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Phase Two Environmental Site Assessment

338 & 338 ½ Cumberland Avenue
Hamilton, Ontario
L8M 2A1

Prepared for:

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Biz Mechanical
338 ½ Cumberland Avenue
Hamilton, ON
L8M 2A1

File: 21336

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EXECUTIVE SUMMARY

Landtek Limited (Landtek) is pleased to submit the findings of the Phase Two Environmental Site Assessment (ESA) report for the properties located at 338 and 338 ½ Cumberland Avenue in Hamilton, Ontario ("the Phase Two Property" or "the Site"). The work was initiated following authorization to proceed from Mr. Frank Bisignani of Biz Mechanical in December of 2021.

The Phase Two ESA was completed in general accordance with CSA Standard Z769-00 as well as current guidelines described in Ontario Regulation 153/04 as amended. The current soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011). The Phase Two ESA covers physical sampling of soils and groundwater and chemical analyses where potential risks of environmental liability are evident from previous findings or past use of the property.

This Phase Two ESA has been completed to support the preparation of a Record of Site Condition (RSC) for the Phase Two Property in accordance with Ontario Regulation 153/04 (2011) ("O. Reg. 153/04").

SITE DESCRIPTION

The Phase Two Property has an area of approximately 0.3076 hectares (0.76 acres) and is situated south of Cumberland Avenue and north of railroad tracks in Hamilton, Ontario. The current land-use for the Site is commercial. The zoning of the area includes commercial, community and residential land-uses. The Site is to be redeveloped into residential dwellings.

O. Reg. 153/04 stipulates that for a property, the Site Condition Standards (SCS) that are applicable to the property are the standards that are applicable to the most sensitive type of property use, in this case residential is the most sensitive land use and therefore for the purpose of this Phase Two ESA residential is considered as the intended land-use.

SUMMARY OF WORK PLAN

In October of 2021, Landtek was retained by the Client, to prepare a Phase One ESA report for the Site, titled "Phase One Environmental Site Assessment, 338 & 338 ½ Cumberland Avenue, Hamilton, Ontario, dated November 2021" (Phase One ESA). The Phase One ESA was conducted to assess the environmental liability, if any, associated with the Site.

The findings of the Phase One ESA identified Potentially Contaminating Activities (PCA) and corresponding areas of potential environmental concern (APEC) and associated contaminants of potential concern (CPC) at the Site. These PCAs, APECs and CPCs are related to:

- Presence of fill of unknown quality imported, at various depths across the property (APEC A);
- Gasoline and Associated Products Storage in Fixed Tanks located at the northeast central portion of the Site removed in late 1990s (APEC B);
- Gasoline and Associated Products Storage in Fixed Tanks existing diesel AST located to the east of the existing building (APEC C)
- Rail Yards, Tracks and Spurs to the south and upgradient of the Site (APEC D); and,
- Former machine shop, assembly, operated on the Site from 1920 to 1940s (APEC E)

Based on the results of the Phase One ESA, a Phase Two ESA was recommended to investigate the areas of potential environmental concern identified. The investigation included sampling of soil and groundwater on the Phase Two Property.

Based on the APECs identified in the Phase One ESA, a program of soil sampling and chemical analysis for inorganic and organic parameters, including pesticides, petroleum hydrocarbons, metals and inorganic parameters, volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyl (PCBs) [collectively referred to as contaminants of concern (COCs)], was proposed.

Seven (7) boreholes (BH(MW)1, BH(MW)2, BH(MW)3, BH4, BH5, BH6, and BH7) were drilled on the Site in November of 2021, as shown on **Figure 3**; three (3) boreholes were installed as groundwater monitoring wells (BH(MW)1, BH(MW)2, and BH(MW)3). The boreholes were advanced using a Diedrich D-70 track-mounted drilling rig with final borehole depths approximately 3 meters below ground surface (mbgs) (9.5 ft) and were established based on the subsurface conditions and likelihood of groundwater being encountered

Selected soil samples from the boreholes were obtained and submitted for laboratory analysis from the underlying native soils for the COCs identified based on field-screening vapour measurements and/or field observations.

Laboratory analysis was carried out by Paracel Laboratories. The laboratory is accredited by the Canadian Association for Laboratory Accreditation (CALA). The parameters for which samples were analysed were selected based on a Sampling and Analysis Plan (SAP) and field conditions encountered.

Soil and groundwater samples were analysed for selected contaminants CPCs that included:

- petroleum hydrocarbons (PHCs);
- polycyclic aromatic hydrocarbons (PAHs);
- polychlorinated biphenyl (PCBs);
- volatile organic compounds (VOCs); and,
- metals and inorganics (including calcium and magnesium); hydrides (including arsenic, antimony, selenium); and Other Related Parameters (ORPs) (including boron (hot water soluble), chloride, cyanide, electrical conductivity (EC), sodium absorption ratio (SAR), hexavalent chromium, nitrate/nitrogen, mercury, methyl mercury, and pH).

The Site Condition Standards (SCS) adopted for this assessment were the Ontario Regulation 153/04 (O. Reg. 153/04) Table 3 SCS Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition and *Residential/Parkland/Institutional* (R/P/I) property use (O. Reg. 153/04 Table 3 SCS).

All field work was carried out in accordance with standard quality assurance / quality control procedures as discussed in the report and the quality control samples analysed included duplicates and trip blanks.

CONCLUSIONS

Based on the available background information and testing completed during the course of this investigation, the findings of the Phase Two ESA are summarized as follows:

- Soil samples tested for VOCs, PHC F1 to F4, PAHs and metals and inorganics (including hydrides and ORPs) were below the O. Reg. 153/04 Table 3 SCS for R/P/I in a non-

potable groundwater condition in accordance with O. Reg. 153/04, with the exception of the following;

- MW1-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene, Methylnaphthalene (1&2), Naphthalene, Phenanthrene;
- MW2-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Acenaphthylene,
- MW3-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Cadmium, Lead, Mercury, Zinc, Acenaphthylene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene
- BH4-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Benzo[a]anthracene, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene
- BH6-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Dibenzo[a,h]anthracene
- BH7-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Fluoranthene

Based on the findings of the Phase Two ESA, soil and groundwater did not meet the applicable O. Reg. 153/04 Table 3 SCS for R/P/I land use on the Site.

Given the soil and groundwater results do demonstrated exceedances when compared to the Table 3 SCS for the COCs, Certification of the Phase Two Property is not deemed acceptable by Landtek.

Free phase product (1 cm) was observed and measured on two separate sampling events November 21 and December 20, 2021 in BH(MW)2.

Based on the results of this Phase Two ESA, an appropriate remediation strategy will need to be considered to confirm the suitability of the Site for its intended development and use and the submission of an RSC.

RECOMMENDATIONS

The soil samples collected for analysis as described in the relevant sections of this report indicate that the fill material on the Site is adversely impacted and concentrations **do** exceed the applicable O. Reg. 153/04 Table 3 SCS. The native soils tested were below the applicable O. Reg. 153/04 Table 3 SCS for R/P/I.

Based on the results of this Phase Two ESA, an appropriate remediation strategy will need to be considered to confirm the suitability of the Site for its intended development and use and the submission of an RSC.

An RSC cannot be submitted based on the work completed on the Site.

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1.0 INTRODUCTION

Landtek Limited (Landtek) is pleased to submit the findings of the Phase Two Environmental Site Assessment (ESA) report for the properties located at 338 & 338 ½ Cumberland Avenue in Hamilton, Ontario ("the Phase Two Property" or "the Site"), as shown on **Figure 1**. The work was initiated following authorization to proceed from Mr. Frank Bisignani of Biz Mechanical in December of 2021.

The Phase Two ESA was completed in general accordance with CSA Standard Z769-00 as well as current guidelines described in Ontario Regulation 153/04 as amended. The current soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011). The Phase Two ESA covers physical sampling of soils and groundwater and chemical analyses where potential risks of environmental liability are evident from previous findings or past use of the property.

This Phase Two ESA has been completed to support the preparation of a Record of Site Condition (RSC) for the Phase Two Property in accordance with Ontario Regulation 153/04 (2011) ("O. Reg. 153/04").

1.1 Site Description

The Phase Two Property has an area of approximately 0.3076 hectares (0.76 acres) and is situated south of Cumberland Avenue and north of railroad tracks in Hamilton, Ontario. It is currently and has historically been used as a commercial property. The Site is bound by residential properties to the west, residential properties to the north followed by Cumberland Avenue, railroad tracks located to the south, and industrial properties to the east.

Figure 1 shows the general location of the Site.

The current land-use for the Site is commercial, which is consistent with the zoning of the area. The zoning of the area includes commercial, community and residential land-uses. The Site is to be redeveloped into residential dwellings.

O. Reg. 153/04 stipulates that for a property, the Site Condition Standards (SCS) that are applicable to the property are the standards that are applicable to the most sensitive type of property use, in this case residential is the most sensitive land use and therefore for the purpose of this Phase Two ESA residential is considered as the intended land-use.

1.2 Property Ownership

A Chain of Title was compiled for the Site by Ecolog ERIS. The Phase Two Properties are legally described as Part Lots 14-16 Plan 305, 338 ½ Cumberland Avenue, Hamilton, Parts 1-3, 7-9 62R6570: City of Hamilton. The title search indicated that the Site was transferred from Ibrahim Shaheen to the current owners Sams Scrap Metal Ltd. in 2011.

The current property owner's contact information is:
Sams Scrap Metal Ltd
President Frank Bisignani
338 ½ Cumberland Avenue, Hamilton, Ontario
L8M 2A1

1.3 Applicable Site Condition Standards (SCS)

Under the O. Reg. 153/04, Part XV.1 of the Environmental Protection Act, the selection of SCS, against which laboratory results are compared, is based on a number of criteria. The SCS are published in the Ontario Ministry of the Environment and Climate Change (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act dated April 15, 2011.

Landtek considered the following criteria for the selection of the applicable SCS for the Site:

- Land Use: The current land use is zoned commercial, community and residential, while the intended land-use for the property is reported to be residential;
- Potable or non-potable groundwater: Based on results from the Phase One ESA completed for the Site by Landtek (dated November 2021), the Site is serviced by municipal water and no potable water wells are located within 250 m of the Site;
- Proximity to surface water body: The Phase Two Property is not located within 30 metres (m) of a waterbody;
- Proximity to areas of natural significance or environmentally sensitive areas: The Site is not considered to be within the proximity of an environmentally sensitive area;
- Depth to bedrock: A property is considered a shallow soil property if one-third or more of the Phase Two Property consists of soil depths of 2 metres below ground surface (mbgs) or less. Based on the subsurface conditions observed as part of the Phase Two ESA work conducted to date, the depth to bedrock is considered to be greater than 2 m and therefore, shallow soil was not observed on the Site at the locations investigated on the Phase Two Property;
- pH of soil: If the surface soil (soil <1.5 m in depth) has a pH value of less than 5 or greater than 9, or if the subsurface soil (soil >1.5 m in depth) has a pH value of less than 5 or greater than 11. For the purposes of this assessment the pH was found to be within the allowable limits and therefore, the Site is not considered to be an environmentally sensitive area; and,
- Soil texture: Based on the results of grain size analysis completed on the Site and the subsurface conditions encountered, the soil texture is considered to be coarse textured as defined in O. Reg153/04.

Based on the above information, *Table 3 SCS Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition and Residential/Parkland/Institutional property use (O. Reg. 153/04 Table 3 SCS)* were selected as the applicable standards for the Phase Two Property.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

A review of the Ontario Base Mapping (OBM) map (Reference Map: Ontario Base Mapping (OBM) Data, Scale 1:22,000, Ontario Ministry of Natural Resources, 2010) provided by Ecolog ERIS for the Site and a 2 km radial search from the property boundaries indicates the local topography of the land slopes northeast towards Lake Ontario and that the regional groundwater flow is inferred to be north-easterly direction towards Hamilton Harbour, located approximately 2.0 km northwest of the Site.

Regional topography from Ministry of Natural Resources and Forestry website was reviewed and indicates the elevation of the Site is approximately 99 meters above sea level (masl).

The properties surrounding the Phase Two Property are predominantly residential, with some industrial properties to the east.

Based on the Phase One ESA completed for the Site, there are no Areas of Natural and Scientific Interest (ANSIs) within 250 m of the Site.

2.2 Previous Investigations

The following previous environmental reports were reviewed for the Phase Two Property and Phase Two Study Area during the preparation of this report:

Two reports were supplied to Landtek by the client:

1. ***Phase 1 Environmental Site Assessment, 338 Cumberland Avenue, Hamilton, Ontario prepared by Trow Consulting Engineers for K.O. Delivery and Warehouse Co. dated October 23, 1995 (1995 Phase 1)***

The following summary outlines the findings of the 1995 Phase 1 ESA:

The investigation was to characterize the likelihood, types and locations of contamination that may be present at the Site. The Site is rectangular shaped and is comprised of approximately 0.25 ha. The Site is a fenced gravel yard located behind residential properties on the south side of Cumberland Avenue. Development on the site consists of a small industrial garage. Properties surrounding the site include residential, light industrial, and a railway line.

The Site building (garage) is a single storey concrete block structure with a tar and shingle flat roof. A small wooden storage shed is located beside the garage. Access to the subject site is off Cumberland Avenue by a gravel driveway that runs along the east side of the house at 338 Cumberland.

On the basis of the 1995 Phase I ESA completed and the age of the subject building, the following summarizes the recommendations:

- Historical maps revealed that the Site was undeveloped or in residential use prior to 1911. In 1911, the site is indicated as part of the residential property of 338 Cumberland Avenue

and was developed with a garage and a greenhouse. The existing garage was built in 1966.

- Owned by K. O. Delivery and Warehousing Company Ltd. since 1937. During the 1970's, the site was jointly occupied by J. J. Armstrong and Son Ltd. (sewer contractors).

- The occupancy records also indicate that adjacent properties along Cumberland Avenue have been in residential use since at least 1946.

- A steel 2,270 litre diesel above ground storage tank (AST) was located along the north edge of the subject site. The AST was reportedly installed circa 1985 and was in-use at the time of the investigation. The tank appears to be in good structural condition and was connected to a nearby pump by an underground pipe. Some surface staining was observed at this location. No identification labels or vehicle impact barriers are in place.

- Two steel underground fuel storage tanks (UST) are located at the site installed circa late-1970s but were out of service since circa 1985. The gasoline UST was 9,000L and was formerly used to store gasoline, while the second tank has a capacity of 4,500 litres and was formerly used to store diesel fuel. Both of these tanks are connected to a nearby pump.

- The out-of-service UST should be removed in order to comply with applicable regulations

The potential presence of contaminated soils which may be associated with the out-of-service underground fuel storage tank installations and the above ground diesel fuel tank should be investigated. A Phase II ESA was recommended.

2. Phase 2 Environmental Site Assessment, 338 Cumberland Avenue, Hamilton, Ontario prepared by Trow Consulting Engineers for K.O. Delivery and Warehouse Co. dated November 10, 1995 (1995 Phase 2)

The following summary outlines the findings of the 1995 Phase 2 ESA:

- Three boreholes were drilled in the vicinity of the former USTs, boreholes were completed to maximum depth of bedrock at approximate 3 mbgs

- Monitoring for total organic vapours was completed in the field. Soil vapour concentrations were below 36 ppm which was considered low.

- The presence of total petroleum hydrocarbons resembling motor oil was detected in both of the samples tested. However, the concentrations of total petroleum hydrocarbons in the samples were below applicable MOE criteria established at the time of the investigation (275 and 288 ppm vs. 5000 ppm). The concentrations of all other parameters tested for were below the laboratory method detection limits

Groundwater was not encountered and was not sampled during the 1995 investigation.

3.0 SCOPE OF THE INVESTIGATION

The Phase Two ESA was carried out to address the APECs identified in the Phase One ESA. A summary of information on the PCAs, their locations and associated APECs and CPCs identified in the Phase One ESA are presented in **Table 2**.

The boreholes/monitoring wells proposed for the Phase Two ESA corresponding to each of the APECs are also presented in **Table 2** which provides the rationale for the work proposed.

The investigation locations are shown on **Figure 2** and **Figure 2a**.

Table 2: Areas of Potential Environmental Concern (APECs)

APEC	Location of APEC on the Phase Two Property	PCA	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted ground water or soil)	Borehole / Monitoring Well (BH/MW)
A	Entire Site	30. Fill material of unknown quality	On-Site	Metals, hydrides, PHCs, BTEX, VOCs	Soil	All bores and monitoring wells
B	Northeast portion of the Site	28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil and groundwater	BH(MW)2, and BH4
C	Central portion of the Site	28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil	BH(MW)3, BH4, and BH5
D	South portion of the Site	46. Rail Yards, Tracks and Spurs	On-Site	Metals, hydrides, CN-, B(HWS), Hg, PAHs	Soil and groundwater	BH(MW)1, BH(MW)3, BH5, and BH7
E	West perimeter of the Site	34. Metal Fabrication	Off-Site	Metals, hydrides, PHCs, BTEX, VOCs	Soil and groundwater	BH(MW)1

Notes:
1 - Area of Potential Environmental Concern (APEC) means the area on, in or under the Phase Two Property where one or more contaminants are potentially present, as determined through the phase two environmental site assessment, including through,
(a) Identification of past or present uses on, in or under the phase two property, and
(b) Identification of potentially contaminating activity.
2 - Potentially contaminating activity (PCA) means a use or activity set out in Column A of Table 2 of Schedule D that is occurring in a Phase One Study Area.
3 - Identify all contaminants of potential concern using the Method Groups as identified in the "Protocol for the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011.
4 - Media Potentially Impacted refers to soil, groundwater, surface water or sediment.
Metals - metals including hydrides (As, Sb, Se, Hg)
PHCs – petroleum hydrocarbons fractions F1-F4
PAH - polycyclic aromatic hydrocarbons
VOCs – volatile organic compounds BTEX – benzene, toluene, ethylbenzene, and xylenes

4.0 METHODOLOGY

The field work for this Phase Two ESA was carried out in November of 2021. The field work was implemented in accordance with the Sampling and Analysis Plan (SAP). The SAP was prepared based on the APEC identified on the Site and the corresponding PCAs, CPCs, and other potentially contaminating issues. Landtek proposed boreholes/monitoring wells on the Site to obtain soil samples, including near the water table and the installation of monitoring wells to obtain groundwater samples.

The analytical program presents information on the sampling locations, media sampled, sample depths and analytical parameters for which samples were analysed. The rationale for the sampling and analysis is presented in **Section 3.0**.

Landtek retained experienced contractors for the drilling activities. Landtek field staff were briefed prior to commencement of the field work by the Project Manager and the Project QP_{ESA}. Field staff was responsible for supervising field activities, logging the soils during the drilling and test pitting activities, monitoring the depth of drilling and installation of monitoring wells, soil, and groundwater sampling, and sorting and dispatch of samples under chain of custody documentation to the contract laboratory.

4.1 Drilling

As indicated in **Section 3.0**, Landtek used borehole drilling to conduct characterisation of the soil and groundwater at the Site. The details of borehole drilling, excavation of test pits and installation of groundwater monitoring wells in the boreholes are discussed in the sections below.

4.1.2 Borehole Drilling and Monitoring

Seven (7) boreholes (BH(MW)1, BH(MW)2, BH(MW)3, BH4, BH5, BH6, and BH7) were drilled on the Site in November of 2021, as shown on **Figure 3**; Three (3) boreholes were installed as groundwater monitoring wells (BH(MW)1, BH(MW)2, and BH(MW)3). The boreholes were drilled using a Diedrich D-70 track-mounted drilling rig with final borehole depths approximately 3 meters below ground surface (mbgs) (9.5 ft) and were established based on the subsurface conditions and likelihood of groundwater being encountered. Standard Penetration Tests (SPT's) and split spoon samples were taken during drilling at selected depths. Full time supervision of drilling and soil sampling operations was carried out by a representative of Landtek.

The boreholes were drilled using a Diedrich D-70 track-mounted drilling rig operated by Elements Drilling. Final borehole depths ranged from approximately 3 mbgs (9.5 ft) to 4.7 mbgs (15 ft) and were established based on the subsurface conditions and/or the likelihood of groundwater being encountered.

The soil was logged by qualified Landtek personnel using the Unified Soil Classification System (USCS) Standard Practices for Description and Identification of Soils, Visual Manual Procedure (ASTM D2488-09a), noting stratigraphy, subsurface conditions, and any physical evidence of soil quality impacts. Borehole and test pit logs are presented in **Appendix B.**

4.2 Soil Sampling

Each borehole was logged, and information recorded including drilling date, depth, headspace vapour concentrations, soil descriptions and measured depth to groundwater (if encountered).

Borehole soil samples were collected at discrete intervals using standard split spoon samples. Soil sampling locations were selected based on observations and field-screening (e.g., vapour readings, unique soil characteristics or visible staining).

Each soil sample taken was split into two (2) portions; one (1) portion was placed into laboratory-supplied sample jars for potential laboratory submission, and the other portion was placed in a sealable plastic bag for field-screening vapour measurement. PHC F1 – F4 and VOC samples were collected using a Terracore syringe precalibrated to approximately 5 grams of wet weight soil and placed directly into laboratory-prepared vials containing methanol preservative. All other soil samples, including those to be analysed for the remaining organic and metal parameters, were collected in laboratory-supplied containers. Two (2) soil samples per borehole was selected for submission for laboratory analysis based on field-screening vapour measurements and/or field observations.

Samples were stored on ice until delivery to Paracel Laboratories following standard chain-of-custody protocols. The soil samples selected for analysis were analyzed for selected COCs. The parameters included the measurement of pH which is required for the selection of the appropriate Site Condition Standards.

Borehole/monitoring well logs (**Appendix B**) provide a geologic description of overburden samples and the depths at which they were collected during the investigation.

4.3 Groundwater: Monitoring Well Installation

Three (3) groundwater monitoring wells (BH(MW)1, BH(MW)2, and BH(MW)3) were installed on the Site, to depths of approximately 4.6 mbgs.

The monitoring wells were constructed using 50 mm inside diameter (ID) Schedule 40 PVC pipe. All sections were machined with fine threaded flush joints to avoid the use of PVC glue and primer for connections as these bonding materials have the potential of introducing traces of organic contaminants. The screened sections of PVC pipe were manufactured with No. 10 (0.25 mm) machined slotting. Solid lengths of PVC pipe were used above the screened interval (i.e., riser pipe). Clean silica sand was placed around the screen to a minimum level of 0.10 m above the top of the screen. Bentonite (hydrated with tap water) was used to backfill the borehole above the sand. Monitoring wells were designed to be installed with screens completed in discrete lithology units to investigate potential groundwater impacts within these units. Groundwater monitoring wells were secured aboveground using a flush mount protective casing.

Monitoring well locations are shown on **Figure 3**. Monitoring well construction details are presented in the borehole logs presented in **Appendix B**.

4.4 Groundwater Sampling

4.5.1 Monitoring Well Development

The on-Site monitoring well was developed using a foot-valve inertial pump technique to minimize sediment in the well and to establish representative groundwater quality in the well. Well development was considered complete when a minimum of three (3) well volumes had been purged or when the well was purged dry a minimum of three (3) times.

4.5.2 Water Level Measurements

The depth to groundwater and total well depths were measured using a clean and calibrated electronic interface probe. The relative elevations were calculated by subtracting the measured groundwater depth from the surveyed top of the casing elevation.

To prevent cross-contamination, the interface probe was cleaned with a laboratory-grade phosphate-free detergent and distilled water solution before each use and in between each well. All water level measurements were taken from the top of the well riser pipe.

4.5.3 Groundwater Sample Collection

Groundwater sampling was carried out on November 16th, 2021. Samples were obtained from all three (3) newly installed monitoring wells (BH(MW)1, BH(MW)2, and BH(MW)3). During the sampling, groundwater samples were collected using dedicated tubing installed in each of the monitoring wells. This method minimizes the velocity of the formation water entering the well screen, as the drawdown is kept to a minimum (i.e., less than 10 % of the initial water column height) by adjusting the pumping rate. Sample filtering was conducted by Paracel Laboratories.

Free phase product (1 cm) was observed and measured on two separate sampling events November 21 and December 20, 2021 in BH(MW)2. In the event free product is observed groundwater cannot be sampled.

Samples were placed into laboratory-supplied containers and stored on ice in coolers for transport and delivery to Paracel Laboratories under a chain of custody protocol.

4.5 Analytical Testing

Laboratory analysis was carried out by Paracel Laboratories. The parameters for which samples were analysed were selected based on the SAP and field conditions encountered. The laboratory is accredited by the Canadian Association for Laboratory Accreditation (CALA). The methods used for analysis were consistent with those stipulated in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. The Analytical Program and laboratory certificates are provided in **Appendix C**.

4.6 Quality Assurance and Quality Control (QA/QC) Measures

All field work was performed following Landtek's Standard Operating Procedures (SOPs), which were developed in accordance with O. Reg. 153/04, as amended and included the following:

- Appropriate measures to avoid cross contamination and carry out decontamination where necessary, collection of all samples in laboratory provided containers, and placement of containers in coolers containing ice;

- The SAP, field conditions, as documented on the borehole and test pit logs and results of field screening, were reviewed to confirm that the appropriate samples were selected for laboratory analysis and that samples were scheduled for analysis of the required chemical parameters;

- The samples listed on the chain-of-custody form were cross-checked with the samples being shipped to the contract laboratory. A further check was carried out to ensure that the relevant analytical parameters had been requested for analysis;

- All coolers contained ice packs along with the sample containers to maintain the minimum temperature required on arrival at the contract laboratory;

- QA/QC samples were collected as required by O. Reg. 153/04 and included the following:

    - Duplicate soil and groundwater samples collected at a frequency of a minimum of 10% i.e., one duplicate for every ten (10) samples submitted for laboratory analysis;

    - A field blank was dispatched to the contract laboratory with the groundwater samples.

- Duplicate soil samples were collected by splitting the sample collected into two equal volumes prior to placing them in a primary and duplicate sample container. Duplicate groundwater samples were collected by filling a duplicate sample container immediately following the collection of the primary sample for each of the sample bottle types. The labelling on the duplicate samples were such that they were considered “blind” duplicates by the laboratory.

5.0 REVIEW AND EVALUATION

5.1 Geology

Geological and Hydrogeological information sources were reviewed to determine the nature of the subsurface strata on Site.

The Ontario Geology Survey has a web application, OGS Earth, which provides geoscience data, collected by the Mines and Minerals division, which can be viewed using user-friendly geographic information programs such as Google Earth. The Surficial Geology and Bedrock Geology applications were reviewed to determine the geologic characteristics mapped at the Site. A review of this data as well as MOE water well records indicate that the predominant Quaternary geology at the Site likely consists of sand and gravelly sand, and gravel underling the Site.

"Bedrock Topography of the Grimsby Area", Ministry of Natural Resources, Ontario Geological Survey, Preliminary Map P. 2401 published in 1981 indicates the bedrock formation is at an elevation of approximately 76 m. The bedrock geology at the Site likely consists of sandstone, shale, dolostone, and siltstone of the Lockport Formation.

Depth to bedrock within the Study Area was referenced within the Water Well Information System database (searched by Ecolog ERIS); Depth to shale bedrock was reported in the range from 2.1 m to 2.7 m bgs. Depth to groundwater was reported to range from 2.1 m to 2.4 m bgs.

5.2 Groundwater: Elevations and Flow Direction

Based on the Site geology information presented in **Section 5.1**, the main hydrogeological unit that was investigated at the Phase Two Property was the shallow groundwater table, present within the sands on the Site. The measured groundwater elevations ranged from 98.0 meters above mean sea level (masl) masl to 98.4 masl, as summarized below in **Table 3**.

Table 3: Depth to Groundwater and Groundwater Elevation Summary

Monitoring Well ID	Elevation (maSL)	November 21, 2021			December 20, 2021		
		Depth to GW	Thickness of FP	Elev. GW	Depth to GW	Thickness of FP	Elev. GW
BH(MW)1	100.5	2.10	--	98.4	2.16	--	98.3
BH(MW)2	100.3	2.30	--	98.0	2.30	--	98.0
BH(MW)3	100.4	2.35	0.01	98.1	2.37	0.01	98.0

The groundwater flow direction is inferred to be towards the northeast. The groundwater contours are interpreted based on the three (3) monitoring wells located on the Site.

5.3 Soil Quality

The results of the laboratory analysis of the soil samples analysed have been compared with the Table 3 SCS (residential, coarse textured soils) and are presented in **Table 2**. Laboratory certificates are presented in **Appendix C**.

The schedule of chemical testing and the summary of test results for soils are shown in **Table 4**. Samples were selected based on location and depth of potential areas of concern as well as olfactory or vapour reading indicators, where possible.

Table 4: Schedule of Chemical Analyses and Summary of Test Results for Soils

Sample	Depth (metres)	Analyses	Exceedances (ug/g)		
			Parameter	Sample Results	Table 3 RPI Standard**
MW1-1	0.75 to 1.4	M&I and PAHs	Boron	**2.0**	1.5
			Acenaphthylene	**1.54**	0.15
			Anthracene	**10.7**	0.67
			Benzo[a]anthracene	**21.4**	0.5
			Benzo[a]pyrene	**19.5**	0.3
			Benzo[b]fluoranthene	**14.6**	0.78
			Benzo[g,h,i]perylene	**15.7**	6.6
			Benzo[k]fluoranthene	**8.87**	0.78
			Chrysene	**20.2**	7
			Dibenzo[a,h]anthracene	**9.12**	0.1
			Fluoranthene	**57.3**	0.69
			Indeno [1,2,3-cd] pyrene	**19**	0.38
			Methylnaphthalene (1&2)	**1.57**	0.99
			Naphthalene	**1.91**	0.6
			Phenanthrene	**43.0**	6.2
MW1-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
MW2-1	0.75 to 1.4	M&I and PAHs	Acenaphthylene	**0.21**	0.15
MW2-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
MW3-1	0.75 to 1.4	M&I and PAHs	Boron	**1.9**	1.5
			Cadmium	**1.5**	1.2
			Lead	**395**	120
			Mercury	**0.4**	0.27
			Zinc	**759**	340
			Acenaphthylene	**0.37**	0.15
			Benzo[a]anthracene	**1.5**	0.5
			Benzo[a]pyrene	**1.3**	0.3
			Benzo[b]fluoranthene	**1.23**	0.78
			Dibenzo[a,h]anthracene	**0.52**	0.1
			Fluoranthene	**2.51**	0.69
			Indeno [1,2,3-cd] pyrene	**0.99**	0.38
MW3-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
BH4-1	0.75 to 1.4	M&I and PAHs	Benzo[a]anthracene	**1.01**	0.5
			Benzo[a]pyrene	**0.90**	0.3
			Dibenzo[a,h]anthracene	**0.33**	0.1
			Fluoranthene	**2.05**	0.69
			Indeno [1,2,3-cd] pyrene	**1.62**	0.38
BH4-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
BH5-1	0.75 to 1.4	M&I and PAHs	--	**No exceedance**	--
BH5-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
BH6-1	0.75 to 1.4	M&I and PAHs	Dibenzo[a,h]anthracene	**0.61**	0.1
BH6-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
BH7-1	0.75 to 1.4	M&I and PAHs	Boron	**2.0**	1.5
			Benzo[a]pyrene	**0.47**	0.3
			Dibenzo[a,h]anthracene	**0.18**	0.1
			Fluoranthene	**1.19**	0.69
BH7-2	2.3 to 2.9	VOCs & PHC F1-F4	--	**No exceedance**	--
QR-04	--	VOCs, PHC F1-F4, PAHs, M&I	PHC F2	**49.3**	30

****** Sample results compared with *Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act', April 2011. Table 3 R/P/I land use standards*
M&I – Metals and Inorganics
PHC F1-F4 – Petroleum Hydrocarbons Fraction 1 to Fraction 4 (PHC F1-F4)
PAH – Polycyclic Aromatic Hydrocarbons
VOCs – Volatile Organic Compounds

5.4 Groundwater Quality

The results of the groundwater analysis from the two (2) monitoring wells sampled (BH(MW)1, and BH(MW)3) were reported below the O. Reg. 153/04 Table 3 SCS.

Free phase product (1 cm) was observed and measured on two separate sampling events November 21 and December 20, 2021 in BH(MW)2.

The schedule of chemical testing and the summary of test results for groundwater are shown in **Table 5**.

Table 3: Schedule of Chemical Analyses and Summary of Test Results for Groundwater

Sample	Analyses Completed	Exceedances (ug/L)		
		Parameter	Sample Results	Table 3 Standard *
BH(MW)1	PHC F1-F4, VOCs, M&I, PAHs, BTEX, PCBs, CN-, B(HWS) and Hg	--	**No exceedance**	--
BH(MW)2		Free Product	Free Product**	Free product must be remove
DupA (duplicate of MW1)	VOCs	--	**No exceedance**	--
BH(MW)3	PHC F1-F4, VOCs, M&I, PAHs, BTEX, CN-, B(HWS), and Hg	--	**No exceedance**	--

****** Sample results compared with *Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act', April 2011. Table 3 R/P/I land use standards*
*** Free product (i.e. free phase oil or gasoline must be removed or remediated to use SCS*

M&I – Metals and Inorganics
PHC F1-F4 – Petroleum Hydrocarbons Fractions F1-F4
PAH – Polycyclic Aromatic Hydrocarbons
VOCs – Volatile Organic Compounds
BTEX – benzene, toluene, ethylbenzene, and xylenes

5.5 QA/QC Results

The following duplicate samples were submitted to the laboratory for analysis of selected COCs:

- Soil: lab analysed a QA/QC sample based on soil provided (QR-04) and,
- Groundwater: parent sample MW1 and duplicate sample DupA.

The Relative Percent Differences (RPD) were calculated between the parent and duplicate samples using the following formula:

$$\left|\frac{C_o - C_s}{(C_o + C_s)/2}\right| \times 100$$

Where:
Co = concentration of the original/parent sample; and
Cs = concentration of the duplicate sample.

Groundwater RPDs ranged from 0% to 22.2%, while soil RPDs ranged from 99% to 0%. Based on the absolute concentrations and the nature of the matrix, the RPD results between all the primary and duplicate samples analysed are considered to be acceptable.

The results of the field blank analysed indicated that there was no interference from extraneous sources of contamination during handling and transport of the samples.

The reported recoveries in the matrix spike analysed along with the batch of groundwater samples were between 72 % and 108.2 % which is considered to be acceptable and demonstrates that there was a minimum loss of volatiles during the sampling, handling, and transport of samples to the laboratory.

In addition to the field quality control samples, the analytical laboratory has its internal QA/QC programs to verify the acceptance of the data generated. The results of the laboratory QA/QC program are presented in the Laboratory Certificate of Analysis provided in **Appendix C**.

The overall QA/QC results are considered to be acceptable and support the reliability of the results of the field samples analysed.

6.0 RESULTS AND CONCLUSIONS

6.1 Soil Quality

The soil samples collected for analysis as described in the relevant sections of this report indicate that the native soils of the Site are not adversely impacted, and concentrations do not exceed the applicable Table 3 SCS. However, the fill on the rest of the Site (338 & 338 ½ Cumberland Avenue) are impacted with concentrations of Metals and PAHs which do exceed the applicable Table 3 SCS, as discussed below:

- MW1-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene, Methylnaphthalene (1&2), Naphthalene, Phenanthrene;
- MW2-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Acenaphthylene,
- MW3-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Cadmium, Lead, Mercury, Zinc, Acenaphthylene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene
- BH4-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Benzo[a]anthracene, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Fluoranthene, Indeno [1,2,3-cd] pyrene
- BH6-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Dibenzo[a,h]anthracene
- BH7-1 (sample depth of 0.75 to 1.4 m bgs) exceeded for Boron, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Fluoranthene

6.2 Groundwater Quality

The results of the groundwater analysis from the two (2) monitoring wells BH(MW)1 and BH(MW)3 were sampled were reported to be below the O. Reg. 153/04 Table 3 SCS.

Free phase product (1 cm) was observed and measured on two separate sampling events November 21 and December 20, 2021 in BH(MW)2.

6.3 Phase Two Property Certification

Based on the findings of the Phase Two ESA, soil and groundwater did not meet the applicable O. Reg. 153/04 Table 3 SCS for R/P/I land use on the Site.

Given the soil and groundwater results do demonstrated exceedances when compared to the Table 3 SCS for the COCs, Certification of the Phase Two Property is not deemed acceptable by Landtek.

Free phase product (1 cm) was observed and measured on two separate sampling events November 21 and December 20, 2021 in BH(MW)2.

Based on the results of this Phase Two ESA, an appropriate remediation strategy will need to be considered to confirm the suitability of the Site for its intended development and use and the submission of an RSC.

An RSC cannot be submitted based on the work completed on the Site.

6.4 Signatures

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

Yours truly,

LANDTEK LIMITED

Lauren Blair

Paul Blunt, P.Eng., QP_{ESA}

7.0 LIMITATIONS

This report was prepared for the exclusive use of the Client. It is intended to provide an assessment of the soil and groundwater conditions with respect to potential contamination prevailing at the time of the assessment. Any use of this document by any party other than the Client is at the sole risk of such user. Any reliance upon this report by any party other than the Client requires the prior written approval of Landtek Limited.

Landtek does not provide any warranty, expressed or implied, that this assessment has identified all potential contaminants at the Site or that the Site is free from any and all contamination from past or current practices other than noted, nor that all issues of environmental compliance have been addressed. The assessment of environmental conditions and potential hazards at the Site has been made using the historical information that supported the preparation of the Phase Two Environmental Site Assessment, on which the scope of this investigation was based, as well as the results of chemical analysis of soil and groundwater samples collected at the tested locations at the time of this investigation. The report must be considered in its entirety and no assurance is made regarding changes in conditions subsequent to the time of investigation.

The Site conditions have been inferred based on conditions observed at a limited number of sampling locations in accessible areas; however, it should be noted that conditions between and beyond sampling locations may vary. In addition, the assessment is dependent upon the accuracy of the analytical data generated through sample analysis and is limited to determining the presence of contaminants for which analysis have been conducted. Findings derived from this Phase Two Environmental Site Assessment are limited and Landtek Limited cannot state that areas of the Site, or neighbouring properties, or portion thereof, are unaffected by the contaminants of concern. The Client still bears risk that such contaminants may be present on, or may migrate to or off the property after the time of this investigation. Landtek Limited is not responsible for any follow-up action and /or costs.

In evaluating the Property, Landtek Limited has relied in good faith on information provided by individuals and companies noted in this report. We assume that the information provided is factual and accurate and Landtek Limited has not independently confirmed any such information.

8.0 REFERENCES

- Ontario Regulation 153/04, as amended by O. Reg. 511/09;
- Provincial Topographic Map – Ontario Base Mapping Data, Ontario Ministry of Natural Resources, 2010;
- Area of Natural and Scientific Interest Map, Ontario Ministry of Natural Resources, March 2017;
- The Surficial Geology of Southern Ontario Map, Ontario Geological Survey, 2010;
- Physiography of Southern Ontario Map, Ontario Geological Survey, 2007;
- *Bedrock Geology of Ontario, Southern Sheet*; Ontario Geological Survey, Map 2544, Scale 1: 1,000,000, 1991; and,
- *Quaternary Geology of Southern Ontario, Southern Sheet*, Map 2556, Scale 1:1,000,000, Ministry of Northern Development and Mines, Queen's Printer for Ontario, 1991.

LIMITATIONS OF THE REPORT

This report was prepared for the sole use of the Client and their legal counsel, and is intended to provide an evaluation of the current environmental conditions at the subject site. Any use that a third party makes of this report, or decisions made based on it, are the responsibility of the third party. Landtek Limited accepts no responsibility for damages of any type suffered by the third party as a result of actions or decisions made based on this report.

The conclusions and recommendations given in this report are based on information determined at the borehole locations. Subsurface conditions, ground water conditions and contaminant concentrations 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 subsurface 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 conclusions and recommendations given in this report are based on information obtained from various sources noted, subsurface investigation, and a visual examination of the site. It is based on the conditions of the subject property at the time of the field investigation supplemented by a review of historical information to assess environmental conditions at the site reported. Landtek assumes that information provided by others is factual and accurate, and accepts no responsibility for any deficiency, misstatement, of inaccuracy in this report from information provided by others.

This assessment should not be considered a comprehensive audit that outlines all environmental liabilities or eliminates all risks of encountering environmental problems in some portions of the site. There is no warranty expressed or implied by this report concerning the status of the study site.

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

The objective of this report was to assess the environmental conditions at the site, with respect to existing environmental regulations within the applicable jurisdiction. Compliance of past owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.

The site history performed herein relies on information supplied by others, such as local, provincial and federal agencies as other consultants. No attempt has been made to independently verify the accuracy of such information, unless specifically noted in our report.

Should the site conditions change or additional background data become available after this report has been issued, Landtek Limited should be made aware of the information and be given an opportunity to reassess the findings if it relates to environmental concerns.

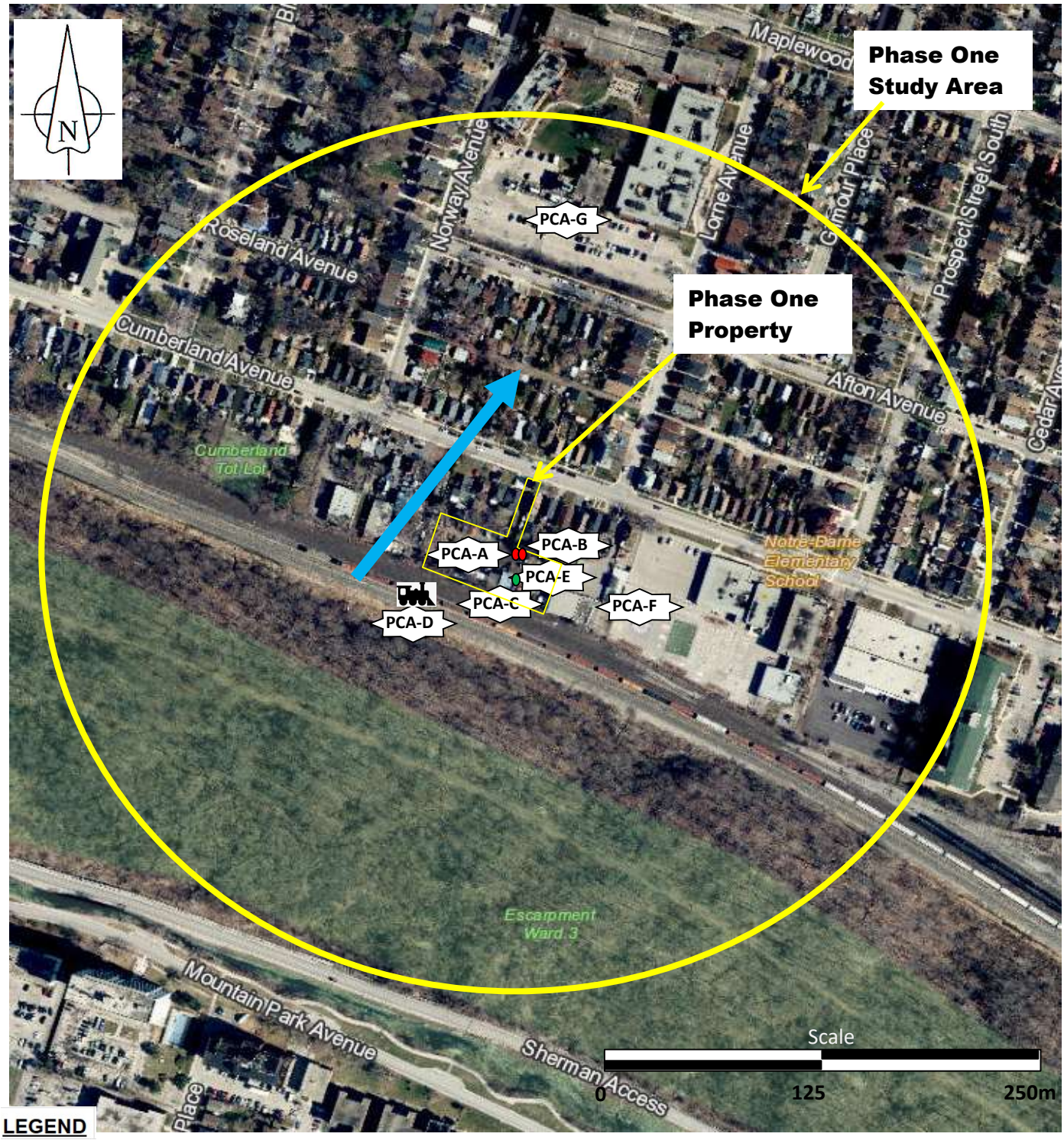
Qualifications

Investigative assessment work was conducted by Ms. Lauren Blair, who has a year of related environmental assessment experience including completion of several Phase One and Two ESA's and Site Remediation activities.

Mr. Paul J Blunt, P.Eng. is a Senior Environmental Engineer with Landtek and has conducted and supervised Phase One ESAs for more than 20 years. Mr. Blunt obtained a B.Sc. in Chemical Engineering from University of Windsor in 1987 and is a licensed Professional Engineer in the Province of Ontario. Mr. Blunt has conducted and supervised Phase One Environmental Site Assessments over 1500 environmental site assessments on a variety of agricultural, residential, industrial, commercial, and industrial properties. Mr. Blunt also has extensive experience in conducting Phase Two Environmental Site Assessments and is therefore familiar with how to assess potential concerns identified during the Phase One ESA. Mr. Blunt has conducted and supervised environmental projects throughout Canada, the United States and Australia.

APPENDIX A

SAMPLING AND ANALYSIS PLAN

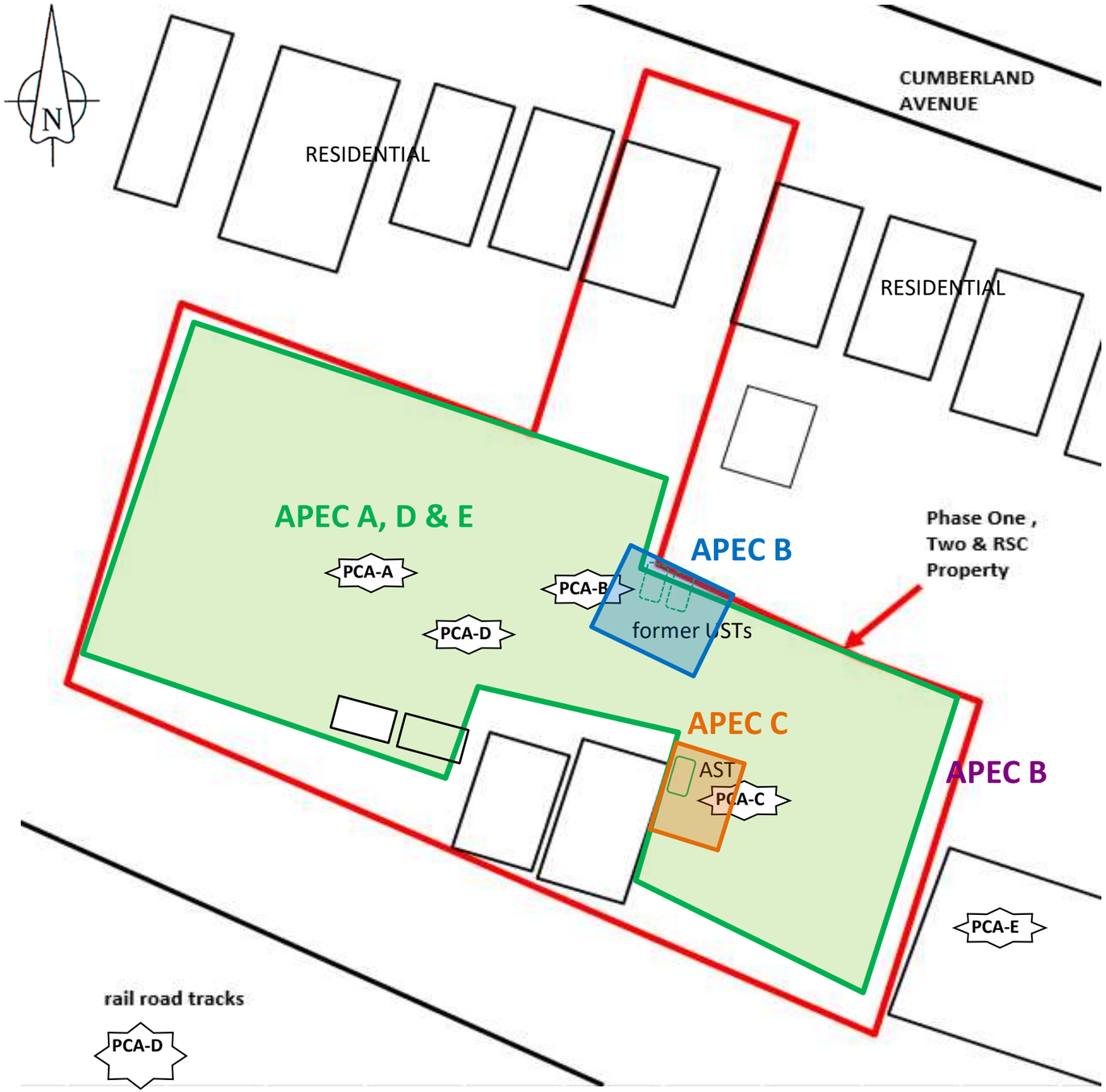


LEGEND

- former UST or AST location
- existing AST
- former salvage yard
- railroad tracks

PCA-A Potential Contaminating Activitity

LANDTEK LIMITED	
Scale:	Date: November 2021
Phase One ESA 338 & 338 1/2 Cumberland Avenue Hamilton, Ontario	
Title:	Fig 1 - Site Location Plan and PCAs
Project No. 21336	



Areas of Potential environmental Concern

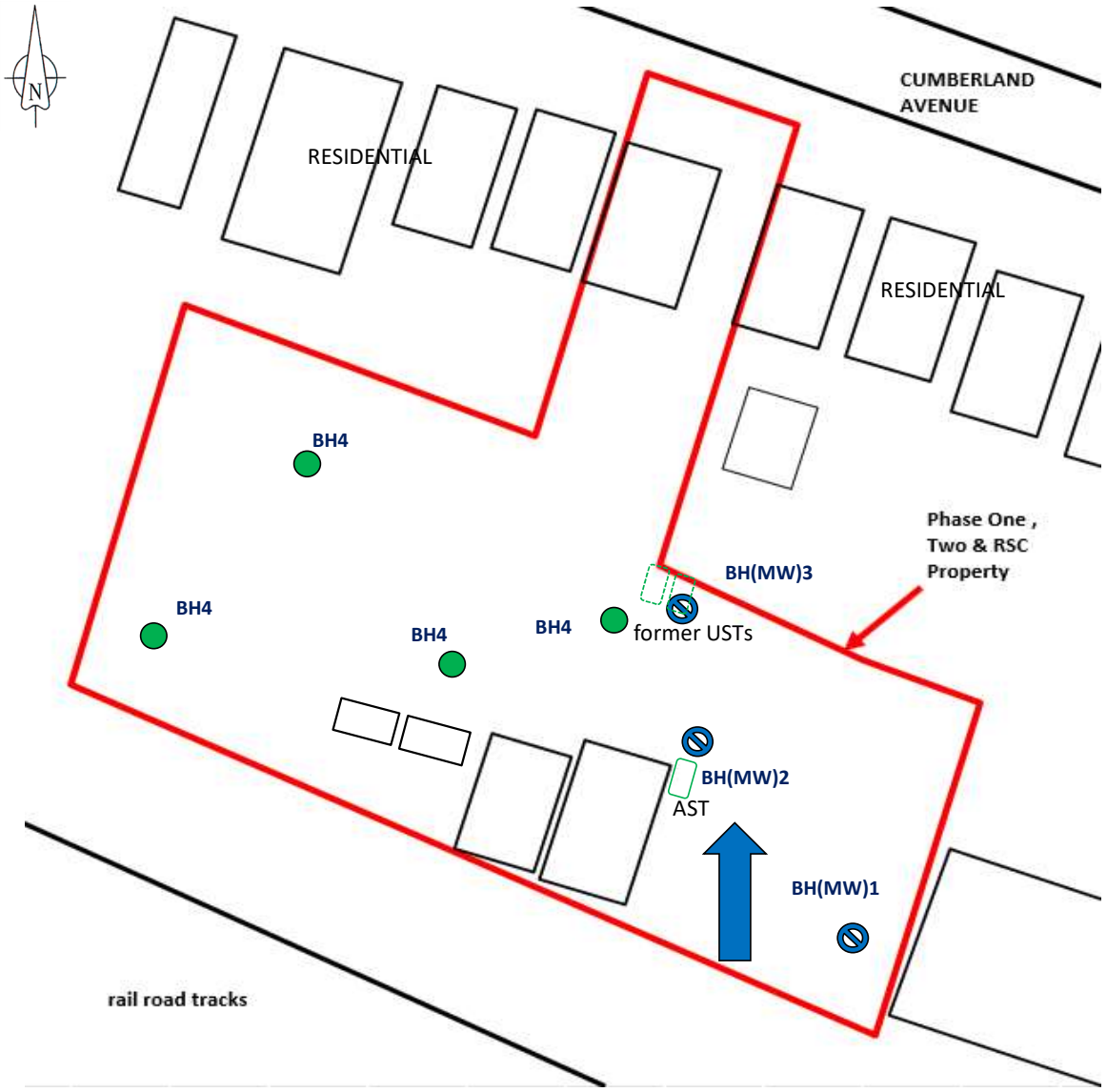
APEC A: Fill material of unknown quality
APEC B: Former USTs
APEC C : Existing AST
APEC E : Former Manufacturing
APEC D :Existing Railroad
APEC E : Former Manufacturing

SCALE

0 10 20
metres

LANDTEK LIMITED

Scale:	as shown	Date: December 2019
Project:	Phase One ESA 338 & 338 1/2 Cumberland Ave. Hamilton, ON	
Title:	Fig 2 - PCAs & Historic Infrastructure	
Project No.	21336	



LEGEND

BH/MW1 — monitoring wells

BH1 — boreholes

inferred groundwater flow direction

SCALE

0 10 20

metres

LANDTEK LIMITED

Scale:	as shown	Date: November 2021
Project:	Phase One ESA 338-33 1/2 Cumberland Avenue Hamilton, ontario	
Title:	Fig 3 - Boreholes & Monitoring wells	
Project No.	21336	

1.0 SAMPLING AND ANALYSIS PLAN

1.1 Introduction

The Sampling and Analysis Plan (SAP) was developed in support of the Phase Two ESA. The Phase Two ESA will be conducted to provide characterization of the subsurface conditions at the Site such that a Record of Site Condition (RSC) may be filed for the Site. The SAP presents the procedures and measures that will be undertaken during field investigative activities to characterize the Site conditions and meet the data quality objectives of the Phase Two ESA.

The SAP presents the sampling program used for the Site, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/ quality control (QA/QC) measures that will be undertaken to provide for the collection of accurate, reproducible, and representative data. These components are described in further detail in the following sections.

1.2 Field Sampling Program

The field sampling program was developed to provide the collection of samples of the surficial and subsurface soil materials and groundwater for chemical analysis of one or more of the following parameters: petroleum hydrocarbons, metals and inorganic parameters, volatile organic compounds, and polycyclic aromatic hydrocarbons (PAHs)) [collectively referred to as contaminants of concern (COCs)].

Vertical control of the boreholes and monitoring wells will be obtained through the completion of an elevation survey with reference to a local permanent and recoverable benchmark. Groundwater flow direction will be determined through groundwater level measurements and the relative groundwater elevations will be established in the Site elevation survey.

1.3 Field Sampling Methods

To meet the requirements of the field sampling program, the following field investigative methods will be undertaken:

- Boreholes
- Soil sampling
- Monitoring well installations
- Monitoring well development
- Residue management procedures
- Groundwater level measurements
- Elevation surveying
- Groundwater sampling

The field investigative methods will be performed as described below:

1.3.1 Boreholes

Seven (7) boreholes will be advanced at the Site to facilitate the collection of soil samples for chemical analysis and geologic characterization.

Prior to borehole drilling, utility clearances will be obtained from public and private locators, as required. If any uncertainty regarding the location of a buried utility at a borehole location is

encountered or if a location is within 1 m of a buried utility, the borehole will be initiated by daylighting or hand augering to a sufficient depth to ensure clearance of utilities. Boreholes will be advanced into the overburden soils by a drilling contractor under the full-time supervision of Landtek Limited staff.

1.3.2 Soil Sampling

Soil samples for geologic characterization and chemical analysis will be collected on a continuous basis in the overburden and weathered shale bedrock material. Geologic and sampling details of the recovered cores will be logged, and the samples will be assessed for the potential presence of non-aqueous phase liquids. A portion of each soil core will be placed in a sealed plastic bag and allowed to reach ambient temperature prior to field screening with a combustible gas detector or photo-ionization detector (PID) that will be calibrated with an appropriate reference gas prior to use. The vapour measurements will be made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings will provide a real-time indication of the relative concentration of volatile organic vapours encountered in the subsurface during drilling. Samples for chemical analysis will be selected on the basis of visual, combustible gas and olfactory evidence of impacts and at specific intervals to define the lateral and vertical extent of known impacts.

Recommended volumes of soil samples selected for chemical analysis will be collected into pre-cleaned, laboratory supplied, analytical test group specific containers. The samples will be placed into clean insulated coolers, chilled with ice for storage and transport. The samples will be assigned unique identification numbers and the date, time, location and requested analysis for each sample will be documented in a bound field notebook. The samples will be submitted to the contractual laboratory within analytical test group holding times under Chain of Custody (COC) protocols. New disposable chemical resistant gloves will be used during the handling and sample collection for each soil core to prevent sample cross-contamination.

1.3.3 Monitoring Well Installation

A drilling contractor will be contracted to advance seven (7) boreholes, three (3) of which will be equipped with monitoring wells to facilitate the collection of groundwater samples. The monitoring wells will be installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 - Amended to O. Reg. 128/03 and will be installed by a licensed well contractor.

The monitoring wells will be constructed using 50 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The base of the well screens will be sealed with PVC end caps. All well pipe connections will be factory machined, treaded flush couplings. The pipe components will be pre-wrapped in plastic, which will be removed prior to insertion in the borehole to minimize the potential for contamination. No lubricants or adhesives will be used in the construction of the monitoring wells. The annular space around the well screens will be backfilled with silica sand to an average height of 0.3 m above the top of the screen. Granular bentonite will be placed in the borehole annulus from the top of the sand pack to approximately 0.3 m below grade. The monitoring wells will be completed with steel monument protective casings and cemented into place.

1.3.4 Monitoring Well Development

The newly installed monitoring wells will be developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance hydraulic communication with the surrounding formation waters. The monitoring wells will be developed using a Waterra foot valve

pump and sample tubing. Monitoring well development will be monitored by visual observations of turbidity, and by taking field measurements of pH, specific conductance, and temperature for every standing well (i.e., wetted casing) volume removed. Standing water volumes will be determined by means of an electronic water level meter. Water quality parameter measurements will be recorded using a multi meter instrument. The instrument probes will be calibrated prior to use following the manufacturer's procedures using analytical grade reagents, or if obtained from a field equipment supplier, the calibration checked. Approximately three to five wetted well volumes will be removed; and, well development will continue until the purged water has chemically stabilized as indicated by visual observation and field parameter measurements.

Well development details will be documented on a well development log sheet or in a bound hard cover notebook. All development waters will be collected and stored in labelled, sealed containers.

1.3.5 Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling programs and monitoring well sampling programs comprised of soil cuttings from drilling activities, decontamination fluids from equipment cleaning, and waters from well development and purging will be placed in labelled, sealed drums for off-Site disposal.

1.3.6 Groundwater Level Measurements

Groundwater level measurements will be recorded for the installed monitoring wells to determine groundwater flow direction in the bedrock aquifer beneath the Site. Water levels will be measured with respect to the top of the casing by means of an electronic water level meter. The water levels will be recorded on water level log sheets or in a bound field notebook. The water level meter probe will be decontaminated between monitoring well locations.

1.3.7 Elevation Surveying

An elevation survey will be conducted to obtain vertical control of the newly installed monitoring well locations. The top of casing and ground surface elevation of each monitoring well location will be surveyed against a known geodetic or permanently recoverable benchmark. Elevations measured against a geodetic benchmark will be recorded as meters above sea level (masl). The benchmark is assigned an elevation of 99.0 meters above sea level (masl). The elevation survey will be accurate to within +- 0.3 cm.

1.3.8 Groundwater Sampling

Groundwater samples will be collected from the installed monitoring wells for chemical analysis. The monitoring wells will be purged first of three to five wetted well volumes of water to remove standing water and draw in fresh formation water. Wetted well volumes will be determined by measuring water levels with an electronic water level meter. Waterra foot valve pump and sample tubing or bailers will be used for well purging and sample collection. Wells, which are purged dry, are to recover to 75% of static levels before sampling.

Recommended groundwater sample volumes will be collected into pre-cleaned, laboratory-supplied vials or bottles with analytical test group specific preservatives, as required. The samples will be placed in an insulated cooler chilled with ice for storage and transport.

All groundwater samples will be assigned unique identification number, and the date, time, project

number, company name, location and requested analyses for each sample will be documented in a bound hard cover notebook. The samples will be submitted to the contractual laboratory within analytical test group holding times under COC protocols. New disposable chemical resistant gloves will be used for each sampling location to prevent sample cross-contamination.

1.4 Field Quality Assurance/Quality Control Program

The objective of the field quality assurance/quality control (QA/QC) program is to obtain soil and groundwater samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA. The objectives of the QA/QC program will be achieved through the implementation of procedures for the collection of unbiased (uncontaminated) samples, sample documentation to provide a measure of sample reproducibility and accuracy. The field QA/QC measures will comprise:

- Decontamination Protocols
- Equipment Calibration
- Sample Preservation
- Sample Documentation
- Field Duplicates and Blanks

Details of the field QA/QC measures are provided below.

1.4.1 Decontamination Protocols

Decontamination protocols will be followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross-contamination. For soil sampling, sampling equipment will be cleaned/decontaminated between sampling intervals. For the monitoring well installations, well components will not be permitted to come into contact with the ground surface prior to insertion into the boreholes. Electronic water level meters will be decontaminated between monitoring well locations during well development, purging, and rising head tests. All decontamination fluids will be collected and stored in clearly labelled, sealed containers.

1.4.2 Equipment Calibration

All equipment requiring calibration will be calibrated in the field according to the manufacturer's requirements using analytical grade reagents, or if the equipment is rented, by the supplier prior to conducting the sampling activities. All calibration data will be documented in a hard cover, bound workbook or on a calibration log sheet.

1.4.3 Sample Preservation

All samples will be preserved using appropriate analytical test group specific reagents, as required, and upon collection will be placed in cooled, insulated containers for storage and transport.

1.4.4 Sample Documentation

All samples will be assigned a unique identification number which is to be recorded along with the date, project number, company name, location and requested analysis in a bound field notebook or on a sampling worksheet. All samples will be handled and transported following chain-of-custody protocols.

1.4.5 Field Duplicate and Blanks

Where groundwater samples are to be analyzed for volatile organic compounds, one trip blank shall be submitted for laboratory analysis with each submission. Field duplicates will be submitted and analysed at a ratio of one duplicate sample for every ten samples submitted for laboratory analysis.

APPENDIX B

BORHOLE LOGS

Log of Borehole: BH(MW)1

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE			
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.5						
		FILL: sand & gravel, some stones, some asphalt, dry		Bentonite	SS1		0.0-0.6	<10	
0.5			99.9	riser					
1.0		**FILL**: silty sand, some stones, somewood chips	99.5		SS2		0.75-1.4	<10	metals & inorg. PAHs
		grey black staining , damp							
1.5									
					SS3		1.5-2.2.0	<10	
2.0		W.L. 98.4 maSL Nov 21, 2021							
		SILT: some shale some sand, grey, moist to wet							
2.5			97.3	Screen	SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
		BEDROCK: Shale, highly weathered, some sand,							
		red, some grey, trace brown							
3.0									
		(switch to air rotary)							
3.5									
4.0									BTEX & PHC(F1-F4)
4.5				Silica sand					
		End of Borehole 4.6 m	95.6						
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH(MW)2

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE			
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.5						
		FILL: sand & gravel, some stones, dry		Bentonite	SS1		0.0-0.6	<10	
0.5			99.9	riser					
1.0		**FILL**: silty sand, some stones,moist,	99.5		SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
					SS3		1.5-2.2.0	100	
2.0		W.L. 98.0 maSL Nov 21, 2021							
		SILT: some shale some sand, grey, moist to wet							
2.5			97.3	Screen	SS4		2.3-2.9	200	VOC & PHC(F1-F4)
		BEDROCK: Shale, highly weathered, some sand, red, some grey, trace brown		Silica sand					
3.0		(switch to air rotary)							
3.5									
4.0									
4.5		End of Borehole 4.6 m	95.6						
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH(MW)3

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE | **SAMPLE**

Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.5						
		FILL: sand & gravel, some stones, some asphalt, dry		Bentonite	SS1		0.0-0.6	<10	
0.5			99.9	riser					
1.0		**FILL**: silty sand, some stones,grey black staining , damp	99.5		SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
		-brown, trace gravel, firm to stiff			SS3		1.5-2.2.0	<10	
2.0		W.L. 98.1 maSL Nov 21, 2021							
		SILT: some shale some sand, grey, moist to wet							
2.5		BEDROCK: Shale, highly weathered, some sand, red, some grey, trace brown	97.3	Screen	SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
3.0		(switch to air rotary)		Silica sand					
3.5									
4.0									
4.5		End of Borehole 4.6 m	95.6						
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH4

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE		
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.1						
		FILL: sand & gravel, some stones, some asphalt, dry			SS1		0.0-0.6	<10	
0.5			99.5						
1.0		**FILL**: silty sand, some stones,grey black staining , damp			SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
2.0					SS3		1.5-2.2.0	<10	
		SILT: some shale some sand, grey, moist to wet							
2.5		BEDROCK: Shale, highly weathered, some sand, red, some grey, trace brown	97.8		SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
3.0		End of Borehole 2.9 m	97.2						
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH5

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE		
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.2						
		FILL: sand & gravel, some stones, some asphalt, grey, dry			SS1		0.0-0.6	<10	
0.5			99.6						
1.0		**FILL**: silty sand, some stones,grey damp			SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
2.0					SS3		1.5-2.2.0	<10	
		SILT: some shale some sand, grey, moist to wet							
2.5		BEDROCK: Shale, highly weathered, some sand, red, some grey, trace brown	98.3		SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
3.0		End of Borehole 2.9 m	97.3						
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH6

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE			
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.4						
		FILL: sand & gravel, some stones, some asphalt, dry			SS1		0.0-0.6	<10	
0.5			99.8						
1.0		**FILL**: silty sand, some stones,grey damp			SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
2.0					SS3		1.5-2.2.0	<10	
		SILT: some shale some sand, grey, moist to wet							
2.5		BEDROCK: Shale, highly weathered, some sand,	98.3		SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
3.0		red, some grey, trace brown							
		End of Borehole 2.9 m	97.3						
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

Log of Borehole: BH7

Project No: 21336
Project : Phase Two ESA
Client: Biz Mechanical

Location: 338 Cumberland Avenue, Hamilton,ON
Drilling Date: November 11, 2021
Logged By: LB & RH

SUBSURFACE PROFILE							SAMPLE			
Depth	Symbol	Description	Elevation Depth	Monitoring Well Details	Sample ID	Recovery (%)	Sample Interval	Soil Vapour (ppm)	Laboratory Analysis
0.0		**gravel surface**	100.6						
		FILL: sand & gravel, some stones, some asphalt, dry			SS1		0.0-0.6	<10	
0.5			100.0						
1.0		**FILL**: silty sand, some stones,grey damp			SS2		0.75-1.4	<10	metals & inorg. PAHs
1.5									
					SS3		1.5-2.2.0	<10	
2.0		SILT: some shale some sand, grey, moist to wet							
2.5		BEDROCK: Shale, highly weathered, some sand, red, some grey, trace brown	98.5		SS4		2.3-2.9	<10	VOC & PHC(F1-F4)
3.0		End of Borehole 2.9 m	97.5						
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									

Contractor:Elements Drilling
Drill Method: rotary auger
Well Casing : 50 mm

LANDTEK LIMITED

Sheet: 1 of 1

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSES
Including Laboratory QA/QC Data

Soil and Groundwater Results

PARACEL LABORATORIES LTD.

TRUSTED.
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Certificate of Analysis

Landtek Limited

205 Nebo Road, Unit 3
Hamilton, ON L8W 2E1
Attn: Rachel Hlywka

Client PO: 21336
Project: 21336
Custody: 62347, 62348

Report Date: 17-Nov-2021
Order Date: 11-Nov-2021

Order #: 2146456

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID	Paracel ID	Client ID
2146456-01	MW1-1		
2146456-02	MW1-2		
2146456-03	MW2-1		
2146456-04	MW2-2		
2146456-05	MW3-1		
2146456-06	MW3-2		
2146456-07	BH4-1		
2146456-08	BH4-2		
2146456-09	BH5-1		
2146456-10	BH5-2		
2146456-11	BH6-1		
2146456-12	BH6-2		
2146456-13	BH7-1		
2146456-14	BH7-2		

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	16-Nov-21	16-Nov-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	15-Nov-21	16-Nov-21
Conductivity	MOE E3138 - probe @25 °C, water ext	16-Nov-21	16-Nov-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	12-Nov-21	12-Nov-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	16-Nov-21	16-Nov-21
PHC F1	CWS Tier 1 - P&T GC-FID	15-Nov-21	16-Nov-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	15-Nov-21	17-Nov-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	16-Nov-21	16-Nov-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	12-Nov-21	15-Nov-21
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	15-Nov-21	16-Nov-21
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	15-Nov-21	16-Nov-21
SAR	Calculated	16-Nov-21	16-Nov-21
Solids, %	Gravimetric, calculation	15-Nov-21	16-Nov-21

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 17-Nov-2021
Order Date: 11-Nov-2021
Project Description: 21336

Summary of Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances. Regulatory limts displayed in brackets, (), applies to medium and fine textured soils.

Criteria:

Client ID	Analyte	MDL / Units	Result	Reg 153/04 (2011)-Table 1 Residential/Industrial

PARACEL LABORATORIES LTD.

Order #: 2146456

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	MW1-1	MW1-2	MW2-1	MW2-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-01	2146456-02	2146456-03	2146456-04	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Physical Characteristics						
% Solids	0.1 % by Wt.	83.7	86.9	89.4	90.9	
General Inorganics						
SAR	0.01 N/A	0.45	-	0.95	-	
Conductivity	5 uS/cm	233	-	266	-	
Cyanide, free	0.03 ug/g	<0.03	-	<0.03	-	
pH	0.05 pH Units	7.62	-	7.56	-	5 - 9 pH units
Metals						
Antimony	1.0 ug/g	<1.0	-	<1.0	-	
Arsenic	1.0 ug/g	7.5	-	6.4	-	
Barium	1.0 ug/g	63.3	-	43.3	-	
Beryllium	0.5 ug/g	0.7	-	<0.5	-	
Boron	5.0 ug/g	21.5	-	9.4	-	
Boron, available	0.5 ug/g	2.0	-	0.6	-	
Cadmium	0.5 ug/g	0.5	-	0.6	-	
Chromium	5.0 ug/g	24.1	-	7.0	-	
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	
Cobalt	1.0 ug/g	9.6	-	4.1	-	
Copper	5.0 ug/g	46.7	-	25.4	-	
Lead	1.0 ug/g	49.7	-	64.6	-	
Mercury	0.1 ug/g	<0.1	-	<0.1	-	
Molybdenum	1.0 ug/g	1.1	-	<1.0	-	
Nickel	5.0 ug/g	21.9	-	8.3	-	
Selenium	1.0 ug/g	<1.0	-	<1.0	-	

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 17-Nov-2021
Order Date: 11-Nov-2021
Project Description: 21336

	Client ID:	MW1-1	MW1-2	MW2-1	MW2-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-01	2146456-02	2146456-03	2146456-04	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Silver	0.3 ug/g	<0.3	-	<0.3	-	
Thallium	1.0 ug/g	<1.0	-	<1.0	-	
Uranium	1.0 ug/g	<1.0	-	<1.0	-	
Vanadium	10.0 ug/g	33.2	-	13.3	-	
Zinc	20.0 ug/g	160	-	308	-	
Volatiles						
Acetone	0.50 ug/g	-	<0.50	-	<0.50	
Benzene	0.02 ug/g	-	<0.02	-	<0.02	
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	MW1-1	MW1-2	MW2-1	MW2-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-01	2146456-02	2146456-03	2146456-04	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	
Ethylene dibromide (dibromoethane	0.05 ug/g	-	<0.05	-	<0.05	
Hexane	0.05 ug/g	-	<0.05	-	<0.05	
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	
Styrene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Toluene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	
m,p-Xylenes	0.05 ug/g	-	<0.05	-	<0.05	
o-Xylene	0.05 ug/g	-	<0.05	-	<0.05	

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 17-Nov-2021
Order Date: 11-Nov-2021
Project Description: 21336

	Client ID:	MW1-1	MW1-2	MW2-1	MW2-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	Criteria:
	Sample ID:	2146456-01	2146456-02	2146456-03	2146456-04	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Xylenes, total	0.05 ug/g	-	<0.05	-	<0.05	
4-Bromofluorobenzene	Surrogate	-	106%	-	105%	
Dibromofluoromethane	Surrogate	-	99.0%	-	96.4%	
Toluene-d8	Surrogate	-	107%	-	108%	
Hydrocarbons						
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	<7	
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	<4	
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	52	
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	36	
Semi-Volatiles						
Acenaphthene	0.02 ug/g	3.62	-	<0.02	-	
Acenaphthylene	0.02 ug/g	1.54	-	0.21	-	
Anthracene	0.02 ug/g	10.7	-	0.17	-	
Benzo [a] anthracene	0.02 ug/g	21.4	-	0.17	-	
Benzo [a] pyrene	0.02 ug/g	19.5	-	0.18	-	
Benzo [b] fluoranthene	0.02 ug/g	14.6	-	0.15	-	
Benzo [g,h,i] perylene	0.02 ug/g	15.7	-	0.26	-	
Benzo [k] fluoranthene	0.02 ug/g	8.87	-	0.08	-	
Chrysene	0.02 ug/g	20.2	-	0.17	-	
Dibenzo [a,h] anthracene	0.02 ug/g	9.12	-	0.10	-	
Fluoranthene	0.02 ug/g	57.3	-	0.28	-	
Fluorene	0.02 ug/g	4.92	-	<0.02	-	
Indeno [1,2,3-cd] pyrene	0.02 ug/g	19.0	-	0.24	-	
1-Methylnaphthalene	0.02 ug/g	0.65	-	0.12	-	

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	MW1-1	MW1-2	MW2-1	MW2-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	**Criteria:**
	Sample ID:	2146456-01	2146456-02	2146456-03	2146456-04	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
2-Methylnaphthalene	0.02 ug/g	0.92	-	0.12	-	
Methylnaphthalene (1&2)	0.03 ug/g	1.57	-	0.24	-	
Naphthalene	0.01 ug/g	1.91	-	0.07	-	
Phenanthrene	0.02 ug/g	43.0	-	0.25	-	
Pyrene	0.02 ug/g	37.8	-	0.15	-	
2-Fluorobiphenyl	Surrogate	87.5%	-	91.5%	-	
Terphenyl-d14	Surrogate	80.0%	-	61.4%	-	

PARACEL LABORATORIES LTD.

Order #: 2146456

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	MW3-1	MW3-2	BH4-1	BH4-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-05	2146456-06	2146456-07	2146456-08	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Physical Characteristics						
% Solids	0.1 % by Wt.	85.9	85.1	87.0	83.4	
General Inorganics						
SAR	0.01 N/A	0.54	-	1.21	-	
Conductivity	5 uS/cm	329	-	288	-	
Cyanide, free	0.03 ug/g	<0.03	-	<0.03	-	
pH	0.05 pH Units	8.16	-	7.63	-	5 - 9 pH units
Metals						
Antimony	1.0 ug/g	<1.0	-	<1.0	-	
Arsenic	1.0 ug/g	16.0	-	5.8	-	
Barium	1.0 ug/g	138	-	77.6	-	
Beryllium	0.5 ug/g	0.8	-	0.7	-	
Boron	5.0 ug/g	16.5	-	19.8	-	
Boron, available	0.5 ug/g	1.9	-	1.3	-	
Cadmium	0.5 ug/g	1.5	-	<0.5	-	
Chromium	5.0 ug/g	39.7	-	15.4	-	
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	
Cobalt	1.0 ug/g	9.2	-	7.8	-	
Copper	5.0 ug/g	111	-	21.1	-	
Lead	1.0 ug/g	395	-	30.3	-	
Mercury	0.1 ug/g	0.4	-	0.1	-	
Molybdenum	1.0 ug/g	2.2	-	1.0	-	
Nickel	5.0 ug/g	25.3	-	17.3	-	
Selenium	1.0 ug/g	2.4	-	<1.0	-	

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Client: Landtek Limited
Client PO: 21336

Report Date: 17-Nov-2021
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Project Description: 21336

	Client ID:	MW3-1	MW3-2	BH4-1	BH4-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	Criteria:
	Sample ID:	2146456-05	2146456-06	2146456-07	2146456-08	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Silver	0.3 ug/g	<0.3	-	<0.3	-	
Thallium	1.0 ug/g	<1.0	-	<1.0	-	
Uranium	1.0 ug/g	<1.0	-	<1.0	-	
Vanadium	10.0 ug/g	37.5	-	23.3	-	
Zinc	20.0 ug/g	759	-	81.7	-	
Volatiles						
Acetone	0.50 ug/g	-	<0.50	-	<0.50	
Benzene	0.02 ug/g	-	<0.02	-	<0.02	
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	

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Project Description: 21336

	Client ID:	MW3-1	MW3-2	BH4-1	BH4-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	Criteria:
	Sample ID:	2146456-05	2146456-06	2146456-07	2146456-08	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	
Ethylene dibromide (dibromoethane	0.05 ug/g	-	<0.05	-	<0.05	
Hexane	0.05 ug/g	-	<0.05	-	<0.05	
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	
Styrene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Toluene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	
m,p-Xylenes	0.05 ug/g	-	<0.05	-	<0.05	
o-Xylene	0.05 ug/g	-	<0.05	-	<0.05	

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	Client ID:	MW3-1	MW3-2	BH4-1	BH4-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	Criteria:
	Sample ID:	2146456-05	2146456-06	2146456-07	2146456-08	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Xylenes, total	0.05 ug/g	-	<0.05	-	<0.05	
4-Bromofluorobenzene	Surrogate	-	105%	-	105%	
Dibromofluoromethane	Surrogate	-	97.5%	-	96.0%	
Toluene-d8	Surrogate	-	107%	-	108%	
Hydrocarbons						
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	<7	
F2 PHCs (C10-C16)	4 ug/g	-	15	-	<4	
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	79	
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	48	
Semi-Volatiles						
Acenaphthene	0.02 ug/g	0.06	-	0.23	-	
Acenaphthylene	0.02 ug/g	0.37	-	0.13	-	
Anthracene	0.02 ug/g	0.36	-	0.43	-	
Benzo [a] anthracene	0.02 ug/g	1.50	-	1.01	-	
Benzo [a] pyrene	0.02 ug/g	1.30	-	0.90	-	
Benzo [b] fluoranthene	0.02 ug/g	1.23	-	0.61	-	
Benzo [g,h,i] perylene	0.02 ug/g	0.70	-	0.43	-	
Benzo [k] fluoranthene	0.02 ug/g	0.66	-	0.37	-	
Chrysene	0.02 ug/g	1.13	-	0.75	-	
Dibenzo [a,h] anthracene	0.02 ug/g	0.52	-	0.33	-	
Fluoranthene	0.02 ug/g	2.51	-	2.05	-	
Fluorene	0.02 ug/g	0.13	-	0.21	-	
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.99	-	1.62	-	
1-Methylnaphthalene	0.02 ug/g	0.06	-	0.36	-	

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Project Description: 21336

	Client ID:	MW3-1	MW3-2	BH4-1	BH4-2	
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	Criteria:
	Sample ID:	2146456-05	2146456-06	2146456-07	2146456-08	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
2-Methylnaphthalene	0.02 ug/g	0.08	-	0.35	-	
Methylnaphthalene (1&2)	0.03 ug/g	0.14	-	0.70	-	
Naphthalene	0.01 ug/g	0.06	-	0.28	-	
Phenanthrene	0.02 ug/g	0.99	-	1.60	-	
Pyrene	0.02 ug/g	1.77	-	1.48	-	
2-Fluorobiphenyl	Surrogate	85.1%	-	69.6%	-	
Terphenyl-d14	Surrogate	66.2%	-	80.0%	-	

PARACEL LABORATORIES LTD.

Order #: 2146456

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Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

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Project Description: 21336

	Client ID:	BH5-1	BH5-2	BH6-1	BH6-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-09	2146456-10	2146456-11	2146456-12	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Physical Characteristics						
% Solids	0.1 % by Wt.	86.6	85.0	86.0	83.9	
General Inorganics						
SAR	0.01 N/A	0.46	-	0.60	-	
Conductivity	5 uS/cm	149	-	115	-	
Cyanide, free	0.03 ug/g	<0.03	-	<0.03	-	
pH	0.05 pH Units	7.42	-	7.23	-	5 - 9 pH units
Metals						
Antimony	1.0 ug/g	<1.0	-	<1.0	-	
Arsenic	1.0 ug/g	8.2	-	5.9	-	
Barium	1.0 ug/g	38.0	-	30.6	-	
Beryllium	0.5 ug/g	0.6	-	<0.5	-	
Boron	5.0 ug/g	17.2	-	8.5	-	
Boron, available	0.5 ug/g	1.4	-	0.8	-	
Cadmium	0.5 ug/g	<0.5	-	<0.5	-	
Chromium	5.0 ug/g	17.4	-	12.3	-	
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	
Cobalt	1.0 ug/g	9.0	-	6.5	-	
Copper	5.0 ug/g	29.1	-	28.5	-	
Lead	1.0 ug/g	14.2	-	10.6	-	
Mercury	0.1 ug/g	<0.1	-	<0.1	-	
Molybdenum	1.0 ug/g	<1.0	-	<1.0	-	
Nickel	5.0 ug/g	20.5	-	15.3	-	
Selenium	1.0 ug/g	<1.0	-	<1.0	-	

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	Client ID:	BH5-1	BH5-2	BH6-1	BH6-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-09	2146456-10	2146456-11	2146456-12	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Silver	0.3 ug/g	<0.3	-	<0.3	-	
Thallium	1.0 ug/g	<1.0	-	<1.0	-	
Uranium	1.0 ug/g	<1.0	-	<1.0	-	
Vanadium	10.0 ug/g	30.9	-	23.4	-	
Zinc	20.0 ug/g	55.1	-	53.9	-	
Volatiles						
Acetone	0.50 ug/g	-	<0.50	-	<0.50	
Benzene	0.02 ug/g	-	<0.02	-	<0.02	
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	

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	Client ID:	BH5-1	BH5-2	BH6-1	BH6-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-09	2146456-10	2146456-11	2146456-12	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	
Ethylene dibromide (dibromoethane	0.05 ug/g	-	<0.05	-	<0.05	
Hexane	0.05 ug/g	-	<0.05	-	<0.05	
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	
Styrene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Toluene	0.05 ug/g	-	<0.05	-	<0.05	
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	
m,p-Xylenes	0.05 ug/g	-	<0.05	-	<0.05	
o-Xylene	0.05 ug/g	-	<0.05	-	<0.05	

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	Client ID:	BH5-1	BH5-2	BH6-1	BH6-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-09	2146456-10	2146456-11	2146456-12	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
Xylenes, total	0.05 ug/g	-	<0.05	-	<0.05	
4-Bromofluorobenzene	Surrogate	-	107%	-	107%	
Dibromofluoromethane	Surrogate	-	95.6%	-	94.9%	
Toluene-d8	Surrogate	-	108%	-	109%	
Hydrocarbons						
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	<7	
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	<4	
F3 PHCs (C16-C34)	8 ug/g	-	52	-	71	
F4 PHCs (C34-C50)	6 ug/g	-	69	-	45	
Semi-Volatiles						
Acenaphthene	0.02 ug/g	<0.02	-	0.02	-	
Acenaphthylene	0.02 ug/g	<0.02	-	0.02	-	
Anthracene	0.02 ug/g	<0.02	-	0.07	-	
Benzo [a] anthracene	0.02 ug/g	<0.02	-	0.25	-	
Benzo [a] pyrene	0.02 ug/g	0.02	-	0.29	-	
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	0.20	-	
Benzo [g,h,i] perylene	0.02 ug/g	0.03	-	0.17	-	
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	0.12	-	
Chrysene	0.02 ug/g	<0.02	-	0.21	-	
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	0.12	-	
Fluoranthene	0.02 ug/g	0.04	-	0.63	-	
Fluorene	0.02 ug/g	<0.02	-	0.04	-	
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.03	-	0.25	-	
1-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	

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	Client ID:	BH5-1	BH5-2	BH6-1	BH6-2	Criteria:
	Sample Date:	11-Nov-2021	11-Nov-2021	11-Nov-2021	11-Nov-2021	
	Sample ID:	2146456-09	2146456-10	2146456-11	2146456-12	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	Soil	Soil	
	MDL/Units					
2-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	<0.03	-	
Naphthalene	0.01 ug/g	<0.01	-	<0.01	-	
Phenanthrene	0.02 ug/g	0.02	-	0.30	-	
Pyrene	0.02 ug/g	0.02	-	0.39	-	
2-Fluorobiphenyl	Surrogate	64.3%	-	72.6%	-	
Terphenyl-d14	Surrogate	69.0%	-	67.3%	-	

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	Client ID:	BH7-1	BH7-2	-	-	
	Sample Date:	11-Nov-2021	11-Nov-2021	-	-	**Criteria:**
	Sample ID:	2146456-13	2146456-14	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
	Matrix:	Soil	Soil	-	-	
	MDL/Units					
Physical Characteristics						
% Solids	0.1 % by Wt.	82.7	78.9	-	-	
General Inorganics						
SAR	0.01 N/A	0.70	-	-	-	
Conductivity	5 uS/cm	178	-	-	-	
Cyanide, free	0.03 ug/g	0.03	-	-	-	
pH	0.05 pH Units	6.61	-	-	-	5 - 9 pH units
Metals						
Antimony	1.0 ug/g	<1.0	-	-	-	
Arsenic	1.0 ug/g	5.9	-	-	-	
Barium	1.0 ug/g	50.6	-	-	-	
Beryllium	0.5 ug/g	0.7	-	-	-	
Boron	5.0 ug/g	22.4	-	-	-	
Boron, available	0.5 ug/g	2.0	-	-	-	
Cadmium	0.5 ug/g	<0.5	-	-	-	
Chromium	5.0 ug/g	15.2	-	-	-	
Chromium (VI)	0.2 ug/g	<0.2	-	-	-	
Cobalt	1.0 ug/g	8.2	-	-	-	
Copper	5.0 ug/g	14.4	-	-	-	
Lead	1.0 ug/g	12.1	-	-	-	
Mercury	0.1 ug/g	<0.1	-	-	-	
Molybdenum	1.0 ug/g	<1.0	-	-	-	
Nickel	5.0 ug/g	14.4	-	-	-	
Selenium	1.0 ug/g	<1.0	-	-	-	

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	Client ID:	BH7-1	BH7-2	-	-	
	Sample Date:	11-Nov-2021	11-Nov-2021	-	-	**Criteria:**
	Sample ID:	2146456-13	2146456-14	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
	Matrix:	Soil	Soil	-	-	
	MDL/Units					
Silver	0.3 ug/g	<0.3	-	-	-	
Thallium	1.0 ug/g	<1.0	-	-	-	
Uranium	1.0 ug/g	<1.0	-	-	-	
Vanadium	10.0 ug/g	23.3	-	-	-	
Zinc	20.0 ug/g	71.8	-	-	-	
Volatiles						
Acetone	0.50 ug/g	-	<0.50	-	-	
Benzene	0.02 ug/g	-	<0.02	-	-	
Bromodichloromethane	0.05 ug/g	-	<0.05	-	-	
Bromoform	0.05 ug/g	-	<0.05	-	-	
Bromomethane	0.05 ug/g	-	<0.05	-	-	
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	-	
Chlorobenzene	0.05 ug/g	-	<0.05	-	-	
Chloroform	0.05 ug/g	-	<0.05	-	-	
Dibromochloromethane	0.05 ug/g	-	<0.05	-	-	
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	-	
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	-	
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	-	
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	BH7-1	BH7-2	-	-	
	Sample Date:	11-Nov-2021	11-Nov-2021	-	-	Criteria:
	Sample ID:	2146456-13	2146456-14	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial
	Matrix:	Soil	Soil	-	-	
	MDL/Units					
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	-	
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	-	
Ethylbenzene	0.05 ug/g	-	<0.05	-	-	
Ethylene dibromide (dibromoethane	0.05 ug/g	-	<0.05	-	-	
Hexane	0.05 ug/g	-	<0.05	-	-	
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	-	
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	-	
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	-	
Methylene Chloride	0.05 ug/g	-	<0.05	-	-	
Styrene	0.05 ug/g	-	<0.05	-	-	
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	-	
Toluene	0.05 ug/g	-	<0.05	-	-	
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	-	
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	-	
Trichloroethylene	0.05 ug/g	-	<0.05	-	-	
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	-	
Vinyl chloride	0.02 ug/g	-	<0.02	-	-	
m,p-Xylenes	0.05 ug/g	-	<0.05	-	-	
o-Xylene	0.05 ug/g	-	<0.05	-	-	

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

		Client ID:	BH7-1	BH7-2	-	-	
		Sample Date:	11-Nov-2021	11-Nov-2021	-	-	**Criteria:**
		Sample ID:	2146456-13	2146456-14	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
		Matrix:	Soil	Soil	-	-	
	MDL/Units						
Xylenes, total	0.05 ug/g		-	<0.05	-	-	
4-Bromofluorobenzene	Surrogate		-	107%	-	-	
Dibromofluoromethane	Surrogate		-	95.5%	-	-	
Toluene-d8	Surrogate		-	108%	-	-	
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g		-	<7	-	-	
F2 PHCs (C10-C16)	4 ug/g		-	<4	-	-	
F3 PHCs (C16-C34)	8 ug/g		-	<8	-	-	
F4 PHCs (C34-C50)	6 ug/g		-	<6	-	-	
Semi-Volatiles							
Acenaphthene	0.02 ug/g		0.12	-	-	-	
Acenaphthylene	0.02 ug/g		<0.02	-	-	-	
Anthracene	0.02 ug/g		0.19	-	-	-	
Benzo [a] anthracene	0.02 ug/g		0.44	-	-	-	
Benzo [a] pyrene	0.02 ug/g		0.47	-	-	-	
Benzo [b] fluoranthene	0.02 ug/g		0.36	-	-	-	
Benzo [g,h,i] perylene	0.02 ug/g		0.26	-	-	-	
Benzo [k] fluoranthene	0.02 ug/g		0.21	-	-	-	
Chrysene	0.02 ug/g		0.37	-	-	-	
Dibenzo [a,h] anthracene	0.02 ug/g		0.18	-	-	-	
Fluoranthene	0.02 ug/g		1.19	-	-	-	
Fluorene	0.02 ug/g		0.13	-	-	-	
Indeno [1,2,3-cd] pyrene	0.02 ug/g		0.38	-	-	-	
1-Methylnaphthalene	0.02 ug/g		<0.02	-	-	-	

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

	Client ID:	BH7-1	BH7-2	-	-	
	Sample Date:	11-Nov-2021	11-Nov-2021	-	-	**Criteria:**
	Sample ID:	2146456-13	2146456-14	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
	Matrix:	Soil	Soil	-	-	
	MDL/Units					
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	-	-	
Naphthalene	0.01 ug/g	0.02	-	-	-	
Phenanthrene	0.02 ug/g	0.80	-	-	-	
Pyrene	0.02 ug/g	0.71	-	-	-	
2-Fluorobiphenyl	Surrogate	71.2%	-	-	-	
Terphenyl-d14	Surrogate	68.1%	-	-	-	

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 17-Nov-2021
Order Date: 11-Nov-2021
Project Description: 21336

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Cyanide, free	ND	0.03	ug/g						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron, available	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.03	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*0.148*		*ug/g*		*74.3*	*50-140*			
Surrogate: Terphenyl-d14	*0.201*		*ug/g*		*100*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	*8.47*		*ug/g*		*106*	*50-140*			
Surrogate: Dibromofluoromethane	*7.79*		*ug/g*		*97.3*	*50-140*			
Surrogate: Toluene-d8	*8.57*		*ug/g*		*107*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	1.33	0.01	N/A	1.31			1.5	30	
Conductivity	292	5	uS/cm	291			0.3	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.68	0.05	pH Units	7.56			1.6	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	60	4	ug/g	36			49.3	30	QR-04
F3 PHCs (C16-C34)	50	8	ug/g	42			17.2	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	8.0	1.0	ug/g	7.5			6.3	30	
Barium	68.7	1.0	ug/g	63.3			8.1	30	
Beryllium	0.8	0.5	ug/g	0.7			12.9	30	
Boron, available	0.73	0.5	ug/g	0.65			11.9	35	
Boron	24.5	5.0	ug/g	21.5			12.8	30	
Cadmium	0.5	0.5	ug/g	0.5			4.8	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	25.0	5.0	ug/g	24.1			3.8	30	
Cobalt	10.5	1.0	ug/g	9.6			9.1	30	
Copper	50.7	5.0	ug/g	46.7			8.1	30	
Lead	53.2	1.0	ug/g	49.7			6.9	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.5	1.0	ug/g	1.1			NC	30	
Nickel	23.3	5.0	ug/g	21.9			6.3	30	
Selenium	1.0	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	35.9	10.0	ug/g	33.2			7.9	30	
Zinc	174	20.0	ug/g	160			8.4	30	
Physical Characteristics									
% Solids	89.4	0.1	% by Wt.	89.6			0.2	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.218*		ug/g		*87.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.211*		ug/g		*84.2*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*6.75*		ug/g		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*6.30*		ug/g		*98.2*	*50-140*			
Surrogate: Toluene-d8	*6.84*		ug/g		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.850	0.03	ug/g	ND	85.0	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	79	7	ug/g	ND	111	80-120			
F2 PHCs (C10-C16)	87	4	ug/g	36	61.5	60-140			
F3 PHCs (C16-C34)	179	8	ug/g	42	73.5	60-140			
F4 PHCs (C34-C50)	119	6	ug/g	ND	89.1	60-140			
Metals									
Antimony	134	1.0	ug/g	ND	107	70-130			
Arsenic	150	1.0	ug/g	7.5	114	70-130			
Barium	200	1.0	ug/g	63.3	109	70-130			
Beryllium	130	0.5	ug/g	0.7	103	70-130			
Boron, available	4.33	0.5	ug/g	0.65	73.6	70-122			
Boron	146	5.0	ug/g	21.5	99.8	70-130			
Cadmium	136	0.5	ug/g	0.5	108	70-130			
Chromium (VI)	4.5	0.2	ug/g	ND	87.5	70-130			
Chromium	157	5.0	ug/g	24.1	106	70-130			
Cobalt	141	1.0	ug/g	9.6	105	70-130			
Copper	183	5.0	ug/g	46.7	109	70-130			
Lead	186	1.0	ug/g	49.7	109	70-130			
Mercury	1.67	0.1	ug/g	ND	111	70-130			
Molybdenum	138	1.0	ug/g	1.1	109	70-130			
Nickel	156	5.0	ug/g	21.9	107	70-130			
Selenium	140	1.0	ug/g	ND	112	70-130			
Silver	109	0.3	ug/g	ND	86.9	70-130			
Thallium	127	1.0	ug/g	ND	101	70-130			
Uranium	134	1.0	ug/g	ND	107	70-130			
Vanadium	169	10.0	ug/g	33.2	109	70-130			
Zinc	306	20.0	ug/g	160	117	70-130			
Semi-Volatiles									
Acenaphthene	0.095	0.02	ug/g	ND	95.0	50-140			
Acenaphthylene	0.095	0.02	ug/g	ND	94.7	50-140			
Anthracene	0.091	0.02	ug/g	ND	90.8	50-140			
Benzo [a] anthracene	0.097	0.02	ug/g	ND	97.3	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	0.095	0.02	ug/g	ND	95.1	50-140			
Benzo [b] fluoranthene	0.092	0.02	ug/g	ND	92.5	50-140			
Benzo [g,h,i] perylene	0.066	0.02	ug/g	ND	66.4	50-140			
Benzo [k] fluoranthene	0.081	0.02	ug/g	ND	81.2	50-140			
Chrysene	0.086	0.02	ug/g	ND	86.3	50-140			
Dibenzo [a,h] anthracene	0.061	0.02	ug/g	ND	60.8	50-140			
Fluoranthene	0.113	0.02	ug/g	ND	113	50-140			
Fluorene	0.107	0.02	ug/g	ND	107	50-140			
Indeno [1,2,3-cd] pyrene	0.062	0.02	ug/g	ND	62.3	50-140			
1-Methylnaphthalene	0.094	0.02	ug/g	ND	93.9	50-140			
2-Methylnaphthalene	0.088	0.02	ug/g	ND	87.5	50-140			
Naphthalene	0.081	0.01	ug/g	ND	81.4	50-140			
Phenanthrene	0.096	0.02	ug/g	ND	96.1	50-140			
Pyrene	0.099	0.02	ug/g	ND	98.9	50-140			
Volatiles									
Acetone	7.85	0.50	ug/g	ND	80.4	50-140			
Benzene	3.51	0.02	ug/g	ND	87.3	60-130			
Bromodichloromethane	3.58	0.05	ug/g	ND	89.0	60-130			
Bromoform	3.56	0.05	ug/g	ND	88.7	60-130			
Bromomethane	3.29	0.05	ug/g	ND	82.2	50-140			
Carbon Tetrachloride	3.61	0.05	ug/g	ND	90.3	60-130			
Chlorobenzene	3.44	0.05	ug/g	ND	85.6	60-130			
Chloroform	3.40	0.05	ug/g	ND	84.7	60-130			
Dibromochloromethane	3.38	0.05	ug/g	ND	84.4	60-130			
Dichlorodifluoromethane	2.08	0.05	ug/g	ND	52.1	50-140			
1,2-Dichlorobenzene	3.51	0.05	ug/g	ND	87.8	60-130			
1,3-Dichlorobenzene	3.56	0.05	ug/g	ND	88.9	60-130			
1,4-Dichlorobenzene	3.52	0.05	ug/g	ND	87.6	60-130			
1,1-Dichloroethane	3.53	0.05	ug/g	ND	88.2	60-130			
1,2-Dichloroethane	3.26	0.05	ug/g	ND	81.1	60-130			
1,1-Dichloroethylene	3.11	0.05	ug/g	ND	77.8	60-130			
cis-1,2-Dichloroethylene	3.53	0.05	ug/g	ND	87.7	60-130			
trans-1,2-Dichloroethylene	3.63	0.05	ug/g	ND	90.2	60-130			
1,2-Dichloropropane	3.48	0.05	ug/g	ND	87.1	60-130			
cis-1,3-Dichloropropylene	3.66	0.05	ug/g	ND	91.4	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,3-Dichloropropylene	3.60	0.05	ug/g	ND	89.5	60-130			
Ethylbenzene	3.49	0.05	ug/g	ND	86.8	60-130			
Ethylene dibromide (dibromoethane, 1,2-	3.51	0.05	ug/g	ND	87.2	60-130			
Hexane	3.69	0.05	ug/g	ND	92.2	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.17	0.50	ug/g	ND	89.6	50-140			
Methyl Isobutyl Ketone	9.66	0.50	ug/g	ND	99.0	50-140			
Methyl tert-butyl ether	9.30	0.05	ug/g	ND	93.0	50-140			
Methylene Chloride	3.40	0.05	ug/g	ND	84.5	60-130			
Styrene	3.53	0.05	ug/g	ND	87.4	60-130			
1,1,1,2-Tetrachloroethane	3.83	0.05	ug/g	ND	95.8	60-130			
1,1,2,2-Tetrachloroethane	3.70	0.05	ug/g	ND	92.1	60-130			
Tetrachloroethylene	3.58	0.05	ug/g	ND	89.1	60-130			
Toluene	3.61	0.05	ug/g	ND	90.3	60-130			
1,1,1-Trichloroethane	3.53	0.05	ug/g	ND	88.4	60-130			
1,1,2-Trichloroethane	3.42	0.05	ug/g	ND	85.1	60-130			
Trichloroethylene	3.74	0.05	ug/g	ND	93.1	60-130			
Trichlorofluoromethane	2.71	0.05	ug/g	ND	67.8	50-140			
Vinyl chloride	3.44	0.02	ug/g	ND	85.9	50-140			
m,p-Xylenes	6.86	0.05	ug/g	ND	85.6	60-130			
o-Xylene	3.40	0.05	ug/g	ND	84.6	60-130			
Surrogate: 4-Bromofluorobenzene	*8.24*		*ug/g*		*103*	*50-140*			
Surrogate: Dibromofluoromethane	*8.40*		*ug/g*		*105*	*50-140*			
Surrogate: Toluene-d8	*8.19*		*ug/g*		*102*	*50-140*			

PARACEL LABORATORIES LTD.

Order #: 2146456

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 17-Nov-2021

Order Date: 11-Nov-2021

Project Description: 21336

Qualifier Notes:

QC Qualifiers :

QR-04 : Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

Soil/Solid results are reported on a dry weight basis unless otherwise indicated
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD.

Paracel ID: 2146456

Paracel Order Number (Lab Use Only)

Chain Of Custody (Lab Use Only)

№ 62347

Client Name: Landtek

Contact Name: Rachel Hlywka

Address: 205 Nebo Rd. Hamilton

Telephone:

Project Ref: 21336

Quote #:

PO #: 21336

E-mail: Nicole@Landtek.ca, Rachel@Landtek.ca

Page 1 of 2

Turnaround Time

☐ 1 day ☐ 3 day

☐ 2 day ☒ Regular

Date Required:

☒ REG 153/04 ☐ REG 406/19

☒ Table 1 ☐ Res/Park ☐ Med/Fine

☐ Table 2 ☒ Ind/Comm ☒ Coarse

☐ Table 3 ☐ Agri/Other

☐ Table ___

For RSC: ☒ Yes ☐ No

Other Regulation

☐ REG.558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU - Storm

Mun:

☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analysis: m/i	PAHs	PHC's/VOC's
1	~~BAR~~ MW1-1	S		1	Nov 11. 21		X	X	
2	~~BAR-21~~ MW1-2	S		2					X
3	~~BH2-21~~ MW2-1	S		1			X	X	
4	~~BH~~ MW2-2	S		2					X
5	MW3-1	S		1			X	X	
6	MW3-2	S		2					X
7	BH4-1	S		1			X	X	
8	BH4-2	S		2					X
9	BH5-1	S		1			X	X	
10	BH5-2	S		2	↓				X

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): Rachel Hlywka	Received By Driver/Depot:	Received at Lab: Atm	Verified By: Atm
Relinquished By (Print): Rachel Hlywka	Date/Time:	Date/Time: 11/11/21 15:12	Date/Time: 11/11/21 15:27
Date/Time: Nov. 11, 21	Temperature: °C	Temperature: 14.5 °C	pH Verified: ☐ By:

PARACI LABORATORIES

Paracel ID: 2146456

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
	№ 62348

Client Name: Landtek
Contact Name: Rachel Hlywka
Address: 205 Nebo Rd. Hamilton
Telephone:

Project Ref: 21336
Quote #:
PO #: 21336
E-mail: Nicole@Landtek.ca, Rachel@Landtek.ca

Page 2 of 2

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation: ☐ REG,558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

☒ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☒ Ind/Comm ☒ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table
For RSC: ☒ Yes ☐ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	m/i	PAH's	PHC's/VOC's
1	BH6-1	S		1	Nov 11. 21		X	X	
2	BH6-2	S		2	↓				X
3	BH7-1	S		1			X	X	
4	BH7-2	S		2					X
5									
6									
7									
8									
9									
10									

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): Rachel Hlywka	Received By Driver/Depot:	Received at Lab: Am	Verified By: Am
Relinquished By (Print): Rachel Hlywka	Date/Time:	Date/Time: 11/11/21 15:12	Date/Time: 11/11/21 15:27
Date/Time: Nov. 11, 21	Temperature: °C	Temperature: 14.5 °C	pH Verified: ☐ By:

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1-800-749-1947
www.paracellabs.com

Certificate of Analysis

Landtek Limited

205 Nebo Road, Unit 3
Hamilton, ON L8W2E1
Attn: Nicole Harper

Client PO: 21336
Project: 21336
Custody: 133278

Report Date: 22-Nov-2021
Order Date: 16-Nov-2021

Order #: 2147194

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID	Paracel ID	Client ID
2147194-01	MW1		
2147194-02	MW3		
2147194-03	Trip Blank		
2147194-04	Dup A		

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 22-Nov-2021

Order Date: 16-Nov-2021

Project Description: 21336

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	17-Nov-21	17-Nov-21
PHC F1	CWS Tier 1 - P&T GC-FID	17-Nov-21	18-Nov-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Nov-21	22-Nov-21
REG 153: Mercury by CVAA	EPA 245.2 - Cold Vapour AA	19-Nov-21	19-Nov-21
REG 153: Metals by ICP/MS, water	EPA 200.8, ICP-MS	17-Nov-21	17-Nov-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	18-Nov-21	19-Nov-21
REG 153: VOCs by P&T GC-MS	EPA 624 - P&T GC-MS	18-Nov-21	18-Nov-21

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 22-Nov-2021
Order Date: 16-Nov-2021
Project Description: 21336

Summary of Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances. Regulatory limts displayed in brackets, (), applies to medium and fine textured soils.

Criteria:

Client ID	Analyte	MDL / Units	Result	Reg 153/04 (2011)-Table 3 Non-Potable Groundwater

PARACEL LABORATORIES LTD.

Order #: 2147194

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 22-Nov-2021

Order Date: 16-Nov-2021

Project Description: 21336

	Client ID:	MW1	MW3	Trip Blank	Dup A	Criteria:	
	Sample Date:	16-Nov-2021	16-Nov-2021	05-Nov-2021	16-Nov-2021		
	Sample ID:	2147194-01	2147194-02	2147194-03	2147194-04	Reg 153/04 (2011)-Table 3 Non-Potable Groundwater	
	Matrix:	Water	Water	Water	Water		
	MDL/Units						
Metals							
Mercury	0.1 ug/L	<0.1	<0.1	-	-	(2.8) 0.29	ug/L
Antimony	0.5 ug/L	<0.5	<0.5	-	-	(20,000) 20,000	ug/L
Arsenic	1.0 ug/L	<1.0	4.2	-	-	(1,900) 1,900	ug/L
Barium	1.0 ug/L	80.8	121	-	-	(29,000) 29,000	ug/L
Beryllium	0.5 ug/L	<0.5	<0.5	-	-	(67) 67	ug/L
Boron	10.0 ug/L	285	693	-	-	(45,000) 45,000	ug/L
Cadmium	0.2 ug/L	<0.2	<0.2	-	-	(2.7) 2.7	ug/L
Chromium	1.0 ug/L	<1.0	<1.0	-	-	(810) 810	ug/L
Chromium (VI)	10 ug/L	<10	<10	-	-	(140) 140	ug/L
Cobalt	0.5 ug/L	<0.5	<0.5	-	-	(66) 66	ug/L
Copper	0.5 ug/L	2.4	0.7	-	-	(87) 87	ug/L
Lead	0.2 ug/L	<0.2	<0.2	-	-	(25) 25	ug/L
Molybdenum	0.5 ug/L	2.3	4.6	-	-	(9,200) 9,200	ug/L
Nickel	1.0 ug/L	3.9	1.9	-	-	(490) 490	ug/L
Selenium	1.0 ug/L	<1.0	<1.0	-	-	(63) 63	ug/L
Silver	0.2 ug/L	<0.2	<0.2	-	-	(1.5) 1.5	ug/L
Sodium	200 ug/L	200000	211000	-	-	(2,300,000) 2,300,000	ug/L
Thallium	0.5 ug/L	<0.5	<0.5	-	-	(510) 510	ug/L
Uranium	0.2 ug/L	5.2	8.6	-	-	(420) 420	ug/L
Vanadium	0.5 ug/L	0.6	0.6	-	-	(250) 250	ug/L
Zinc	5.0 ug/L	<5.0	<5.0	-	-	(1,100) 1,100	ug/L
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	(130,000) 130,000	ug/L

PARACEL LABORATORIES LTD.

Order #: 2147194

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 22-Nov-2021

Order Date: 16-Nov-2021

Project Description: 21336

	Client ID:	MW1	MW3	Trip Blank	Dup A	Criteria:	
	Sample Date:	16-Nov-2021	16-Nov-2021	05-Nov-2021	16-Nov-2021		
	Sample ID:	2147194-01	2147194-02	2147194-03	2147194-04	Reg 153/04 (2011)-Table 3 Non-Potable Groundwater	
	Matrix:	Water	Water	Water	Water		
	MDL/Units						
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(430) 44	ug/L
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(85,000) 85,000	ug/L
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(770) 380	ug/L
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(56) 5.6	ug/L
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	(8.4) 0.79	ug/L
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(630) 630	ug/L
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(22) 2.4	ug/L
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(82,000) 82,000	ug/L
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	(4,400) 4,400	ug/L
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(9,600) 4,600	ug/L
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(9,600) 9,600	ug/L
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(67) 8	ug/L
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(3,100) 320	ug/L
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(12) 1.6	ug/L
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(140) 16	ug/L
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5		
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5		
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(45) 5.2	ug/L
Ethylbenzene	0.5 ug/L	<0.5	3.4	<0.5	<0.5	(2,300) 2,300	ug/L
Ethylene dibromide (dibromoethane	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	(0.83) 0.25	ug/L

Certificate of Analysis

Client: Landtek Limited

Client PO: 21336

Report Date: 22-Nov-2021

Order Date: 16-Nov-2021

Project Description: 21336

	Client ID:	MW1	MW3	Trip Blank	Dup A	Criteria:	
	Sample Date:	16-Nov-2021	16-Nov-2021	05-Nov-2021	16-Nov-2021		
	Sample ID:	2147194-01	2147194-02	2147194-03	2147194-04	Reg 153/04 (2011)-Table 3 Non-Potable Groundwater	
	Matrix:	Water	Water	Water	Water		
	MDL/Units						
Hexane	1.0 ug/L	<1.0	1.4	<1.0	<1.0	(520) 51	ug/L
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	(1,500,000) 470,000	ug/L
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	(580,000) 140,000	ug/L
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	(1,400) 190	ug/L
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	(5,500) 610	ug/L
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(9,100) 1,300	ug/L
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(28) 3.3	ug/L
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(15) 3.2	ug/L
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(18,000) 18,000	ug/L
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(6,700) 640	ug/L
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(30) 4.7	ug/L
Trichloroethylene	0.5 ug/L	0.9	1.1	<0.5	0.8	(17) 1.6	ug/L
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	(2,500) 2,500	ug/L
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(1.7) 0.5	ug/L
m,p-Xylenes	0.5 ug/L	<0.5	4.3	<0.5	<0.5		
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5		
Xylenes, total	0.5 ug/L	<0.5	4.6	<0.5	<0.5	(4,200) 4,200	ug/L
4-Bromofluorobenzene	Surrogate	98.1%	99.8%	99.5%	99.8%		
Dibromofluoromethane	Surrogate	61.1%	61.2%	62.6%	59.7%		
Toluene-d8	Surrogate	103%	104%	104%	104%		
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	47	-	-	(750) 750	ug/L
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	(150) 150	ug/L

PARACEL LABORATORIES LTD.

Order #: 2147194

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 22-Nov-2021
Order Date: 16-Nov-2021
Project Description: 21336

	Client ID:	MW1	MW3	Trip Blank	Dup A	Criteria:	
	Sample Date:	16-Nov-2021	16-Nov-2021	05-Nov-2021	16-Nov-2021		
	Sample ID:	2147194-01	2147194-02	2147194-03	2147194-04	Reg 153/04 (2011)-Table 3 Non-Potable Groundwater	
	Matrix:	Water	Water	Water	Water		
	MDL/Units						
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	(500) 500	ug/L
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	(500) 500	ug/L
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	0.11	-	-	(1,700) 600	ug/L
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-	(1.8) 1.8	ug/L
Anthracene	0.01 ug/L	<0.01	<0.01	-	-	(2.4) 2.4	ug/L
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-	(4.7) 4.7	ug/L
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-	(0.81) 0.81	ug/L
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	(0.75) 0.75	ug/L
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-	(0.2) 0.2	ug/L
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	(0.4) 0.4	ug/L
Chrysene	0.05 ug/L	<0.05	<0.05	-	-	(1) 1	ug/L
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-	(0.52) 0.52	ug/L
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-	(130) 130	ug/L
Fluorene	0.05 ug/L	<0.05	<0.05	-	-	(400) 400	ug/L
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-	(0.2) 0.2	ug/L
1-Methylnaphthalene	0.05 ug/L	<0.05	0.32	-	-	(1,800) 1,800	ug/L
2-Methylnaphthalene	0.05 ug/L	<0.05	0.26	-	-	(1,800) 1,800	ug/L
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	0.58	-	-	(1,800) 1,800	ug/L
Naphthalene	0.05 ug/L	<0.05	0.76	-	-	(6,400) 1,400	ug/L
Phenanthrene	0.05 ug/L	<0.05	0.11	-	-	(580) 580	ug/L
Pyrene	0.01 ug/L	<0.01	<0.01	-	-	(68) 68	ug/L
2-Fluorobiphenyl	Surrogate	97.0%	97.8%	-	-		
Terphenyl-d14	Surrogate	82.6%	105%	-	-		

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1.0	ug/L						
Barium	ND	1.0	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10.0	ug/L						
Cadmium	ND	0.2	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1.0	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.2	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1.0	ug/L						
Selenium	ND	1.0	ug/L						
Silver	ND	0.2	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.5	ug/L						
Uranium	ND	0.2	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5.0	ug/L						
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	*8.79*		*ug/L*		*87.9*	*50-140*			
Surrogate: Terphenyl-d14	*10.8*		*ug/L*		*108*	*50-140*			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*79.8*		*ug/L*		*99.7*	*50-140*			
Surrogate: Dibromofluoromethane	*51.2*		*ug/L*		*63.9*	*50-140*			
Surrogate: Toluene-d8	*83.2*		*ug/L*		*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	47			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	1.4	0.5	ug/L	ND			NC	20	
Arsenic	1.7	1.0	ug/L	1.5			8.0	20	
Barium	220	1.0	ug/L	217			1.5	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	52.0	10.0	ug/L	53.1			2.0	20	
Cadmium	ND	0.2	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1.0	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	0.8	0.5	ug/L	0.8			4.2	20	
Lead	0.8	0.2	ug/L	0.9			11.8	20	
Molybdenum	1.3	0.5	ug/L	1.1			17.3	20	
Nickel	ND	1.0	ug/L	ND			NC	20	
Selenium	ND	1.0	ug/L	ND			NC	20	
Silver	ND	0.2	ug/L	ND			NC	20	
Sodium	2020000	20000	ug/L	2000000			1.4	20	
Thallium	ND	0.5	ug/L	ND			NC	20	
Uranium	0.3	0.2	ug/L	0.3			15.5	20	
Vanadium	1.1	0.5	ug/L	1.0			2.8	20	
Zinc	ND	5.0	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	3.58	0.5	ug/L	3.41			4.9	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	1.85	1.0	ug/L	1.39			28.4	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	1.12	0.5	ug/L	1.10			1.8	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	4.55	0.5	ug/L	4.32			5.2	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*81.7*		ug/L		*102*	*50-140*			
Surrogate: Dibromofluoromethane	*52.8*		ug/L		*66.0*	*50-140*			
Surrogate: Toluene-d8	*83.8*		ug/L		*105*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	646	25	ug/L	ND	91.4	68-117			
F2 PHCs (C10-C16)	1620	100	ug/L	ND	98.3	60-140			
F3 PHCs (C16-C34)	3930	100	ug/L	ND	106	60-140			
F4 PHCs (C34-C50)	2660	100	ug/L	ND	99.6	60-140			
Metals									
Mercury	2.89	0.1	ug/L	ND	96.2	70-130			
Antimony	48.9	0.5	ug/L	ND	97.8	70-130			
Arsenic	60.0	1.0	ug/L	1.5	117	70-130			
Barium	263	1.0	ug/L	217	92.8	70-130			
Beryllium	53.5	0.5	ug/L	ND	107	70-130			
Boron	98.5	10.0	ug/L	53.1	90.9	70-130			
Cadmium	44.7	0.2	ug/L	ND	89.3	70-130			
Chromium (VI)	202	10	ug/L	ND	101	70-130			
Chromium	48.6	1.0	ug/L	ND	97.3	70-130			
Cobalt	45.7	0.5	ug/L	ND	91.5	70-130			
Copper	47.8	0.5	ug/L	0.8	94.0	70-130			
Lead	49.1	0.2	ug/L	0.9	96.3	70-130			
Molybdenum	50.3	0.5	ug/L	1.1	98.3	70-130			
Nickel	47.9	1.0	ug/L	ND	95.8	70-130			
Selenium	57.0	1.0	ug/L	ND	114	70-130			
Silver	43.1	0.2	ug/L	ND	86.2	70-130			
Sodium	1000	200	ug/L	ND	100	80-120			
Thallium	47.7	0.5	ug/L	ND	95.5	70-130			
Uranium	48.3	0.2	ug/L	0.3	96.0	70-130			
Vanadium	52.3	0.5	ug/L	1.0	103	70-130			
Zinc	53.7	5.0	ug/L	ND	107	70-130			
Semi-Volatiles									
Acenaphthene	10.4	0.05	ug/L	ND	104	50-140			
Acenaphthylene	10.9	0.05	ug/L	ND	109	50-140			
Anthracene	11.4	0.01	ug/L	ND	114	50-140			
Benzo [a] anthracene	11.0	0.01	ug/L	ND	110	50-140			
Benzo [a] pyrene	12.5	0.01	ug/L	ND	125	50-140			
Benzo [b] fluoranthene	11.8	0.05	ug/L	ND	118	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [g,h,i] perylene	11.3	0.05	ug/L	ND	113	50-140			
Benzo [k] fluoranthene	11.9	0.05	ug/L	ND	119	50-140			
Chrysene	10.7	0.05	ug/L	ND	107	50-140			
Dibenzo [a,h] anthracene	9.98	0.05	ug/L	ND	99.8	50-140			
Fluoranthene	11.7	0.01	ug/L	ND	117	50-140			
Fluorene	11.5	0.05	ug/L	ND	115	50-140			
Indeno [1,2,3-cd] pyrene	11.4	0.05	ug/L	ND	114	50-140			
1-Methylnaphthalene	10.5	0.05	ug/L	ND	105	50-140			
2-Methylnaphthalene	10.0	0.05	ug/L	ND	100	50-140			
Naphthalene	9.85	0.05	ug/L	ND	98.5	50-140			
Phenanthrene	11.4	0.05	ug/L	ND	114	50-140			
Pyrene	11.2	0.01	ug/L	ND	112	50-140			
Surrogate: 2-Fluorobiphenyl	*9.51*		*ug/L*		*95.1*	*50-140*			
Surrogate: Terphenyl-d14	*10.2*		*ug/L*		*102*	*50-140*			
Volatiles									
Acetone	93.6	5.0	ug/L	ND	95.9	50-140			
Benzene	36.6	0.5	ug/L	ND	91.0	50-140			
Bromodichloromethane	32.0	0.5	ug/L	ND	79.7	50-140			
Bromoform	33.0	0.5	ug/L	ND	82.2	50-140			
Bromomethane	38.2	0.5	ug/L	ND	95.5	50-140			
Carbon Tetrachloride	30.6	0.2	ug/L	ND	76.4	50-140			
Chlorobenzene	37.3	0.5	ug/L	ND	92.9	50-140			
Chloroform	36.4	0.5	ug/L	ND	90.6	50-140			
Dibromochloromethane	32.4	0.5	ug/L	ND	81.0	50-140			
Dichlorodifluoromethane	31.5	1.0	ug/L	ND	78.8	50-140			
1,2-Dichlorobenzene	36.7	0.5	ug/L	ND	91.8	50-140			
1,3-Dichlorobenzene	36.9	0.5	ug/L	ND	92.2	50-140			
1,4-Dichlorobenzene	37.1	0.5	ug/L	ND	92.3	50-140			
1,1-Dichloroethane	35.4	0.5	ug/L	ND	88.4	50-140			
1,2-Dichloroethane	35.6	0.5	ug/L	ND	88.7	50-140			
1,1-Dichloroethylene	31.6	0.5	ug/L	ND	79.0	50-140			
cis-1,2-Dichloroethylene	33.8	0.5	ug/L	ND	84.2	50-140			
trans-1,2-Dichloroethylene	33.8	0.5	ug/L	ND	84.1	50-140			
1,2-Dichloropropane	35.9	0.5	ug/L	ND	89.8	50-140			
cis-1,3-Dichloropropylene	33.5	0.5	ug/L	ND	83.8	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,3-Dichloropropylene	33.7	0.5	ug/L	ND	83.9	50-140			
Ethylbenzene	37.7	0.5	ug/L	ND	93.8	50-140			
Ethylene dibromide (dibromoethane, 1,2-	33.9	0.2	ug/L	ND	84.4	50-140			
Hexane	34.9	1.0	ug/L	ND	87.3	50-140			
Methyl Ethyl Ketone (2-Butanone)	94.0	5.0	ug/L	ND	91.8	50-140			
Methyl Isobutyl Ketone	112	5.0	ug/L	ND	115	50-140			
Methyl tert-butyl ether	90.2	2.0	ug/L	ND	90.2	50-140			
Methylene Chloride	33.4	5.0	ug/L	ND	83.2	50-140			
Styrene	38.1	0.5	ug/L	ND	94.3	50-140			
1,1,1,2-Tetrachloroethane	33.6	0.5	ug/L	ND	84.1	50-140			
1,1,2,2-Tetrachloroethane	36.4	0.5	ug/L	ND	90.6	50-140			
Tetrachloroethylene	35.7	0.5	ug/L	ND	88.9	50-140			
Toluene	36.9	0.5	ug/L	ND	92.3	50-140			
1,1,1-Trichloroethane	31.9	0.5	ug/L	ND	79.6	50-140			
1,1,2-Trichloroethane	35.1	0.5	ug/L	ND	87.4	50-140			
Trichloroethylene	36.8	0.5	ug/L	0.88	89.3	50-140			
Trichlorofluoromethane	32.6	1.0	ug/L	ND	81.6	50-140			
Vinyl chloride	31.6	0.5	ug/L	ND	79.1	50-140			
m,p-Xylenes	74.9	0.5	ug/L	ND	93.3	50-140			
o-Xylene	37.2	0.5	ug/L	ND	92.6	50-140			
Surrogate: 4-Bromofluorobenzene	*77.1*		*ug/L*		*96.4*	*50-140*			
Surrogate: Dibromofluoromethane	*80.5*		*ug/L*		*101*	*50-140*			
Surrogate: Toluene-d8	*82.1*		*ug/L*		*103*	*50-140*			

PARACEL LABORATORIES LTD.

Order #: 2147194

Certificate of Analysis
Client: Landtek Limited
Client PO: 21336

Report Date: 22-Nov-2021
Order Date: 16-Nov-2021
Project Description: 21336

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES LT

Paracel ID: 2147194

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2147194	Nº 133278

Client Name: Landtek	Project Ref: 2133b	Page 1 of 1
Contact Name: Rachel Hlywka	Quote #:	Turnaround Time
Address: 205 Nebo Rd. Hamilton	PO #: 2133b	☐ 1 day ☐ 3 day
	E-mail: rachel@Landtek.ca, Paul@Landtek.ca, Nicole@Landtek.ca	☐ 2 day ☒ Regular
Telephone:		Date Required:

☒ REG 153/04 ☐ REG 406/19

☒ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☒ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☒ Yes ☐ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)
1	MW1	GW			Nov 16. 21		X	X	X	X	X	X	X
2	MW3	GW			↓		X	X	X	X	X	X	X
3	Trip Blank	O		1	↓								
4	DUP A	GW		2	↓			X					
5													
6													
7													
8													
9													
10													

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): Rachel Hlywka	Received By Driver/Depot:	Received at Lab: AM	Verified By: BB
Relinquished By (Print): Rachel Hlywka	Date/Time:	Date/Time: 16/11/21 15:39	Date/Time: Nov 16th/2021 @16:00
Date/Time: Nov 16 - 21 15:30	Temperature: °C	Temperature: 15.3 °C	pH Verified: ☑ By: AM