Phase II Environmental Site Assessment

568 Gunn Road
Winnipeg, Manitoba

Prepared for:

Alliance Tree Care Inc.
150 Transport Road
Sunnyside, MB R5R 0J8

March 15, 2021

Pinchin File: 287232

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EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed, Limitation of Liability and Terms of Engagement signed by Alliance Tree Care Inc. (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 568 Gunn Road in Winnipeg, Manitoba (hereafter referred to as the Site).

The Site consists of vacant land that divided into separate storage areas by chain link fences and is used for the storage of vehicles in various stages of disrepair as well as campers, trailers, and boats.

The purpose of this Phase II ESA was to address potential issues of environmental concern identified during a Phase I ESA conducted by Pinchin in relation to the potential acquisition of the Site.

The results of the Phase I ESA completed by Pinchin identified the following potential issues of environmental concern:

- Potential airborne metals impacts from an industrial facility and foundry located south of the Site;
- Potential fill of unknown quality and origin observed throughout the Site in the 1979 to 1997 aerial photographs; and
- Staining associated with the storage of derelict vehicles on-Site since at least the early 2000s.

Based on the above-mentioned findings, Pinchin recommended that a Phase II ESA be conducted at the Site.

The Phase II ESA was completed at the Site by Pinchin between February 19, 2021 and February 23, 2021, and consisted of the advancement of 5 boreholes, all of which were completed as groundwater monitoring wells. All groundwater monitoring wells were dry during the Phase II ESA.

Select “worst case” soil samples collected during the borehole drilling program were submitted for laboratory analysis of a combination of benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX), petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4), VOCs, polycyclic aromatic hydrocarbons (PAHs) and metals.

Based on Site-specific information, the soil quality was assessed based on the Canadian Council of Ministers of the Environment (CCME) "*Environmental Quality Guidelines*" accessed on the CCME web site in March 2021, the CCME "*Canada-Wide Standards for Petroleum Hydrocarbons in Soil*", dated 2008 and the CCME "*Canadian Environmental Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons*", dated 2010 (hereafter collectively referred to as the "CCME Soil Guidelines").

In addition to the CCME Soil Guidelines, Manitoba Conservation and Climate has adopted the Ontario Ministry of the Environment, Conservation and Parks (MECP) standards specified by the MECP document entitled "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 (MECP Soil Quality Guidelines); and Alberta Environment and Parks (AEP) guidelines specified by the AEP document entitled "*Alberta Tier 1 Soil and Groundwater Remediation Guidelines"*, dated January 10, 2019" (AEP Soil Quality Guidelines). The above-mentioned guidelines are hereby collectively referred to as the Soil Quality Guidelines.

The reported concentrations of BTEX, PHCs (F1-F4), VOCs, PAHs and metals in the soil samples submitted for analysis met the Soil Quality Guidelines, with the following exceptions:

- soil sample BH03-01 collected at borehole BH03, which had concentrations of total chromium that exceeded the Soil Quality Guidelines; and
- soil sample BH04-01 collected at borehole MW04, which had concentrations of total chromium that exceeded the Soil Quality Guidelines.

Pinchin also notes that soil sample BH04-01 collected at borehole MW04 had a concentration of vanadium equal to the Soil Quality Guideline.

The findings of this Phase II ESA identified metals-impacted soil at boreholes MW03 and MW04. The metal-impacted soils are not considered to present an immediate concern to human health or environment under current Site conditions and use. As such, it is Pinchin's recommendation that a Management Plan be developed for the Site and submitted to Manitoba Conservation and Climate for approval.

Should the use of the Site change, including future redevelopment or other activities requiring excavation of the metal-impacted soils, additional soil assessment should be completed to further delineate the metal-impacted soils. Development of a Remedial Plan for the site would be required and submitted to Manitoba Conservation and Climate for approval, prior to undertaking any remedial activities.

As of April 1, 2014, new amendments to the Contaminated Sites Remediation Act (CSRA) and Contaminated Sites Remediation Regulation (CSRR) came into effect. Section 3.1 of the CSRA states that the owner or occupier of a site must notify Manitoba Conservation and Climate in writing when he or she becomes aware of information that indicates that the site has been contaminated at a level that exceeds a standard established or adopted by regulation (in this case the CSRR) and provide Manitoba Conservation and Climate and with all reports and any other documentation in his or her possession respecting the contamination at the site.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

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1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed, Limitation of Liability and Terms of Engagement signed by Alliance Tree Care Inc. (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 568 Gunn Road in Winnipeg, Manitoba (hereafter referred to as the Site). The Site location is shown on Figure 1 (all Figures are provided in Appendix I).

The Site consists of vacant land that divided into separate storage areas by chain link fences and is used for the storage of vehicles in various stages of disrepair as well as campers, trailers, and boats.

The purpose of this Phase II ESA was to address potential issues of environmental concern identified during a Phase I ESA conducted by Pinchin in relation to the potential acquisition of the Site.

This Phase II ESA was completed in general accordance with the Canadian Standards Association document entitled "*Phase II Environmental Site Assessment, CSA S Standard Z769-00 (R2018)*", dated 2000 and reaffirmed in 2018.

1.1 Background

Pinchin completed a Phase I ESA of the Site for the Client, the findings of which were provided in the report entitled "*Phase I Environmental Site Assessment, 568 Gunn Road, Winnipeg, Manitoba"*, dated January 8, 2021. The results of the Phase I ESA completed by Pinchin identified the following that could give rise to potential subsurface impacts in connection with the Site:

- Potential airborne metals impacts from an industrial facility and foundry located south of the Site;
- Potential fill of unknown quality and origin observed throughout the Site in the 1979 to 1997 aerial photographs; and
- Staining associated with the storage of derelict vehicles on-Site since at least the early 2000s.

Based on the above-mentioned findings, it was Pinchin's recommendation that a Phase II ESA be conducted at the Site.

1.2 Scope of Work

The scope of work completed by Pinchin, as outlined in the Pinchin proposal entitled "*Proposal for Phase II Environmental Site Assessment, 568 Gunn Road, Winnipeg, Manitoba"* submitted to the Client on January 15, 2021, included the following:

- Advancement of 5 boreholes following the clearance of underground services, 3 of which to be instrumented with a monitoring well;
- Submission of select "worst case" soil samples for laboratory analysis of a combination of benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX), petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4), VOCs, polycyclic aromatic hydrocarbons (PAHs) and metals;
- Collection of groundwater samples from each of the newly installed monitoring wells, following well development and purging, for laboratory analysis of VOCs, PHCs (F1-F4) and PAHs;
- Comparison of the laboratory analytical results to the applicable regulatory criteria; and
- Preparation of a factual report detailing the findings of the Phase II ESA and recommendations.

The scope of work described in the Pinchin proposal included collection of groundwater samples from the newly installed monitoring wells. However, due to the absence of groundwater within the monitoring wells during the Phase II ESA, groundwater samples were not collected. Furthermore, the scope of work described in the Pinchin proposal also included installation of three groundwater monitoring wells. However, five monitoring wells were installed at the Site.

2.0 METHODOLOGY

The investigation methodology was conducted in general accordance with standard environmental consulting practices and the following documents:

- Manitoba Conservation and Climate guidelines entitled:
  - *"Environmental Site Assessments in Manitoba",* dated June 2016;
  - *"Treatment and Disposal of Petroleum Contaminated Soil",* dated January 2015; and
  - *"Manitoba Criteria for BTEX in Investigation Results", dated October 2014.*

- Manitoba Conservation and Climate information bulletins entitled:
  - *"Assessment Criteria for Groundwater",* dated June 2016;
  - *"Application of the CCME Canada-Wide Standard for Petroleum Hydrocarbons in Soil: Management Limits",* dated October 2015; and
  - *"Contaminated Sites Remediation Regulation Reporting Requirements and Standards",* dated October 2015.
- Canadian Council of Ministers of the Environment (CCME) publication entitled "Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment – Volume 4 Analytical Methods", dated 2016.
- Canadian Standards Association publication entitled "*Phase II Environmental Site Assessment, CSA Standard Z769-00 (R 2018)*".

2.1 Borehole Investigation

Pinchin retained Maple Leaf Drilling Ltd. (Maple Leaf) to complete the borehole drilling program at the Site on February 19, 2021 following the clearance of underground services in the vicinity of the work area by public utility locators and a private utility locator retained by Pinchin.

The boreholes were advanced to a maximum depth of 4.57 metres below ground surface (mbgs) using a B40 truck-mounted drill rig equipped with solid stem augers. Soil samples were collected at regular intervals from the auger flights. Discrete soil samples were collected from the auger flights and containerized in laboratory-supplied glass sampling jars.

Subsurface soil conditions were logged on-Site by Pinchin personnel at the time of drilling. Soil samples were examined for visual and olfactory evidence of impacts and a portion of each sample was analyzed in the field for VOC and petroleum-derived vapour concentrations in soil headspace using a photoionization detector (PID) and a combustible gas indicator operated in methane elimination mode (RKI Eagle 2).

The locations of the boreholes are shown on Figure 2 and a description of the subsurface stratigraphy encountered during the drilling program is documented in the borehole logs included in Appendix II..

2.2 Monitoring Well Installation

Groundwater monitoring wells were installed in boreholes MW01, MW02, MW03, MW04 and MW05 to enable groundwater monitoring and sampling. The monitoring wells were constructed with 5.1 cm inner diameter (ID) flush-threaded Schedule 40 polyvinyl chloride (PVC) risers, followed by a length of 5.1 cm ID No. 10 slot PVC screen.

Each well screen was sealed at the bottom using a threaded cap and each riser was sealed at the top with a lockable J-plug cap. Silica sand was placed around and above the screened interval to form a filter pack around the well screen. A layer of bentonite was placed above the silica sand and was extended to the ground surface. A protective flush-mount cover was installed at the ground surface over each riser pipe and cemented in place.

The locations of the monitoring wells are shown on Figure 2. The monitoring well construction details are shown on the borehole logs included in Appendix II.

2.3 Groundwater Monitoring

The water levels within the monitoring wells were measured on February 23, 2021 using an interface probe. The presence/absence of non-aqueous phase liquid (NAPL) was also assessed during groundwater monitoring using the interface probe. All groundwater monitoring wells were dry during groundwater monitoring activities.

A summary of the groundwater elevation data is presented in Table 1 (All tables are presented in Appendix III).

2.4 Sampling and Laboratory Analysis

2.4.1 Soil

Up to two “worst case” soil samples, based on vapour concentrations as well as visual and/or olfactory considerations, preferred pathway migration and contaminant characteristics, recovered from each borehole were submitted for laboratory analysis of a combination of BTEX, PHCs (F1-F4), VOCs, PAHs and metals.

The borehole locations are shown on Figure 2. Table 2 provides a summary of the soil samples submitted for laboratory analysis.

2.4.2 Groundwater

On February 23, 2021, all newly installed groundwater monitoring wells were dry or had insufficient groundwater volume to allow for sampling.

The monitoring well locations are shown on Figure 2.

2.4.3 Analytical Laboratory

Selected soil samples were delivered to Bureau Veritas Laboratories (BV Labs) in Winnipeg, Manitoba for analysis. BV Labs is an independent laboratory accredited by the Standards Council of Canada and the Canadian Association for Laboratory Accreditation. Formal chain of custody records of the sample submissions were maintained between Pinchin and the staff at BV Labs.

2.5 QA/QC Protocols

Various quality assurance/quality control (QA/QC) protocols were followed during the Phase II ESA to ensure that representative samples were obtained and that representative analytical data were reported by the laboratory.

Field QA/QC protocols that were employed by Pinchin included the following:

- Care was exercised not to obtain soil samples that were in direct contact with the drilling equipment or that had been smeared along the edge of the borehole;
- Soil samples were placed in laboratory-supplied glass sample jars;
- Soil samples were placed in coolers on ice immediately upon collection, with appropriate sample temperatures maintained prior to submission to the laboratory;
- Dedicated and disposable nitrile gloves were used for sample handling;
- Non-dedicated monitoring and sampling equipment (e.g., interface probe, sampling knife) was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse; and
- Sample collection and handling procedures were performed in general accordance with the *Manitoba Conservation and Climate Guidelines* and Pinchin's SOPs for Phase II ESAs.

BV Labs' internal laboratory QA/QC consisted of the analysis of laboratory duplicate, method blank, matrix spike and spiked blank samples, and an evaluation of surrogate recoveries..

2.6 Regulatory Criteria

Manitoba Conservation and Climate has adopted Canadian Council of Ministers of the Environment (CCME) guidelines as the regulatory criteria applicable to soil conditions in Manitoba. Analytical results of soil samples are compared to criteria set forth in the CCME "*Environmental Quality Guidelines"* that are accessed at the CCME web site, the CCME *"Canada-Wide Standards for Petroleum Hydrocarbons in Soil",* dated 2008, and the CCME "*Canadian Environmental Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons*", dated 2010. These guidelines are collectively referred to as the "CCME Soil Guidelines". For assessing soil quality parameters not included in the CCME Soil Guidelines, Manitoba Conservation and Climate has adopted the following guidelines:

- Ontario Ministry of the Environment, Conservation and Parks (MECP) "Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 (MECP Soil Guidelines); and
- Alberta Environment and Parks (AEP) guidelines specified by the AEP document entitled "Alberta Tier 1 Soil and Groundwater Remediation Guidelines", dated January 10, 2019 (AEP Soil Guidelines).

The above guidelines have been developed using a risk-based approach. The application of the appropriate criteria is dependent upon several site-specific conditions including:

- The existing/proposed land use;
- The existing/potential groundwater use;
- Soil depth; and
- Soil texture.

Guidelines are further subdivided into the following types of protection:

- Human health guidelines; and
- Environmental health guidelines.

Within each of these categories, several pathways are listed that describe how the chemical or compound in question would come in contact with the receptor. If a pathway is not applicable to a site, or a specific area of a site, then the corresponding guideline value is not applicable. For example, if the site is covered with asphalt or concrete, access to the soil is limited and the human health guideline for soil ingestion is not applicable because there is no pathway for humans to come into contact with the soil if the cover is maintained. If future use of a site is modified, pathways that were not applicable can become applicable and need to be reassessed. Site-specific details for the evaluation of applicable pathways are as noted below.

- The Site is a commercial property and commercial land use guidelines are applicable to the Site.
- Water utilities are not present at the Site and potable water in the surrounding area is supplied by the City of Winnipeg, with Shoal Lake serving as the water source. As such, groundwater is not a potable source on-Site or in the vicinity of the Site.
- Groundwater is not used for livestock watering at the Site and the Site is located more than 30 metres from the nearest water body. Therefore, the livestock watering and freshwater aquatic life pathways are not applicable to the Site.
- Native soils at the Site are prominently comprised of fine-grained soils (clay and silt) and fine-grained guidelines are applicable to the Site.
- The human health vapour inhalation pathway is applicable within 30 centimetres of a building foundation (or proposed building foundation). For the purpose of this Phase II ESA, the human health vapour inhalation pathway has been considered applicable to the Site.
- The environmental health soil contact, human health ingestion, and human health dermal contact pathways are applicable in areas where access to the soil is possible (i.e., not under asphalt, concrete or a building foundation). Areas of the Site assessed as part of this Phase II ESA were not hard-surfaced and, therefore, the environmental health soil contact, human health ingestion and human health dermal contact pathways are considered to be applicable to the Site.
- The off-Site migration check, management limit, and nutrient and energy cycling checks are applicable to all areas of the Site.

Based on the above evaluation, all soil analytical results have been compared to the CCME, MECP and AEP Soil Guidelines for commercial land use and fine-grained soils excluding the protection of potable water, livestock watering and aquatic life (collectively referred to as the Soil Quality Guidelines).

The above evaluation is based on Pinchin's observation of Site conditions at the time of the Phase II ESA. If Site conditions or use of the Site changes in the future, the applicable pathways should be re-evaluated.

3.0 RESULTS

3.1 Site Geology and Hydrogeology

Based on the soil samples recovered during the borehole drilling program, the soil stratigraphy at the drilling locations below the ground surface generally consists of fill material comprised of black silty clay with minor gravel and sand to a depth of approximately between 1.22 and 1.37 mbgs.

Native subsurface material underlying the fill material was observed to generally consist of grey silty clay that extended to the maximum borehole completion depth of 4.57 mbgs. Damp to moist soil conditions were generally observed throughout the boreholes.

A detailed description of the subsurface stratigraphy encountered during borehole advancement is documented in the borehole logs located in Appendix II.

The water level information obtained during groundwater monitoring is presented in Table 1 and on the borehole logs in Appendix II. All groundwater monitoring wells were dry during groundwater monitoring activities on February 23, 2021.

The Red River is located approximately 8.2 kilometres (km) west of the Site. Groundwater flow at the Site is inferred to be towards the west based on the location of the Red River and regional drainage patterns.

3.2 Soil Headspace Vapour Concentrations

Vapour concentrations measured in the headspace of soil samples collected during the drilling investigation are presented on the borehole logs in Appendix II and ranged from 0 parts per million by volume (ppm_v) to a maximum of 1 ppm_v in soil samples MW01-01 and MW01-02, MW02-1, MW03-01 and MW03-02, collected at a depths ranging from 0.61 to 1.37 mbgs in boreholes MW01, MW02 and MW03 respectively.

3.3 Field Observations

No odours or staining were observed in the soil samples collected during the borehole drilling program.

No odours or evidence of NAPL were observed during groundwater monitoring**.**

3.4 Analytical

3.4.1 Soil

As indicated in Tables 3 through 6, reported concentrations of BTEX, PHCs (F1-F4), VOCs, PAHs and metals in the soil samples submitted for analysis met the Soil Quality Guidelines, with the following exceptions:

- Soil sample BH03-01 collected at borehole MW03 exceeded the Soil Quality Guidelines for total chromium (100 milligrams per kilogram (mg/kg) vs. the Soil Quality Guideline of 87 mg/kg); and
- Soil sample BH04-01 collected at borehole MW04 exceeded the Soil Quality Guidelines for total chromium (120 mg/kg vs. the Soil Quality Guideline of 87 mg/kg).

As indicated in Table 4, Pinchin notes that due to the sample weight for analysis, BV Labs raised the reportable detection limits (RDLs) for soil sample BH04-01 which resulted RDL in the laboratory for VOC parameter 1,1,1,2-tetrachloroethane being raised to a level above the Soil Quality Guidelines. However, given that all other VOC parameters in sample BH04-01 were below detection and all VOC parameters were below detection in other soil samples collected at the Site, it is Pinchin's opinion that 1,1,1,2-tetrachloroethane is unlikely to be present in soil sample BH04-01 at concentrations above the Soil Quality Guidelines.

As indicated Table 6, Soil sample BH04-01 collected at borehole MW04 had concentration of vanadium equal to Soil Quality Guidelines, which is 130 mg/kg.

The laboratory Certificate of Analysis for the soil samples is provided in Appendix IV.

4.0 FINDINGS AND CONCLUSIONS

Based on the work completed, the following is a summary of the activities and findings of this Phase II ESA:

- Pinchin retained Maple Leaf to advance 5 boreholes at the Site on February 19, 2021. The boreholes were advanced to a maximum depth of 4.57 mbgs using a B40 truck-mounted drill rig equipped with solid stem augers. All of the boreholes were instrumented with monitoring wells to enable groundwater monitoring and sampling.

- The soil stratigraphy at the drilling locations generally consists of black silty clay, minor gravel and sand fill material to a depth of approximately between 1.22 and 1.37 mbgs overlying native soil comprised of grey silty clay that extended to the maximum borehole completion depth of 4.57 mbgs. The soil was generally observed to be moist within the silty clay, between 3.66 and 3.81 mbgs.
- All groundwater monitoring wells were dry on February 23, 2021, as such groundwater samples were not collected for laboratory analysis. Inferred groundwater flow is expected to be west based on the location of the Red River and regional drainage patterns.
- Based on Site-specific information, the soil quality was assessed based on the Soil Quality Guidelines for commercial land use and fine-grained soils excluding the protection of potable water, livestock watering and aquatic life.
- Seven (7) “worst case” soil samples based on the results of field screening were submitted for laboratory analysis of a combination of BTEX, PHCs (F1-F4), VOCs, PAHs and metals.
- Reported concentrations in the soil samples submitted for analysis of BTEX, PHCs (F1-F4), VOCs, PAHs and metals satisfied their respective Soil Quality Guidelines with the following exceptions:
    - Soil sample BH03-01 collected at borehole MW03 exceeded the Soil Quality Guidelines for total chromium; and
    - Soil sample BH04-01 collected at borehole MW04 exceeded the Soil Quality Guidelines for total chromium.

Pinchin also notes that soil sample BH04-01 collected at borehole MW04 had a concentration of vanadium equal to the Soil Quality Guideline.

The findings of this Phase II ESA identified metals-impacted soil at boreholes MW03 and MW04. As such, it is Pinchin’s recommendation that a Remedial Plan be developed for the Site and submitted to Manitoba Conservation and Climate for approval.

Should the use of the Site change, including future redevelopment or other activities requiring excavation of the metal-impacted soils, additional soil assessment should be completed to further delineate the metal-impacted soils. Development of a Remedial Plan for the site would be required and submitted to Manitoba Conservation and Climate for approval, prior to undertaking any remedial activities.

As of April 1, 2014, new amendments to the Contaminated Sites Remediation Act (CSRA) and Contaminated Sites Remediation Regulation (CSRR) came into effect. Section 3.1 of the CSRA states that the owner or occupier of a site must notify Manitoba Sustainable Development in writing when he or she becomes aware of information that indicates that the site has been contaminated at a level that exceeds a standard established or adopted by regulation (in this case the CSRR) and provide Manitoba Sustainable Development and with all reports and any other documentation in his or her possession respecting the contamination at the site.

5.0 TERMS AND LIMITATIONS

This Phase II ESA was performed for Alliance Tree Care Inc. (Client) in order to investigate potential environmental impacts at 568 Gunn Road in Winnipeg, Manitoba (Site). This Phase II ESA does not quantify the extent of the current and/or potential environmental impacts or the cost of any remediation.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations. Samples have been analyzed for a limited number of contaminants that are expected to be present at the Site, and the absence of information relating to a specific contaminant does not indicate that it is not present.

No environmental site assessment can wholly eliminate uncertainty regarding the potential for environmental impacts on a property. Performance of this Phase II ESA to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental impacts on the Site and recognizes reasonable limits on time and cost.

This Phase II ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site.

This report was prepared for the exclusive use of the Client, subject to the terms, conditions and limitations contained within the duly authorized proposal for this project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.

If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

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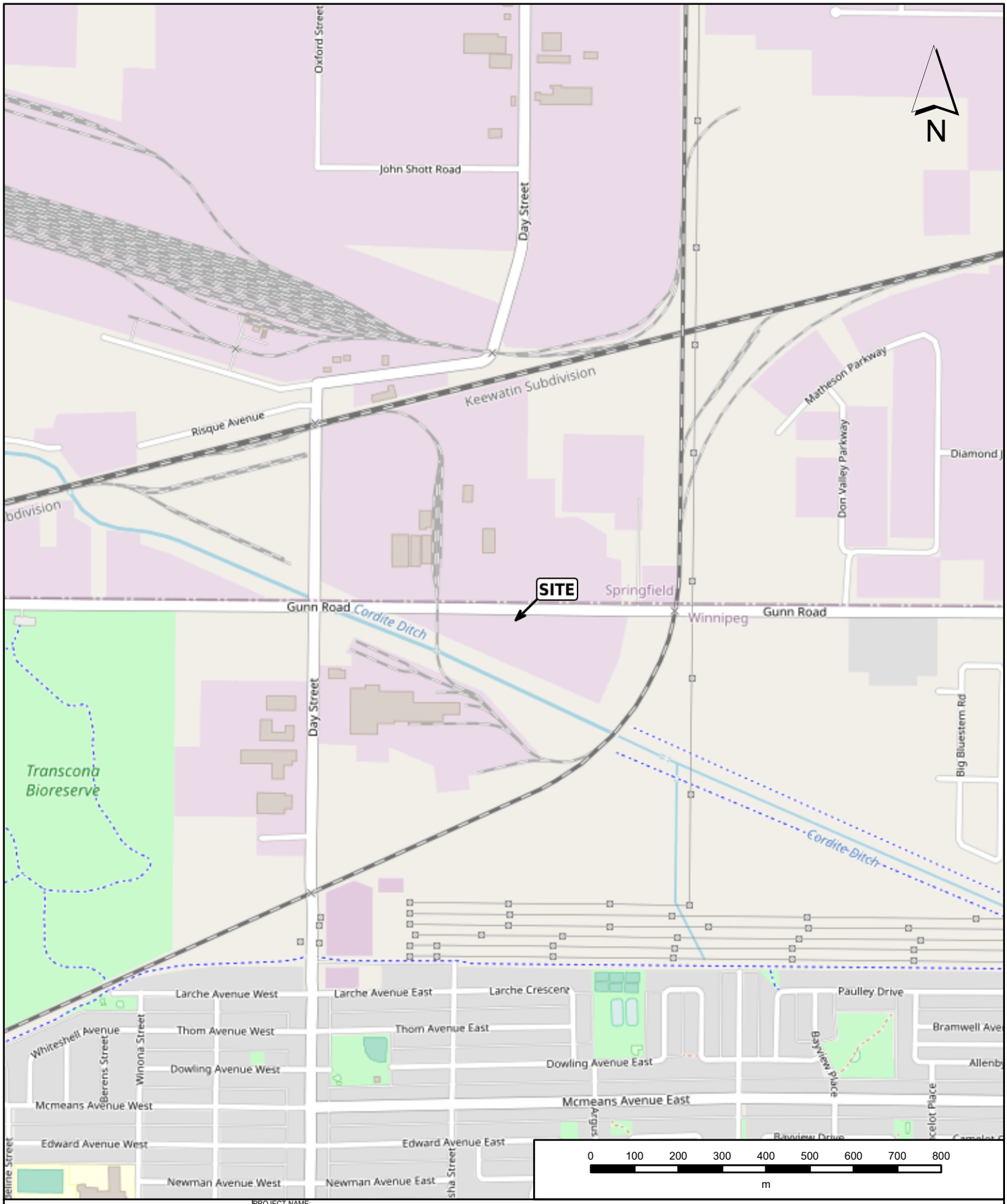
Template: Master Report for Phase II ESA - Stage 2 PSI, EDR, January 13, 2021

APPENDIX I
Figures



PINCHIN

PROJECT NAME:	PHASE II ENVIRONMENTAL SITE ASSESSMENT				
CLIENT NAME:	ALLIANCE TREE CARE INC.				
PROJECT LOCATION:	568 GUNN ROAD, WINNIPEG, MANITOBA				
FIGURE NAME:	KEY MAP				FIGURE NUMBER: 1
PROJECT NUMBER: 287232	SCALE: 1:18,000	DRAWN BY: MBM	REVIEWED BY: VT	DATE: MARCH 2021	

N

LEGEND

SITE BOUNDARY

MONITORING WELL

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

INFERRED GROUNDWATER FLOW DIRECTION

0 10 30 50 m

PINCHIN

PROJECT NAME:
PHASE II ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME:
ALLIANCE TREE CARE INC.

PROJECT LOCATION:
568 GUNN ROAD, WINNIPEG, MANITOBA

FIGURE NAME:
BOREHOLE/ MONITORING WELL LOCATION PLAN

PROJECT NUMBER:	SCALE:
287232	AS SHOWN
DRAWN BY:	REVIEWED BY:
MBM	VT
DATE:	FIGURE NUMBER:
MARCH 2021	2

GUNN ROAD

MW05

MW04

MW03

MW02

MW01

BH4–1 (0.15 – 0.61 mbgs)		
Parameter	Guideline mg/kg	Concentration mg/kg
Total Chromium	87	120

BH3–1 (0.15 – 0.61 mbgs)		
Parameter	Guideline mg/kg	Concentration mg/kg
Total Chromium	87	100
Vanadium	130	130

INFERRED GROUNDWATER FLOW DIRECTION

0 10 30 50 m

N

LEGEND

SITE BOUNDARY

MONITORING WELL

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

PINCHIN

PROJECT NAME:
PHASE II ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME:
ALLIANCE TREE CARE INC.

PROJECT LOCATION:
568 GUNN ROAD, WINNIPEG, MANITOBA

FIGURE NAME:
SOIL EXCEEDANCES PLAN

PROJECT NUMBER:	SCALE:
287232	AS SHOWN
DRAWN BY: MBM	REVIEWED BY: VT
DATE: MARCH 2021	FIGURE NUMBER: 3

APPENDIX II

Borehole Logs

Log of Borehole: MW01

Project #: 287232 **Logged By:** LG

Project: Phase II Environmental Site Assessment

Client: Alliance Tree Care Inc.

Location: 568 Gunn Road, Winnipeg, MB

Drill Date: February 19, 2021

SUBSURFACE PROFILE

Depth (ft / m)	Description	Measured Depth (m)
0 / 0	Ground Surface	0.00
	Clay Fill Black silty clay, minor sand and gravel, some debris, damp.	
		1.37
	Silty Clay Grey, damp.	
	Moist from 3.66 mbgs.	
		4.57
	End of Borehole	

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Monitoring Well Details: Bentonite, Riser, Silica Sand, Screen

Monitoring well was dry on February 23, 2021.

SAMPLE

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
100	BH01-01	0/1	PHC(F1-F4) BTEX,VOC PAH, Metals
	BH01-02	0/1	PHC(F1-F4) BTEX, Metals
100	BH01-03	0/0	
	BH01-04	0/0	
100	BH01-05	0/0	
	BH01-06	0/0	

Contractor: Maple Leaf Drilling Ltd.

Grade Elevation: NM

Drilling Method: Solid Stem Auger

Top of Casing Elevation: NM

Well Casing Size: 5.1 cm

Sheet: 1 of 1

Log of Borehole: MW02

Project #: 287232 **Logged By:** LG

Project: Phase II Environmental Site Assessment

Client: Alliance Tree Care Inc.

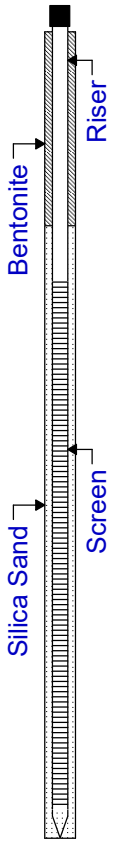
Location: 568 Gunn Road, Winnipeg, MB

Drill Date: February 19, 2021

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Measured Depth (m)
0 / 0		Ground Surface	0.00
0 – 4.5 / 0 – 1.37		***Clay Fill*** Black clay, silt, minor gravel, damp.	
4.5 – 15 / 1.37 – 4.57		***Silty Clay*** Grey, damp. Moist from 3.81 mbgs.	1.37
15 / 4.57		End of Borehole	4.57

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).



Monitoring well was dry on February 23, 2021.

SAMPLE

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
100	BH02-01	0/1	PHC(F1-F4) BTEX, Metals
	BH02-02	0/0	
100	BH02-03	0/0	
	BH02-04	0/0	
100	BH02-05	0/0	
	BH02-06	0/0	

Contractor: Maple Leaf Drilling Ltd.

Drilling Method: Solid Stem Auger

Well Casing Size: 5.1 cm

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: MW03

Project #: 287232 **Logged By:** LG

Project: Phase II Environmental Site Assessment

Client: Alliance Tree Care Inc.

Location: 568 Gunn Road, Winnipeg, MB

Drill Date: February 19, 2021

SUBSURFACE PROFILE

Ground Surface — 0.00

Clay Fill
Black clay, silt, minor gravel and sand, damp.

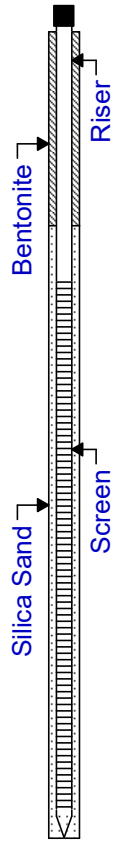
1.22

Silty Clay
Brown to grey, damp.

4.57

End of Borehole

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).



Monitoring well was dry on February 23, 2021.

SAMPLE

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
100	BH03-01	0/1	PHC(F1-F4) BTEX, Metals
	BH03-02	0/1	
100	BH03-03	0/0	
	BH03-04	0/0	
100	BH03-05	0/0	
	BH03-06	0/0	

Contractor: Maple Leaf Drilling Ltd.

Drilling Method: Solid Stem Auger

Well Casing Size: 5.1 cm

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: MW04

Project #: 287232 **Logged By:** LG

Project: Phase II Environmental Site Assessment

Client: Alliance Tree Care Inc.

Location: 568 Gunn Road, Winnipeg, MB

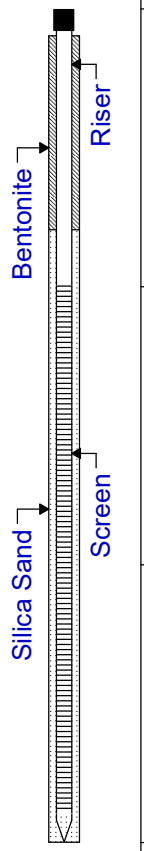
Drill Date: February 19, 2021

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Measured Depth (m)
0 / 0		Ground Surface	0.00
0 – 4.5 / 0 – 1.37		***Clay Fill*** Black silty clay, minor sand and gravel, damp.	
4.5 – 15 / 1.37 – 4.57		***Silty Clay*** Brown to grey, damp to moist.	4.57
15 / 4.57		End of Borehole	

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Monitoring Well Details



Monitoring well was dry on February 23, 2021.

SAMPLE

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
100	BH04-01	0/0	PHC(F1-F4) BTEX,VOC PAH, Metals
	BH04-02	0/0	PHC(F1-F4) BTEX, Metals
100	BH04-03	0/0	
	BH04-04	0/0	
100	BH04-05	0/0	
	BH04-06	0/0	

Contractor: Maple Leaf Drilling Ltd.

Drilling Method: Solid Stem Auger

Well Casing Size: 5.1 cm

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: MW05

Project #: 287232 **Logged By:** LG

Project: Phase II Environmental Site Assessment

Client: Alliance Tree Care Inc.

Location: 568 Gunn Road, Winnipeg, MB

Drill Date: February 19, 2021

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Measured Depth (m)
0	0		Ground Surface	0.00
0–4	0–1.22		***Clay Fill*** Black silty clay, minor sand and gravel, damp.	1.22
4–15	1.22–4.57		***Silty Clay*** Grey, damp.	4.57
15	4.57		End of Borehole	

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Monitoring Well Details: Bentonite, Riser, Silica Sand, Screen

Monitoring well was dry on February 23, 2021.

SAMPLE

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
100	BH05-01	0/0	PHC(F1-F4) BTEX,VOC PAH, Metals
	BH05-02	0/0	
100	BH05-03	0/0	
	BH05-04	0/0	
100	BH05-05	0/0	
	BH05-06	0/0	

Contractor: Maple Leaf Drilling Ltd.

Grade Elevation: NM

Drilling Method: Solid Stem Auger

Top of Casing Elevation: NM

Well Casing Size: 5.1 cm

Sheet: 1 of 1

APPENDIX III

Summary Tables

TABLE 1
GROUNDWATER ELEVATION DATA
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Well Number	*Date (dd/mm/yyyy)*	*NAPL Level Measurement from TOC (m)*	*Water Level Measurement from TOC (m)*	*Water Level Measurement from Ground (mbgs)*	*Product Thickness (m)*
MW01	23/02/2020	ND	Dry	Dry	ND
MW02	23/02/2020	ND	Dry	Dry	ND
MW03	23/02/2020	ND	Dry	Dry	ND
MW04	23/02/2020	ND	Dry	Dry	ND
MW05	23/02/2020	ND	Dry	Dry	ND

Notes:

NAPL	Non-Aqueous Phase Liquid
ND	Not Detected
TOC	Indicates Top of Casing
m	Metres
mbgs	Metres Below Ground Surface

TABLE 2
SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Samples			Parameters					
Borehole / Monitoring Well ID	Sample ID	Sample Depth Range (mbgs)	SOIL SAMPLES	PHCs (F1-F4) & BTEX	VOCs	PAHs	Metals	Rationale/Notes
MW01	BH01-01	0.15 - 0.76		●	●	●	●	Assess soil conditions in relation to potential airborne metals impacts from an industrial facility and foundry located south of the Site, potential presence of fill unknown quality and origin, and staining associated with the storage of derelict vehicles on-Site since at least the early 2000s.
	BH01-02	1.07 - 1.37		●			●	Assess soil conditions in relation to potential fill of unknown quality and origin observed throughout the Site in the 1979 to 1997 aerial photographs.
MW02	BH02-01	0.3 - 0.61		●			●	Assess soil conditions in relation to potential airborne metals impacts from an industrial facility and foundry located south of the Site, potential presence of fill unknown quality and origin, and staining associated with the storage of derelict vehicles on-Site since at least the early 2000s..
MW03	BH03-01	0.3 - 0.61		●			●	Assess soil conditions in relation to potential airborne metals impacts from an industrial facility and foundry located south of the Site, potential presence of fill unknown quality and origin, and staining associated with the storage of derelict vehicles on-Site since at least the early 2000s.
MW04	BH04-01	0.15 - 0.61		●	●	●	●	Assess soil conditions in relation to potential airborne metals impacts from an industrial facility and foundry located south of the Site, potential presence of fill unknown quality and origin, and staining associated with the storage of derelict vehicles on-Site since at least the early 2000s.
	BH04-02	1.07 - 1.37		●			●	Assess soil conditions in relation to potential fill of unknown quality and origin observed throughout the Site in the 1979 to 1997 aerial photographs.
MW05	BH05-01	0.15 - 0.46		●	●	●	●	Assess soil conditions in relation to potential airborne metals impacts from an industrial facility and foundry located south of the Site, potential presence of fill unknown quality and origin, and staining associated with the storage of derelict vehicles on-Site since at least the early 2000s..

Notes:

PHCs (F1-F4) Petroleum Hydrocarbons (Fraction 1 to Fraction 4)
BTEX Benzene, Toluene, Ethylbenzene, and Xylenes
VOCs Volatile Organic Compounds
PAHs Polycyclic Aromatic Hydrocarbons
mbgs Metres Below Ground Surface

TABLE 3
PETROLEUM HYDROCARBON AND BTEX ANALYSIS FOR SOIL
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Parameter	Soil Quality Guidelines		Sample Designation						
			Sample Collection Date (dd/mm/yyyy)						
			Sample Depth Range (mbgs)						
			BH01-01	BH01-02	BH02-01	BH03-01	BH04-01	BH04-02	BH05-01
	Surface (<1.5 mbgs)	Subsoil (>1.5 mbgs)	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			0.15 - 0.76	1.07 - 1.37	0.3 - 0.61	0.3 - 0.61	0.15 - 0.61	1.07 - 1.37	0.15 - 0.46
Benzene	2.8[a]	2.9[b]	<0.0050	<0.0070 (1)	<0.010 (1)	<0.0050	<0.0070 (1)	<0.0080 (1)	<0.0050
Toluene	330[a]	660[b]	<0.050	<0.050 (1)	<0.050 (1)	<0.050	<0.050 (1)	<0.050 (1)	<0.050
Ethylbenzene	430[a]	860[b]	<0.010	<0.010 (1)	<0.012 (1)	<0.010	<0.010 (1)	<0.011 (1)	<0.010
Xylenes (Total)	230[a]	460[b]	<0.045	<0.11 (2)	<0.15 (2)	<0.045	<0.10 (2)	<0.13 (2)	<0.045
Petroleum Hydrocarbons F1 (C_6 - C_{10})	320[c]	800[d]	<10	<24 (2)	<15 (1)	<10	<23 (2)	<13 (1)	<10
Petroleum Hydrocarbons F2 (>C_{10} - C_{16})	260[c]	1,000[d]	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F3 (>C_{16} - C_{34})	2,500[c]	5,000[d]	98	78	<50	160	<50	<50	50
Petroleum Hydrocarbons F4 (>C_{34} - C_{50})	6,600[c]	10,000[d]	280	64	<50	200	<50	<50	<50

Notes:

CCME	Canadian Council of the Ministries of the Environment
BOLD	Exceeds referenced guideline
Units	All units in mg/kg
<	Indicates concentration is less than the laboratory's minimum reportable detection limit
mbgs	Metres below ground surface
BTEX	Benzene, toluene, ethylbenzene and xylenes
(1)	Laboratory Note: Detection limit reported based on MDL and sample weight used for analysis.
(2)	Laboratory Note: Detection limits raised based on sample weight used for analysis.

[a] Referenced from the Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines, accessed on-line in March 2021.

Data represents the most stringent criteria for commercial land-use, fine-grained surface soils excluding the protection of potable water, livestock watering and aquatic life. For benzene, the 10^{-5} incremental risk factor is referenced.

[b] Referenced from the CCME Canadian Environmental Quality Guidelines, accessed on-line in March 2021.

Data represents the most stringent criteria for commercial land-use, fine-grained subsoils excluding the protection of potable water, livestock watering and aquatic life. For benzene, the 10^{-5} incremental risk factor is referenced.

[c] Referenced from the CCME Canada-Wide Standards for Petroleum Hydrocarbons in Soil, 2008

Data represents the most stringent criteria for commercial land-use, fine-grained surface soils excluding the protection of potable water, livestock watering and aquatic life.

[d] Referenced from the CCME Canada-Wide Standards for Petroleum Hydrocarbons in Soil, 2008

Data represents the most stringent criteria for commercial land-use, fine-grained subsoils excluding the protection of potable water, livestock watering and aquatic life.

TABLE 4
VOLATILE ORGANIC COMPOUND ANALYSIS FOR SOIL
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Parameter	Soil Quality Guidelines	Sample Designation		
		Sample Collection Date (dd/mm/yyyy)		
		Sample Depth (mbgs)		
		BH01-01	BH04-01	BH05-01
		19/02/2021	19/02/2021	19/02/2021
		0.15 - 0.76	0.15 - 0.61	0.15 - 0.46
1,1,1,2-tetrachloroethane	0.11[b]	<0.050	**<0.12 (2)**	<0.050
1,1,1-trichloroethane	50[a]	<0.020	<0.047 (2)	<0.020
1,1,2,2-tetrachloroethane	50[a]	<0.050	<0.12 (2)	<0.050
1,1,2-trichloroethane	50[a]	<0.020	<0.047 (2)	<0.020
1,1-dichloroethane	50[a]	<0.020	<0.047 (2)	<0.020
1,1-dichloroethene	50[a]	<0.020	<0.047 (2)	<0.020
1,2,3-trichlorobenzene	10[a]	<0.040	<0.093 (2)	<0.040
1,2,4-trichlorobenzene	10[a]	<0.040	<0.093 (2)	<0.040
1,2,4-trimethylbenzene	NG	<0.50	<1.2 (2)	<0.50
1,2-dibromoethane	0.05[b]	<0.0020	<0.0047 (2)	<0.0020
1,2-dichlorobenzene	10[a]	<0.020	<0.047 (2)	<0.020
1,2-dichloroethane	50[a]	<0.0020	<0.0047 (2)	<0.0020
1,2-dichloropropane	50[a]	<0.020	<0.047 (2)	<0.020
1,3,5-trichlorobenzene	10[a]	<0.040	<0.093 (2)	<0.040
1,3,5-trimethylbenzene	NG	<0.50	<1.2 (2)	<0.50
1,3-dichlorobenzene	10[a]	<0.020	<0.047 (2)	<0.020
1,4-dichlorobenzene	10[a]	<0.020	<0.047 (2)	<0.020
Bromodichloromethane	18[b]	<0.030	<0.070 (2)	<0.030
Bromoform	1.7[b]	<0.050	<0.12 (2)	<0.050
Bromomethane	0.05[b]	<0.020	<0.047 (2)	<0.020
Carbon tetrachloride	50[a]	<0.00050	<0.0012 (2)	<0.00050
Chlorobenzene	10[a]	<0.0010	<0.0023 (2)	<0.0010
Chlorodibromomethane	13[b]	<0.020	<0.047 (2)	<0.020
Chloroethane	NG	<0.020	<0.047 (2)	<0.020
Chloroform	50[a]	<0.010	<0.023 (2)	<0.010
Chloromethane	NG	<0.030	<0.070 (2)	<0.030
cis-1,2-dichloroethene	50[a]	<0.020	<0.047 (2)	<0.020
cis-1,3-dichloropropene	NG	<0.020	<0.047 (2)	<0.020
Dichloromethane	50[a]	<0.030	<0.070 (2)	<0.030
Methyl methacrylate	1.3[c]	<0.040	<0.093 (2)	<0.040
Methyl-tert-butylether (MTBE)	3.2[b]	<0.030	<0.070 (2)	<0.030
Styrene	50[a]	<0.020	<0.047 (2)	<0.020
Tetrachloroethene	0.5[a]	<0.010	<0.023 (2)	<0.010
trans-1,2-dichloroethene	50[a]	<0.020	<0.047 (2)	<0.020
trans-1,3-dichloropropene	0.21[b]	<0.020	<0.047 (2)	<0.020
Trichloroethene	0.92[a]	<0.010	<0.023 (2)	<0.010
Trichlorofluoromethane	5.8[b]	<0.020	<0.047 (2)	<0.020
Vinyl chloride	0.25[b]	<0.00030	<0.00070 (2)	<0.00030

Notes:

CCME	Canadian Council of the Ministries of the Environment
BOLD	Exceeds referenced guideline
Units	All units in mg/kg
<	Indicates concentration is less than the laboratory's minimum reportable detection limit
mbgs	Metres below ground surface
-	Not Analyzed
(2)	Laboratory Note: Detection limits raised based on sample weight used for analysis.

[a] Referenced from the CCME Canadian Environmental Quality Guidelines, Accessed On-Line in March 2021.
Data represents the most stringent criteria for commercial land-use excluding the protection of potable water, livestock watering and aquatic life.

[b] Ontario Ministry of the Environment and Climate Change *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 3 Standards, Fine-medium-Textured Soils, Non-Potable Groundwater Condition, for Industrial/Commercial/Community property use."*

[c] Alberta Environment and Parks *"Alberta Tier 1 Soil and Groundwater Remediation Guidelines"* (January 10, 2019) for commercial land use with fine-grained soil.

TABLE 5
POLYCYCLIC AROMATIC HYDROCARBON ANALYSIS FOR SOIL
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Parameter	*Soil Quality Guidelines*	*Sample Designation*		
		Sample Collection Date (dd/mm/yyyy)		
		Sample Depth (mbgs)		
		BH01-01	*BH04-01*	*BH05-01*
		19/02/2021	*19/02/2021*	*19/02/2021*
		0.15 - 0.76	*0.15 - 0.61*	*0.15 - 0.46*
Index of Additive Cancer Risk (IACR)	NA	NC	NC	NC
B[a]P TPE (Total Potency Equivalents)[1]	5.3[a]	0.016	0.00605	0.061
Acenaphthene	NC	<0.0050	<0.0050	<0.0050
Acenaphthylene	NC	<0.0050	<0.0050	<0.0050
Acridine	NG	<0.010	<0.010	<0.010
Anthracene	32[a]	<0.0040	<0.0040	0.015
Benzo(a)anthracene	10[a]	0.0080	<0.0050	0.044
Benzo(b&j)fluoranthene	10[a]	0.016	<0.0050	0.061
Benzo(k)fluoranthene	10[a]	<0.0050	<0.0050	0.020
Benzo(g,h,i)perylene	NC	0.013	<0.0050	0.025
Benzo(c)phenanthrene	NG	<0.0050	<0.0050	<0.0050
Benzo(a)pyrene	72[a]	0.010	<0.0050	0.043
Benzo[e]pyrene	NG	0.013	<0.0050	0.031
Chrysene	NC	0.0098	<0.0050	0.039
Dibenz(a,h)anthracene	10[a]	<0.0050	<0.0050	<0.0050
Fluoranthene	180[a]	0.021	<0.0050	0.11
Fluorene	NC	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	10[a]	0.0077	<0.0050	0.028
2-Methylnaphthalene[c]	85[b]	0.0098	<0.0050	<0.0050
Naphthalene	22[a]	0.011	<0.0050	0.0082
Phenanthrene	50[a]	0.017	<0.0050	0.064
Perylene	NG	<0.0050	<0.0050	0.010
Pyrene	100[a]	0.020	<0.0050	0.092
Quinoline	NG	<0.010	<0.010	<0.010

Notes:

<	Indicates concentration is less than the laboratory's minimum reportable detection limit
BOLD	Exceeds soil quality guideline
Units	All units in mg/kg
mbgs	Metres below ground surface
NG	No Guideline
NC	Not calculated
-	Not Analyzed

[1] Benzo(a)pyrene Total Potency Equivalents is calculated by summing the products of the detectable levels of following parameters by their respective Benzo(a)pyrene Equivalency Factor : Benzo(a)anthracene (0.1), Benzo(a)pyrene (1), Benzo(b+j)fluoranthene (0.1), Benzo(k)fluoranthene (0.1), Benzo(g,h,i)perylene (0.01), Chrysene (0.01), Dibenz(a,h)anthracene (1) and Indeno(1,2,3-c,d)pyrene (0.1) If parameters are below detection, 50% of reportable detection value is used for the calculation.

[a] Referenced from CCME'S Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, Policyclic Aromatic Hydrocarbons, 2010.

[b] Ontario Ministry of the Environment and Climate Changes "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 3 Standards, Fine-medium-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use."

[c] The methyl naphthalene standards are applicable to both 1-methyl naphthalene and 2-methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

TABLE 6
METALS ANALYSIS FOR SOIL
Alliance Tree Care Inc.
568 Gunn Road, Winnipeg, Manitoba

Parameter	*Soil Quality Guidelines*	*Sample Designation*						
		Sample Collection Date (dd/mm/yyyy)						
		Sample Depth (mbgs)						
		BH01-01	*BH01-02*	*BH02-01*	*BH03-01*	*BH04-01*	*BH04-02*	*BH05-01*
		19/02/2021	*19/02/2021*	*19/02/2021*	*19/02/2021*	*19/02/2021*	*19/02/2021*	*19/02/2021*
		0.15 - 0.76	*1.07 - 1.37*	*0.3 - 0.61*	*0.3 - 0.61*	*0.15 - 0.61*	*1.07 - 1.37*	*0.15 - 0.46*
Antimony	40[a]	0.64	0.52	<0.50	0.82	<0.50	<0.50	<0.50
Arsenic	12[a]	7.5	8.5	8.0	5.9	8.1	8.0	6.3
Barium	2000[a]	150	220	170	150	200	200	140
Beryllium	8[a]	0.95	1.2	1.3	0.49	1.2	1.3	0.92
Boron (Hot Water Soluble)*	2[b]	0.57	0.47	0.38	0.34	0.38	0.34	0.82
Cadmium	22[a]	0.49	0.37	0.54	0.22	0.34	0.25	0.47
Chromium (Total)	87[a]	65	54	53	**100**	**120**	66	51
Chromium (Hexavalent)	1.4[a]	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Cobalt	300[a]	12	15	14	7.7	14	14	10
Copper	91[a]	37	35	35	67	35	32	27
Lead	260[a]	20	16	19	45	17	14	23
Mercury	24[a]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	40[a]	3.3	0.71	0.49	23	0.79	0.41	0.74
Nickel	89[a]	38	43	41	36	43	42	32
Selenium	2.9[a]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	40[b]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1[a]	0.27	0.33	0.32	0.13	0.32	0.31	0.24
Tin	300[a]	1.5	1.3	1.3	3.4	1.4	1.2	1.7
Uranium	33[a]	1.6	2.7	2.4	1.2	1.1	1.2	1.4
Vanadium	130[a]	71	80	82	45	130	89	63
Zinc	410[a]	99	99	99	67	91	89	80

Notes:

CCME	Canadian Council of the Ministries of the Environment
BOLD	Exceeds soil quality guideline
Units	All units in mg/kg
mbgs	Metres below ground surface
NG	No guideline for corresponding parameter
-	Not analyzed
<	Indicates concentration is less than the laboratory's minimum reportable detection limit

[a] Referenced from the CCME Canadian Environmental Quality Guidelines, accessed on-line in March 2021.

Data represents the most stringent criteria for commercial land-use excluding the protection of potable water, livestock watering and aquatic life.

[b] Ontario Ministry of the Environment and Climate Changes "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 3 Standards, Medium to Fine-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use."

* Hot Water Soluble Boron guidelines apply to surface soils only (<1.5 mbgs)

APPENDIX IV

Laboratory Certificates of Analysis

Your Project #: 287232
Site Location: GUNN RD P2ESA
Your C.O.C. #: n017995

Attention: Laura Gallagher

PINCHIN LTD.
54 Terracon Pl.
Winnipeg, MB
CANADA R2J 4G7

Report Date: 2021/03/03
Report #: R2992371
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C111192
Received: 2021/02/21, 14:44

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Boron (Hot Water Soluble)	7	2021/03/03	2021/03/03	AB SOP-00034 / AB SOP-00042	EPA 6010d R5 m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	7	N/A	2021/02/26	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	7	N/A	2021/02/27		Auto Calc
Hexavalent Chromium (2)	2	2021/02/26	2021/02/26	AB SOP-00063	SM 23 3500-Cr B m
Hexavalent Chromium (2)	5	2021/02/27	2021/02/27	AB SOP-00063	SM 23 3500-Cr B m
CCME Hydrocarbons (F2-F4 in soil) (3)	4	2021/02/25	2021/02/26	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (3)	3	2021/02/26	2021/02/26	AB SOP-00036	CCME PHC-CWS m
Elements by ICPMS - Soils	7	2021/02/28	2021/02/28	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Moisture	7	N/A	2021/02/26	AB SOP-00002	CCME PHC-CWS m
Index of Additive Cancer Risk	3	N/A	2021/02/28		Auto Calc
Benzo[a]pyrene Equivalency	3	N/A	2021/02/28		Auto Calc
PAH in Soil by GC/MS	3	2021/02/26	2021/02/27	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
Total LMW, HMW, Total PAH Calc	3	N/A	2021/02/28		Auto Calc
VOCs in Soil by HS GC/MS (Std List) (1)	3	N/A	2021/02/25	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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Your Project #: 287232
Site Location: GUNN RD P2ESA
Your C.O.C. #: n017995

Attention: Laura Gallagher

PINCHIN LTD.
54 Terracon Pl.
Winnipeg, MB
CANADA R2J 4G7

Report Date: 2021/03/03
Report #: R2992371
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C111192
Received: 2021/02/21, 14:44

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
(2) Some soil samples may react with the Cr(VI) spike reducing it to Cr(III). These samples are highly unlikely to contain native hexavalent chromium. Thus a failed spike recovery does not invalidate a negative result on the native sample.
(3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Carmen McKay, Key Account Specialist
Email: Carmen.MCKAY@bureauveritas.com
Phone# (403)219-3683
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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BV Labs Job #: C111192
Report Date: 2021/03/03

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

RESULTS OF CHEMICAL ANALYSES OF SOIL

BV Labs ID		ZI8771		ZI8772	ZI8773		ZI8774	ZI8775		
Sampling Date		2021/02/19		2021/02/19	2021/02/19		2021/02/19	2021/02/19		
COC Number		n017995		n017995	n017995		n017995	n017995		
	UNITS	BH01-01	QC Batch	BH01-02	BH02-01	QC Batch	BH03-01	BH04-01	RDL	QC Batch
Elements										
Soluble (Hot water) Boron (B)	mg/kg	0.57	A170311	0.47	0.38	A170311	0.34	0.38	0.10	A170311
Hex. Chromium (Cr 6+)	mg/kg	<0.080	A167169	<0.080	<0.080	A165848	<0.080	<0.080	0.080	A166811
RDL = Reportable Detection Limit										

BV Labs ID		ZI8776	ZI8777		
Sampling Date		2021/02/19	2021/02/19		
COC Number		n017995	n017995		
	UNITS	BH04-02	BH05-01	RDL	QC Batch
Elements					
Soluble (Hot water) Boron (B)	mg/kg	0.34	0.82	0.10	A170311
Hex. Chromium (Cr 6+)	mg/kg	<0.080	<0.080	0.080	A166811
RDL = Reportable Detection Limit					

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BV Labs Job #: C111192
Report Date: 2021/03/03

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		ZI8771		ZI8772	ZI8773	ZI8774		ZI8775		
Sampling Date		2021/02/19		2021/02/19	2021/02/19	2021/02/19		2021/02/19		
COC Number		n017995		n017995	n017995	n017995		n017995		
	UNITS	BH01-01	QC Batch	BH01-02	BH02-01	BH03-01	QC Batch	BH04-01	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A166377	<10	<10	<10	A165471	<10	10	A166377
F3 (C16-C34 Hydrocarbons)	mg/kg	98	A166377	78	<50	160	A165471	<50	50	A166377
F4 (C34-C50 Hydrocarbons)	mg/kg	280	A166377	64	<50	200	A165471	<50	50	A166377
Reached Baseline at C50	mg/kg	Yes	A166377	Yes	Yes	Yes	A165471	Yes		A166377
Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	81	A166377	103	110	102	A165471	93		A166377
RDL = Reportable Detection Limit										

BV Labs ID		ZI8776		ZI8777		
Sampling Date		2021/02/19		2021/02/19		
COC Number		n017995		n017995		
	UNITS	BH04-02	QC Batch	BH05-01	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A165471	<10	10	A166377
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	A165471	50	50	A166377
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	A165471	<50	50	A166377
Reached Baseline at C50	mg/kg	Yes	A165471	Yes		A166377
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	105	A165471	85		A166377
RDL = Reportable Detection Limit						

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BV Labs Job #: C111192
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PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

PHYSICAL TESTING (SOIL)

BV Labs ID		ZI8771	ZI8772	ZI8773		ZI8774	ZI8775		
Sampling Date		2021/02/19	2021/02/19	2021/02/19		2021/02/19	2021/02/19		
COC Number		n017995	n017995	n017995		n017995	n017995		
	UNITS	BH01-01	BH01-02	BH02-01	QC Batch	BH03-01	BH04-01	RDL	QC Batch
Physical Properties									
Moisture	%	27	26	27	A165574	17	25	0.30	A165218
RDL = Reportable Detection Limit									

BV Labs ID		ZI8776	ZI8777		
Sampling Date		2021/02/19	2021/02/19		
COC Number		n017995	n017995		
	UNITS	BH04-02	BH05-01	RDL	QC Batch
Physical Properties					
Moisture	%	26	25	0.30	A165574
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8771	ZI8775	ZI8777		
Sampling Date		2021/02/19	2021/02/19	2021/02/19		
COC Number		n017995	n017995	n017995		
	UNITS	BH01-01	BH04-01	BH05-01	RDL	QC Batch
Polycyclic Aromatics						
Index of Additive Cancer Risk(IACR)	N/A	0.19	<0.10	0.80	0.10	A164286
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A165427
B[a]P TPE Total Potency Equivalents	mg/kg	0.017	<0.0071	0.061	0.0071	A164287
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A165427
Acridine	mg/kg	<0.010	<0.010	<0.010	0.010	A165427
Anthracene	mg/kg	<0.0040	<0.0040	0.015	0.0040	A165427
Benzo(a)anthracene	mg/kg	0.0080	<0.0050	0.044	0.0050	A165427
Benzo(b&j)fluoranthene	mg/kg	0.016	<0.0050	0.061	0.0050	A165427
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	0.020	0.0050	A165427
Benzo(g,h,i)perylene	mg/kg	0.013	<0.0050	0.025	0.0050	A165427
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A165427
Benzo(a)pyrene	mg/kg	0.010	<0.0050	0.043	0.0050	A165427
Benzo(e)pyrene	mg/kg	0.013	<0.0050	0.031	0.0050	A165427
Chrysene	mg/kg	0.0098	<0.0050	0.039	0.0050	A165427
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A165427
Fluoranthene	mg/kg	0.021	<0.0050	0.11	0.0050	A165427
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A165427
Indeno(1,2,3-cd)pyrene	mg/kg	0.0077	<0.0050	0.028	0.0050	A165427
2-Methylnaphthalene	mg/kg	0.0098	<0.0050	<0.0050	0.0050	A165427
Naphthalene	mg/kg	0.011	<0.0050	0.0082	0.0050	A165427
Phenanthrene	mg/kg	0.017	<0.0050	0.064	0.0050	A165427
Perylene	mg/kg	<0.0050	<0.0050	0.010	0.0050	A165427
Pyrene	mg/kg	0.020	<0.0050	0.092	0.0050	A165427
Quinoline	mg/kg	<0.010	<0.010	<0.010	0.010	A165427
Low Molecular Weight PAH`s	mg/kg	0.038	<0.010	0.087	0.010	A163804
High Molecular Weight PAH`s	mg/kg	0.11	<0.0050	0.46	0.0050	A163804
Total PAH	mg/kg	0.14	<0.010	0.55	0.010	A163804
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	80	71	75		A165427
D8-ACENAPHTHYLENE (sur.)	%	86	75	80		A165427
D8-NAPHTHALENE (sur.)	%	83	80	79		A165427
TERPHENYL-D14 (sur.)	%	100	95	95		A165427
RDL = Reportable Detection Limit						

BV Labs Job #: C111192
Report Date: 2021/03/03

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		ZI8771	ZI8772	ZI8773	ZI8774	ZI8775	ZI8776	ZI8777		
Sampling Date		2021/02/19	2021/02/19	2021/02/19	2021/02/19	2021/02/19	2021/02/19	2021/02/19		
COC Number		n017995	n017995	n017995	n017995	n017995	n017995	n017995		
	UNITS	**BH01-01**	**BH01-02**	**BH02-01**	**BH03-01**	**BH04-01**	**BH04-02**	**BH05-01**	**RDL**	**QC Batch**
Elements										
Total Antimony (Sb)	mg/kg	0.64	0.52	<0.50	0.82	<0.50	<0.50	<0.50	0.50	A167343
Total Arsenic (As)	mg/kg	7.5	8.5	8.0	5.9	8.1	8.0	6.3	1.0	A167343
Total Barium (Ba)	mg/kg	150	220	170	150	200	200	140	1.0	A167343
Total Beryllium (Be)	mg/kg	0.95	1.2	1.3	0.49	1.2	1.3	0.92	0.40	A167343
Total Cadmium (Cd)	mg/kg	0.49	0.37	0.54	0.22	0.34	0.25	0.47	0.050	A167343
Total Chromium (Cr)	mg/kg	65	54	53	100	120	66	51	1.0	A167343
Total Cobalt (Co)	mg/kg	12	15	14	7.7	14	14	10	0.50	A167343
Total Copper (Cu)	mg/kg	37	35	35	67	35	32	27	1.0	A167343
Total Lead (Pb)	mg/kg	20	16	19	45	17	14	23	0.50	A167343
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A167343
Total Molybdenum (Mo)	mg/kg	3.3	0.71	0.49	23	0.79	0.41	0.74	0.40	A167343
Total Nickel (Ni)	mg/kg	38	43	41	36	43	42	32	1.0	A167343
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A167343
Total Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A167343
Total Thallium (Tl)	mg/kg	0.27	0.33	0.32	0.13	0.32	0.31	0.24	0.10	A167343
Total Tin (Sn)	mg/kg	1.5	1.3	1.3	3.4	1.4	1.2	1.7	1.0	A167343
Total Uranium (U)	mg/kg	1.6	2.7	2.4	1.2	1.1	1.2	1.4	0.20	A167343
Total Vanadium (V)	mg/kg	71	80	82	45	130	89	63	1.0	A167343
Total Zinc (Zn)	mg/kg	99	99	99	67	91	89	80	10	A167343

RDL = Reportable Detection Limit

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VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8771			ZI8772		ZI8773		
Sampling Date		2021/02/19			2021/02/19		2021/02/19		
COC Number		n017995			n017995		n017995		
	UNITS	BH01-01	RDL	QC Batch	BH01-02	RDL	BH02-01	RDL	QC Batch
Volatiles									
Xylenes (Total)	mg/kg	<0.045	0.045	A164190	<0.11	0.11	<0.15	0.15	A164190
F1 (C6-C10) - BTEX	mg/kg	<10	10	A164190	<24	24	<15	15	A164190
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	0.0050	A164877	<0.0070 (1)	0.0070	<0.010 (1)	0.010	A164877
Bromodichloromethane	mg/kg	<0.030	0.030	A163791					
Toluene	mg/kg	<0.050	0.050	A164877	<0.050 (1)	0.050	<0.050 (1)	0.050	A164877
Bromoform	mg/kg	<0.050	0.050	A163791					
Ethylbenzene	mg/kg	<0.010	0.010	A164877	<0.010 (1)	0.010	<0.012 (1)	0.012	A164877
Bromomethane	mg/kg	<0.020	0.020	A163791					
Carbon tetrachloride	mg/kg	<0.00050	0.00050	A163791					
m & p-Xylene	mg/kg	<0.040	0.040	A164877	<0.094 (2)	0.094	<0.13 (2)	0.13	A164877
Chlorobenzene	mg/kg	<0.0010	0.0010	A163791					
o-Xylene	mg/kg	<0.020	0.020	A164877	<0.047 (2)	0.047	<0.066 (2)	0.066	A164877
Chlorodibromomethane	mg/kg	<0.020	0.020	A163791					
Chloroethane	mg/kg	<0.020	0.020	A163791					
Chloroform	mg/kg	<0.010	0.010	A163791					
F1 (C6-C10)	mg/kg	<10	10	A164877	<24 (2)	24	<15 (1)	15	A164877
Chloromethane	mg/kg	<0.030	0.030	A163791					
1,2-dibromoethane	mg/kg	<0.0020	0.0020	A163791					
1,2-dichlorobenzene	mg/kg	<0.020	0.020	A163791					
1,3-dichlorobenzene	mg/kg	<0.020	0.020	A163791					
1,4-dichlorobenzene	mg/kg	<0.020	0.020	A163791					
1,1-dichloroethane	mg/kg	<0.020	0.020	A163791					
1,2-dichloroethane	mg/kg	<0.0020	0.0020	A163791					
1,1-dichloroethene	mg/kg	<0.020	0.020	A163791					
cis-1,2-dichloroethene	mg/kg	<0.020	0.020	A163791					
trans-1,2-dichloroethene	mg/kg	<0.020	0.020	A163791					
Dichloromethane	mg/kg	<0.030	0.030	A163791					
1,2-dichloropropane	mg/kg	<0.020	0.020	A163791					
cis-1,3-dichloropropene	mg/kg	<0.020	0.020	A163791					
trans-1,3-dichloropropene	mg/kg	<0.020	0.020	A163791					

RDL = Reportable Detection Limit
(1) Detection limit reported based on MDL and sample weight used for analysis.
(2) Detection limits raised based on sample weight used for analysis.

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VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8771			ZI8772		ZI8773		
Sampling Date		2021/02/19			2021/02/19		2021/02/19		
COC Number		n017995			n017995		n017995		
	UNITS	BH01-01	RDL	QC Batch	BH01-02	RDL	BH02-01	RDL	QC Batch
Methyl methacrylate	mg/kg	<0.040	0.040	A163791					
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	0.030	A163791					
Styrene	mg/kg	<0.020	0.020	A163791					
1,1,1,2-tetrachloroethane	mg/kg	<0.050	0.050	A163791					
1,1,2,2-tetrachloroethane	mg/kg	<0.050	0.050	A163791					
Tetrachloroethene	mg/kg	<0.010	0.010	A163791					
1,2,3-trichlorobenzene	mg/kg	<0.040	0.040	A163791					
1,2,4-trichlorobenzene	mg/kg	<0.040	0.040	A163791					
1,3,5-trichlorobenzene	mg/kg	<0.040	0.040	A163791					
1,1,1-trichloroethane	mg/kg	<0.020	0.020	A163791					
1,1,2-trichloroethane	mg/kg	<0.020	0.020	A163791					
Trichloroethene	mg/kg	<0.010	0.010	A163791					
Trichlorofluoromethane	mg/kg	<0.020	0.020	A163791					
1,2,4-trimethylbenzene	mg/kg	<0.50	0.50	A163791					
1,3,5-trimethylbenzene	mg/kg	<0.50	0.50	A163791					
Vinyl chloride	mg/kg	<0.00030	0.00030	A163791					
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	103		A164877	102		102		A164877
4-Bromofluorobenzene (sur.)	%	96		A164877	97		97		A164877
D10-o-Xylene (sur.)	%	115		A164877	119		116		A164877
D4-1,2-Dichloroethane (sur.)	%	103		A164877	103		104		A164877
1,4-Difluorobenzene (sur.)	%	98		A163791					
4-Bromofluorobenzene (sur.)	%	108		A163791					
D10-o-Xylene (sur.)	%	108		A163791					
D4-1,2-Dichloroethane (sur.)	%	107		A163791					
RDL = Reportable Detection Limit									

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BV Labs Job #: C111192
Report Date: 2021/03/03

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8774			ZI8775			ZI8776		
Sampling Date		2021/02/19			2021/02/19			2021/02/19		
COC Number		n017995			n017995			n017995		
	UNITS	BH03-01	RDL	QC Batch	BH04-01	RDL	QC Batch	BH04-02	RDL	QC Batch
Volatiles										
Xylenes (Total)	mg/kg	<0.045	0.045	A164284	<0.10	0.10	A164284	<0.13	0.13	A164284
F1 (C6-C10) - BTEX	mg/kg	<10	10	A164284	<23	23	A164284	<13	13	A164284
Field Preserved Volatiles										
Benzene	mg/kg	<0.0050	0.0050	A164877	<0.0070 (1)	0.0070	A164877	<0.0080 (1)	0.0080	A164877
Bromodichloromethane	mg/kg				<0.070 (2)	0.070	A163791			
Toluene	mg/kg	<0.050	0.050	A164877	<0.050 (1)	0.050	A164877	<0.050 (1)	0.050	A164877
Bromoform	mg/kg				<0.12 (2)	0.12	A163791			
Ethylbenzene	mg/kg	<0.010	0.010	A164877	<0.010 (1)	0.010	A164877	<0.011 (1)	0.011	A164877
Bromomethane	mg/kg				<0.047 (2)	0.047	A163791			
Carbon tetrachloride	mg/kg				<0.0012 (2)	0.0012	A163791			
m & p-Xylene	mg/kg	<0.040	0.040	A164877	<0.093 (2)	0.093	A164877	<0.11 (2)	0.11	A164877
Chlorobenzene	mg/kg				<0.0023 (2)	0.0023	A163791			
o-Xylene	mg/kg	<0.020	0.020	A164877	<0.047 (2)	0.047	A164877	<0.056 (2)	0.056	A164877
Chlorodibromomethane	mg/kg				<0.047 (2)	0.047	A163791			
Chloroethane	mg/kg				<0.047 (2)	0.047	A163791			
Chloroform	mg/kg				<0.023 (2)	0.023	A163791			
F1 (C6-C10)	mg/kg	<10	10	A164877	<23 (2)	23	A164877	<13 (1)	13	A164877
Chloromethane	mg/kg				<0.070 (2)	0.070	A163791			
1,2-dibromoethane	mg/kg				<0.0047 (2)	0.0047	A163791			
1,2-dichlorobenzene	mg/kg				<0.047 (2)	0.047	A163791			
1,3-dichlorobenzene	mg/kg				<0.047 (2)	0.047	A163791			
1,4-dichlorobenzene	mg/kg				<0.047 (2)	0.047	A163791			
1,1-dichloroethane	mg/kg				<0.047 (2)	0.047	A163791			
1,2-dichloroethane	mg/kg				<0.0047 (2)	0.0047	A163791			
1,1-dichloroethene	mg/kg				<0.047 (2)	0.047	A163791			
cis-1,2-dichloroethene	mg/kg				<0.047 (2)	0.047	A163791			
trans-1,2-dichloroethene	mg/kg				<0.047 (2)	0.047	A163791			
Dichloromethane	mg/kg				<0.070 (2)	0.070	A163791			
1,2-dichloropropane	mg/kg				<0.047 (2)	0.047	A163791			
cis-1,3-dichloropropene	mg/kg				<0.047 (2)	0.047	A163791			
trans-1,3-dichloropropene	mg/kg				<0.047 (2)	0.047	A163791			

RDL = Reportable Detection Limit
(1) Detection limit reported based on MDL and sample weight used for analysis.
(2) Detection limits raised based on sample weight used for analysis.

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VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8774			ZI8775			ZI8776		
Sampling Date		2021/02/19			2021/02/19			2021/02/19		
COC Number		n017995			n017995			n017995		
	UNITS	BH03-01	RDL	QC Batch	BH04-01	RDL	QC Batch	BH04-02	RDL	QC Batch
Methyl methacrylate	mg/kg				<0.093 (1)	0.093	A163791			
Methyl-tert-butylether (MTBE)	mg/kg				<0.070 (1)	0.070	A163791			
Styrene	mg/kg				<0.047 (1)	0.047	A163791			
1,1,1,2-tetrachloroethane	mg/kg				<0.12 (1)	0.12	A163791			
1,1,2,2-tetrachloroethane	mg/kg				<0.12 (1)	0.12	A163791			
Tetrachloroethene	mg/kg				<0.023 (1)	0.023	A163791			
1,2,3-trichlorobenzene	mg/kg				<0.093 (1)	0.093	A163791			
1,2,4-trichlorobenzene	mg/kg				<0.093 (1)	0.093	A163791			
1,3,5-trichlorobenzene	mg/kg				<0.093 (1)	0.093	A163791			
1,1,1-trichloroethane	mg/kg				<0.047 (1)	0.047	A163791			
1,1,2-trichloroethane	mg/kg				<0.047 (1)	0.047	A163791			
Trichloroethene	mg/kg				<0.023 (1)	0.023	A163791			
Trichlorofluoromethane	mg/kg				<0.047 (1)	0.047	A163791			
1,2,4-trimethylbenzene	mg/kg				<1.2 (1)	1.2	A163791			
1,3,5-trimethylbenzene	mg/kg				<1.2 (1)	1.2	A163791			
Vinyl chloride	mg/kg				<0.00070 (1)	0.00070	A163791			
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	102		A164877	103		A164877	102		A164877
4-Bromofluorobenzene (sur.)	%	96		A164877	96		A164877	96		A164877
D10-o-Xylene (sur.)	%	119		A164877	113		A164877	115		A164877
D4-1,2-Dichloroethane (sur.)	%	104		A164877	103		A164877	104		A164877
1,4-Difluorobenzene (sur.)	%				98		A163791			
4-Bromofluorobenzene (sur.)	%				107		A163791			
D10-o-Xylene (sur.)	%				104		A163791			
D4-1,2-Dichloroethane (sur.)	%				108		A163791			

RDL = Reportable Detection Limit
(1) Detection limits raised based on sample weight used for analysis.

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VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8777		
Sampling Date		2021/02/19		
COC Number		n017995		
	UNITS	BH05-01	RDL	QC Batch
Volatiles				
Xylenes (Total)	mg/kg	<0.045	0.045	A164284
F1 (C6-C10) - BTEX	mg/kg	<10	10	A164284
Field Preserved Volatiles				
Benzene	mg/kg	<0.0050	0.0050	A164877
Bromodichloromethane	mg/kg	<0.030	0.030	A163791
Toluene	mg/kg	<0.050	0.050	A164877
Bromoform	mg/kg	<0.050	0.050	A163791
Ethylbenzene	mg/kg	<0.010	0.010	A164877
Bromomethane	mg/kg	<0.020	0.020	A163791
Carbon tetrachloride	mg/kg	<0.00050	0.00050	A163791
m & p-Xylene	mg/kg	<0.040	0.040	A164877
Chlorobenzene	mg/kg	<0.0010	0.0010	A163791
o-Xylene	mg/kg	<0.020	0.020	A164877
Chlorodibromomethane	mg/kg	<0.020	0.020	A163791
Chloroethane	mg/kg	<0.020	0.020	A163791
Chloroform	mg/kg	<0.010	0.010	A163791
F1 (C6-C10)	mg/kg	<10	10	A164877
Chloromethane	mg/kg	<0.030	0.030	A163791
1,2-dibromoethane	mg/kg	<0.0020	0.0020	A163791
1,2-dichlorobenzene	mg/kg	<0.020	0.020	A163791
1,3-dichlorobenzene	mg/kg	<0.020	0.020	A163791
1,4-dichlorobenzene	mg/kg	<0.020	0.020	A163791
1,1-dichloroethane	mg/kg	<0.020	0.020	A163791
1,2-dichloroethane	mg/kg	<0.0020	0.0020	A163791
1,1-dichloroethene	mg/kg	<0.020	0.020	A163791
cis-1,2-dichloroethene	mg/kg	<0.020	0.020	A163791
trans-1,2-dichloroethene	mg/kg	<0.020	0.020	A163791
Dichloromethane	mg/kg	<0.030	0.030	A163791
1,2-dichloropropane	mg/kg	<0.020	0.020	A163791
cis-1,3-dichloropropene	mg/kg	<0.020	0.020	A163791
trans-1,3-dichloropropene	mg/kg	<0.020	0.020	A163791
Methyl methacrylate	mg/kg	<0.040	0.040	A163791
RDL = Reportable Detection Limit				

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VOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		ZI8777		
Sampling Date		2021/02/19		
COC Number		n017995		
	UNITS	BH05-01	RDL	QC Batch
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	0.030	A163791
Styrene	mg/kg	<0.020	0.020	A163791
1,1,1,2-tetrachloroethane	mg/kg	<0.050	0.050	A163791
1,1,2,2-tetrachloroethane	mg/kg	<0.050	0.050	A163791
Tetrachloroethene	mg/kg	<0.010	0.010	A163791
1,2,3-trichlorobenzene	mg/kg	<0.040	0.040	A163791
1,2,4-trichlorobenzene	mg/kg	<0.040	0.040	A163791
1,3,5-trichlorobenzene	mg/kg	<0.040	0.040	A163791
1,1,1-trichloroethane	mg/kg	<0.020	0.020	A163791
1,1,2-trichloroethane	mg/kg	<0.020	0.020	A163791
Trichloroethene	mg/kg	<0.010	0.010	A163791
Trichlorofluoromethane	mg/kg	<0.020	0.020	A163791
1,2,4-trimethylbenzene	mg/kg	<0.50	0.50	A163791
1,3,5-trimethylbenzene	mg/kg	<0.50	0.50	A163791
Vinyl chloride	mg/kg	<0.00030	0.00030	A163791
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	101		A164877
4-Bromofluorobenzene (sur.)	%	96		A164877
D10-o-Xylene (sur.)	%	114		A164877
D4-1,2-Dichloroethane (sur.)	%	103		A164877
1,4-Difluorobenzene (sur.)	%	97		A163791
4-Bromofluorobenzene (sur.)	%	111		A163791
D10-o-Xylene (sur.)	%	104		A163791
D4-1,2-Dichloroethane (sur.)	%	103		A163791
RDL = Reportable Detection Limit				

GENERAL COMMENTS

Results relate only to the items tested.

BV Labs Job #: C111192
Report Date: 2021/03/03

QUALITY ASSURANCE REPORT

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A163791	1,4-Difluorobenzene (sur.)	2021/02/25	102	50 - 140	101	50 - 140	99	%				
A163791	4-Bromofluorobenzene (sur.)	2021/02/25	110	50 - 140	111	50 - 140	97	%				
A163791	D10-o-Xylene (sur.)	2021/02/25	120	50 - 140	111	50 - 140	106	%				
A163791	D4-1,2-Dichloroethane (sur.)	2021/02/25	95	50 - 140	97	50 - 140	106	%				
A164877	1,4-Difluorobenzene (sur.)	2021/02/26	97	50 - 140	102	50 - 140	102	%				
A164877	4-Bromofluorobenzene (sur.)	2021/02/26	97	50 - 140	96	50 - 140	96	%				
A164877	D10-o-Xylene (sur.)	2021/02/26	112	50 - 140	100	50 - 140	97	%				
A164877	D4-1,2-Dichloroethane (sur.)	2021/02/26	108	50 - 140	106	50 - 140	104	%				
A165427	D10-ANTHRACENE (sur.)	2021/02/25	69	50 - 130	77	50 - 130	82	%				
A165427	D8-ACENAPHTHYLENE (sur.)	2021/02/25	71	50 - 130	79	50 - 130	84	%				
A165427	D8-NAPHTHALENE (sur.)	2021/02/25	70	50 - 130	78	50 - 130	83	%				
A165427	TERPHENYL-D14 (sur.)	2021/02/25	86	50 - 130	90	50 - 130	98	%				
A165471	O-TERPHENYL (sur.)	2021/02/26	106	60 - 140	110	60 - 140	114	%				
A166377	O-TERPHENYL (sur.)	2021/02/26	83	60 - 140	79	60 - 140	91	%				
A163791	1,1,1,2-tetrachloroethane	2021/02/25	117	50 - 140	101	60 - 130	<0.050	mg/kg	NC	50		
A163791	1,1,1-trichloroethane	2021/02/25	112	50 - 140	95	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,1,2,2-tetrachloroethane	2021/02/25	81	50 - 140	74	60 - 130	<0.050	mg/kg	NC	50		
A163791	1,1,2-trichloroethane	2021/02/25	112	50 - 140	96	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,1-dichloroethane	2021/02/25	109	50 - 140	93	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,1-dichloroethene	2021/02/25	107	50 - 140	93	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,2,3-trichlorobenzene	2021/02/25	74	50 - 140	75	60 - 130	<0.040	mg/kg	NC	50		
A163791	1,2,4-trichlorobenzene	2021/02/25	81	50 - 140	78	60 - 130	<0.040	mg/kg	NC	50		
A163791	1,2,4-trimethylbenzene	2021/02/25	126	50 - 140	110	60 - 130	<0.50	mg/kg	NC	50		
A163791	1,2-dibromoethane	2021/02/25	108	50 - 140	102	60 - 130	<0.0020	mg/kg	NC	50		
A163791	1,2-dichlorobenzene	2021/02/25	102	50 - 140	93	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,2-dichloroethane	2021/02/25	115	50 - 140	102	60 - 130	<0.0020	mg/kg	NC	50		
A163791	1,2-dichloropropane	2021/02/25	113	50 - 140	97	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,3,5-trichlorobenzene	2021/02/25	95	50 - 140	91	60 - 130	<0.040	mg/kg	NC	50		
A163791	1,3,5-trimethylbenzene	2021/02/25	132	50 - 140	116	60 - 130	<0.50	mg/kg	NC	50		
A163791	1,3-dichlorobenzene	2021/02/25	120	50 - 140	106	60 - 130	<0.020	mg/kg	NC	50		
A163791	1,4-dichlorobenzene	2021/02/25	114	50 - 140	101	60 - 130	<0.020	mg/kg	NC	50		
A163791	Bromodichloromethane	2021/02/25	118	50 - 140	102	60 - 130	<0.030	mg/kg	NC	50		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A163791	Bromoform	2021/02/25	104	50 - 140	89	60 - 130	<0.050	mg/kg	NC	50		
A163791	Bromomethane	2021/02/25	147 (1)	50 - 140	121	60 - 130	<0.020	mg/kg	NC	50		
A163791	Carbon tetrachloride	2021/02/25	112	50 - 140	94	60 - 130	<0.00050	mg/kg	NC	50		
A163791	Chlorobenzene	2021/02/25	118	50 - 140	105	60 - 130	<0.0010	mg/kg	NC	50		
A163791	Chlorodibromomethane	2021/02/25	114	50 - 140	102	60 - 130	<0.020	mg/kg	NC	50		
A163791	Chloroethane	2021/02/25	104	50 - 140	88	60 - 130	<0.020	mg/kg	NC	50		
A163791	Chloroform	2021/02/25	110	50 - 140	96	60 - 130	<0.010	mg/kg	NC	50		
A163791	Chloromethane	2021/02/25	112	50 - 140	82	60 - 130	<0.030	mg/kg	NC	50		
A163791	cis-1,2-dichloroethene	2021/02/25	113	50 - 140	99	60 - 130	<0.020	mg/kg	NC	50		
A163791	cis-1,3-dichloropropene	2021/02/25	124	50 - 140	98	60 - 130	<0.020	mg/kg	NC	50		
A163791	Dichloromethane	2021/02/25	98	50 - 140	87	60 - 130	<0.030	mg/kg	NC	50		
A163791	Methyl methacrylate	2021/02/25	99	50 - 140	88	60 - 130	<0.040	mg/kg	NC	50		
A163791	Methyl-tert-butylether (MTBE)	2021/02/25	105	50 - 140	92	60 - 130	<0.030	mg/kg	NC	50		
A163791	Styrene	2021/02/25	120	50 - 140	105	60 - 130	<0.020	mg/kg	NC	50		
A163791	Tetrachloroethene	2021/02/25	118	50 - 140	106	60 - 130	<0.010	mg/kg	NC	50		
A163791	trans-1,2-dichloroethene	2021/02/25	107	50 - 140	94	60 - 130	<0.020	mg/kg	NC	50		
A163791	trans-1,3-dichloropropene	2021/02/25	128	50 - 140	94	60 - 130	<0.020	mg/kg	NC	50		
A163791	Trichloroethene	2021/02/25	119	50 - 140	103	60 - 130	<0.010	mg/kg	NC	50		
A163791	Trichlorofluoromethane	2021/02/25	96	50 - 140	84	60 - 130	<0.020	mg/kg	NC	50		
A163791	Vinyl chloride	2021/02/25	106	50 - 140	81	60 - 130	<0.00030	mg/kg	NC	50		
A164877	Benzene	2021/02/26	105	50 - 140	105	60 - 130	<0.0050	mg/kg	NC	50		
A164877	Ethylbenzene	2021/02/26	97	50 - 140	99	60 - 130	<0.010	mg/kg	NC	50		
A164877	F1 (C6-C10)	2021/02/26	104	60 - 140	109	60 - 140	<10	mg/kg	NC	30		
A164877	m & p-Xylene	2021/02/26	100	50 - 140	107	60 - 130	<0.040	mg/kg	NC	50		
A164877	o-Xylene	2021/02/26	101	50 - 140	104	60 - 130	<0.020	mg/kg	NC	50		
A164877	Toluene	2021/02/26	98	50 - 140	105	60 - 130	<0.050	mg/kg	NC	50		
A165218	Moisture	2021/02/26					<0.30	%	2.4	20		
A165427	2-Methylnaphthalene	2021/02/26	68	50 - 130	81	50 - 130	<0.0050	mg/kg	21	50		
A165427	Acenaphthene	2021/02/26	68	50 - 130	82	50 - 130	<0.0050	mg/kg	47	50		
A165427	Acenaphthylene	2021/02/26	70	50 - 130	82	50 - 130	<0.0050	mg/kg	9.1	50		
A165427	Acridine	2021/02/26	57	50 - 130	65	50 - 130	<0.010	mg/kg	NC	50		
A165427	Anthracene	2021/02/26	64	50 - 130	76	50 - 130	<0.0040	mg/kg	5.0	50		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A165427	Benzo(a)anthracene	2021/02/26	77	50 - 130	86	50 - 130	<0.0050	mg/kg	1.5	50		
A165427	Benzo(a)pyrene	2021/02/26	73	50 - 130	85	50 - 130	<0.0050	mg/kg	4.0	50		
A165427	Benzo(b&j)fluoranthene	2021/02/26	70	50 - 130	82	50 - 130	<0.0050	mg/kg	5.5	50		
A165427	Benzo(c)phenanthrene	2021/02/26	72	50 - 130	81	50 - 130	<0.0050	mg/kg	2.6	50		
A165427	Benzo(e)pyrene	2021/02/26	76	50 - 130	83	50 - 130	<0.0050	mg/kg	27	50		
A165427	Benzo(g,h,i)perylene	2021/02/26	66	50 - 130	82	50 - 130	<0.0050	mg/kg	4.7	50		
A165427	Benzo(k)fluoranthene	2021/02/26	69	50 - 130	81	50 - 130	<0.0050	mg/kg	0	50		
A165427	Chrysene	2021/02/26	72	50 - 130	80	50 - 130	<0.0050	mg/kg	17	50		
A165427	Dibenz(a,h)anthracene	2021/02/26	72	50 - 130	85	50 - 130	<0.0050	mg/kg	9.7	50		
A165427	Fluoranthene	2021/02/26	55	50 - 130	88	50 - 130	<0.0050	mg/kg	46	50		
A165427	Fluorene	2021/02/26	71	50 - 130	84	50 - 130	<0.0050	mg/kg	37	50		
A165427	Indeno(1,2,3-cd)pyrene	2021/02/26	73	50 - 130	86	50 - 130	<0.0050	mg/kg	10	50		
A165427	Naphthalene	2021/02/26	68	50 - 130	81	50 - 130	<0.0050	mg/kg	15	50		
A165427	Perylene	2021/02/26	66	50 - 130	81	50 - 130	<0.0050	mg/kg	2.6	50		
A165427	Phenanthrene	2021/02/26	69	50 - 130	80	50 - 130	<0.0050	mg/kg	27	50		
A165427	Pyrene	2021/02/26	50	50 - 130	84	50 - 130	<0.0050	mg/kg	43	50		
A165427	Quinoline	2021/02/26	103	50 - 130	109	50 - 130	<0.010	mg/kg	NC	50		
A165471	F2 (C10-C16 Hydrocarbons)	2021/02/26	100	60 - 140	104	60 - 140	<10	mg/kg	34	40		
A165471	F3 (C16-C34 Hydrocarbons)	2021/02/26	95	60 - 140	110	60 - 140	<50	mg/kg	3.2	40		
A165471	F4 (C34-C50 Hydrocarbons)	2021/02/26	107	60 - 140	110	60 - 140	<50	mg/kg	7.9	40		
A165574	Moisture	2021/02/26					<0.30	%	4.1	20		
A165848	Hex. Chromium (Cr 6+)	2021/02/26	89	75 - 125	105	80 - 120	<0.080	mg/kg	NC	35		
A166377	F2 (C10-C16 Hydrocarbons)	2021/02/27	83	60 - 140	81	60 - 140	<10	mg/kg	NC	40		
A166377	F3 (C16-C34 Hydrocarbons)	2021/02/27	82	60 - 140	80	60 - 140	<50	mg/kg	NC	40		
A166377	F4 (C34-C50 Hydrocarbons)	2021/02/27	83	60 - 140	80	60 - 140	<50	mg/kg	NC	40		
A166811	Hex. Chromium (Cr 6+)	2021/02/27	87	75 - 125	102	80 - 120	<0.080	mg/kg	NC	35		
A167169	Hex. Chromium (Cr 6+)	2021/02/27	90	75 - 125	105	80 - 120	<0.080	mg/kg	NC	35		
A167343	Total Antimony (Sb)	2021/02/28	109	75 - 125	119	80 - 120	<0.50	mg/kg	NC	30	121	15 - 182
A167343	Total Arsenic (As)	2021/02/28	106	75 - 125	112	80 - 120	<1.0	mg/kg	11	30	117	53 - 147
A167343	Total Barium (Ba)	2021/02/28	NC	75 - 125	113	80 - 120	<1.0	mg/kg	4.9	35	114	80 - 119
A167343	Total Beryllium (Be)	2021/02/28	106	75 - 125	108	80 - 120	<0.40	mg/kg	NC	30		
A167343	Total Cadmium (Cd)	2021/02/28	107	75 - 125	113	80 - 120	<0.050	mg/kg	7.4	30	123	72 - 128

Bureau Veritas Laboratories Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A167343	Total Chromium (Cr)	2021/02/28	119	75 - 125	112	80 - 120	<1.0	mg/kg	9.9	30	124	59 - 141
A167343	Total Cobalt (Co)	2021/02/28	103	75 - 125	110	80 - 120	<0.50	mg/kg	10	30	118	58 - 142
A167343	Total Copper (Cu)	2021/02/28	103	75 - 125	111	80 - 120	<1.0	mg/kg	5.2	30	111	83 - 117
A167343	Total Lead (Pb)	2021/02/28	101	75 - 125	107	80 - 120	<0.50	mg/kg	8.2	35	116	79 - 121
A167343	Total Mercury (Hg)	2021/02/28	105	75 - 125	119	80 - 120	<0.050	mg/kg	NC	35		
A167343	Total Molybdenum (Mo)	2021/02/28	107	75 - 125	111	80 - 120	<0.40	mg/kg	18	35	116	67 - 133
A167343	Total Nickel (Ni)	2021/02/28	109	75 - 125	109	80 - 120	<1.0	mg/kg	9.9	30	117	79 - 121
A167343	Total Selenium (Se)	2021/02/28	103	75 - 125	110	80 - 120	<0.50	mg/kg	NC	30		
A167343	Total Silver (Ag)	2021/02/28	105	75 - 125	109	80 - 120	<0.20	mg/kg	NC	35	119	47 - 153
A167343	Total Thallium (Tl)	2021/02/28	102	75 - 125	108	80 - 120	<0.10	mg/kg	9.6	30		
A167343	Total Tin (Sn)	2021/02/28	107	75 - 125	109	80 - 120	<1.0	mg/kg	NC	35	115	67 - 133
A167343	Total Uranium (U)	2021/02/28	103	75 - 125	107	80 - 120	<0.20	mg/kg	6.5	30	110	77 - 123
A167343	Total Vanadium (V)	2021/02/28	122	75 - 125	111	80 - 120	<1.0	mg/kg	11	30	117	79 - 121
A167343	Total Zinc (Zn)	2021/02/28	113	75 - 125	113	80 - 120	<10	mg/kg	7.5	30	117	79 - 121
A170311	Soluble (Hot water) Boron (B)	2021/03/03	105	75 - 125	105	80 - 120	<0.10	mg/kg	1.3	35		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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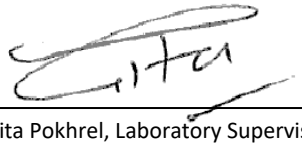
BV Labs Job #: C111192
Report Date: 2021/03/03

PINCHIN LTD.
Client Project #: 287232
Site Location: GUNN RD P2ESA
Sampler Initials: LLG

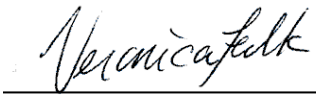
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Laboratory Supervisor



Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

Unit D, 675 Berry St., Winnipeg, MB R3H 1A7
Phone: 204-772-7276 Fax: 204-772-2386 Toll Free: (866) 800-6208

564

CHAIN OF CUSTODY RECORD

Page _____ of _____

INVOICE INFORMATION
Company Name: Pinchin ltd
Contact Name:
Address:
Phone: Fax:
Email: ap@pinchin.com

REPORT INFORMATION (if different from invoice)
Company Name: Pinchin ltd
Contact Name: Laura Gallagher
Address: vtupschuk@pinchin.com
Phone: Fax:
Email: lgallagher@pinchin.com

PROJECT INFORMATION
Quotation #:
P.O. #:
Project #: 287232
Project Name: Gunn Rd P2ESA
Location:
Sampled By: LLG

MAXXAM JOB NUMBER

CHAIN OF CUSTODY #
N 017995

REGULATORY REQUIREMENTS SERVICE REQUESTED:
- ☐ CCME
- ☐ DRINKING WATER
- ☐ Other:

Special Instructions:

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM.

ANALYSIS REQUESTED (Please be specific): Drinking Water? (Y / N); Coliforms: Total / Fecal / E. coli; (Method) MF / MPN / QT; Dissolved Metals – Field Filtered? Y/N, Field Acidified? Y/N; Total Metal – Field Acidified? Y/N; BTEX / F1; F2 - F4; PCB; Biochemical Oxygen Demand; VOC; PAH; metals; HOLD - DO NOT ANALYZE

	Lab Use	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil etc)	BTEX / F1	F2 - F4	PCB	Biochemical Oxygen Demand	VOC	PAH	metals	HOLD - DO NOT ANALYZE	# of Cont.	COMMENTS
1		BH01-01	Feb19	AM	soil	X	X			X	X	X			
2		BH01-02	↓	↓	↓	X	X					X			
3		BH02-01	↓	↓	↓	X	X					X			
4		BH03-01	↓	↓	↓	X	X					X			
5		BH04-01	↓	Pm	↓	X	X			X	X	X			
6		BH04-02	↓	Pm	↓	X	X					X			
7		BH05-01	↓	Pm	↓	X	X			X	X	X			
8															
9															
10															
11															
12															

meal: 11/11/11 Bags
5/3/3

21-Feb-21 14:44
Carmen McKay
C111192
CUW INS-0140

TURNAROUND TIME (TAT) REQUIRED
PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.
Regular (Standard) TAT:
☒ 5 to 7 Working Days
Rush TAT:
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required:
TATs for certain tests are > 5 days. Please contact your Project Manager for details

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	RECEIVED ON ICE	Laboratory Use Only – Temperature (°C) on Receipt
Laura Gallagher	Tegan	Feb 22/21	1444	Y ☒ N ☐	6.1 7.1 5.7
	ARDFIN VILLAMAYOR	2021/02/23	08:50		

***MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.**

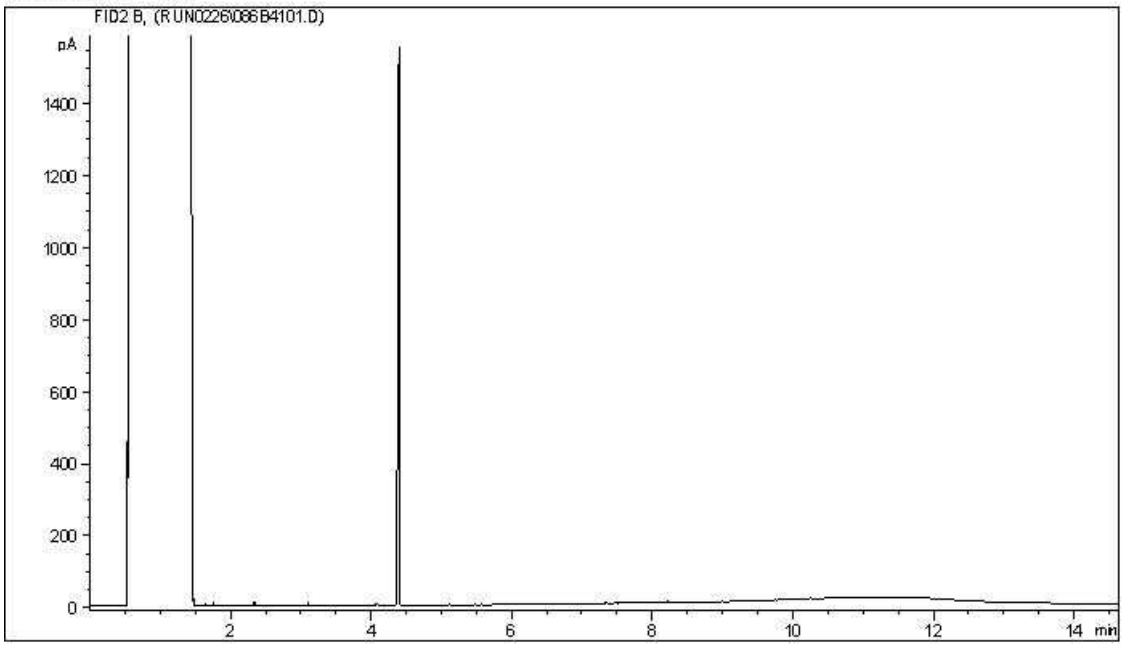
CoC-1028 Maxxam International Corporation o/a Maxxam White: Maxxam Yellow: Client Copy

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8771

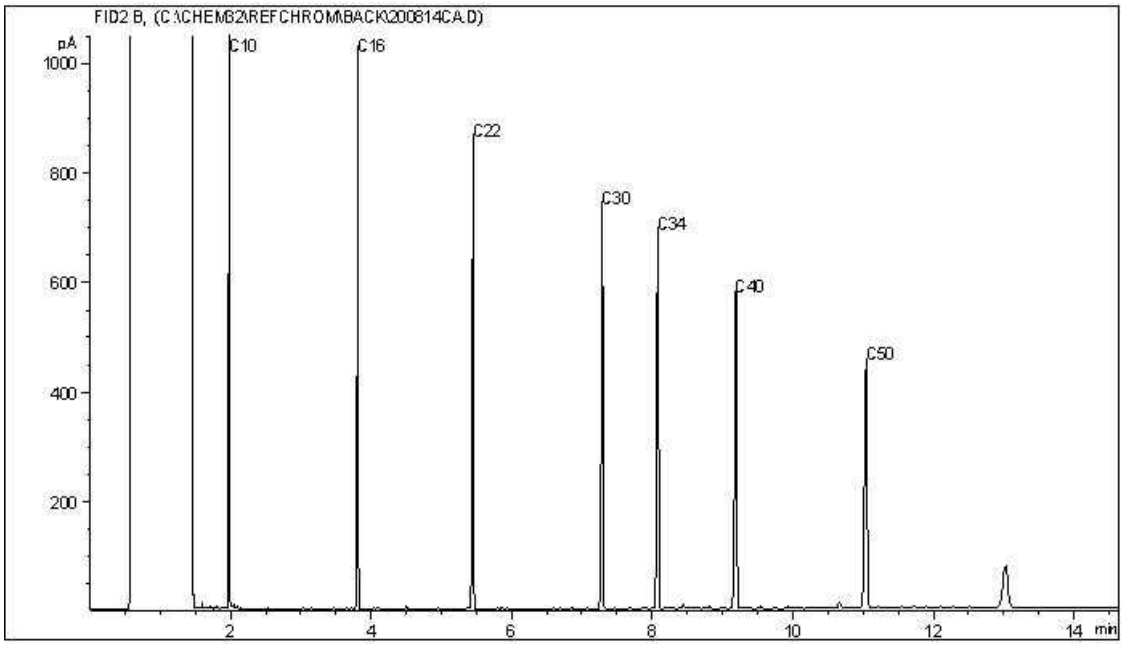
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH01-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

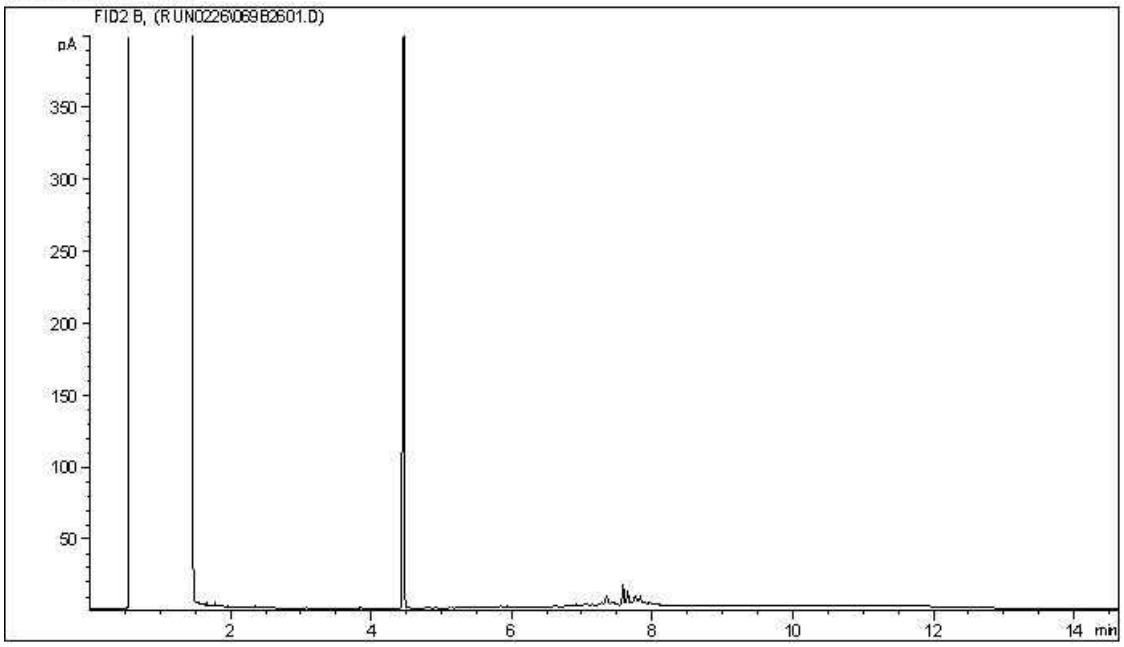
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8772

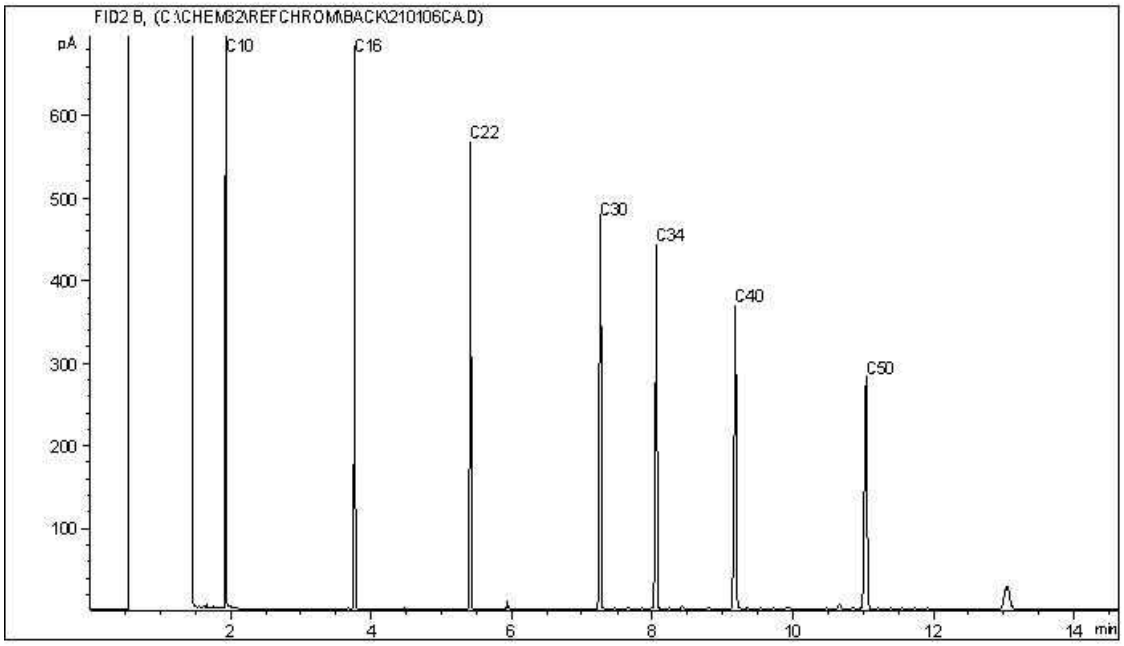
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH01-02

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

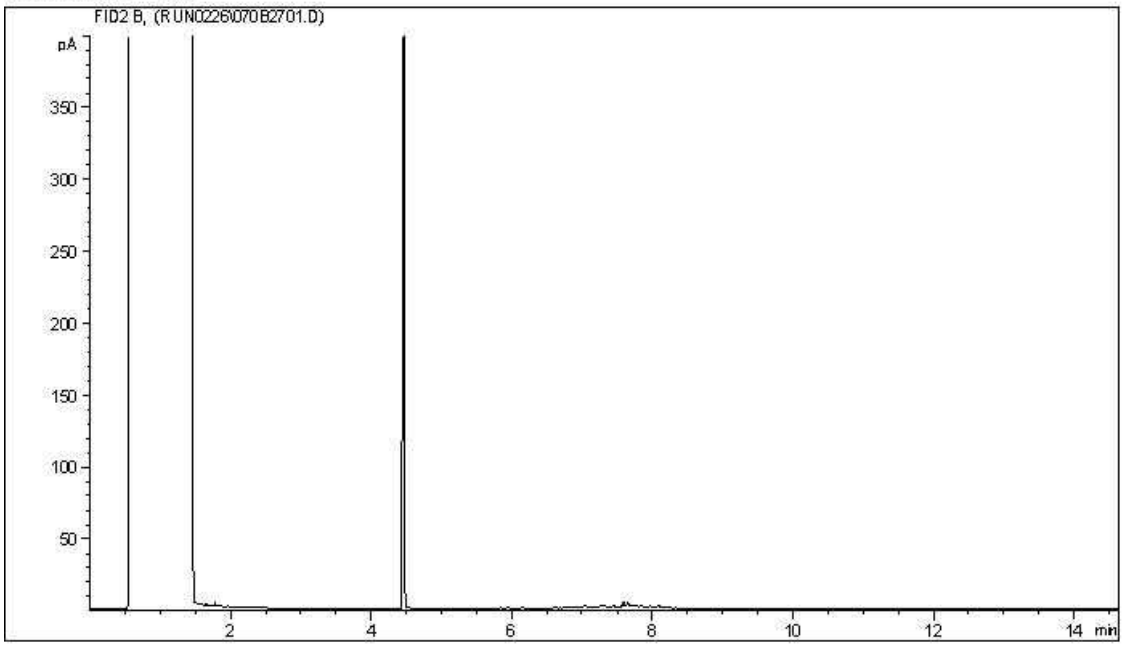
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8773

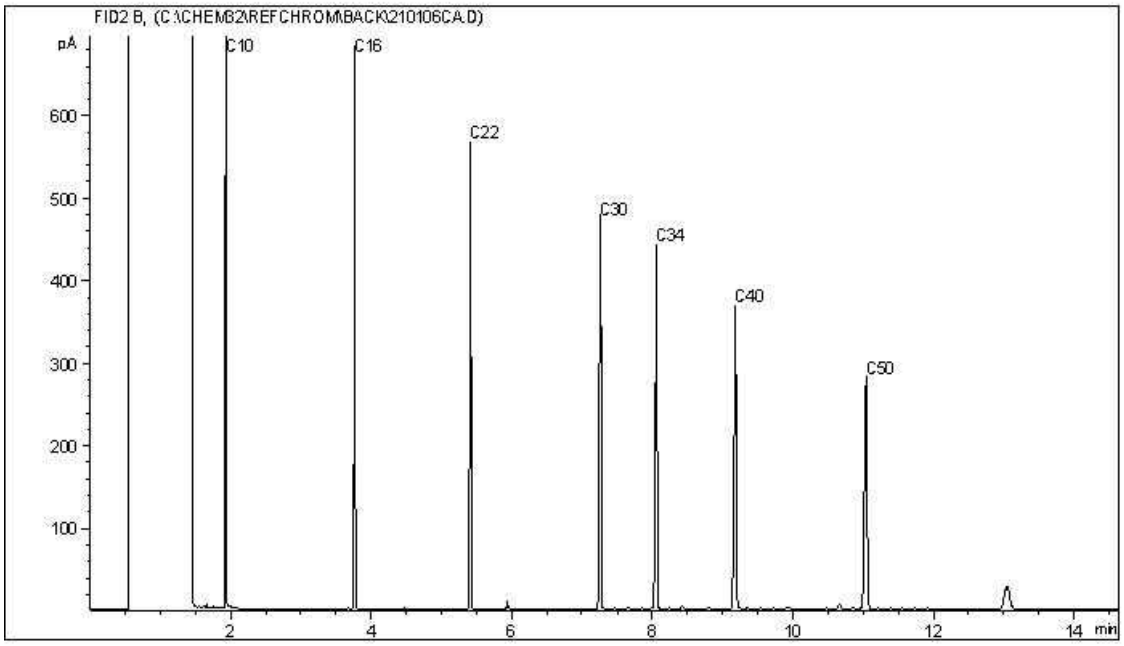
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH02-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

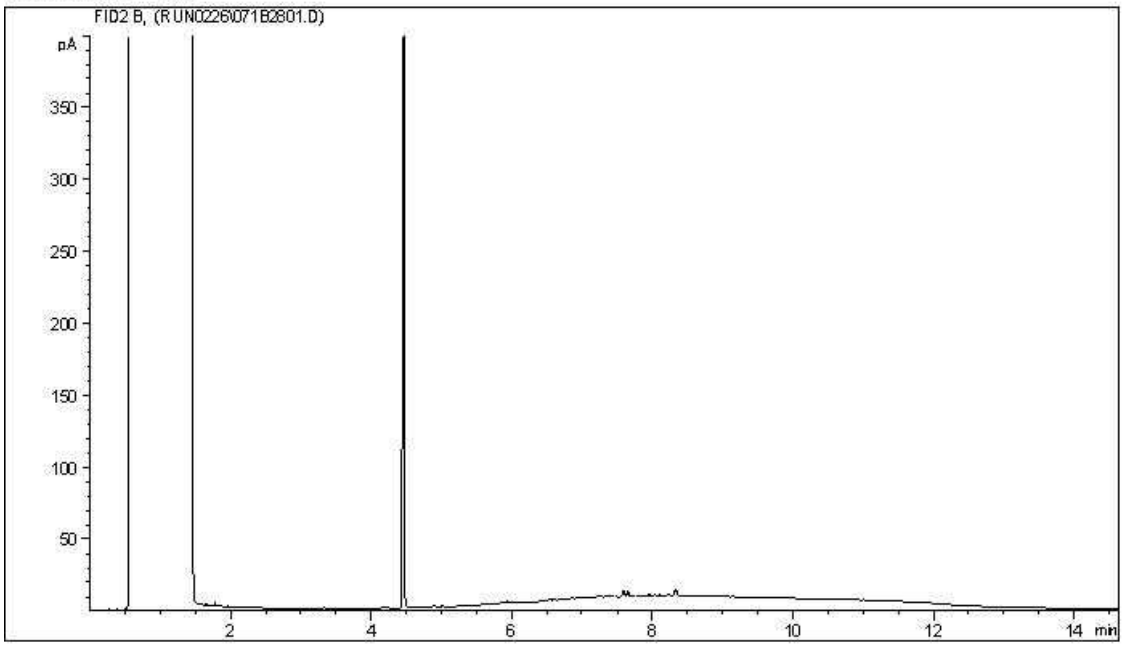
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8774

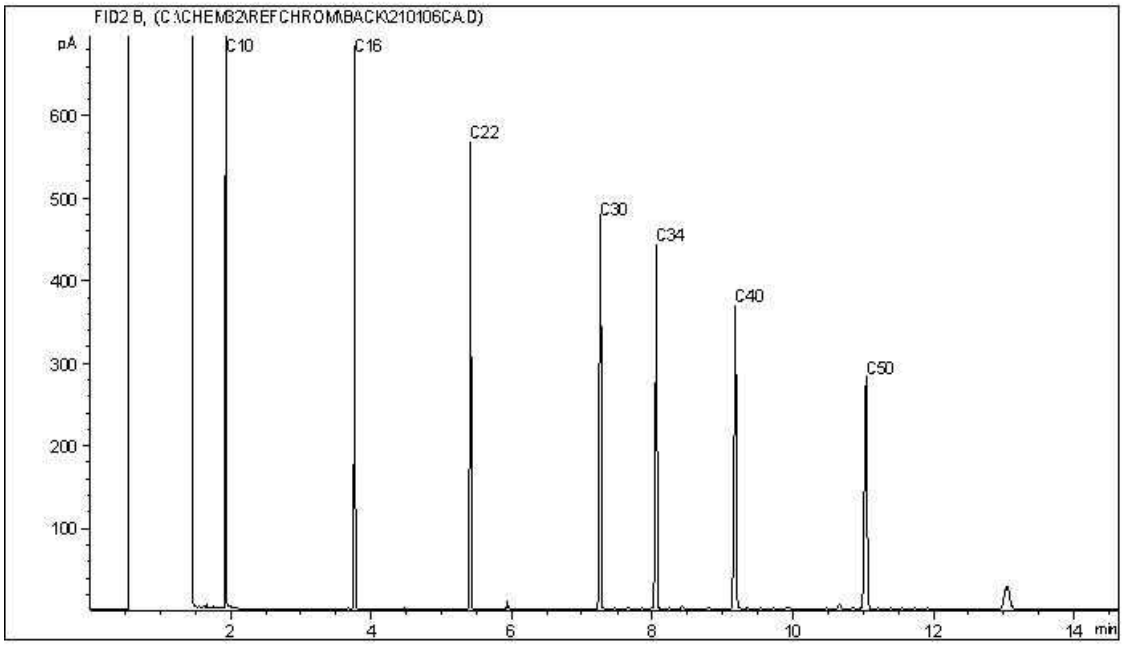
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH03-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

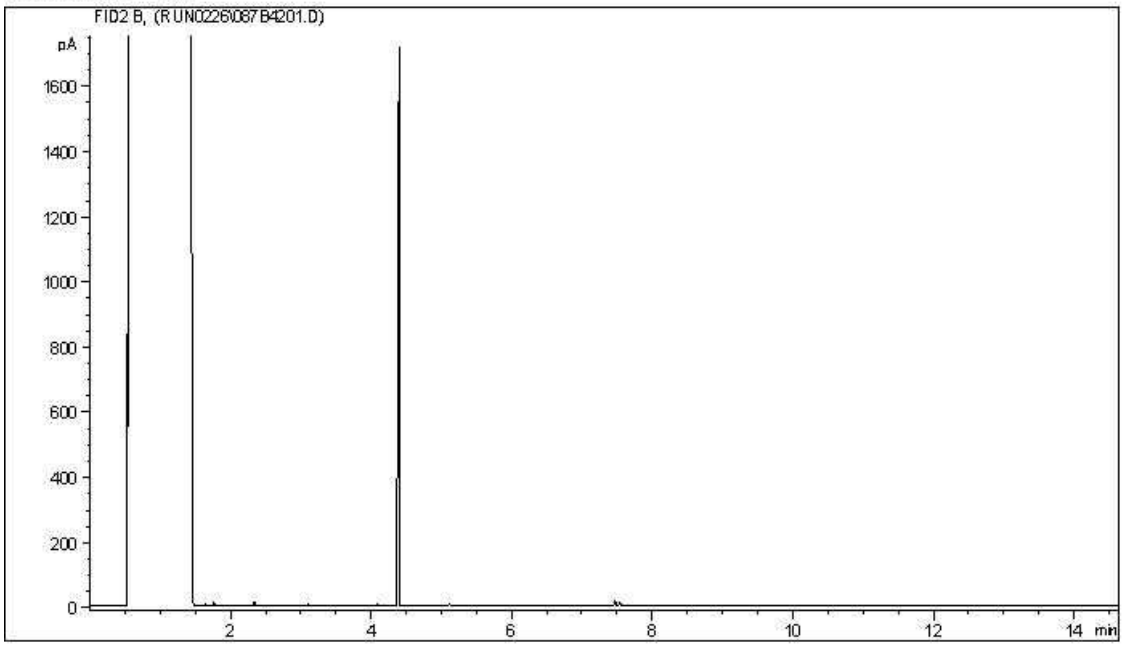
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8775

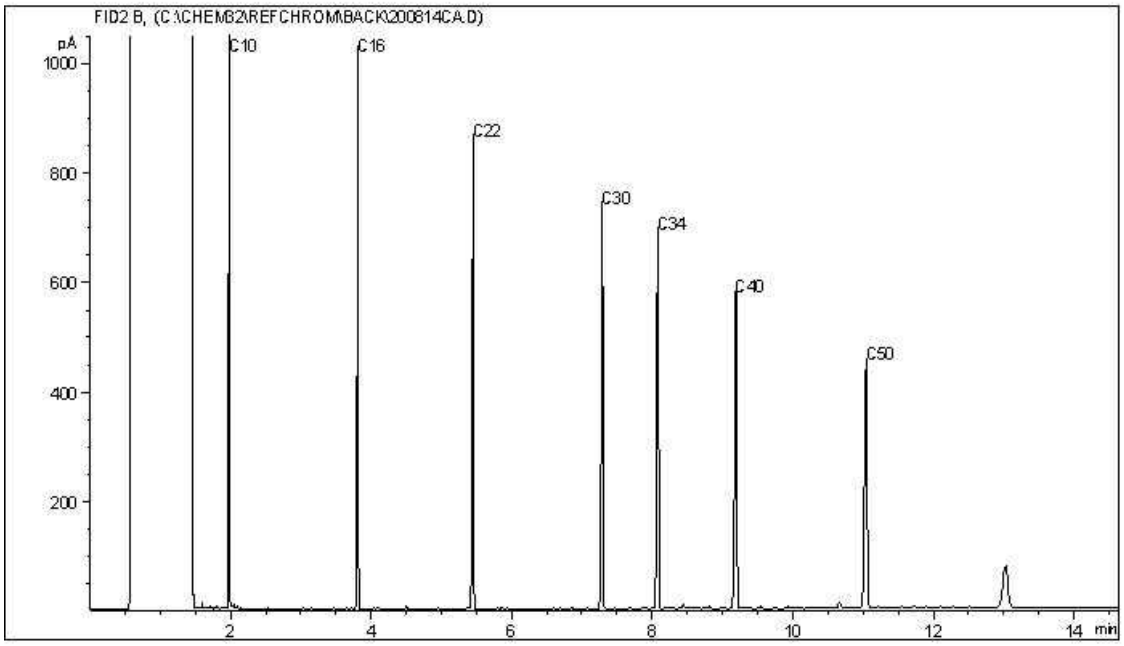
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH04-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

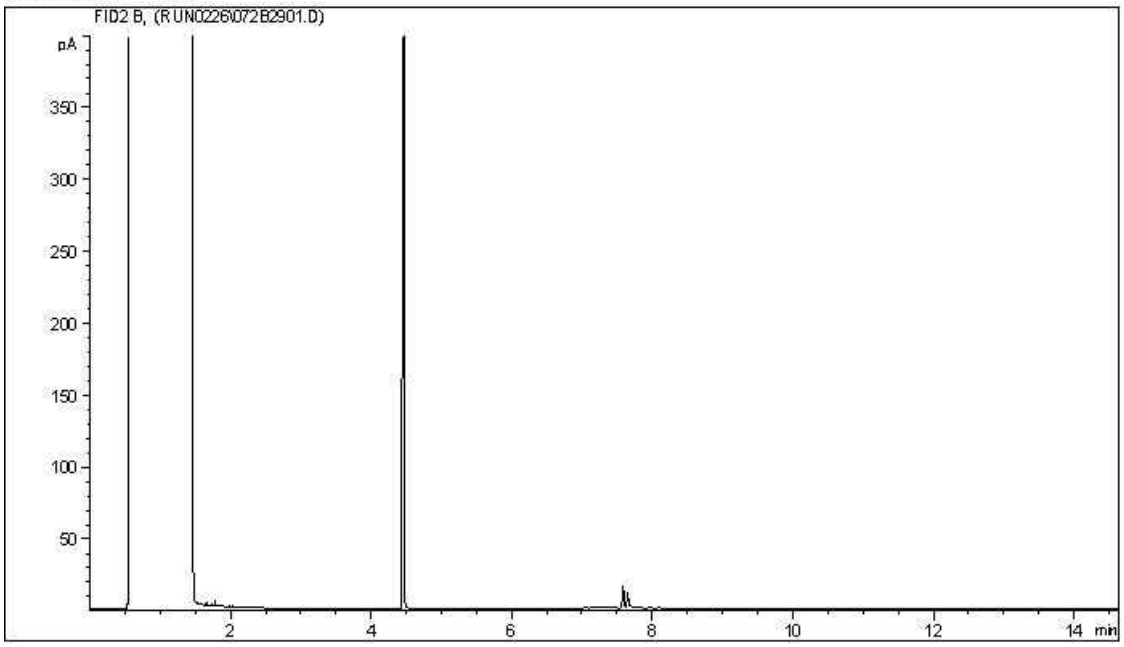
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8776

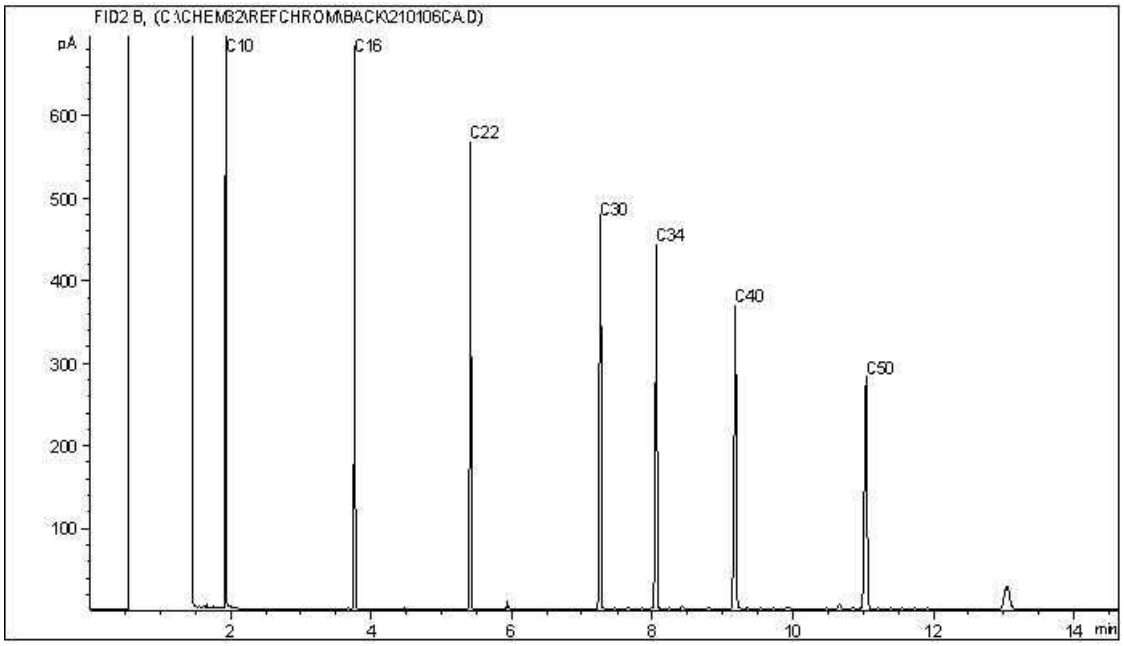
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH04-02

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

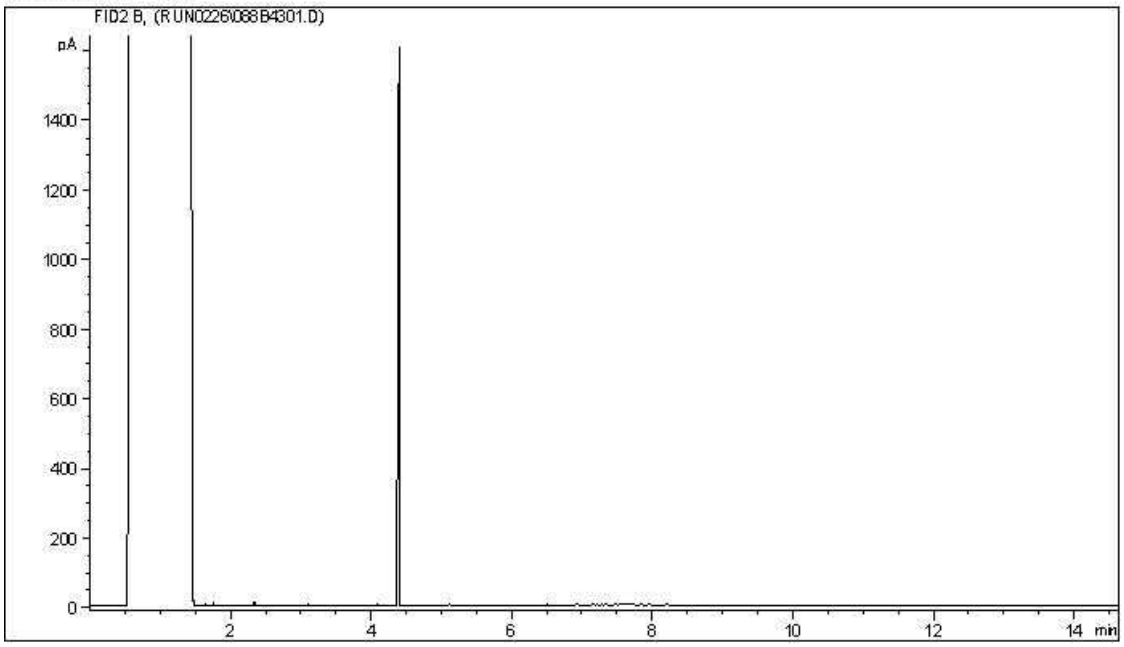
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C111192
Report Date: 2021/03/03
BV Labs Sample: ZI8777

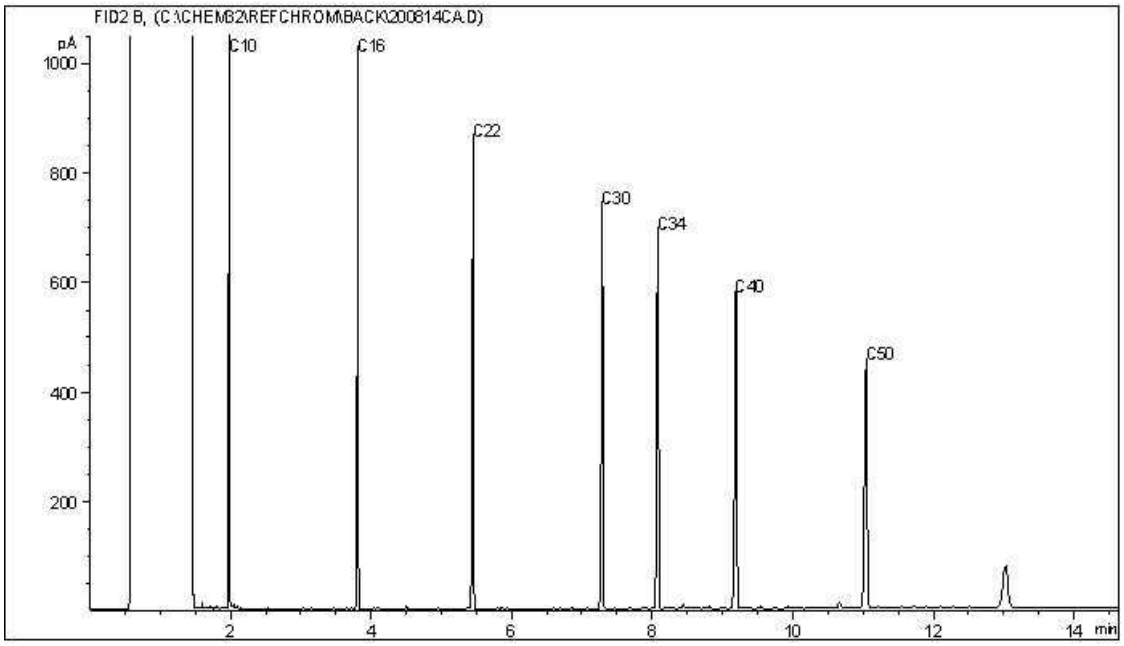
PINCHIN LTD.
Client Project #: 287232
Site Reference: GUNN RD P2ESA
Client ID: BH05-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.