	NA	< 0.5	72%	50%	140%	66%	50%	140%	77%	50%	140%
Bis(2-chloroisopropyl)ether	4867188		< 0.5	< 0.5	NA	< 0.5	87%	50%	140%	80%	50%	140%	102%	50%	140%
m&p-Cresol	4867188		< 0.5	< 0.5	NA	< 0.5	95%	50%	140%	79%	50%	140%	68%	50%	140%
Hexachloroethane	4867188		< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	116%	50%	140%	107%	50%	140%

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Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4-Dimethylphenol	4867188		< 0.5	< 0.5	NA	< 0.5	66%	30%	130%	88%	30%	130%	81%	30%	130%
2,4-Dichlorophenol	4867188		< 0.3	< 0.3	NA	< 0.3	82%	50%	140%	73%	50%	140%	98%	50%	140%
1,2,4-Trichlorobenzene	4867188		< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	70%	50%	140%	65%	50%	140%
p-Chloroaniline	4867188		< 1.0	< 1.0	NA	< 1.0	66%	50%	140%	89%	50%	140%	74%	50%	140%
2,4,6-Trichlorophenol	4867188		< 0.2	< 0.2	NA	< 0.2	76%	50%	140%	80%	50%	140%	97%	50%	140%
2,4,5-Trichlorophenol	4867188		< 0.2	< 0.2	NA	< 0.2	80%	50%	140%	73%	50%	140%	67%	50%	140%
1,1-Biphenyl	4867188		< 0.5	< 0.5	NA	< 0.5	73%	50%	140%	65%	50%	140%	89%	50%	140%
Dimethyl phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	68%	50%	140%	86%	50%	140%	105%	50%	140%
2,6-Dinitrotoluene	4867188		< 0.5	< 0.5	NA	< 0.5	75%	50%	140%	98%	50%	140%	70%	50%	140%
2,4-Dinitrotoluene	4867188		< 0.5	< 0.5	NA	< 0.5	74%	50%	140%	76%	50%	140%	65%	50%	140%
2,3,4,6-Tetrachlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	96%	50%	140%	88%	50%	140%
Diethyl phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	65%	50%	140%	77%	50%	140%
Hexachlorobenzene	4867188		< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	87%	50%	140%	81%	50%	140%
Pentachlorophenol	4867188		< 0.5	< 0.5	NA	< 0.5	65%	50%	140%	98%	50%	140%	73%	50%	140%
3,3'-dichlorobenzidine	4867188		< 0.5	< 0.5	NA	< 0.5	72%	30%	130%	73%	30%	130%	108%	30%	130%
Bis(2-Ethylhexyl)phthalate	4867188		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	105%	50%	140%	67%	50%	140%
2,4-Dinitrophenol	4867188		< 10	< 10	NA	< 10	75%	30%	130%	116%	30%	130%	89%	30%	130%
Phenoxy Acid Herbicides (Water)															
2,4-D		TW	< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	92%	50%	140%	82%	50%	140%
2,4,5-T		TW	< 0.5	< 0.5	NA	< 0.5	80%	50%	140%	85%	50%	140%	82%	50%	140%
2,4,5-TP		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	84%	50%	140%	80%	50%	140%
Dicamba		TW	< 0.5	< 0.5	NA	< 0.5	96%	50%	140%	72%	50%	140%	75%	50%	140%
Dichlorprop		TW	< 0.5	< 0.5	NA	< 0.5	80%	50%	140%	78%	50%	140%	70%	50%	140%
Dinoseb		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	82%	50%	140%	70%	50%	140%
Picloram		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	80%	50%	140%	71%	50%	140%
Diclofop-methyl		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	76%	50%	140%	75%	50%	140%
2,3,4,6-Tetrachlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	70%	50%	140%	NA	50%	140%
2,4-Dichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	90%	50%	140%	81%	50%	140%	NA	50%	140%
2,4,5-Trichlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	84%	50%	140%	NA	50%	140%
2,4,6-Trichlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	76%	50%	140%	NA	50%	140%
Bromoxynil		TW	< 0.3	< 0.3	NA	< 0.3	99%	50%	140%	91%	50%	140%	NA	50%	140%
MCPA		TW	< 5.0	< 5.0	NA	< 5.0	86%	50%	140%	82%	50%	140%	72%	50%	140%
MCPP		TW	< 5.0	< 5.0	NA	< 5.0	98%	50%	140%	75%	50%	140%	78%	50%	140%
Pentachlorophenol		TW	< 0.1	< 0.1	NA	< 0.1	100%	50%	140%	95%	50%	140%	NA	50%	140%
Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level															
1-Methylnaphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	92%	50%	140%	107%	50%	140%	122%	50%	140%
2-Methylnaphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	84%	50%	140%	95%	50%	140%	109%	50%	140%
Acenaphthene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	84%	50%	140%	109%	50%	140%	122%	50%	140%
Acenaphthylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	79%	50%	140%	102%	50%	140%	112%	50%	140%

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Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Acridine, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	124%	50%	140%	123%	50%	140%
Anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	113%	50%	140%	122%	50%	140%
Benzo(a)anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	115%	50%	140%	120%	50%	140%
Benzo(a)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	74%	50%	140%	109%	50%	140%	112%	50%	140%
Benzo(b)fluoranthene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	88%	50%	140%	92%	50%	140%	114%	50%	140%
Benzo(j+k)fluoranthene	1	4906036	< 0.001	< 0.001	NA	< 0.001	89%	50%	140%	117%	50%	140%	120%	50%	140%
Benzo(e)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	125%	50%	140%	125%	50%	140%
Benzo(ghi)perylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	80%	50%	140%	120%	50%	140%	115%	50%	140%
Chrysene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	129%	50%	140%	137%	50%	140%
Dibenzo(a,h)anthracene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	74%	50%	140%	109%	50%	140%	106%	50%	140%
Fluoranthene, Ultra-low	1	4906036	0.174	< 0.001	NA	< 0.001	86%	50%	140%	128%	50%	140%	137%	50%	140%
Fluorene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	82%	50%	140%	113%	50%	140%	127%	50%	140%
Indeno(1,2,3-cd)pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	71%	50%	140%	98%	50%	140%	103%	50%	140%
Naphthalene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	103%	50%	140%	114%	50%	140%
Perylene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	81%	50%	140%	121%	50%	140%	116%	50%	140%
Phenanthrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	86%	50%	140%	126%	50%	140%	137%	50%	140%
Pyrene, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	90%	50%	140%	136%	50%	140%	139%	50%	140%
Quinoline, Ultra-low	1	4906036	< 0.001	< 0.001	NA	< 0.001	85%	50%	140%	125%	50%	140%	130%	50%	140%
Sediment	1	4906036	<	<	NA	<									

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution. Matrix spike performed on a different sample than the duplicate.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.
Duplicate: More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits.

Resin and Fatty acid (water)

Fatty acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	71%	70%	130%	NA	70%	130%
Resin acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	86%	70%	130%	NA	70%	130%
Resin and Fatty acid total	4900042	NA	NA	NA	0.0%	< 10	NA	70%	130%	79%	70%	130%	NA	70%	130%
O-methylpodocarpic	4900042	NA	NA	NA	0.0%	57	NA	40%	140%	70%	40%	140%	NA	40%	140%

Comments: The QC criteria are only applicable to the total resins and total fatty acids.

NA : Non applicable.

If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

NA in the spike blank or CRM indicates that it is not required by the procedure.

Glycols Analysis in Water

Propylene Glycol	671	4900042	<10	<10	NA	< 10	106%	50%	140%	87%	50%	140%	104%	50%	140%
Monoethylene Glycol	671	4900042	<8	<8	NA	< 8	107%	50%	140%	87%	50%	140%	106%	50%	140%
Diethylene Glycol	671	4900042	<5	<5	NA	< 5	103%	50%	140%	92%	50%	140%	105%	50%	140%
Triethylene Glycol	671	4900042	<8	<8	NA	< 8	99%	50%	140%	96%	50%	140%	106%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Trace Organics Analysis (Continued)

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Tetraethylene Glycol	671	4900042	<10	<10	NA	< 10	90%	50%	140%	88%	50%	140%	89%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Ethanolamines in Water by HPLC - Low Level

Diethanolamine (DEA)	1137	4896467	<0.04	<0.04	NA	< 0.04	98%	80%	120%	100%	70%	130%	104%	60%	140%
Ethanolamine (MEA)	1137	4896467	<0.05	<0.05	NA	< 0.05	103%	80%	120%	104%	70%	130%	103%	60%	140%
Diisopropanolamine (DIPA)	1137	4896467	<0.1	<0.1	NA	< 0.1	107%	80%	120%	110%	70%	130%	100%	60%	140%
Monoisopropanolamine (MIPA)	1137	4896467	<0.1	<0.1	NA	< 0.1	95%	80%	120%	97%	70%	130%	94%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By:

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AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

Water Analysis

RPT Date: Apr 25, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Residual Chlorine															
Total Residual Chlorine	4900996		0.03	0.04	NA	< 0.01	92%	80%	120%	95%	90%	110%	96%	80%	120%
PWQO Parameters															
pH	4900964		7.96	8.06	1.2%	NA	100%	90%	110%						
Alkalinity (as CaCO3)	4900964		68	70	2.9%	< 5	95%	80%	120%						
Ammonia as N	4898634		<0.02	<0.02	NA	< 0.02	100%	70%	130%	101%	80%	120%	95%	70%	130%
Total Phosphorus	4900042	4900042	0.47	0.47	0.0%	< 0.02	102%	70%	130%	100%	80%	120%	97%	70%	130%
Turbidity	4900964		1.2	1.8	NA	< 0.5	101%	80%	120%						
Cyanide, WAD	4900360		<0.002	<0.002	NA	< 0.002	91%	70%	130%	95%	80%	120%	93%	70%	130%
Sulphide	4904651		<0.01	<0.01	NA	< 0.01	102%	90%	110%	102%	90%	110%	99%	80%	120%
Phenols	4898643		0.002	0.001	NA	< 0.001	99%	90%	110%	99%	90%	110%	101%	80%	120%
Aluminum-dissolved	4906489		<0.004	<0.004	NA	< 0.004	98%	70%	130%	102%	80%	120%	97%	70%	130%
Total Antimony	4900987		<0.001	<0.001	NA	< 0.001	103%	70%	130%	110%	80%	120%	103%	70%	130%
Total Arsenic	4900987		<0.003	<0.003	NA	< 0.003	97%	70%	130%	102%	80%	120%	99%	70%	130%
Total Beryllium	4900987		<0.001	<0.001	NA	< 0.001	98%	70%	130%	100%	80%	120%	100%	70%	130%
Total Boron	4900987		0.017	0.020	NA	< 0.010	99%	70%	130%	103%	80%	120%	99%	70%	130%
Total Cadmium	4900987		<0.0001	<0.0001	NA	< 0.0001	99%	70%	130%	101%	80%	120%	100%	70%	130%
Total Chromium	4900987		<0.003	<0.003	NA	< 0.003	99%	70%	130%	103%	80%	120%	103%	70%	130%
Total Cobalt	4900987		<0.0005	<0.0005	NA	< 0.0005	103%	70%	130%	104%	80%	120%	103%	70%	130%
Total Copper	4900987		0.002	0.002	NA	< 0.001	101%	70%	130%	96%	80%	120%	99%	70%	130%
Total Iron	4900987		0.073	0.076	4.0%	< 0.010	106%	70%	130%	104%	80%	120%	101%	70%	130%
Total Lead	4900987		<0.001	<0.001	NA	< 0.001	106%	70%	130%	102%	80%	120%	94%	70%	130%
Dissolved Mercury	4900042	4900042	<0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	97%	80%	120%	87%	70%	130%
Total Molybdenum	4900987		0.003	<0.002	NA	< 0.002	104%	70%	130%	111%	80%	120%	102%	70%	130%
Total Nickel	4900987		<0.003	<0.003	NA	< 0.003	100%	70%	130%	101%	80%	120%	102%	70%	130%
Total Selenium	4900987		<0.002	<0.002	NA	< 0.002	96%	70%	130%	102%	80%	120%	93%	70%	130%
Total Silver	4900987		0.0001	<0.0001	NA	< 0.0001	108%	70%	130%	101%	80%	120%	93%	70%	130%
Total Thallium	4900987		<0.0003	<0.0003	NA	< 0.0003	105%	70%	130%	105%	80%	120%	97%	70%	130%
Total Tungsten	4900987		<0.010	<0.010	NA	< 0.010	99%	70%	130%	95%	80%	120%	95%	70%	130%
Total Uranium	4900987		<0.002	<0.002	NA	< 0.002	107%	70%	130%	97%	80%	120%	95%	70%	130%
Total Vanadium	4900987		<0.002	<0.002	NA	< 0.002	97%	70%	130%	103%	80%	120%	103%	70%	130%
Total Zinc	4900987		<0.020	0.030	NA	< 0.020	108%	70%	130%	117%	80%	120%	106%	70%	130%
Total Zirconium	4900987		<0.004	<0.004	NA	< 0.004	117%	70%	130%	112%	80%	120%	106%	70%	130%

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: Iris Verástegui

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluorene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenanthrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dibenzo(a,h)anthracene	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Chlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
o-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
m&p-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachloroethane	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dimethylphenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
p-Chloroaniline	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS

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http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Hexachlorobutadiene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-and 1-methyl Napthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,1-Biphenyl	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dimethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,6-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,3,4,6-Tetrachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Diethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pentachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene-d12	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Sediment			N/A
Aldicarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Bendiocarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbofuran	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbaryl	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diuron	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Triallate	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Temephos	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diquat	ORG-91-5102	EPA 549.1	HPLC
Paraquat	ORG-91-5102	EPA 549.1	HPLC
Diethanolamine (DEA)	TO-2240	"In house" developed method	HPLC/UV
Ethanolamine (MEA)	TO-2240	"In house" developed method	HPLC/UV
Diisopropanolamine (DIPA)	TO-2240	"In house" developed method	HPLC/UV
Monoisopropanolamine (MIPA)	TO-2240	"In house" developed method	HPLC/UV
Propylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Monoethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Diethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Triethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Tetraethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Heptanol	TO-1410	EPA SW-846 8015	GC/FID
Gamma-Hexachlorocyclohexane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor Epoxide	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan I	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan II	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
alpha - chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
gamma-Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
Dieldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Methoxychlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobenzene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobutadiene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachloroethane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aroclor 1242	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Aroclor 1248	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1254	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1260	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Polychlorinated Biphenyls	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Total Oil and Grease in water	VOL-91-5011	SM 5520 & EPA SW846 3510C & EPA 1664	BALANCE
2,4-D	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4,5-T	ORG-91-5510	EPA SW846 8151A	GC/ECD
2,4,5-TP	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dicamba	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dichlorprop	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Dinoseb	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Picloram	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Diclofop-methyl	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,3,4,6-Tetrachlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4-Dichlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
2,4,5-Trichlorophenol	ORG-91-5100	EPA SW-846 8151A	GC/ECD
2,4,6-Trichlorophenol	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Bromoxynil	ORG-91-5110	EPA SW-846 8151A	GC/ECD
MCPA	ORG-91-5110	EPA SW-846 8151A	GC/ECD
MCPP	ORG-91-5110	EPA SW-846 8151A	GC/ECD
Pentachlorophenol	ORG-91-5110	EPA SW-846 3510 & 8151	GC/ECD
DCAA	ORG-91-5110	EPA SW-846 8151	GC/ECD
1-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
2-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acridine, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(b)fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(j+k)fluoranthene	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(e)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(ghi)perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Chrysene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Dibenzo(a,h)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluorene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Indeno(1,2,3-cd)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Naphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Phenanthrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Quinoline, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Sediment			GC/MS/FID
Naphthalene-d8	ORG-120-5119	EPA 3510C/8270E	GC/MS
Terphenyl-d14	ORG-120-5119	EPA 3510C/8270E	GC/MS
Pyrene-d10	ORG-120-5119	EPA 3510C/8270E	GC/MS
PAH - Extraction (Ultra-low)			GC/MS
Linoleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Linolenic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Oleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
9,10-Dichlorostearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Stearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Pimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Sandaracopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Isopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Palustric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Levopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Dehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Abietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Neoabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
14-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12,14-Dichlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin and Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
O-methylpodocarpic	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Trifluralin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Simazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Atrazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metribuzin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Prometryne	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metolachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Alachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Cyanazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Triphenyl phosphate (surr)	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
2-Hexanone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2,4-Trichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

5835 COOPERS AVENUE
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http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Oxygen	INOR-93-6006	Modified from SM 4500-O G	DO METER
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Alkalinity (as CaCO3)	INOR-93-6000	Modified from SM 2320 B	PC TITRATE
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Ammonia-Un-ionized (Calculated)		MOE REFERENCE, PWQOs Tab 2	CALCULATION
Total Phosphorus	INOR-93-6057	modified from LACHAT 10-115-01-3A	LACHAT FIA
Turbidity	INOR-93-6000	modified from SM 2130 B	PC TITRATE
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015,SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Sulphide	INOR-93-6054	modified from SM 4500 S2- D	SPECTROPHOTOMETER
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA
Aluminum-dissolved	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Beryllium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Boron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Iron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Dissolved Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Thallium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tungsten	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Uranium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Vanadium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

Results relate only to the items tested. Results apply to samples as received.

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http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 23H012142

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:3275/3201 Trafalgar Rd, Oakville

SAMPLED BY:LB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Zirconium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Lab Filtration Aluminum Dissolved	SR-78-9001		FILTRATION
Lab Filtration mercury	SR-78-9001		FILTRATION
Total Residual Chlorine	INOR-93-6060	modified from SM 4500-CL- G	SPECTROPHOTOMETER

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

Short Holding Time

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

Chain of Custody Record

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

Report Information:

Company: LANDTEK LIMITED
Contact: HENRY EREBOR
Address: 205 NEBO ROAD, HAMILTON, ON L8W 2E1
Phone: 289-880-3992 Fax:
Reports to be sent to:
1. Email: henry@landtek.ca
2. Email:

Project Information:

Project: 21260
Site Location: 3275/3201 TRAFALGAR RD. OAKVILLE
Sampled By: L.B
AGAT Quote #: 854148 PO:
Please note: if quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company: ~~LAN~~ LANDTEK LIMITED
Contact: KATHY CRISTOI
Address: 205 NEBO ROAD, HAMILTON ON
Email: kathyc@landtek.ca

Regulatory Requirements:

(Please check all applicable boxes)

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

☐ Excess Soils R406
Table ____ *Indicate One*
☐ Regulation 558
☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
____ *Region*
☐ Prov. Water Quality Objectives (PWQO)
☒ Other
____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☒ No

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

Laboratory Use Only

Work Order #: 23H012142
Cooler Quantity: 6 LG COOLERS
Arrival Temperatures: SEE ATTACHED
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: NO ICE

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

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

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 153: Aroclors	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package SPLP: ☐ Metals pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: Include Moisture ☐ Sulphide ☐	PWQO						Potentially Hazardous or High Concentration (Y/N)
MW106	April 5	AM PM		GW		✓												X						
MW4-23	April 5	AM PM		GW		✓												X						
MW111-20	April 5	AM PM		GW		✓												X						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						

Samples Relinquished By (Print Name and Sign): Lauren Blair	Date: Apr. 5/23	Time: PM	Samples Received By (Print Name and Sign): DTAIC	Date: APR 5/23	Time: 2:30pm		
Samples Relinquished By (Print Name and Sign): DTAIC	Date: APR 5/23	Time: 3pm	Samples Received By (Print Name and Sign): Rhiana C	Date: Apr 5	Time: 4:40	Page ____ of ____	
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:	N°: T - 140693	

AGAT Laboratories

Sample Temperature Log

Client: LANDTEK

Work Order #:

Arrival Temperatures - Branch/Driver

Cooler #1:	9.2	9.1	9.0
Cooler #2:	10.0	10.2	10.5
Cooler #3:	9.9	9.7	9.5
Cooler #4:	8.7	8.8	8.2
Cooler #5:	10.1	10.7	10.6
Cooler #6:	9.1	8.9	8.7
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By:

Date

Time: AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	6.2	6.0	6.8
Cooler #2:	6.8	6.0	6.5
Cooler #3:	2.3	2.9	3.0
Cooler #4:	4.4	4.0	4.7
Cooler #5:	6.2	6.0	6.3
Cooler #6:	7.4	7.0	6.9
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

loose ice

IR Gun ID:

Taken By: Rhiana C

2nd

Date

Time: AM / PM

Document ID: SR-78-9511.001
Date Issued: February 24, 2015

Page:

AGAT Laboratories

5835 COOPERS AVENUE
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http://www.agatlabs.com

CLIENT NAME: LANDTEK LTD.
205 NEBO ROAD, UNIT 3
HAMILTON, ON L8W2E1
(905) 383-3733
ATTENTION TO: Henry Erebor
PROJECT: 21260
AGAT WORK ORDER: 24H183156
MICROBIOLOGY ANALYSIS REVIEWED BY: Sheetal Koul, Laboratory Team Lead
MISCELLANEOUS ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
WATER ANALYSIS REVIEWED BY: Yris Verastegui, Inorganic Team Lead
DATE REPORTED: Aug 19, 2024
PAGES (INCLUDING COVER): 41
VERSION*: 1

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

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.
- This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. Measurement Uncertainty is not taken into consideration when stating conformity with a specified requirement.

AGAT Laboratories
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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

E.Coli (MI-Agar)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	
Escherichia coli	CFU/100mL	100		0	

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

6061042 Escherichia coli, Total Coliforms RDL = 10 CFU/100mL.
RDL > 1 indicates dilutions of the sample.

The sample was diluted prior to filtration due to the presence of sediments.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Base Neutrals and Acids [Water]

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL		6061042
Naphthalene	µg/L	7	0.30		<0.30
Acenaphthylene	µg/L		0.31		<0.31
Acenaphthene	µg/L		0.30		<0.30
Fluorene	µg/L	0.2	0.31		<0.31
Phenanthrene	µg/L	0.03	0.32		<0.32
Anthracene	µg/L	0.0008	0.30		<0.30
Fluoranthene	µg/L	0.0008	0.27		<0.27
Pyrene	µg/L		0.20		<0.20
Benzo(a)anthracene	µg/L	0.0004	0.20		<0.20
Chrysene	µg/L	0.0001	0.27		<0.27
Benzo(b)fluoranthene	µg/L		0.20		<0.20
Benzo(k)fluoranthene	µg/L	0.0002	0.20		<0.20
Benzo(a)pyrene	µg/L		0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.20		<0.20
Dibenzo(a,h)anthracene	µg/L	0.002	0.20		<0.20
Benzo(g,h,i)perylene	µg/L	0.00002	0.20		<0.20
Phenol	µg/L		1.0		<1.0
Bis(2-chloroethyl)ether	µg/L		0.5		<0.5
2-Chlorophenol	µg/L		0.5		<0.5
o-Cresol	µg/L	1	0.5		<0.5
Bis(2-chloroisopropyl)ether	µg/L		0.5		<0.5
m&p-Cresol	µg/L		0.5		<0.5
Hexachloroethane	µg/L		0.5		<0.5
2,4-Dimethylphenol	µg/L		0.5		<0.5
2,4-Dichlorophenol	µg/L		0.3		<0.3
1,2,4-Trichlorobenzene	µg/L		0.5		<0.5
p-Chloroaniline	µg/L		1.0		<1.0
Hexachlorobutadiene	µg/L		0.4		<0.4
2-and 1-methyl Napthalene	µg/L	2	0.5		<0.5

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24H183156
PROJECT: 21260

CLIENT NAME: LANDTEK LTD.
SAMPLING SITE:

ATTENTION TO: Henry Erebor
SAMPLED BY:

Base Neutrals and Acids [Water]

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL		6061042
2,4,6-Trichlorophenol	µg/L	18	0.2		<0.2
2,4,5-Trichlorophenol	µg/L	18	0.2		<0.2
1,1-Biphenyl	µg/L		0.5		<0.5
Dimethyl phthalate	µg/L		0.5		<0.5
2,6-Dinitrotoluene	µg/L		0.5		<0.5
2,4-Dinitrotoluene	µg/L		0.5		<0.5
2,3,4,6-Tetrachlorophenol	µg/L	1	0.5		<0.5
Diethyl phthalate	µg/L		0.5		<0.5
Hexachlorobenzene	µg/L	0.0065	0.5		<0.5
Pentachlorophenol	µg/L		0.5		<0.5
3,3'-dichlorobenzidine	µg/L		0.5		<0.5
Bis(2-Ethylhexyl)phthalate	µg/L		0.5		<0.5
2,4-Dinitrophenol	µg/L		10		<10
Sediment					1
Surrogate	Unit	Acceptable Limits			
2-Fluorophenol	%	50-140			77
phenol-d6 surrogate	%	50-140			70
2,4,6-Tribromophenol	%	50-140			62
Chrysene-d12	%	50-140			70

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

6061042 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Carbamate Pesticides (Water)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Aldicarb	µg/L		2.0	<2.0
Bendiocarb	µg/L		2	<2
Carbofuran	µg/L		5	<5
Carbaryl	µg/L		5	<5
Diuron	µg/L		10	<10
Triallate	µg/L		1	<1
Temephos	µg/L		10	<10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Diquat/Paraquat

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Diquat	µg/L		5	<5
Paraquat	µg/L		1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

5835 COOPERS AVENUE
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CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Ethanolamines in Water by HPLC - Low Level

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Diethanolamine (DEA)	mg/L		0.040	<0.04
Ethanolamine (MEA)	mg/L		0.05	<0.05
Diisopropanolamine (DIPA)	mg/L		0.1	<0.1
Monoisopropanolamine (MIPA)	mg/L		0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Glycols Analysis in Water

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	
Propylene Glycol	mg/L		10	<10	
Monoethylene Glycol	mg/L		8	<8	
Diethylene Glycol	mg/L		5.0	<5	
Triethylene Glycol	mg/L		8	<8	
Tetraethylene Glycol	mg/L		10	<10	
Surrogate	Unit	Acceptable Limits			
Heptanol	%	50-140		95	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042 Analysis by GC/FID.
Identification based on retention time relative to standards.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Gamma-Hexachlorocyclohexane	ug/L		0.01	<0.01
Heptachlor	ug/L		0.01	<0.01
Aldrin	ug/L		0.01	<0.01
Heptachlor Epoxide	ug/L		0.01	<0.01
Endosulfan I	µg/L		0.05	<0.05
Endosulfan II	µg/L		0.05	<0.05
Endosulfan	ug/L		0.05	<0.05
alpha - chlordane	µg/L		0.1	<0.1
gamma-Chlordane	µg/L		0.2	<0.2
Chlordane	ug/L		0.04	<0.04
op'-DDE	µg/L		0.01	<0.01
pp'-DDE	µg/L		0.01	<0.01
DDE	ug/L		0.01	<0.01
op'-DDD	µg/L		0.05	<0.05
pp'-DDD	µg/L		0.05	<0.05
DDD	ug/L		0.05	<0.05
op'-DDT	µg/L		0.04	<0.04
pp'-DDT	µg/L		0.05	<0.05
DDT	ug/L		0.04	<0.04
Dieldrin	ug/L		0.02	<0.02
Endrin	ug/L		0.05	<0.05
Methoxychlor	ug/L		0.04	<0.04
Hexachlorobenzene	ug/L	0.0065	0.01	<0.01
Hexachlorobutadiene	ug/L		0.01	<0.01
Hexachloroethane	ug/L		0.01	<0.01
Aroclor 1242	ug/L		0.1	<0.1
Aroclor 1248	ug/L		0.1	<0.1
Aroclor 1254	ug/L		0.1	<0.1
Aroclor 1260	ug/L		0.1	<0.1

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

OC Pesticides + PCBs (Water)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	
Polychlorinated Biphenyls	ug/L	0.001	0.1	<0.1	
Surrogate	Unit	Acceptable Limits			
TCMX	%	50-140		90	
Decachlorobiphenyl	%	50-140		100	

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

6061042 DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.
PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Oil and Grease (Total) in Water

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Total Oil and Grease in water	mg/L		0.5	2.03

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Phenoxy Acid Herbicides (Water)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL		6061042
2,4-D	µg/L		0.5		<0.5
2,4,5-T	µg/L		0.5		<0.5
2,4,5-TP	µg/L		0.5		<0.5
Dicamba	µg/L		0.5		<0.5
Dichlorprop	µg/L		0.5		<0.5
Dinoseb	µg/L		0.5		<0.5
Picloram	µg/L		0.5		<0.5
Diclofop-methyl	µg/L		0.5		<0.5
2,3,4,6-Tetrachlorophenol	µg/L	1	0.5		<0.5
2,4-Dichlorophenol	µg/L		0.2		<0.2
2,4,5-Trichlorophenol	µg/L	18	0.5		<0.5
2,4,6-Trichlorophenol	µg/L	18	0.5		<0.5
Bromoxynil	µg/L		0.3		<0.3
MCPA	µg/L		5.0		<5.0
MCPP	µg/L		5.0		<5.0
Pentachlorophenol	µg/L		0.1		<0.1
Surrogate	Unit	Acceptable Limits			
DCAA	%	50-140			100

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

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

		SAMPLE DESCRIPTION:		MW101-20
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
1-Methylnaphthalene, Ultra-low	µg/L		0.001	0.035
2-Methylnaphthalene, Ultra-low	µg/L		0.001	0.067
Acenaphthene, Ultra-low	µg/L		0.001	<0.001
Acenaphthylene, Ultra-low	µg/L		0.001	0.018
Acridine, Ultra-low	µg/L		0.001	<0.001
Anthracene, Ultra-low	µg/L		0.001	<0.001
Benzo(a)anthracene, Ultra-low	µg/L		0.001	<0.001
Benzo(a)pyrene, Ultra-low	µg/L		0.001	<0.001
Benzo(b)fluoranthene, Ultra-low	µg/L		0.001	<0.001
Benzo(j+k)fluoranthene	µg/L		0.001	<0.01
Benzo(e)pyrene, Ultra-low	µg/L		0.001	<0.001
Benzo(ghi)perylene, Ultra-low	µg/L		0.001	<0.001
Chrysene, Ultra-low	µg/L		0.001	<0.001
Dibenzo(a,h)anthracene, Ultra-low	µg/L		0.001	<0.001
Fluoranthene, Ultra-low	µg/L		0.001	<0.001
Fluorene, Ultra-low	µg/L		0.001	<0.001
Indeno(1,2,3-cd)pyrene, Ultra-low	µg/L		0.001	<0.001
Naphthalene, Ultra-low	µg/L		0.001	<0.001
Perylene, Ultra-low	µg/L		0.001	<0.001
Phenanthrene, Ultra-low	µg/L		0.001	<0.001
Pyrene, Ultra-low	µg/L		0.001	<0.001
Quinoline, Ultra-low	µg/L		0.001	<0.001
Sediment				No
PAH - Extraction (Ultra-low)				Y
Surrogate	Unit	Acceptable Limits		
Naphthalene-d8	%	50-140		131
Terphenyl-d14	%	50-140		120
Pyrene-d10	%	50-140		99

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Polycyclic Aromatic Hydrocarbons in Water - Ultra-Low Level

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Halifax (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Resin and Fatty acid (water)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

		SAMPLE DESCRIPTION:		MW101-20	MW101-20
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2024-08-08 13:30	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	6061042Zb
Linoleic acid	µg/L		10		<10
Linolenic acid	µg/L		10		<10
Oleic acid	µg/L		10		<10
9,10-Dichlorostearic acid	µg/L		10		<10
Stearic acid	µg/L		10		<10
Fatty acid total	µg/L		10		<10
Pimaric acid	µg/L		10		<10
Sandaracopimaric acid	µg/L		10		<10
Isopimaric acid	µg/L		10		<10
Palustric acid	µg/L		10		<10
Levopimaric acid	µg/L		10		<10
Dehydroabietic acid	µg/L		10		<10
Abietic acid	µg/L		10		<10
Neoabietic acid	µg/L		10		<10
14-Chlorodehydroabietic acid	µg/L		10		<10
12-Chlorodehydroabietic acid	µg/L		10		<10
12,14-Dichlorodehydroabietic acid	µg/L		10		<10
Resin acid total	µg/L		10		<10
Resin and Fatty acid total	µg/L		10		<10
Surrogate	Unit	Acceptable Limits			
O-methylpodocarpic	%	40-140			73

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042-6061042Zb: Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range or reduce matrix interference.

Sample was analyzed in Montreal.

Analysis performed at AGAT Montréal (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Triazine Pesticides [Water]

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Trifluralin	µg/L		1.0	<1.0
Simazine	µg/L		1.0	<1.0
Atrazine	µg/L		0.5	<0.5
Metribuzin	µg/L		0.25	<0.25
Prometryne	µg/L		0.25	<0.25
Metolachlor	µg/L		0.11	<0.11
Alachlor	µg/L		0.5	<0.5
Cyanazine	µg/L		1.0	<1.0
Surrogate	Unit	Acceptable Limits		
Triphenyl phosphate (surr)	%	30-130		71

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

6061042 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL		6061042
Dichlorodifluoromethane	µg/L		0.40		<0.40
Chloromethane	µg/L	700	0.20		<0.20
Vinyl Chloride	µg/L	600	0.17		<0.17
Bromomethane	µg/L	0.9	0.20		<0.20
Chloroethane	µg/L		0.20		<0.20
Trichlorofluoromethane	µg/L		0.40		<0.40
Acetone	µg/L		1.0		<1.0
1,1-Dichloroethylene	µg/L		0.2		<0.2
Methylene Chloride	µg/L	100	0.30		<0.30
trans- 1,2-dichloroethylene	µg/L	200	0.20		<0.20
Methyl tert-butyl ether	µg/L	200	0.20		<0.20
1,1-Dichloroethane	µg/L	200	0.30		<0.30
Methyl Ethyl Ketone	µg/L	400	1.0		<1.0
cis- 1,2-Dichloroethylene	µg/L	200	0.20		<0.20
Chloroform	µg/L		0.20		<0.20
1,2-Dichloroethane	µg/L	100	0.20		<0.20
1,1,1-Trichloroethane	µg/L	10	0.30		<0.30
Carbon Tetrachloride	µg/L		0.20		<0.20
Benzene	µg/L	100	0.20		0.40
1,2-Dichloropropane	µg/L	0.7	0.20		<0.20
Trichloroethylene	µg/L	20	0.20		<0.20
Bromodichloromethane	µg/L	200	0.20		<0.20
cis-1,3-Dichloropropene	µg/L		0.20		<0.20
Methyl Isobutyl Ketone	µg/L		1.0		<1.0
trans-1,3-Dichloropropene	µg/L	7	0.30		<0.30
1,1,2-Trichloroethane	µg/L	800	0.20		<0.20
Toluene	µg/L	0.8	0.20		0.35
2-Hexanone	µg/L		1.0		<1.0
Dibromochloromethane	µg/L	40	0.10		<0.10

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	
Ethylene Dibromide	µg/L	5	0.10	<0.10	
Tetrachloroethylene	µg/L	50	0.20	<0.20	
1,1,1,2-Tetrachloroethane	µg/L	20	0.10	<0.10	
Chlorobenzene	µg/L	15	0.10	<0.10	
Ethylbenzene	µg/L	8	0.10	<0.10	
m & p-Xylene	µg/L	32	0.20	<0.20	
Bromoform	µg/L	60	0.10	<0.10	
Styrene	µg/L	4	0.10	<0.10	
1,1,2,2-Tetrachloroethane	µg/L	70	0.10	<0.10	
o-Xylene	µg/L	40	0.10	<0.10	
1,3-Dichlorobenzene	µg/L	2.5	0.10	<0.10	
1,4-Dichlorobenzene	µg/L	4	0.10	<0.10	
1,2-Dichlorobenzene	µg/L	2.5	0.10	<0.10	
1,2,4-Trichlorobenzene	µg/L	0.5	0.30	<0.30	
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	<0.30	
Xylenes (Total)	µg/L		0.20	<0.20	
n-Hexane	µg/L		0.20	<0.20	
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		88	
4-Bromofluorobenzene	% Recovery	50-140		106	

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

6061042 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Dissolved Oxygen in Water- mg/L

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Dissolved Oxygen	mg/L		0.05	11.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PWQO Parameters

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

		SAMPLE DESCRIPTION:		MW101-20
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
pH	pH Units	6.5-8.5	NA	7.46
Alkalinity (as CaCO3)	mg/L		5	563
Ammonia as N	mg/L		0.02	0.04
Ammonia-Un-ionized (Calculated)	mg/L	0.02	0.000002	0.000692
Total Phosphorus	mg/L	*	0.02	4.58
Turbidity	NTU		0.5	1490
Cyanide, WAD	mg/L	0.005	0.002	<0.002
Sulphide	mg/L		0.01	<0.01
Phenols	mg/L	0.001	0.001	<0.001
Aluminum-dissolved	mg/L	*	0.004	<0.004
Total Antimony	mg/L	0.020	0.003	<0.003
Total Arsenic	mg/L	0.1	0.006	0.020
Total Beryllium	mg/L	*	0.002	0.003
Total Boron	mg/L	0.2	0.020	1.67
Total Cadmium	mg/L	0.0002	0.0002	0.0004
Total Iron	mg/L	0.3	0.100	33.6
Total Chromium	mg/L		0.006	0.049
Total Cobalt	mg/L	0.0009	0.0010	0.0193
Total Copper	mg/L	0.005	0.004	0.015
Total Lead	mg/L	*	0.0010	0.0227
Dissolved Mercury	mg/L	0.0002	0.0001	<0.0001
Total Molybdenum	mg/L	0.040	0.004	<0.004
Total Nickel	mg/L	0.025	0.006	0.042
Total Selenium	mg/L	0.1	0.004	<0.004
Total Silver	mg/L	0.0001	0.0002	<0.0002
Total Thallium	mg/L	0.0003	0.0006	<0.0006
Total Tungsten	mg/L	0.030	0.020	<0.020
Total Uranium	mg/L	0.005	0.0010	0.0146
Total Vanadium	mg/L	0.006	0.004	0.059

Certified By: Iris Verástegui

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Certificate of Analysis

AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PWQO Parameters

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

				SAMPLE DESCRIPTION:	MW101-20
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042	
Total Zinc	mg/L	0.030	0.040	0.084	
Total Zirconium	mg/L	0.004	0.008	0.020	
Lab Filtration Aluminum Dissolved				1	
Lab Filtration mercury				1	

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

6061042 Dilution required, RDL has been increased accordingly.
Un-ionized Ammonia detection limit is a calculated RDL. The calculation of Un-ionized Ammonia is based on lab measured parameters (ammonia as N, pH and temperature).Values are reported as calculated.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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AGAT WORK ORDER: 24H183156

PROJECT: 21260

CLIENT NAME: LANDTEK LTD.

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Residual Chlorine

DATE RECEIVED: 2024-08-08

DATE REPORTED: 2024-08-19

			SAMPLE DESCRIPTION:	MW101-20
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-08-08 13:30
Parameter	Unit	G / S	RDL	6061042
Total Residual Chlorine	mg/L		0.08	<0.08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6061042 Due to the instability of chlorine in aqueous solutions, the results reported may be biased low and should be reviewed with discretion. Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Microbiology Analysis

RPT Date: Aug 19, 2024			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
E.Coli (MI-Agar)															
Escherichia coli	6061471		0	0	NA										

Comments: NA - % RPD Not Applicable.

Certified By:

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 24H183156
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Base Neutrals and Acids [Water]															
Naphthalene	6058518		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	116%	50%	140%	85%	50%	140%
Acenaphthylene	6058518		< 0.31	< 0.31	NA	< 0.31	88%	50%	140%	111%	50%	140%	87%	50%	140%
Acenaphthene	6058518		< 0.30	< 0.30	NA	< 0.30	102%	50%	140%	117%	50%	140%	78%	50%	140%
Fluorene	6058518		< 0.31	< 0.31	NA	< 0.31	106%	50%	140%	69%	50%	140%	75%	50%	140%
Phenanthrene	6058518		< 0.32	< 0.32	NA	< 0.32	93%	50%	140%	83%	50%	140%	117%	50%	140%
Anthracene	6058518		< 0.30	< 0.30	NA	< 0.30	92%	50%	140%	69%	50%	140%	83%	50%	140%
Fluoranthene	6058518		< 0.27	< 0.27	NA	< 0.27	89%	50%	140%	73%	50%	140%	80%	50%	140%
Pyrene	6058518		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	72%	50%	140%	85%	50%	140%
Benzo(a)anthracene	6058518		< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	73%	50%	140%	67%	50%	140%
Chrysene	6058518		< 0.27	< 0.27	NA	< 0.27	92%	50%	140%	82%	50%	140%	68%	50%	140%
Benzo(b)fluoranthene	6058518		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	91%	50%	140%	105%	50%	140%
Benzo(k)fluoranthene	6058518		< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	93%	50%	140%	114%	50%	140%
Benzo(a)pyrene	6058518		< 0.01	< 0.01	NA	< 0.01	92%	50%	140%	93%	50%	140%	110%	50%	140%
Indeno(1,2,3-cd)pyrene	6058518		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	76%	50%	140%	86%	50%	140%
Dibenzo(a,h)anthracene	6058518		< 0.20	< 0.20	NA	< 0.20	70%	50%	140%	69%	50%	140%	66%	50%	140%
Benzo(g,h,i)perylene	6058518		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	73%	50%	140%	78%	50%	140%
Phenol	6058518		< 1.0	< 1.0	NA	< 1.0	72%	50%	140%	70%	50%	140%	70%	50%	140%
Bis(2-chloroethyl)ether	6058518		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	109%	50%	140%	99%	50%	140%
2-Chlorophenol	6058518		< 0.5	< 0.5	NA	< 0.5	74%	50%	140%	100%	50%	140%	78%	50%	140%
o-Cresol	6058518		< 0.5	< 0.5	NA	< 0.5	108%	50%	140%	102%	50%	140%	99%	50%	140%
Bis(2-chloroisopropyl)ether	6058518		< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	84%	50%	140%	74%	50%	140%
m&p-Cresol	6058518		< 0.5	< 0.5	NA	< 0.5	85%	50%	140%	100%	50%	140%	84%	50%	140%
Hexachloroethane	6058518		< 0.5	< 0.5	NA	< 0.5	89%	50%	140%	94%	50%	140%	76%	50%	140%
2,4-Dimethylphenol	6058518		< 0.5	< 0.5	NA	< 0.5	79%	30%	130%	94%	30%	130%	78%	30%	130%
2,4-Dichlorophenol	6058518		< 0.3	< 0.3	NA	< 0.3	91%	50%	140%	92%	50%	140%	65%	50%	140%
1,2,4-Trichlorobenzene	6058518		< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	78%	50%	140%	57%	50%	140%
p-Chloroaniline	6058518		< 1.0	< 1.0	NA	< 1.0	81%	50%	140%	108%	50%	140%	80%	50%	140%
Hexachlorobutadiene	6058518		< 0.4	< 0.4	NA	< 0.4	101%	50%	140%	63%	50%	140%	67%	50%	140%
2,4,6-Trichlorophenol	6058518		< 0.2	< 0.2	NA	< 0.2	92%	50%	140%	119%	50%	140%	65%	50%	140%
2,4,5-Trichlorophenol	6058518		< 0.2	< 0.2	NA	< 0.2	113%	50%	140%	99%	50%	140%	116%	50%	140%
1,1-Biphenyl	6058518		< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	112%	50%	140%	88%	50%	140%
Dimethyl phthalate	6058518		< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	99%	50%	140%	75%	50%	140%
2,6-Dinitrotoluene	6058518		< 0.5	< 0.5	NA	< 0.5	111%	50%	140%	93%	50%	140%	110%	50%	140%
2,4-Dinitrotoluene	6058518		< 0.5	< 0.5	NA	< 0.5	102%	50%	140%	113%	50%	140%	119%	50%	140%
2,3,4,6-Tetrachlorophenol	6058518		< 0.5	< 0.5	NA	< 0.5	110%	50%	140%	63%	50%	140%	64%	50%	140%
Diethyl phthalate	6058518		< 0.5	< 0.5	NA	< 0.5	95%	50%	140%	76%	50%	140%	65%	50%	140%
Hexachlorobenzene	6058518		< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	71%	50%	140%	62%	50%	140%
Pentachlorophenol	6058518		< 0.5	< 0.5	NA	< 0.5	82%	50%	140%	75%	50%	140%	64%	50%	140%
3,3'-dichlorobenzidine	6058518		< 0.5	< 0.5	NA	< 0.5	94%	30%	130%	62%	30%	130%	78%	30%	130%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
PROJECT: 21260
SAMPLING SITE:

AGAT WORK ORDER: 24H183156
ATTENTION TO: Henry Erebor
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Bis(2-Ethylhexyl)phthalate	6058518		< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	69%	50%	140%	99%	50%	140%
2,4-Dinitrophenol	6058518		< 10	< 10	NA	< 10	107%	30%	130%	78%	30%	130%	77%	30%	130%
Carbamate Pesticides (Water)															
Aldicarb	1	6041695	< 2.0	< 2.0	0.0%	< 2.0	102%	50%	140%	112%	50%	140%	102%	50%	140%
Bendiocarb	1	6041695	< 2	< 2	0.0%	< 2	121%	50%	140%	95%	50%	140%	76%	50%	140%
Carbofuran	1	6041695	< 5	< 5	0.0%	< 5	121%	50%	140%	95%	50%	140%	76%	50%	140%
Carbaryl	1	6041695	< 5	< 5	0.0%	< 5	56%	50%	140%	71%	50%	140%	89%	50%	140%
Diuron	1	6041695	< 10	< 10	0.0%	< 10	99%	50%	140%	110%	50%	140%	97%	50%	140%
Triallate	1	6041695	< 1	< 1	0.0%	< 1	108%	50%	140%	123%	50%	140%	91%	50%	140%
Temephos	1	6041695	< 10	< 10	0.0%	< 10	89%	60%	130%	98%	60%	130%	96%	60%	130%
Diquat/Paraquat															
Diquat		TWDUP	< 5	< 5	0.0%	< 5	99%	50%	140%	60%	50%	140%	99%	50%	140%
Paraquat		TWDUP	< 1	< 1	0.0%	< 1	97%	50%	140%	65%	50%	140%	96%	50%	140%
OC Pesticides + PCBs (Water)															
Gamma-Hexachlorocyclohexane	6065544		< 0.01	< 0.01	NA	< 0.01	88%	50%	140%	85%	50%	140%	94%	50%	140%
Heptachlor	6065544		< 0.01	< 0.01	NA	< 0.01	82%	50%	140%	104%	50%	140%	109%	50%	140%
Aldrin	6065544		< 0.01	< 0.01	NA	< 0.01	89%	50%	140%	92%	50%	140%	104%	50%	140%
Heptachlor Epoxide	6065544		< 0.01	< 0.01	NA	< 0.01	82%	50%	140%	84%	50%	140%	94%	50%	140%
Endosulfan I	6065544		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	90%	50%	140%	100%	50%	140%
Endosulfan II	6065544		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	91%	50%	140%	102%	50%	140%
alpha - chlordane	6065544		< 0.1	< 0.1	NA	< 0.1	82%	50%	140%	89%	50%	140%	89%	50%	140%
gamma-Chlordane	6065544		< 0.2	< 0.2	NA	< 0.2	83%	50%	140%	86%	50%	140%	96%	50%	140%
op'-DDE	6065544		< 0.01	< 0.01	NA	< 0.01	115%	50%	140%	105%	50%	140%	94%	50%	140%
pp'-DDE	6065544		< 0.01	< 0.01	NA	< 0.01	82%	50%	140%	95%	50%	140%	100%	50%	140%
op'-DDD	6065544		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	108%	50%	140%	109%	50%	140%
pp'-DDD	6065544		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	98%	50%	140%	104%	50%	140%
op'-DDT	6065544		< 0.04	< 0.04	NA	< 0.04	95%	50%	140%	109%	50%	140%	115%	50%	140%
pp'-DDT	6065544		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	92%	50%	140%	98%	50%	140%
Dieldrin	6065544		< 0.02	< 0.02	NA	< 0.02	88%	50%	140%	89%	50%	140%	99%	50%	140%
Endrin	6065544		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	86%	50%	140%	106%	50%	140%
Methoxychlor	6065544		< 0.04	< 0.04	NA	< 0.04	82%	50%	140%	88%	50%	140%	106%	50%	140%
Hexachlorobenzene	6065544		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	97%	50%	140%	103%	50%	140%
Hexachlorobutadiene	6065544		< 0.01	< 0.01	NA	< 0.01	91%	50%	140%	115%	50%	140%	104%	50%	140%
Hexachloroethane	6065544		< 0.01	< 0.01	NA	< 0.01	89%	50%	140%	103%	50%	140%	115%	50%	140%
Aroclor 1242	6065544		< 0.1	< 0.1	NA	< 0.1	106%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	6065544		< 0.1	< 0.1	NA	< 0.1	98%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	6065544		< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	6065544		< 0.1	< 0.1	NA	< 0.1	97%	60%	140%	NA	60%	140%	NA	60%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 24H183156
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Polychlorinated Biphenyls	6065544		< 0.1	< 0.1	NA	< 0.1	103%	60%	140%	102%	60%	140%	NA	60%	140%
Oil and Grease (Total) in Water															
Total Oil and Grease in water	6056507		< 0.5	< 0.5	NA	< 0.5	98%	70%	130%	99%	70%	130%	96%	70%	130%
Phenoxy Acid Herbicides (Water)															
2,4-D			< 0.5	< 0.5	NA	< 0.5	95%	50%	140%	90%	50%	140%	76%	50%	140%
2,4,5-T			< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	94%	50%	140%	81%	50%	140%
2,4,5-TP			< 0.5	< 0.5	NA	< 0.5	90%	50%	140%	85%	50%	140%	79%	50%	140%
Dicamba			< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	82%	50%	140%	85%	50%	140%
Dichlorprop			< 0.5	< 0.5	NA	< 0.5	97%	50%	140%	90%	50%	140%	86%	50%	140%
Dinoseb			< 0.5	< 0.5	NA	< 0.5	86%	50%	140%	80%	50%	140%	70%	50%	140%
Picloram			< 0.5	< 0.5	NA	< 0.5	80%	50%	140%	96%	50%	140%	72%	50%	140%
Diclofop-methyl			< 0.5	< 0.5	NA	< 0.5	98%	50%	140%	78%	50%	140%	84%	50%	140%
2,3,4,6-Tetrachlorophenol			< 0.5	< 0.5	NA	< 0.5	75%	50%	140%	80%	50%	140%	NA	50%	140%
2,4-Dichlorophenol			< 0.2	< 0.2	NA	< 0.2	86%	50%	140%	94%	50%	140%	NA	50%	140%
2,4,5-Trichlorophenol			< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	91%	50%	140%	NA	50%	140%
2,4,6-Trichlorophenol			< 0.5	< 0.5	NA	< 0.5	75%	50%	140%	80%	50%	140%	NA	50%	140%
Bromoxynil			< 0.3	< 0.3	NA	< 0.3	98%	50%	140%	85%	50%	140%	NA	50%	140%
MCPA			< 5.0	< 5.0	NA	< 5.0	96%	50%	140%	90%	50%	140%	90%	50%	140%
MCPP			< 5.0	< 5.0	NA	< 5.0	102%	50%	140%	90%	50%	140%	86%	50%	140%
Pentachlorophenol			< 0.1	< 0.1	NA	< 0.1	95%	50%	140%	94%	50%	140%	NA	50%	140%
Triazine Pesticides [Water]															
Trifluralin	6061464		< 0.2	< 0.2	NA	< 1.0	111%	50%	140%	71%	50%	140%	101%	50%	140%
Simazine	6061464		< 0.5	< 0.5	NA	< 1.0	102%	50%	140%	82%	50%	140%	99%	50%	140%
Atrazine	6061464		< 0.5	< 0.5	NA	< 0.5	95%	50%	140%	73%	50%	140%	95%	50%	140%
Metribuzin	6061464		< 0.25	< 0.25	NA	< 0.25	107%	50%	140%	115%	50%	140%	104%	50%	140%
Prometryne	6061464		< 0.25	< 0.25	NA	< 0.25	74%	50%	140%	77%	50%	140%	83%	50%	140%
Metolachlor	6061464		< 0.11	< 0.11	NA	< 0.11	108%	50%	140%	85%	50%	140%	105%	50%	140%
Alachlor	6061464		< 0.5	< 0.5	NA	< 0.5	114%	50%	140%	87%	50%	140%	105%	50%	140%
Cyanazine	6061464		< 0.5	< 0.5	NA	< 1.0	104%	50%	140%	100%	50%	140%	108%	50%	140%
Volatile Organic Compounds in Water (ug/L)															
Dichlorodifluoromethane	6059553		<0.40	<0.40	NA	< 0.40	74%	50%	140%	113%	50%	140%	80%	50%	140%
Chloromethane	6059553		<0.20	<0.20	NA	< 0.20	81%	50%	140%	116%	50%	140%	92%	50%	140%
Vinyl Chloride	6059553		<0.17	<0.17	NA	< 0.17	102%	50%	140%	114%	50%	140%	102%	50%	140%
Bromomethane	6059553		<0.20	<0.20	NA	< 0.20	106%	50%	140%	109%	50%	140%	98%	50%	140%
Chloroethane	6059553		<0.20	<0.20	NA	< 0.20	84%	50%	140%	111%	50%	140%	93%	50%	140%
Trichlorofluoromethane	6059553		<0.40	<0.40	NA	< 0.40	83%	50%	140%	111%	50%	140%	99%	50%	140%
Acetone	6059553		<1.0	<1.0	NA	< 1.0	98%	50%	140%	112%	50%	140%	111%	50%	140%
1,1-Dichloroethylene	6059553		<0.2	<0.2	NA	< 0.2	110%	50%	140%	104%	60%	130%	90%	50%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 24H183156
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methylene Chloride	6059553		<0.30	<0.30	NA	< 0.30	109%	50%	140%	103%	60%	130%	95%	50%	140%
trans- 1,2-dichloroethylene	6059553		<0.20	<0.20	NA	< 0.20	75%	50%	140%	72%	60%	130%	89%	50%	140%
Methyl tert-butyl ether	6059553		<0.20	<0.20	NA	< 0.20	96%	50%	140%	104%	60%	130%	100%	50%	140%
1,1-Dichloroethane	6059553		<0.30	<0.30	NA	< 0.30	115%	50%	140%	105%	60%	130%	95%	50%	140%
Methyl Ethyl Ketone	6059553		<1.0	<1.0	NA	< 1.0	100%	50%	140%	108%	50%	140%	102%	50%	140%
cis- 1,2-Dichloroethylene	6059553		<0.20	<0.20	NA	< 0.20	116%	50%	140%	106%	60%	130%	98%	50%	140%
Chloroform	6059553		<0.20	<0.20	NA	< 0.20	104%	50%	140%	112%	60%	130%	104%	50%	140%
1,2-Dichloroethane	6059553		<0.20	<0.20	NA	< 0.20	104%	50%	140%	115%	60%	130%	101%	50%	140%
1,1,1-Trichloroethane	6059553		<0.30	<0.30	NA	< 0.30	113%	50%	140%	98%	60%	130%	90%	50%	140%
Carbon Tetrachloride	6059553		<0.20	<0.20	NA	< 0.20	107%	50%	140%	93%	60%	130%	86%	50%	140%
Benzene	6059553		0.93	0.87	NA	< 0.20	116%	50%	140%	106%	60%	130%	94%	50%	140%
1,2-Dichloropropane	6059553		<0.20	<0.20	NA	< 0.20	114%	50%	140%	105%	60%	130%	90%	50%	140%
Trichloroethylene	6059553		<0.20	<0.20	NA	< 0.20	113%	50%	140%	107%	60%	130%	96%	50%	140%
Bromodichloromethane	6059553		<0.20	<0.20	NA	< 0.20	106%	50%	140%	102%	60%	130%	87%	50%	140%
cis-1,3-Dichloropropene	6059553		<0.20	<0.20	NA	< 0.20	100%	50%	140%	105%	60%	130%	92%	50%	140%
Methyl Isobutyl Ketone	6059553		<1.0	<1.0	NA	< 1.0	75%	50%	140%	95%	50%	140%	115%	50%	140%
trans-1,3-Dichloropropene	6059553		<0.30	<0.30	NA	< 0.30	108%	50%	140%	110%	60%	130%	104%	50%	140%
1,1,2-Trichloroethane	6059553		<0.20	<0.20	NA	< 0.20	108%	50%	140%	112%	60%	130%	109%	50%	140%
Toluene	6059553		1.63	1.55	5.0%	< 0.20	107%	50%	140%	104%	60%	130%	103%	50%	140%
2-Hexanone	6059553		<1.0	<1.0	NA	< 1.0	93%	50%	140%	107%	50%	140%	117%	50%	140%
Dibromochloromethane	6059553		<0.10	<0.10	NA	< 0.10	89%	50%	140%	94%	60%	130%	88%	50%	140%
Ethylene Dibromide	6059553		<0.10	<0.10	NA	< 0.10	105%	50%	140%	110%	60%	130%	102%	50%	140%
Tetrachloroethylene	6059553		<0.20	<0.20	NA	< 0.20	102%	50%	140%	106%	60%	130%	102%	50%	140%
1,1,1,2-Tetrachloroethane	6059553		<0.10	<0.10	NA	< 0.10	100%	50%	140%	100%	60%	130%	101%	50%	140%
Chlorobenzene	6059553		<0.10	<0.10	NA	< 0.10	107%	50%	140%	106%	60%	130%	103%	50%	140%
Ethylbenzene	6059553		<0.10	<0.10	NA	< 0.10	100%	50%	140%	100%	60%	130%	103%	50%	140%
m & p-Xylene	6059553		1.05	1.00	4.9%	< 0.20	100%	50%	140%	103%	60%	130%	104%	50%	140%
Bromoform	6059553		<0.10	<0.10	NA	< 0.10	79%	50%	140%	84%	60%	130%	82%	50%	140%
Styrene	6059553		<0.10	<0.10	NA	< 0.10	92%	50%	140%	100%	60%	130%	101%	50%	140%
1,1,2,2-Tetrachloroethane	6059553		<0.10	<0.10	NA	< 0.10	102%	50%	140%	111%	60%	130%	106%	50%	140%
o-Xylene	6059553		0.38	0.35	NA	< 0.10	104%	50%	140%	105%	60%	130%	105%	50%	140%
1,3-Dichlorobenzene	6059553		<0.10	<0.10	NA	< 0.10	102%	50%	140%	109%	60%	130%	113%	50%	140%
1,4-Dichlorobenzene	6059553		<0.10	<0.10	NA	< 0.10	102%	50%	140%	111%	60%	130%	111%	50%	140%
1,2-Dichlorobenzene	6059553		<0.10	<0.10	NA	< 0.10	102%	50%	140%	111%	60%	130%	116%	50%	140%
1,2,4-Trichlorobenzene	6059553		<0.30	<0.30	NA	< 0.30	106%	50%	140%	109%	60%	130%	101%	50%	140%
n-Hexane	6059553		1.33	1.10	18.9%	< 0.20	102%	50%	140%	106%	60%	130%	107%	50%	140%
Ethanolamines in Water by HPLC - Low Level															
Diethanolamine (DEA)	1347	6061042	<0.04	<0.04	NA	< 0.040	108%	80%	120%	106%	70%	130%	108%	60%	140%
Ethanolamine (MEA)	1347	6061042	<0.05	<0.05	NA	< 0.05	106%	80%	120%	104%	70%	130%	104%	60%	140%

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Diisopropanolamine (DIPA)	1347	6061042	<0.1	<0.1	NA	< 0.1	105%	80%	120%	102%	70%	130%	103%	60%	140%
Monoisopropanolamine (MIPA)	1347	6061042	<0.1	<0.1	NA	< 0.1	100%	80%	120%	97%	70%	130%	98%	60%	140%
Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.															
Glycols Analysis in Water															
Propylene Glycol	941	6066764	<10	<10	NA	< 10	77%	50%	140%	79%	50%	140%	97%	50%	140%
Monoethylene Glycol	941	6066764	<8	<8	NA	< 8	75%	50%	140%	77%	50%	140%	93%	50%	140%
Diethylene Glycol	941	6066764	<5	<5	NA	< 5.0	78%	50%	140%	81%	50%	140%	97%	50%	140%
Triethylene Glycol	941	6066764	<8	<8	NA	< 8	80%	50%	140%	84%	50%	140%	100%	50%	140%
Tetraethylene Glycol	941	6066764	<10	<10	NA	< 10	76%	50%	140%	76%	50%	140%	86%	50%	140%
Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated. The sample spikes and dups are not from the same sample ID.															
Resin and Fatty acid (water)															
Fatty acid total		MR	522	466	11.3%	< 10	NA	70%	130%	84%	70%	130%	NA	70%	130%
Resin acid total		MR	1100	1020	7.5%	< 10	NA	70%	130%	80%	70%	130%	NA	70%	130%
Resin and Fatty acid total		MR	1620	1480	9.0%	< 10	NA	70%	130%	82%	70%	130%	NA	70%	130%
O-methylpodocarpic		MR	80%	66%	0.0%	81	NA	40%	140%	80%	40%	140%	NA	40%	140%

Comments: The QC criteria are only applicable to the total resins and total fatty acids.

NA : Non applicable.

If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

NA in the spike blank or CRM indicates that it is not required by the procedure.

Certified By:

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Quality Assurance

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
PWQO Parameters															
pH	6059538		7.32	7.43	1.5%	NA	100%	90%	110%						
Alkalinity (as CaCO3)	6059538		83	87	4.7%	< 5	97%	80%	120%						
Ammonia as N	6059538		0.22	0.22	0.0%	< 0.02	110%	70%	130%	100%	80%	120%	105%	70%	130%
Total Phosphorus	6057500		<0.02	<0.02	NA	< 0.02	105%	70%	130%	99%	80%	120%	107%	70%	130%
Turbidity	6059538		<0.5	<0.5	NA	< 0.5	104%	80%	120%						
Cyanide, WAD	6065539		<0.002	0.002	NA	< 0.002	95%	70%	130%	97%	80%	120%	109%	70%	130%
Sulphide	6063135		<0.01	<0.01	NA	< 0.01	100%	90%	110%	99%	90%	110%	102%	80%	120%
Phenols	6057463		<0.001	<0.001	NA	< 0.001	102%	90%	110%	100%	90%	110%	90%	80%	120%
Aluminum-dissolved	6061042	6061042	<0.004	<0.004	NA	< 0.004	89%	70%	130%	92%	80%	120%	102%	70%	130%
Total Antimony	6058518		<0.003	<0.003	NA	< 0.003	101%	70%	130%	101%	80%	120%	102%	70%	130%
Total Arsenic	6058518		<0.003	<0.003	NA	< 0.003	103%	70%	130%	105%	80%	120%	98%	70%	130%
Total Beryllium	6058518		<0.001	<0.001	NA	< 0.001	99%	70%	130%	105%	80%	120%	105%	70%	130%
Total Boron	6058518		0.158	0.157	0.6%	< 0.010	100%	70%	130%	104%	80%	120%	104%	70%	130%
Total Cadmium	6058518		<0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	101%	80%	120%	99%	70%	130%
Total Iron	6058518		<0.050	0.061	NA	< 0.050	101%	70%	130%	106%	80%	120%	100%	70%	130%
Total Chromium	6058518		<0.003	<0.003	NA	< 0.003	100%	70%	130%	102%	80%	120%	99%	70%	130%
Total Cobalt	6058518		0.0102	0.0108	5.7%	< 0.0005	99%	70%	130%	105%	80%	120%	100%	70%	130%
Total Copper	6058518		<0.002	<0.002	NA	< 0.002	101%	70%	130%	102%	80%	120%	96%	70%	130%
Total Lead	6058518		<0.0005	<0.0005	NA	< 0.0005	95%	70%	130%	102%	80%	120%	94%	70%	130%
Dissolved Mercury	6063473		<0.0001	<0.0001	NA	< 0.0001	102%	70%	130%	104%	80%	120%	102%	70%	130%
Total Molybdenum	6058518		0.003	0.003	NA	< 0.002	97%	70%	130%	105%	80%	120%	106%	70%	130%
Total Nickel	6058518		0.008	0.007	NA	< 0.003	102%	70%	130%	105%	80%	120%	102%	70%	130%
Total Selenium	6058518		<0.002	<0.002	NA	< 0.002	99%	70%	130%	97%	80%	120%	96%	70%	130%
Total Silver	6058518		<0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	103%	80%	120%	91%	70%	130%
Total Thallium	6058518		<0.0003	<0.0003	NA	< 0.0003	96%	70%	130%	100%	80%	120%	94%	70%	130%
Total Tungsten	6058518		<0.010	<0.010	NA	< 0.010	96%	70%	130%	100%	80%	120%	99%	70%	130%
Total Uranium	6058518		0.0082	0.0077	6.3%	< 0.0005	95%	70%	130%	105%	80%	120%	103%	70%	130%
Total Vanadium	6058518		<0.002	<0.002	NA	< 0.002	103%	70%	130%	108%	80%	120%	103%	70%	130%
Total Zinc	6058518		<0.020	<0.020	NA	< 0.020	100%	70%	130%	100%	80%	120%	118%	70%	130%
Total Zirconium	6058518		<0.004	<0.004	NA	< 0.004	95%	70%	130%	99%	80%	120%	95%	70%	130%
Residual Chlorine															
Total Residual Chlorine	6065541		1.4	1.3	7.4%	< 0.01	97%	80%	120%	100%	90%	110%	NA	80%	120%

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

Certified By: Iris Verástegui

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Quality Assurance

CLIENT NAME: LANDTEK LTD.
AGAT WORK ORDER: 24H183156
PROJECT: 21260
ATTENTION TO: Henry Erebor
SAMPLING SITE:
SAMPLED BY:

Water Analysis (Continued)

RPT Date: Aug 19, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration

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AGAT Laboratories

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Acenaphthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluorene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenanthrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)anthracene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Benzo(a)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dibenzo(a,h)anthracene	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Phenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Chlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
o-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
m&p-Cresol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachloroethane	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dimethylphenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
p-Chloroaniline	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Hexachlorobutadiene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-and 1-methyl Napthalene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
1,1-Biphenyl	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Dimethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,6-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrotoluene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,3,4,6-Tetrachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Diethyl phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Hexachlorobenzene	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Pentachlorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4-Dinitrophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene-d12	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Sediment			N/A
Aldicarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Bendiocarb	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbofuran	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Carbaryl	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diuron	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Triallate	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Temephos	ORG-91-5101	EPA 632 531.1 & MOE E3158	HPLC
Diquat	ORG-91-5102	EPA 549.1	HPLC
Paraquat	ORG-91-5102	EPA 549.1	HPLC
Diethanolamine (DEA)	TO-2240	"In house" developed method	HPLC/UV
Ethanolamine (MEA)	TO-2240	"In house" developed method	HPLC/UV
Diisopropanolamine (DIPA)	TO-2240	"In house" developed method	HPLC/UV
Monoisopropanolamine (MIPA)	TO-2240	"In house" developed method	HPLC/UV
Propylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Monoethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID

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Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Diethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Triethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Tetraethylene Glycol	TO-1410	EPA SW-846 8015	GC/FID
Heptanol	TO-1410	EPA SW-846 8015	GC/FID
Gamma-Hexachlorocyclohexane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor Epoxide	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan I	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan II	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
alpha - chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
gamma-Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
Dieldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Methoxychlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobenzene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobutadiene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachloroethane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aroclor 1242	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Aroclor 1248	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1254	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Aroclor 1260	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Polychlorinated Biphenyls	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Total Oil and Grease in water	VOL-91-5011	SM 5520 & EPA SW846 3510C & EPA 1664	BALANCE
2,4-D	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,4,5-T	ORG-91-5510	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,4,5-TP	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Dicamba	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Dichlorprop	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Dinoseb	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Picloram	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Diclofop-methyl	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,3,4,6-Tetrachlorophenol	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,4-Dichlorophenol	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,4,5-Trichlorophenol	ORG-91-5100	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
2,4,6-Trichlorophenol	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Bromoxynil	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
MCPA	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
MCPP	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
Pentachlorophenol	ORG-91-5110	modified from EPA 515.2, EPA SW-846 8151A	GC/ECD
DCAA	ORG-91-5110	EPA SW-846 8151	GC/ECD
1-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
2-Methylnaphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acenaphthylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Acridine, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(a)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(j+k)fluoranthene	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(e)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Benzo(ghi)perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Chrysene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Dibenzo(a,h)anthracene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluoranthene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Fluorene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Indeno(1,2,3-cd)pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Naphthalene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Perylene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Phenanthrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Pyrene, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Quinoline, Ultra-low	ORG-120-5119	EPA 3510C/8270E	GC/MS
Sediment			GC/MS/FID
Naphthalene-d8	ORG-120-5119	EPA 3510C/8270E	GC/MS
Terphenyl-d14	ORG-120-5119	EPA 3510C/8270E	GC/MS
Pyrene-d10	ORG-120-5119	EPA 3510C/8270E	GC/MS
PAH - Extraction (Ultra-low)			GC/MS
Linoleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Linolenic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Oleic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
9,10-Dichlorostearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Stearic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Pimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Sandaracopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Isopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Palustric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Levopimaric acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Dehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Abietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Neoabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
14-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12-Chlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
12,14-Dichlorodehydroabietic acid	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Resin and Fatty acid total	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
O-methylpodocarpic	ORG-100-5112F	MA.414–Aci-g-r 1.0	GC/MS
Trifluralin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Simazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Atrazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metribuzin	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Prometryne	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Metolachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS

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Method Summary

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AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Alachlor	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Cyanazine	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Triphenyl phosphate (surr)	ORG-91-5104	EPA SW-846 3510C, 8270D & MOE E3121	GC/MS
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

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SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
2-Hexanone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2,4-Trichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Oxygen	INOR-93-6006	Modified from SM 4500-O G	DO METER
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Alkalinity (as CaCO3)	INOR-93-6000	Modified from SM 2320 B	PC TITRATE
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Ammonia-Un-ionized (Calculated)		MOE REFERENCE, PWQOs Tab 2	CALCULATION
Total Phosphorus	INOR-93-6057	modified from LACHAT 10-115-01-3A	LACHAT FIA
Turbidity	INOR-93-6000	modified from SM 2130 B	PC TITRATE
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015,SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Sulphide	INOR-93-6054	modified from SM 4500 S2- D	SPECTROPHOTOMETER
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA
Aluminum-dissolved	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Beryllium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Boron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Iron	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Dissolved Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Thallium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tungsten	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Uranium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Vanadium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

Results relate only to the items tested. Results apply to samples as received.

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CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: LANDTEK LTD.

AGAT WORK ORDER: 24H183156

PROJECT: 21260

ATTENTION TO: Henry Erebor

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Zirconium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Lab Filtration Aluminum Dissolved	SR-78-9001		FILTRATION
Lab Filtration mercury	SR-78-9001		FILTRATION
Total Residual Chlorine	INOR-93-6060	modified from SM 4500-CL- G	SPECTROPHOTOMETER

Results relate only to the items tested. Results apply to samples as received.

MISS (1) 7-2, 7-3, 7-9 (2) 7-1, 7-6, 6-9

AGAT Laboratories

Have feedback? Scan here for a quick survey!

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

Short Holding Time

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 24H183156

Cooler Quantity: LG COOLER.

Arrival Temperatures:

Depot Temperatures: 19.9 | 20.0 | 20.2

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: #2 18.6 19.0 19.2 LOOSE ICE

Report Information:

Company: LANDTEK LIMITED
Contact: HENRY EREBOR
Address: 205 NEBO RD, HAMILTON, ON L8W 2E1
Phone: 289-880-3992 Fax:
Reports to be sent to:
1. Email: henry@landtek.ca
2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

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

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

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
Region

☒ Prov. Water Quality Objectives (PWQO)

☒ Other
Indicate One

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

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

Project Information:

Project: 21260
Site Location: 3275/3201 TRAFALGAR RD, OAKVILLE
Sampled By: LB
AGAT Quote #: 354148 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company: LANDTEK LIMITED
Contact: KATHY CRISTOI
Address: 205 NEBO RD, HAMILTON
Email: Kathy@landtek.ca

Legal Sample ☐

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs	VOC	PAHs	PCBs: Arocolors ☐	O. Reg 406: Regulation 406 Characterization Package	pH, Metals, BTEX, F1-F4	EC, SAR	Regulation 406 SPLP Rainwater Leach mSPLP: ☐ Metals ☐ VOCs ☐ SVOCs ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	PWQO	Potentially Hazardous or High Concentration (Y/N)
1. MW101-20	Aug. 8	1:30 AM PM		GW		N												X		
2.		AM PM																		
3.		AM PM																		
4.		AM PM																		
5.		AM PM																		
6.		AM PM																		
7.		AM PM																		
8.		AM PM																		
9.		AM PM																		
10.		AM PM																		
11.		AM PM																		

	Date	Time		Date	Time
Samples Relinquished By (Print Name and Sign): Lauren Blair	Aug. 8/24		Samples Received By (Print Name and Sign): DJMC	Aug 8/24	2:35pm
Samples Relinquished By (Print Name and Sign): DJMC	Aug 8/24	3pm	Samples Received By (Print Name and Sign):	Aug 8	4pm
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____

N°: T - 160833

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

Document ID: DIV-TS-1511.023

Any and all products and/or services provided by AGAT Labs are pursuant to the terms and conditions as set forth at www.agatlabs.com/termsandconditions unless otherwise agreed in a current written contractual document.

ALS Canada Ltd.

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right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2423232**	Page	: 1 of 3
Client	: **AGAT Laboratories Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Eva Janzen	Account Manager	: Emily Smith
Address	: 8600 Glenlyon Parkway Burnaby BC Canada V5J 0B6	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 24H183156	Date Samples Received	: 13-Aug-2024 06:30
PO	: 226666	Date Analysis Commenced	: 14-Aug-2024
C-O-C number	: ----	Issue Date	: 15-Aug-2024 06:07
Sampler	: Client		
Site	: ----		
Quote number	: 2022 Price List		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Sarah Birch	VOC Section Supervisor	VOC, Waterloo, Ontario

General Comments

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.
Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

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

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

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

Unit	*Description*
µg/L	micrograms per litre

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

Analytical Results

Sub-Matrix: **Groundwater** (Matrix: **Water**)				Client sample ID	**24H183156-6061042Z (x,y,z) -MW101-20**					
				Sampling date/time	08-Aug-2024 10:30					
Analyte	*Method/Lab*	*LOR*	*Unit*	WT2423232-001	**ONPWQO IPWQOT2<100**	**ONPWQO IPWQOT2>100**	**--**	**--**	**--**	**--**
Volatile Organic Compounds										
Dioxane, 1,4-	E611I/WT	20	µg/L	<20	20 µg/L	20 µg/L	--	--	--	--
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	E611I/WT	1.0	%	95.3	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611I/WT	1.0	%	96.9	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ONPWQO	Ontario PWQO (Provincial Water Quality Objectives, JULY, 1994)
IPWQOT2<100	Surface Water T2 Interim PWQOs (Hardness < 100 mg/L)
IPWQOT2>100	Surface Water T2 Interim PWQOs (Hardness > 100 mg/L)

ALS Canada Ltd.

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right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2423232**	Page	: 1 of 5
Client	: **AGAT Laboratories Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Eva Janzen	Account Manager	: Emily Smith
Address	: 8600 Glenlyon Parkway Burnaby BC Canada V5J 0B6	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 24H183156	Date Samples Received	: 13-Aug-2024 06:30
PO	: 226666	Issue Date	: 15-Aug-2024 06:07
C-O-C number	: ----		
Sampler	: Client		
Site	: ----		
Quote number	: 2022 Price List		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Volatile Organic Compounds : VOCs (Dioxane) by Headspace GC-MS										
Glass vial (sodium bisulfate) 24H183156-6061042Z (x,y,z)-MW101-20	E611I	08-Aug-2024	14-Aug-2024	14 days	6 days	✓	14-Aug-2024	14 days	6 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
VOCs (Dioxane) by Headspace GC-MS	E611I	1594516	1	1	100.0	5.0	✓
Laboratory Control Samples (LCS)							
VOCs (Dioxane) by Headspace GC-MS	E611I	1594516	1	1	100.0	5.0	✓
Method Blanks (MB)							
VOCs (Dioxane) by Headspace GC-MS	E611I	1594516	1	1	100.0	5.0	✓
Matrix Spikes (MS)							
VOCs (Dioxane) by Headspace GC-MS	E611I	1594516	1	1	100.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs (Dioxane) by Headspace GC-MS	E611I ALS Environmental - Waterloo	Water	EPA 8260D/1624C (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Waterloo	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.

QUALITY CONTROL REPORT

Work Order	: **WT2423232**	Page	: 1 of 3
Client	: AGAT Laboratories Ltd.	Laboratory	: ALS Environmental - Waterloo
Contact	: Eva Janzen	Account Manager	: Emily Smith
Address	: 8600 Glenlyon Parkway Burnaby BC Canada V5J 0B6	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 24H183156	Date Samples Received	: 13-Aug-2024 06:30
PO	: 226666	Date Analysis Commenced	: 14-Aug-2024
C-O-C number	: ----	Issue Date	: 15-Aug-2024 06:07
Sampler	: Client		
Site	: ----		
Quote number	: 2022 Price List		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Sarah Birch	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1594516)											
WT2423232-001	24H183156-6061042Z (x,y,z)-MW101-20	Dioxane, 1,4-	123-91-1	E611I	20	µg/L	<20	<20	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1594516)						
Dioxane, 1,4-	123-91-1	E611I	20	µg/L	<20	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1594516)									
Dioxane, 1,4-	123-91-1	E611I	20	µg/L	100 µg/L	113	70.0	130	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1594516)										
WT2423232-001	24H183156-6061042Z (x,y,z)-MW101-20	Dioxane, 1,4-	123-91-1	E611I	118 µg/L	100 µg/L	118	60.0	140	----

VW - 206

Chain of Custody (COC) / Analytical Request Form

COC Number: 21 -

Page 1 of 1

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Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	AGAT Laboratories
Contact:	Eva Janzen; Neil Ramnaraign
Phone:	905-712-5096; 905-712-5131
	Company address below will appear on the final report
Street:	5835 Coopers Avenue
City/Province:	Mississauga/ON
Postal Code:	L4Z 1Y2
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

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

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

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

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: janzen@agatlabs.com

Email 2: ramnaraign@agatlabs.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: janzen@agatlabs.com

Email 2: ramnaraign@agatlabs.com

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge

☐ 3 day [P3] if received by 3pm M-F - 25

☐ 2 day [P2] if received by 3pm M-F - 50

☐ 1 day [E] if received by 3pm M-F - 100

☐ Same day [E2] if received by 10am M-S

Additional fees may apply to rus

Date and Time Required for all E&P T

For all tests with rush T

Environmental Division
Waterloo
Work Order Reference
WT2423232

Telephone : +1 519 886 6910

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:	24H183156	Major/Minor Code:	Routing Code:
PO / AFE:	226666	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact:	Sampler:

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	1,4-Dioxane	Indicate Filtered (F), Preser	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	24H183156 - 6061042Z (x,y,z) - MW101-20	8-Aug-24	13:30	GW	3	R				

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

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

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

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

Ontario Provincial Water Quality Objectives (JULY, 1994)

SAMPLE RECEIPT DETAILS (ALS use only)

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

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

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.3°C				7.1			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Andy T. Tran	Aug. 9. 2024	8AM		13-Aug-2024	9:30		13-Aug-24	15:25

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX G

DEWATERING ASSUMPTIONS AND CALCULATIONS – UNDERGROUND LEVELS

Table 1 – Excavation Dewatering Calculations-Phase 1 Underground Parking Levels

$$Q = 2\pi kD\,(H - h_w)/\ln(R_o/r_e)$$

Equation 1: The potential groundwater flow rate to the excavation was estimated using equation for full penetration by single well of confined aquifer (artesian conditions) fed by a circular source.

Where: Q = discharge rate (m^3/s)
K = hydraulic conductivity (m/s)
D = Aquifer thickness (m)
H = height of piezometer level above based of aquifer (m)
h_w = height of water at outside edge of pumping wells after drawdown (m)
R = radius of influence (m)
r_e = equivalent radius (m)
C = 3000
D = 16.6 m
Excavation Dimensions: 99.5 m x 60.0 m

R = C*(H – h)*√(K) Radius of Influence - Sichardt's equation

r_e = √(L * B)/π (applies when a/b>1.5 and R0 << rs)

r_e = (L + B)/π (applies when a/b<1.5 and R0 >> rs)

Underground Parking	H (m)	h_w (m)	R (m)	r_e (m)	Q m3/s	Q L/day	Q L/day (2.0 Factor of Safety)	Q L/s (2.0 Factor of Safety)
	12.10	3.90	6.80	43.60	~4.446 x 10-4	~38,413	~ 76,826	~ 0.89

Assumptions for hydrogeological setting:

1. A confined aquifer is presumed to exist locally with a piezometric water table determined to be 6.90 mbgs at MW111-7D on July 26, 2023, and extending to an estimated depth of approximately 19.0 mbgl.
2. The maximum dewatering depth of construction activities is assumed to be 15.1 mbgl (0.5 m below bottom of Excavation).
3. It is assumed that as a requirement of the proposed construction activities the excavation will be pumped dry.
4. The hydraulic conductivity values for the bedrock beneath the site was determined to be 7.538 x 10^{-8} m/s

Table 2 – Excavation Dewatering Calculations-Phase 2 West Underground Parking Levels

$$Q = 2\pi kD\,(H - h_w)/\ln(R_o/r_e)$$

Equation 1: The potential groundwater flow rate to the excavation was estimated using equation for full penetration by single well of confined aquifer (artesian conditions) fed by a circular source.

Where: Q = discharge rate (m^3/s)
K = hydraulic conductivity (m/s)
D = Aquifer thickness (m)
H = height of piezometer level above based of aquifer (m)
h_w = height of water at outside edge of pumping wells after drawdown (m)
R = radius of influence (m)
r_e = equivalent radius (m)
C = 3000
D = 16.6 m
Excavation Dimensions: 101.0 m x 60.5 m

$R = C*(H-h)*\sqrt{(K)}$ Radius of Influence - Sichardt's equation

$r_e = \sqrt{(L * B)}/\pi$ (applies when a/b>1.5 and R0 << rs)

$r_e = (L + B)/\pi$ (applies when a/b<1.5 and R0 >> rs)

Underground Parking	H (m)	h_w (m)	R (m)	r_e (m)	Q m3/s	Q L/day	Q L/day (2.0 Factor of Safety)	Q L/s (2.0 Factor of Safety)
	12.10	3.90	6.8	44.1	~4.494 x 10-4	~38,828	~ 77,656	~ 0.90

Assumptions for hydrogeological setting:

1. A confined aquifer is presumed to exist locally with a piezometric water table determined to be 6.90 mbgs at MW111-7D on July 26, 2023, and extending to an estimated depth of approximately 19.0 mbgl.
2. The maximum dewatering depth of construction activities is assumed to be 15.1 mbgl (0.5 m below bottom of Excavation).
3. It is assumed that as a requirement of the proposed construction activities the excavation will be pumped dry.
4. The hydraulic conductivity values for the bedrock beneath the site was determined to be 7.538 x 10^{-8} m/s

Table 3 – Excavation Dewatering Calculations-Phase 2 East A Underground Parking Levels

$$Q = 2\pi kD\,(H - h_w)/\ln(R_o/r_e)$$

Equation 1: The potential groundwater flow rate to the excavation was estimated using equation for full penetration by single well of confined aquifer (artesian conditions) fed by a circular source.

Where: Q = discharge rate (m^3/s)
K = hydraulic conductivity (m/s)
D = Aquifer thickness (m)
H = height of piezometer level above based of aquifer (m)
h_w = height of water at outside edge of pumping wells after drawdown (m)
R = radius of influence (m)
r_e = equivalent radius (m)
C = 3000
D = 16.2 m
Excavation Dimensions: 110.0 m x 48.0 m

$R = C*(H-h)*\sqrt{(K)}$ Radius of Influence - Sichardt's equation

$r_e = \sqrt{(L * B)}/\pi$ (applies when a/b>1.5 and R0 << rs)

$r_e = (L + B)/\pi$ (applies when a/b<1.5 and R0 >> rs)

Underground Parking	H (m)	h_w (m)	R (m)	r_e (m)	Q m3/s	Q L/day	Q L/day (2.0 Factor of Safety)	Q L/s (2.0 Factor of Safety)
	15.9	3.90	9.90	41.0	~4.255 x 10-4	~36,763	~ 73,526	~ 0.85

Assumptions for hydrogeological setting:

1. A confined aquifer is presumed to exist locally with a piezometric water table determined to be 3.10 mbgs (average of the highest water level readings at MW111-20, MW1D-23 and MW122D-23) and extending to an estimated depth of approximately 19.0 mbgl.
2. The maximum dewatering depth of construction activities is assumed to be 15.1 mbgl (0.5 m below bottom of Excavation).
3. It is assumed that as a requirement of the proposed construction activities the excavation will be pumped dry.
4. The hydraulic conductivity values for the bedrock beneath the site was determined to be 7.538 x 10^{-8} m/s

Table 4 – Excavation Dewatering Calculations-Phase 2 East B Underground Parking Levels

$$Q = 2\pi kD\,(H - h_w)/\ln(R_o/r_e)$$

Equation 1: The potential groundwater flow rate to the excavation was estimated using equation for full penetration by single well of confined aquifer (artesian conditions) fed by a circular source.

Where: Q = discharge rate (m^3/s)
K = hydraulic conductivity (m/s)
D = Aquifer thickness (m)
H = height of piezometer level above based of aquifer (m)
h_w = height of water at outside edge of pumping wells after drawdown (m)
R = radius of influence (m)
r_e = equivalent radius (m)
C = 3000
D = 12.40 m
Excavation Dimensions: 78.0 m x 55.0 m

$R = C*(H-h)*\sqrt{(K)}$ Radius of Influence - Sichardt's equation

$r_e = \sqrt{(L * B)}/\pi$ (applies when a/b>1.5 and R0 << rs)

$r_e = (L + B)/\pi$ (applies when a/b<1.5 and R0 >> rs)

Underground Parking	H (m)	h_w (m)	R (m)	r_e (m)	Q m3/s	Q L/day	Q L/day (2.0 Factor of Safety)	Q L/s (2.0 Factor of Safety)
	14.29	3.90	8.60	42.4	~3.302 x 10-4	~28,5294	~ 57,058	~ 0.66

Assumptions for hydrogeological setting:

1. A confined aquifer is presumed to exist locally with a piezometric water table determined to be 4.71 mbgs at MW103 on May 22, 2022, and extending to an estimated depth of approximately 19.0 mbgl.
2. The maximum dewatering depth of construction activities is assumed to be 15.1 mbgl (0.5 m below bottom of Excavation).
3. It is assumed that as a requirement of the proposed construction activities the excavation will be pumped dry.
4. The hydraulic conductivity values for the bedrock beneath the site was determined to be 7.538 x 10^{-8} m/s

Table 5 – Excavation Dewatering Calculations-Phase 2 East C Underground Parking Levels

$$Q = 2\pi kD\,(H - h_w)/\ln(R_o/r_e)$$

Equation 1: The potential groundwater flow rate to the excavation was estimated using equation for full penetration by single well of confined aquifer (artesian conditions) fed by a circular source.

Where: Q = discharge rate (m^3/s)
K = hydraulic conductivity (m/s)
D = Aquifer thickness (m)
H = height of piezometer level above based of aquifer (m)
h_w = height of water at outside edge of pumping wells after drawdown (m)
R = radius of influence (m)
r_e = equivalent radius (m)
C = 3000
D = 14.1 m
Excavation Dimensions: 64.0 m x 18.0 m

$R = C*(H-h)*\sqrt{(K)}$ Radius of Influence - Sichardt's equation

$r_e = \sqrt{(L * B)}/\pi$ (applies when a/b>1.5 and R0 << rs)

$r_e = (L + B)/\pi$ (applies when a/b<1.5 and R0 >> rs)

Basement	H (m)	h_w (m)	R (m)	r_e (m)	Q m3/s	Q L/day	Q L/day (2.0 Factor of Safety)	Q L/s (2.0 Factor of Safety)
	16.44	3.90	10.3	19.2	~1.949 x 10-4	~16,839	~ 33,678	~ 0.39

Assumptions for hydrogeological setting:

1. A confined aquifer is presumed to exist locally with a piezometric water level determined to be 2.56 mbgs at MW106 on March 25, 2022, and extending to an estimated depth of approximately 19.0 mbgl.
2. The maximum dewatering depth of construction activities is assumed to be 15.1 mbgl (0.5 m below bottom of Excavation).
3. It is assumed that as a requirement of the proposed construction activities the excavation will be pumped dry.
4. The hydraulic conductivity values for the bedrock beneath the site was determined to be 7.538 x 10^{-8} m/s

APPENDIX H

WATER BALANCE (PHASE 1 DEVELOPMENT)

APPENDIX H: DETAILED WATER BALANCE - Phase 1 Development - 3275/3201 Trafalgar Road, Oakville

1. Climate Information

Precipitation (collected from Env. Canada data)	897.1	mm/a
Evapotranspiration (calculated by Thornthwaite method)	629.58	mm/a
Water Surplus	267.52	mm/a

2. Infiltration Rates

Infiltration Factors (Table 2)

Rolling Land (average slope from 2.8 m to 3.8 m per km)	0.2
Medium combinations of clay and loam	0.2
Cultivated Lands	0.1
TOTAL	0.5

Infiltration	134	mm/a
Run-off	134	mm/a

Clayey Silt	100	mm/a

[*] MOE Table 2 and Table 3 approach in the Technical Information Requirements for Land Development Applications (MOE, 1995).

Site development area is underlain by glaciolacustrine material (clayey silt/silty clay material).

Based on the above, the recharge rate is approximately 100 mm/a
with runoff of 167.5 mm/a

3. Site Statistics

Phase 1 Area Development which impacts the Water Balance of the entire Site

Pre-Development:

Impervous Area	0.46	ha	4,635 m^2
Roof Top Area	0.00	ha	0 m^2
Landcape Area + Core Area	7.33	ha	73,311 m^2
TOTAL	7.79	ha	77,946 m^2

Post-Development:

Impervous Area	0.76	ha	7,633 m^2
Roof Top Area	0.33	ha	3,316 m^2
Landcape Area + Core Area	6.70	ha	66,996 m^2
TOTAL	7.79	ha	77,946 m^2

Post Development

Impervous Area (4.26 %)	0.76	ha	7,633 m^2
Roof Top Area (9.79 %)	0.33	ha	3,316 m^2
Lanscape Area + Core Area (85.95 %)	6.70	ha	66,996 m^2

4. Annual Pre-Development Water Balance

Land Use	Area (m^2)	Precipitation (m^3)	Evapotranspiration (m^3)	Infiltration (m^3)	Run-Off (m^3)
Building Roofs	0	0	-	-	0
Lanscape + Core Area	73,311	65,767	46,155	7,331	12,281
Impevous Area	4,635	4,158	-	-	4,158
TOTAL	77,946	69,925	46,155	7,331	16,439

5. Annual Post-Development Water Balance

Land Use	Area (m^2)	Precipitation (m^3)	Evapotranspiration (m^3)	Infiltration (m^3)	Run-Off (m^3)
Building Roofs	3,316	2,975	-	-	2,975
Impevous Area	7,633	6,848	-	-	6,848
Lanscape + Core Area	66,996	60,103	42,180	6,700	11,223
TOTAL	77,946	69,925	42,180	6,700	21,046

6. Comparison of Pre-Development and Post-Development

		Precipitation (m^3)	Evapotranspiration (m^3)	Infiltration (m^3)	Run-Off (m^3)
Pre-Development		69,925	46,155	7,331	16,439
Post-Development		69,925	42,180	6,700	21,046

7. Post development infiltration measures

Post-development infiltration volume	6,700	m^3
Pre-development infiltration volume	7,331	m^3
Deficit from pre to post-development infiltration	631	m^3
Percentage of water collected from roof area required to match pre-development infiltration	21	%
Roof Runoff	2,975	m3
Deficit from pre to post-development infiltration	631	m3
Water Surplus	2,344	m3

Thornthwaite method for determining potential evapotranspiration

A monthly index is obtained from the equation:

$i = (t/5)^{1.514}$

Summation of the 12 monthly values gives an appropriate heat index, I.

To calculate a, the expression is:

$a = 0.000000675I^3 - 0.0000771I^2 + 0.01792I + 0.49239$

From these relations, a general equation for potential evapotranspiration is obtained. It is:

$$e = 1.6\left(\frac{10t}{I}\right)^a$$

in which a has the value given in the equation above.

Hamilton RBG Climate Data

	Daily Average Temp (C^o)	Monthly index (i)	Potential Evapotranspiration (cm)	Adjusted Potential Evaportranspiration (cm)
Jan	-4.7			0
Feb	-3.9			0
Mar	0.5	0.030619634	0.141489475	0.158468212
April	7.1	1.70045269	2.980613536	3.33828716
May	13.3	4.398157705	6.129446549	7.723102652
June	18.9	7.487254318	9.177357679	11.74701783
July	22	9.422960101	10.92657209	14.095278
August	20.9	8.718883818	10.30139518	12.36167422
September	16.3	5.984273673	7.74263507	8.052340473
October	10	2.856007959	4.417316126	4.196450319
November	4.1	0.740481431	1.586283476	1.284889615
Dec	-1.4			0
	HEAT INDEX (I) =	41.3084717		**62.96** **cm/year**
				629.58 **mm/year**
	a =	1.148654797