



**NORTH AMERICAN
TUNGSTEN**
C O R P O R A T I O N L T D

March 13, 2023

Mackenzie Valley Land and Water Board
7th Floor – 4922 48th Street
PO Box 2130
Yellowknife, NT X1A 2P6
Attention: Kimberley Murray, Regulatory Specialist

Ms. Murray,

Re: MV2015L2-0003 Renewal, Water Quality Sampling Quality Assurance and Quality Control Plan

North American Tungsten Corporation Ltd. ("NATC") is pleased to provide the enclosed revised document, *Water Quality Sampling Quality Assurance and Quality Control Plan*, in relation to NATC's application for a new land use permit and Type-B care and maintenance water licence, as the existing water licence expires on January 27, 2024. NATC looks forward to the public review of the enclosed document and other documents related to the application.

Should you have any questions regarding these responses, feel free to contact the writer or Vicki Chan at 604.639.0847 or vchan@alvarezandmarsal.com.

Yours truly,

**North American Tungsten Corporation Ltd.
by its Monitor, Alvarez & Marsal Canada Inc.
acting in its capacity as Monitor of NATC and not
in its personal capacity**

Todd M. Martin
Senior Vice President



**WATER SAMPLING QUALITY ASSURANCE AND QUALITY CONTROL
PLAN**

CANTUNG MINE, NT

VERSION #2

PREPARED BY NORTH AMERICAN TUNGSTEN CORPORATION LTD.

Dated: March 13, 2023

SUMMARY

This Plan describes how water samples are collected, shipped, tested and reported to ensure that data collected is done so in a standard way and the data is high quality.

REVISION SUMMARY

Version	Date	Summary of Changes
<i>MV2023L2-xxxx</i>		
2	Mar 2023	Revised throughout to reflect C&M, new water licence and SNP, revised for clarity and conciseness, formatted for consistency with other management plans. Removed discussion of instrumentation not related to water quality sampling or the SNP, aspects referring to toxicity testing, removed lab specificity to allow for flexibility and use of various labs. Added option for use of equivalent sampling equipment, single use disposable filtration cups and syringes, alternative groundwater sampling methods, detail on QAQC sample collection.
<i>MV2015L2-0003</i>		
-	-	-
<i>MV2002L2-0019</i>		
1	Mar 2015	Original Plan

CONFORMITY

Condition	Plan Section	Comment
		[Table to be populated following licence issuance]

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GLOSSARY AND ACRONYMS

Term	Definition
A&M	Alvarez & Marsal Canada Inc., Court-appointed monitor of NATC
BTEXS	Benzene, toluene, ethyl benzene, xylenes and styrene
CALA	Canadian Association for Laboratory Accreditation Inc.
C&M	Care and Maintenance
CCAA	<i>Companies' Creditors Arrangement Act</i>
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COC	Chain of Custody
Company	North American Tungsten Corporation Ltd.
Court	The Supreme Court of British Columbia
DIANC	Department of Indian and Northern Affairs Canada
F1-F4	Hydrocarbon fractions 1-4
ICP	Inductively Coupled Plasma
ID	Identification
ILAC	International Laboratory Accreditation Cooperation
Joint Sales Process	Joint sales and marketing process for the Cantung Mine and Mactung property undertaken by the Government of Canada and Government of the Northwest Territories
Mine	Cantung Mine
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
Monitor	Alvarez & Marsal Canada Inc.
NATC	North American Tungsten Corporation Ltd.
NT	Northwest Territories
NTWB	Northwest Territories Water Board
Plan	Water Quality Sampling Quality Assurance and Quality Control Plan
QA	Quality Assurance
QC	Quality Control
SCC	Standards Council of Canada
SNP	Surveillance Network Program
TDS	Total Dissolved Solids
TSS	Total Suspended Solids

1.0 INTRODUCTION

North American Tungsten Corporation Ltd.'s (NATC or the Company) Cantung Mine (Mine) is located on the Flat River, approximately 275 km northwest of Nahanni Butte, 300 km north of Watson Lake, just east of the Yukon border in the Dehcho Region of the Northwest Territories (NT). The site is accessible by air, utilizing the existing airstrip, or by the Nahanni Range Road.

The Cantung Mine, which opened in 1962, is North America's largest tungsten producer. It was most recently operated by NATC, up until the fall of 2015 when mining and milling ceased and the site entered care and maintenance. On June 9, 2015, NATC filed for creditor protection under the *Companies' Creditors Arrangement Act* (CCAA) and Alvarez & Marsal Canada Inc. (A&M or the Monitor) was appointed as Monitor by the Supreme Court of British Columbia (the Court).

This *Water Quality Sampling Quality Assurance and Quality Control Plan* (the Plan) has been prepared by NATC to describe how it collects water samples, submits the samples for laboratory analysis and reports the water quality results.

1.1 PURPOSE & OBJECTIVES

The purpose of this Plan is to identify field and laboratory requirements necessary to satisfy the Surveillance Network Program (SNP) and to standardize procedures for water quality sampling and handling and data management and reporting to ensure precision of the data, confidence in the results, and accuracy in reporting.

The objectives of this Plan are to:

- Outline required sampling and sample handling methodology.
- Outline considerations for maintaining sample integrity when shipping to and from a remote site.
- Identify appropriate analytical services for use by the Project.

1.2 SCOPE

The Plan includes both field and laboratory requirements required to satisfy the compliance monitoring program in the Licence(s). The Plan has been developed as a standardized procedure for water quality sampling, laboratory analysis, and reporting to ensure precision of the data, confidence in the results, and accuracy in the reporting. This Plan is developed in accordance with the following (together referred to as the Guides):

- *Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and for Submission of a QA/QC Plan* (DIANAC 1996a); and
- *Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "B" Licensees in Meeting SNP Requirements and for Submission of a QA/QC Plan* (DIANAC and NTWB 1996b).

The Guides defines QA and QC as follows:

- **Quality Assurance:** the system of activities designed to better ensure that quality control is done effectively.
- **Quality Control:** the use of established procedures to achieve standards of measurement for the three principal components of quality being precision, accuracy and reliability.

This Plan applies to all environmental water quality sampling undertaken in support of maintaining compliance at the Mine site.

1.3 PLAN MANAGEMENT AND IMPLEMENTATION

The Plan is effective upon approval. The Plan is reviewed annually by the Site Manager or designate and updated as needed and following issuance of new or amended authorizations to ensure alignment with relevant terms and conditions. When material changes occur, the updated document is provided to parties in accordance with the *Engagement Plan*.

A copy of this Plan is maintained on site in the administration office and in A&M's office in Vancouver.

2.0 ROLES AND RESPONSIBILITIES

NATC is responsible for the Mine, including implementation and management of this Plan. Contact information for NATC is provided below.

North American Tungsten Corporation Ltd.
 c/o Alvarez & Marsal Canada Inc.
 925 W. Georgia St.
 Suite 902, Cathedral Place Building
 Vancouver, BC V6C 3L2
 Ph: (604) 638-7440
 Contact: Todd M. Martin, Sr. Vice President
tmartin@alvarezandmarsal.com
 or
 Vicki Chan, Vice President
vchan@alvarezandmarsal.com

2.1 SITE MANAGER AND STAFF

The Site Manager, or designate, is responsible for implementation and management of this Plan. NATC staff are to implement and comply with the Plan as directed by the Site Manager.

2.2 CONTRACTORS, SUPPLIERS AND VISITORS

All personnel conducting activities on site, including contractors, suppliers and visitors, are required to implement this Plan as it pertains to their activities on site.

3.0 SAMPLE COLLECTION

Sampling locations, equipment and supplies used as well as methods employed to collect samples are each described below.

3.1 LOCATION

The water quality monitoring stations in association with water licence Surveillance Network Program (SNP) are listed in **Error! Reference source not found..** As stations may change from time to time with SNP modifications and licence amendments, the reader is directed to always refer to the current version of the water licence for the current sampling requirements.

Depending on site activities, not all stations will be active at all times. Similarly, depending on site and weather conditions, water may not be present at all times at all stations. Accordingly, the methodology outlined in the Plan is intended to be applicable to water sampling at all current active SNP stations and where other licence conditions require water quality sampling, and aspects may be applied to other water quality sampling that may be undertaken, such as for drinking water testing, environmental studies or other monitoring.

Further, some stations may have effluent quality criteria (EQC) pursuant to terms and conditions in the water licence; these parameters, by station, are also identified in **Error! Reference source not found.**

Table 1. SNP Station name, location and description

SNP station #	Location		Description
	Easting	Northing	
4-1	540034	6871361	Flat River at the Project freshwater intake, located in the Water Supply Facility
4-5	542520	6869094	Flat River at bridge downstream of airstrip
4-13	539835	6871035	Mine water: discharge from “E” Zone
4-20	541342	6870330	Drainage culvert from Stinky Pond
4-27-9 ¹	540483	6871000	Groundwater monitoring downgradient of TCA 2
4-27-11 ¹	541216	6869956	Groundwater monitoring downgradient of TCA 5
4-27-12 ¹	541357	6870091	Groundwater monitoring downgradient of TCA 3
4-27-15	541600	6869880	Groundwater well southeast of airstrip
4-27-17	539968	6871380	Groundwater well upstream of the Project
4-27-18 ¹	540646	6870369	Groundwater monitoring well up-gradient of the Project
4-28-1 ¹	541224	6870386	Groundwater pumping well PW-1
4-28-2 ¹	541118	6870491	Groundwater pumping well PW-2
4-29	538180	6873871	Flat River, three (3) kilometres upstream of pumphouse
4-33R	543488	6867875	Flat River, downstream station
4-34 ²	-	-	Seepage down-gradient of the fuel berm
4-36	541368	6870158	Any point between Tailings Containment Area 3 and the Flat River, where Seepage is visible
4-37	-	-	Any point between Tailings Containment Area 4 and the Flat River, where Seepage is visible
4-38	-	-	Any point between Tailings Containment Area 1 and the Flat River, where Seepage is visible
4-39	-	-	Any point between Tailings Containment Area 2 and the Flat River, where Seepage is visible
4-45	541000	6870605	Middle Bridge, upstream of Stinky Pond Discharge to Flat River
5-2	540523	6870986	Old Lagoon Outflow
TC11-7 ¹	540323	6871176	Groundwater monitoring well downgradient of TCA 1
TC11-11 ¹	540405	6871071	Groundwater monitoring well downgradient of TCA 2

The applicable monitoring program, the SNP, is listed in the water licence annex and includes collection and analysis of both groundwater and surface water. Figures 1 and 2 illustrate the SNP station locations. Sampling frequency varies with season and station. As the SNP may be revised from time to time over the life of a water licence, this Plan provide general direction applicable to all environmental water sampling undertaken on site.

¹ EQC for pH, TSS, total ammonia as N, total arsenic, total cadmium, total copper, total lead, total nickel, total zinc

² EQC for extractable petroleum hydrocarbons, benzene, ethyl benzene, toluene

Analytical parameters required pursuant to the SNP include:

- Total and dissolved inductively coupled plasma (ICP) metal scan
 - ICP metal scan includes, at a minimum aluminum, arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, phosphorous, selenium, silver, strontium, thallium, tungsten, uranium, vanadium, and zinc.
- Total cyanide;
- Total ammonia, nitrate-nitrogen, nitrite-nitrogen;
- Total ions including sulphate, chloride, fluoride, bromide;
- Total and dissolved suspended solids;
- Total and dissolved organic carbon;
- Physical parameters including alkalinity, acidity, pH, hardness, electrical conductivity, total petroleum hydrocarbons
- Total petroleum hydrocarbons includes BTEXS, Fraction 1 (C6 to C10), Fraction 2 (C10 to C16), Fraction 3 (C16 to C34), and Fraction 4 (C34 to C50)
 - BTEXS includes benzene, toluene, ethyl benzene, xylenes and styrene.

3.2 EQUIPMENT

3.2.1 SPECIFICATIONS

The following field equipment, or equivalent, has been chosen for its suitability to the type of conditions at the Mine. The following sections identify the brand, model and rationale for selecting that piece of equipment.

3.2.1.1 YSI PROPLUS QUATTRO

The YSI ProPlus Quattro is a multiple parameter, handheld instrument that simultaneously measures and displays pH, electrical conductivity, specific conductance, dissolved oxygen (expressed in both mg/L and percent saturation) and temperature. YSI ProPlus Quattro was selected for ease of use and calibration, readability and durability. An additional practical feature of the ProPlus Quattro is that if one probe (e.g. the pH probe) is damaged, the unit can still be used to collect data from the undamaged probes since the probes are independent of one another.

3.2.1.2 OAKTON PCS TESTR 35

A handheld pocket multimeter, Oakton PCS Testr 35, is maintained as a backup in the event that the YSI ProPlus Quattro is not in service. It is capable of reading pH, conductivity, TDS, salinity and temperature.

3.2.1.3 HAND BAILER

Dedicated or disposable PVC plastic bailers may be used to purge and sample wells. Where possible, it is recommended that dedicated bailers either be left in each monitoring well or single use disposable bailers be used at each well to minimize the risk of cross contamination.

3.2.1.4 INERTIAL LIFT PUMP

An inertial lift pump consists of a disposable PVC tube (i.e. Waterra) with a foot valve. Where possible, dedicated or disposable tubing and valves are used to purge and sample wells. It is recommended that dedicated pumps are either left in each monitoring well or single use disposable pumps be used at each well to minimize the risk of cross contamination.

3.2.1.5 GRUNDFOS VARIABLE SPEED CONTROLLER AND REDI-FLO 2 PUMP

The Grundfos variable speed controller and Redi-Flo 2 submersible pump are used for collecting groundwater samples from the large diameter wells. The Redi-Flo 2 is a stainless steel pump that, coupled with the Grundfos variable speed controller, allows for the user to pump at a specific flow rate to properly purge wells without unnecessary disturbance or mobilization of sediment. The controller is uncomplicated and user-friendly and the pump is easy to clean and disinfect. This combination allows for easy collection of representative groundwater samples.

3.2.1.6 GEOTECH PERISTALTIC PUMP

The Geotech variable speed peristaltic pump was selected for its reliability and ease of transport between sampling locations. These pumps are used extensively throughout the field of environmental monitoring for sampling low recharge, or shallow groundwater wells. These units can be powered by a rechargeable, internal 12-volt battery or via an external battery with the use of the 12-volt adaptor. They are easy to operate and allow for a variable flow rate for effective purging and sample collection.

3.2.2 CALIBRATION, MAINTENANCE AND STORAGE

All portable field equipment is calibrated, used and stored according to manufacturer's specifications. Whenever possible, the field equipment selected for use has been industry proven and low maintenance, but eventually all equipment requires maintenance, calibration and/or servicing.

3.2.2.1 YSI PRO PLUS QUATTRO

The YSI Pro Plus is stored in a protective case between sampling events. The probes are stored in the plastic cover provided by the manufacturer to keep the probes hydrated between uses. The pH probes are calibrated using three point calibrations with pH 4, 7, and 10 buffers. Similar calibration is performed for conductivity. Temperature is compared to the air temperature and dissolved oxygen is calibrated to fully saturated air. Spare parts including membranes and solutions are stored with the meter in case of failure or expiration.

3.2.2.2 OAKTON PCS TESTR 35

The Oakton PCS Testr 35 is stored in a protective case between sampling events. The pH probes are calibrated using three point calibrations with pH 4, 7, and 10 buffers. Similar calibration is performed for conductivity. Temperature is compared to the air temperature. Spare parts including membranes and solutions are stored with the meter in case of failure or expiration.

3.2.2.3 HAND BAILER

Where a single stainless steel bailer is to be used at multiple wells it is decontaminated prior to being re-used. If bailers kept in a well are significantly stained, discolored, or damaged when removed, they are replaced prior to sampling. Extra bailers are maintained on site.

3.2.2.4 INERTIAL LIFT PUMP

Where dedicated tubing kept in a well is significantly stained, discolored, or damaged when removed, it is replaced prior to sampling. Extra Waterra tubing and replacement foot valves are maintained on site.

3.2.2.5 GRUNDFOS VARIABLE SPEED CONTROLLER AND REDI-FLO 2 PUMP

The Grundfos controller and the Redi-Flo 2 pump are nearly maintenance free. The controller is kept cleaned and the 120V plug inspected for damage. The unit is stored in the protective case provided by the manufacturer. The Redi-Flo 2 is a stainless steel pump that only requires rinsing between uses and is stored in a soft sided case between uses. The intake screen on the pump is visually checked for signs or debris and is cleaned as needed. The power cable is visually inspected for sign of wear.

3.2.2.6 GEOTECH PERISTALTIC PUMP

The Geotech peristaltic pump requires very little maintenance and no calibrations are required. The unit is kept clean and dry between uses and the rechargeable, internal 12-volt battery is kept charged. The tubing required to operate the pump is inspected and replaced as required. Extra tubing is maintained on site.

3.3 SUPPLIES

3.3.1 LAB SUPPLIES

All sample containers, coolers, deionized water and preservatives are provided to NATC by a qualified analytical lab. Except in unforeseen circumstances, new lab-supplies are used. All sample bottles are inspected prior to sample collection to make sure that they appear to be in good condition. Sample bottles found without caps are discarded and not used for sample collection.

An adequate supply of lab-supplied preservatives in vials is maintained on site. Further, some lab-supplied bottles are 'pre-charged' with preservative. Any preservative that has expired, appears cloudy or shows signs of crystallization is not used and is either appropriately disposed of or returned to the lab.

While typical containers used, per parameter, are listed in Table 2, these may vary with different analytical labs.

3.3.2 FILTER APPARATUS

Filter apparatus may include:

- Disposable non-metallic vacuum filter flasks or syringes; or
- Reusable non-metallic vacuum flasks and disposable 0.45 µm filter membranes.

An external vacuum pump is used in both cases.

Disposable apparatus are disposed of after each use, while reusable apparatus are rinsed three times with commercial distilled water between uses.

Table 1. Typical bottles and preservatives used

Parameter	Container	Preservative	Other
Alkalinity (PP as CaCO ₃ , CO ₃ , HCO ₃ , OH)	1x 500 mL plastic	n/a	
Chloride (Cl)			
Conductivity			
Sulphate (SO ₄)			
pH			
Nitrite (N)			
Nitrate plus Nitrite (N)			
Nitrate (N)			
Total Dissolved Solids (TDS)			
Total Suspended Solids (TSS)			
	1x 1 L plastic		
Ammonia (N)	1x 40 mL glass vial	Sulphuric acid	Field Preserved No headspace
Total Mercury (Hg)	1 x40 mL vial	Hydrochloric acid	Field Preserved
Dissolved Mercury (Hg)	1 x 40 mL vial	Hydrochloric acid	Field Filtered Field Preserved
Total Metals + Hardness	1x 120 mL plastic	Nitric acid	Field Preserved
Dissolved Metals	1x 120 mL plastic	Nitric acid	Field Filtered Field Preserved
Extractable Petroleum Hydrocarbons (EPH)	2x 40 mL glass vial	Sodium bisulfate	No headspace
BTEXS, Fraction 1 (F1)	2x 40 mL glass vial	Sodium bisulfate	No headspace
Fractions 2-4 (F2-F4)	2 x 100 mL amber glass	Sodium bisulfate	-

3.4 METHODS

Methods to identify and collect samples are each described below.

3.4.1 SAMPLE IDENTIFICATION

Waterproof labels are completed with permanent ink to ensure sample information cannot be erased or altered. These labels are then placed directly on the sample bottle when dry to ensure proper adhesion.

The following information is recorded on all water quality sample bottles:

- Client name (NATC);
- Project;
- Date;
- Sample identification (ID);
- Preservative added;
- Field filtered (if applicable); and
- Analysis requested.

Blanks and duplicates are given a unique sample ID to maintain the blind nature of the sample.

3.4.2 SURFACE WATER COLLECTION

Surface water samples are collected either directly from the source into the sample bottle or with a clean 1-liter sample container. Sample containers that do not arrive containing preservatives are generally conditioned three times prior to taking the sample, unless indicated by the lab (i.e. acid rinsed bottles for low level parameters). Any 'pre-charged' bottles cannot be conditioned as the preservative would be discarded during the process.

For collecting surface water samples the following practices are employed:

- Sampling proceeds from the station likely to be least contaminated to the most likely contaminated station;
- Sample bottles and caps are conditioned or rinsed three times prior to use, unless indicated by the lab;
- Samples are collected upstream of the sampler to avoid accidental contamination;
- Sampler points the mouth of the bottle upstream into the direction of flow by submerging the entire mouth of the bottle to avoid collection of anything floating on the surface of the water;
- Where water is too shallow to fill the bottle all at once or where bottles are pre-charged with preservatives, water is collected either with a disposable syringe or a new smaller lab-supplied plastic bottle and decanted into larger bottles;
- New, powder-free nitrile gloves are worn while collecting and handling each sample;
- Samples are field-filtered as required and as safe work conditions allow;
- Preservatives are added immediately after the sample has been collected and/or filtered as required and as safe work conditions allow;
- Activities that can affect the water quality results (smoking, refueling vehicles, etc.) are not permitted during sample collection, and
- Caution is always taken to ensure samples are collected in a safe manner without unnecessary risk to involved personnel.

3.4.3 GROUNDWATER COLLECTION

Groundwater samples are collected using an appropriate method, given the depth to groundwater and well diameter.

Where a non-dedicated sampler is used, both the pump and tubing are thoroughly rinsed with the sample water from the sample site prior to collection. This is conducted during the purging of the stagnant water in the well and thus ensures that there is no cross contamination between samples and also purges the well to remove the stagnant water, allowing for a representative sample to be collected. After each sample is collected, the remaining water in both the pump and tubing is drained before moving to another groundwater sample location.

For collecting groundwater samples, the following practices are employed:

- Wells are purged and the *in situ* parameters measured must be stable before samples are collected;
- Pumps and associated tubing are drained between sample sites to prevent cross contamination;
- New, powder-free nitrile gloves are worn while collecting and handling each sample;
- Samples are field-filtered as required and as safe work conditions allow;
- Preservatives are added immediately after the sample has been collected and/or filtered as required and as safe work conditions allow;
- Activities that can affect the water quality results (smoking, refueling vehicles, etc.) are not permitted during sample collection, and
- Caution is always exercised to ensure samples are collected in a safe manner without unnecessary risk to involved personnel.

3.4.4 MINE WATER COLLECTION

Mine water and surface water are sampled in the same way.

3.4.5 METHOD BLANKS

Method blanks (also known as field blanks) are prepared in the field to monitor potential effects from the sampling procedure. Method blanks are collected and filtered in exactly the same way as regular water samples except the water source is not the stream or seep, but instead deionized water from bottles supplied by the lab and carried into the field.

One method blank sample is collected for every 10 samples (or part thereof).

3.4.6 TRAVEL BLANKS

Travel blanks (also known as trip blanks) are prepared by the laboratory to monitor potential effects from bottle materials. Travel blanks travel with the field crew in the same way as the bottle sets. Travel blanks are not opened in the field. The travel blanks should be set aside while sampling, then labelled and shipped with the samples.

Each shipment should have one travel blank set.

3.4.7 DUPLICATES

Duplicates (or replicates) are collected in exactly the same way as regular water samples. The duplicate is collected by the same person that collected the original sample and at stations with a reasonable amount of flow.

One duplicate sample is collected for every 10 samples (or part thereof).

3.4.8 PRESERVATION

Water samples are preserved either with chemicals and/or temperature control. Refrigeration of samples at 4°C is the most common preservation technique, in conjunction with chemical preservation, as discussed above and indicated by the lab.

Where possible, samples should be preserved in the field and maintained in a cool, dark container to minimize changes in water chemistry.

3.4.9 *IN SITU* DATA COLLECTION

Surface water sample collection occurs prior to collection of *in situ* data to avoid potential for disturbance of sediments by field meters.

In situ data are parameters that are measured in the field at the time of sample collection. These include, but are not limited to, pH, temperature, electrical conductivity, specific conductivity, total dissolved solids, and dissolved oxygen.

In situ data is collected by placing the multi-meter probe(s) directly in the water being tested. Occasionally the sampling conditions do not allow for this method and a subsample must be collected. The subsample is collected at the same time as the samples to be submitted to the laboratory. The multi-meter probe is placed into the subsample container to measure the parameters. Once the *in situ* values are recorded, the subsample is discarded. This procedure is usually reserved for particularly cold temperatures (i.e. below -15°C) as this can cause liquid crystal displays to react slowly or become unreadable entirely. Additionally, the multi meter probe(s) can develop a thin layer of ice, which may not be always apparent, but can cause inaccurate readings and/or damage to the probe.

4.0 SAMPLE HANDLING

4.1 SAMPLE STORAGE

Once the water quality samples have been collected, they are kept cool in hot weather either in a fridge or in a cooler with ice packs, and kept from freezing by storing indoors in winter. Fridge and coolers are dedicated to environmental sample storage.

During transportation, samples are packed in a cooler with frozen cooler packs as needed in an effort to maintain a temperature of 4°C.

4.2 CHAIN OF CUSTODY

A Chain of Custody (COC) form containing the following information is completed by the sampler for every cooler shipment of samples. This form includes:

- Company name and contact information;
- Analytical laboratory name, address, and contact person;
- Invoicing instructions;
- Report format requested;
- Project information;
- Sampler's name;
- Sample identification number, time and date of sampling, sample type, and analyses requested;
- Any special instructions; and
- Name of person releasing the shipment as well as date and time of release.

Each person relinquishing and receiving the samples must sign the COC form. Each cooler shipped must have a COC form indicating those samples contained in the particular cooler. COC forms should be enclosed in a sealable plastic bag to protect them from possible water damage during shipment, and may additionally be submitted by email or through an online lab management information system. One copy of the COC form is included with the shipment and one copy must remain on site for recording keeping. Standard COC forms are provided in both digital and hardcopy by the lab.

4.3 SHIPPING

Advance planning and sample collection timing supports sample transfer to the lab within hold times. While every reasonable effort is routinely made to submit samples within hold time limits, the remote location of the Mine may at times make this challenging.

For shipping, samples are securely stored in coolers with ice packs and packing material to keep bottles upright and intact during transport.

A completed COC form is placed in a plastic bag, sealed and placed inside the cooler with the water quality samples. The cooler is securely taped closed and the laboratory address is clearly marked on the outside of each cooler.

Samples are relinquished to freight handlers upon arrival of the inbound aircraft or vehicle. Should samples not be relinquished as planned due to unforeseen circumstances, such as a plane not landing as planned, samples are kept secure and cool, and repackaged as necessary, in preparation for a future flight as needed.

If possible, samples are shipped offsite on a weekday, excluding Friday, to avoid possible shipping delays over weekends.

Personnel responsible for shipping samples to the lab typically give the lab advance notice to ensure any transfers are arranged in advance to support achieving hold times. Upon receipt, the lab provides a sample receipt, documenting the condition of samples received.

5.0 ANALYSIS

Due to proximity and based on availability, one of four labs will typically be used to conduct analysis: Bureau Veritas; ALS; AGAT; Taiga. Lab facilities in either Whitehorse, Vancouver, Yellowknife, Calgary or Edmonton may typically be utilized, based on availability and logistics.

All labs are appropriately accredited and use standard methods. Each lab used is accredited by either Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC). Both Canadian accreditation bodies are equally competent and recognized by the International Laboratory Accreditation Cooperation (ILAC); refer to Appendix A.

Certificates stating parameters for which each lab is accredited for are found in Appendix B. These certificates may be updated from time to time.

Detection limits and analytical methodology applied are routinely include in certificates of analysis issued by each lab.

6.0 DATA MANAGEMENT AND REPORTING

6.1 FIELD DATA

Field data including *in situ* data and sample event information such as the following are recorded in a field notebook:

- Type of sampling event (monthly, annual);
- Date and time for each sample location;
- Sampler; and
- Local weather conditions.

Documented information is uploaded to NATC's corporate data management system.

Any inspections and calibrations are similarly recorded in an electronically maintained calibration

and maintenance log.

6.2 DATA REVIEW

Upon receipt of the analytical data, the results are reviewed by NATC personnel for any EQC exceedances or water quality anomalies.

6.3 DATA STORAGE

Analytical results are received digitally by multiple NATC parties to ensure adequate backup and redundancy. Results are uploaded to NATC's corporate data management system and are also typically available through each lab's online data portal.

6.4 REPORTING

Completed chain of custody forms, sample receipt confirmation and results are provided digitally by the lab to NATC personnel.

All results are reviewed upon receipt and uploaded to the corporate data management system. Any anomalies are discussed with the lab and appropriate resolution sought as needed, including reanalysis as required.

Reporting is undertaken in accordance with the water licence, including reporting of analytical results for each station, results for any duplicates or blanks, listing of detection limits, indication of EQC exceedances and trends.

7.0 REFERENCES

Companies' Creditors Arrangement Act. R.S.C., 1985, c. C-36

Department of Indian and Northern Affairs Canada (DIANAC). 1996a. Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and For Submission of a QA/QC Plan. Water Resources Division and the Northwest Territories Water Board.

DIANAC, Northwest Territories Water Board (NTWB). 1996b. Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" Licensees in Meeting SNP Requirements and For Submission of a QA/QC Plan. Water Resources Division and the Northwest Territories Water Board.

Government of Canada, Government of the Northwest Territories, Inuvialuit Regional Corporation, Northwest Territories Métis Nation, Sahtu Secretariat Incorporated, Gwich'in Tribal Council, Tłıchq Government. 2013. Northwest Territories Lands and Resources Devolution Agreement.

Mackenzie Valley Resource Management Act. S.C. 1998, c. 25.

APPENDIX A

APPENDIX A CALA & SCC JOINT STATEMENT



Standards Council of Canada
Conseil canadien des normes

Subject: References to Laboratory Accreditation in Requests for Proposal / Bids

Date: 2012-10-17

To: All Authors of RFPs Specifying Laboratory Accreditation

It has come to our attention that a number of Requests For Proposal (RFPs) issued by Canadian governments (federal, provincial, etc.) and private sector specifiers state that "...the bidder and all subcontractors are required to secure accreditation from a specific organization...". In many of these cases only a single accrediting body is specifically named in the RFP.

With this joint public notice we wish to draw your attention to the fact that there are two Canadian based accrediting bodies, the Canadian Association for Laboratory Accreditation Inc. (CALA) and the Standards Council of Canada (SCC). Both of these accrediting bodies are recognized by the International Laboratory Accreditation Cooperation (ILAC) as equally competent accreditors of testing and/or calibration laboratories. In fact, worldwide, there are 68 signatories to the ILAC Mutual Recognition Arrangement (MRA)—an agreement which requires that accreditors of laboratories undergo stringent and regular peer evaluations of their operations based on the internationally recognized criteria and procedures outlined in ISO/IEC 17011.

In our opinion, the stipulations included in these RFPs are unnecessarily limiting and inconsistent. CALA and SCC have been informing the proper authorities that these RFP's should be amended to more consistently define an accredited laboratory as one whose accreditation has been obtained from an accrediting body that is signatory to the ILAC MRA, using the internationally recognized criteria and procedures outlined in ISO/IEC 17025: (General requirements for Competence of Calibration and Testing Laboratories).

About the Canadian Association for Laboratory Accreditation Inc. (CALA)

The Canadian Association for Laboratory Accreditation Inc. (CALA) is a not-for-profit Canadian laboratory accreditation body. It is known for responsive and efficient quality assurance services. Its members participate in rigorous programs of inter-lab comparisons and on-site assessments based on international standards, and benefit from both workshop and web-based training opportunities. www.cala.ca

About the Standards Council of Canada (SCC)

The Standards Council of Canada is a federal Crown corporation. Its mandate is to promote efficient and effective standardization in Canada. Located in Ottawa, SCC has a 15-member governing Council and a staff of approximately 83. The organization reports to Parliament through the Minister of Industry and oversees Canada's national network of standardization expertise. The SCC offers accreditation services to both standards development bodies, and conformity assessment organizations. In the area of conformity assessment, it provides services to over 400 clients. www.scc.ca



C. Charles Brimley
Canadian Association for Laboratory
Accreditation
Chief Executive Officer
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Chantal Guay, ing. P. Eng.
Standards Council of Canada
Vice-President, Accreditation Services
613 238 3222 ext. 432
cguay@scc.ca

APPENDIX B

APPENDIX B LAB ACCREDITATIONS

Certificate of Accreditation

Certificat d'accréditation



Bureau Veritas Burnaby Laboratory 4606 Canada Way, Burnaby, BC V5G 1K5

having been assessed by the Standards Council of Canada (SCC) and found to conform with the requirements of ISO/IEC 17025:2017 and the conditions for accreditation established by SCC is hereby recognized as an

ACCREDITED TESTING LABORATORY

for the specific tests or types of tests listed in the scope of accreditation approved by SCC and found on the SCC website at www.scc.ca.

ayant fait l'objet d'une évaluation du Conseil canadien des normes (CCN), et ayant été trouvé conforme aux exigences énoncées dans ISO/IEC 17025:2017 et aux conditions d'accréditation établies par le CCN, est de ce fait reconnu comme étant un

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour les essais ou types d'essais énumérés dans la portée d'accréditation approuvée par le CCN et figurant dans le site Web du CCN au www.ccn.ca.

SCC file number: / Dossier du CCN n° : 15188

Initial accreditation date: / Date de la première accréditation : 1993-06-08

Vice-President – Accreditation Services / Vice-président – Services d'accréditation

Issued on: / Délivré le : 2022-02-16

The validity of this certificate, including the date of last re-accreditation and its expiry can be confirmed by the accompanying Scope of Accreditation document in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. The accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF communiqué dated April 2017).

Pour vérifier la validité du présent certificat, y compris la date de la dernière réaccréditation et la date d'expiration du certificat, consulter la portée d'accréditation qui se trouve dans le répertoire des laboratoires accrédités dans le site Web du CCN au www.ccn.ca.

Ce laboratoire est accrédité conformément à la Norme internationale reconnue ISO/IEC 17025:2017. Cette accréditation démontre la compétence technique d'un organisme pour une portée définie et l'exploitation d'un système de management de la qualité de laboratoire (cf. communiqué conjoint ISO-ILAC-IAF date d'avril 2017).



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Bureau Veritas

File Number: 15188

Program: Laboratories

Field of Testing:

Biological
Chemical/Physical
Forensic

Program Specialty Area:

Agriculture Inputs, Food, Animal Health And Plant
Protection
Environmental
Forensic

Initial Accreditation Date: 1993/06/08

Status: Accredited

As of: 2022/11/22

Expires on: 2025/06/08

4606 Canada Way

Burnaby

British Columbia

V5G 1K5

Canada

www.bvna.com

 [Scope of Accreditation \(pdf\) \(English\)](#)

Stephanie Chang

 Burnaby-QualityAssuranc@bureauveritas.com

 604 734 7276

Certificate of Accreditation

Certificat d'accréditation



Bureau Veritas Calgary Laboratory

2021 – 41st Avenue, N.E., Calgary, Alberta, T2E 6P2, Canada

having been assessed by the Standards Council of Canada (SCC) and found to conform with the requirements of ISO/IEC 17025:2017 and the conditions for accreditation established by SCC is hereby recognized as an

ACCREDITED TESTING LABORATORY

for the specific tests or types of tests listed in the scope of accreditation approved by SCC and found on the SCC website at www.scc.ca.

ayant fait l'objet d'une évaluation du Conseil canadien des normes (CCN), et ayant été trouvé conforme aux exigences énoncées dans ISO/IEC 17025:2017 et aux conditions d'accréditation établies par le CCN, est de ce fait reconnu comme étant un

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour les essais ou types d'essais énumérés dans la portée d'accréditation approuvée par le CCN et figurant dans le site Web du CCN au www.ccn.ca.

SCC file number: / Dossier du CCN n° : 151043

Initial accreditation date: / Date de la première accréditation : 2016-08-30

Vice-President – Accreditation Services / Vice-président – Services d'accréditation

Issued on: / Délivré le : 2022-02-16

The validity of this certificate, including the date of last re-accreditation and its expiry can be confirmed by the accompanying Scope of Accreditation document in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. The accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF communiqué dated April 2017).

Pour vérifier la validité du présent certificat, y compris la date de la dernière réaccréditation et la date d'expiration du certificat, consulter la portée d'accréditation qui se trouve dans le répertoire des laboratoires accrédités dans le site Web du CCN au www.ccn.ca.

Ce laboratoire est accrédité conformément à la Norme internationale reconnue ISO/IEC 17025:2017. Cette accréditation démontre la compétence technique d'un organisme pour une portée définie et l'exploitation d'un système de management de la qualité de laboratoire (cf. communiqué conjoint ISO-ILAC-IAF date d'avril 2017).



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Bureau Veritas

File Number: 151043

Program: Laboratories

Field of Testing:

Biological

Chemical/Physical

Program Specialty Area:

Agriculture Inputs, Food, Animal Health And Plant

Protection

Environmental

Initial Accreditation Date: 2016/08/30

Status: Accredited

As of: 2022/10/03

Expires on: 2024/08/30

2020-41st Avenue N. E.

Calgary

Alberta

R2E 6P2

Canada

www.bvna.com

 [Scope of Accreditation \(pdf\) \(English\)](#)

Natalia Gonzalez

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Certificate of Accreditation

Certificat d'accréditation



Bureau Veritas Edmonton Laboratory

6744-50 Street NW, Edmonton, AB, T6B 3M9

9331 48 Street NW, Edmonton, AB, T6B 2R4

having been assessed by the Standards Council of Canada (SCC) and found to conform with the requirements of ISO/IEC 17025:2017 and the conditions for accreditation established by SCC is hereby recognized as an

ACCREDITED TESTING LABORATORY

for the specific tests or types of tests listed in the scope of accreditation approved by SCC and found on the SCC website at www.scc.ca.

ayant fait l'objet d'une évaluation du Conseil canadien des normes (CCN), et ayant été trouvé conforme aux exigences énoncées dans ISO/IEC 17025:2017 et aux conditions d'accréditation établies par le CCN, est de ce fait reconnu comme étant un

LABORATOIRE D'ESSAIS ACCRÉDITÉ

pour les essais ou types d'essais énumérés dans la portée d'accréditation approuvée par le CCN et figurant dans le site Web du CCN au www.ccn.ca.

SCC file number: / Dossier du CCN n° : 15229

Initial accreditation date: / Date de la première accréditation : 1995-03-06

Vice-President – Accreditation Services / Vice-président – Services d'accréditation

Issued on: / Délivré le : 2022-03-01

The validity of this certificate, including the date of last re-accreditation and its expiry can be confirmed by the accompanying Scope of Accreditation document in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. The accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF communiqué dated April 2017).

Pour vérifier la validité du présent certificat, y compris la date de la dernière réaccréditation et la date d'expiration du certificat, consulter la portée d'accréditation qui se trouve dans le répertoire des laboratoires accrédités dans le site Web du CCN au www.ccn.ca.

Ce laboratoire est accrédité conformément à la Norme internationale reconnue ISO/IEC 17025:2017. Cette accréditation démontre la compétence technique d'un organisme pour une portée définie et l'exploitation d'un système de management de la qualité de laboratoire (cf. communiqué conjoint ISO-ILAC-IAF date d'avril 2017).



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Bureau Veritas

File Number: 15229

Program: Laboratories

Field of Testing:

Biological
Chemical/Physical

Program Specialty Area:

Environmental

Initial Accreditation Date: 1995/03/06

Status: Accredited

As of: 2023/02/08

Expires on: 2027/03/06

6744-50 Street

Edmonton

Alberta

T6B 3M9

Canada

www.bvna.com

↓ [Scope of Accreditation \(pdf\) \(English\)](#)

Lalaine Mabanta

✉ Edmonton-QA-CA@bureauveritas.com

☎ +780 577-7151

📠 +780 378-8699

Canadian Association for Laboratory Accreditation Inc.

Certificate of Accreditation

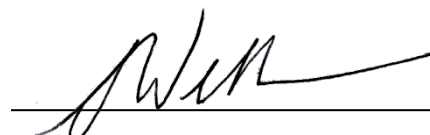
AGAT Laboratories (Calgary)
AGAT Laboratories Ltd.
2910 12th Street N.E.
Calgary, Alberta



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Accreditation No.: 1002702
Issued On: December 1, 2021
Accreditation Date: February 22, 2005
Expiry Date: May 31, 2024


Acting President and CEO



This certificate is the property of the Canadian Association for Laboratory Accreditation Inc. and must be returned on request; reproduction must follow policy in place at date of issue.
For the specific tests to which this accreditation applies, please refer to the laboratory's scope of accreditation at www.cala.ca.



CALA Scope of Accreditation

Laboratory Name: AGAT Laboratories (Calgary)**Client ID:** 1002702**Parent Institution:** AGAT Laboratories Ltd.**Address:** 2910 12th Street N.E., Calgary, Alberta, T2E 7P7**Contact:** Mr. Vince Hill**Email:** vhill@agatlabs.com**Phone:** (403) 735-2016**Fax:** (403) 735-2771**Standard:** Conforms with requirements of ISO/IEC 17025:2017**Clients Served:** All Interested Parties**Revised On:** 11/14/2022**Valid To:** 06/01/2024

001 - Alkalinity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** TITRIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0100

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2320 B	Yes	Yes	No

Parameter

Alkalinity (pH 4.5)

002 - Anions

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:****Lab Method ID(s):** INS-0150, WATR-0200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No

ParameterBromate (BrO₃)

Bromide

Chlorate

Chloride

Chlorite

Fluoride

Iodide

Nitrate

Nitrite

Sulfate

003 - Conductivity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** CONDUCTIVITY METER**Preparation Method:****Lab Method ID(s):** INST-0120

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2510 B	Yes	Yes	No

Parameter

Conductivity (25C)

004 - Dissolved Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** INST-0140, WATR-0200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Parameter

Aluminum

Antimony

Arsenic

Barium

Beryllium

Bismuth

Parameter

Boron
 Cadmium
 Calcium
 Chromium
 Cobalt
 Copper
 Iron
 Lead
 Lithium
 Magnesium
 Manganese
 Molybdenum
 Nickel
 Phosphorus
 Potassium
 Selenium
 Silicon
 Silver
 Sodium
 Strontium
 Sulphur (Sulfur)
 Thallium
 Vanadium
 Zinc
 Zirconium

009 - Total Kjeldahl Nitrogen (TKN)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0520

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 351.2	Yes	Yes	No

Parameter

Total Kjeldahl Nitrogen

010 - Biochemical Oxygen Demand (BOD)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** DISSOLVED OXYGEN METER (DO)**Preparation Method:****Lab Method ID(s):** MIC-1500

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-O C	Yes	Yes	No
SM 5210 B	Yes	Yes	No

Parameter

BOD (5 day)

CBOD (5 day)

011 - Solids**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** WATR-0600, WATR-0610

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2540 C	Yes	Yes	No
SM 2540 D	No	Yes	No

Parameter

Total Dissolved Solids

Total Suspended Solids

014 - Polycyclic Aromatic Hydrocarbons (PAH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0200

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3510B	Yes	Yes	No
EPA 3511	Yes	Yes	No
EPA 8270E	Yes	Yes	No

Parameter

1-Methylnaphthalene
 2-Methylnaphthalene
 Acenaphthene
 Acenaphthylene
 Acridine
 Anthracene
 Benzo(a)anthracene
 Benzo(a)pyrene
 Benzo(b)fluoranthene
 Benzo(e)pyrene
 Benzo(g,h,i)perylene
 Benzo(k)fluoranthene
 Chrysene
 Dibenzo(a,h)anthracene
 Fluoranthene
 Fluorene
 Indeno(1,2,3 - cd)pyrene
 Naphthalene
 Perylene
 Phenanthrene
 Pyrene
 Quinoline

015 - Polychlorinated Biphenyls (PCB)**Field of Accreditation:** Environmental**Matrix:** Oil**Analytical Method:** GC/ECD**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0420

Method Reference	Modified From	Analytical Method	Preparation Method
AEC M106.0	Yes	Yes	No
ASTM D4059-00	Yes	Yes	No

Parameter

Aroclor 1016
 Aroclor 1221
 Aroclor 1232
 Aroclor 1242
 Aroclor 1248
 Aroclor 1254
 Aroclor 1260
 Aroclor 1262
 Aroclor 1268
 Total PCB

020 - Microtox**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** BIOLUMINESCENCE**Preparation Method:****Lab Method ID(s):** TOX-0100

Method Reference	Modified From	Analytical Method	Preparation Method
EPS 1/RM/24	Yes	Yes	No

Parameter

Microtox IC50 (15 min)

024 - Mercury**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** COLD VAPOUR ATOMIC ABSORPTION (CVAA)**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0161, SOIL-390

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
EPA 3050B	Yes	Yes	No
SM 3112 B	Yes	Yes	No

Parameter

Mercury

026 - Metals

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/OES**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0140, SOIL-390

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
EPA 3050B	Yes	Yes	No
SM 3120	Yes	Yes	No

Parameter

Aluminum
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silicon
Silver
Sodium
Strontium
Sulphur (Sulfur)
Thallium
Titanium
Tungsten
Vanadium
Zinc
Zirconium

028 - Polycyclic Aromatic Hydrocarbons (PAH)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0210

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3540C	Yes	Yes	No
EPA 3570	Yes	Yes	No
EPA 8270E	Yes	Yes	No

Parameter

1-Methylnaphthalene
2-Methylnaphthalene
Acenaphthene
Acenaphthylene
Acridine
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(e)pyrene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3 - cd)pyrene
Naphthalene
Perylene
Phenanthrene
Pyrene

Parameter

Quinoline

043 - Anions**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:** SATURATED PASTE**Lab Method ID(s):** INST-0150, SOIL-140

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No

Parameter

Chloride

Nitrate-N

Nitrite (NO₂)

Sulphate

046 - pH**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** PH METER**Preparation Method:****Lab Method ID(s):** INOR-401-0120, INST-0104, SOIL-0110, SOIL-0140

Method Reference	Modified From	Analytical Method	Preparation Method
METHODS OF SOIL ANALYSIS 15.2	Yes	Yes	No
SM 4500-H+	Yes	Yes	No

Parameter

pH (saturated paste)

047 - Oil and Grease**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** FTIR**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-2200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5220 C	Yes	Yes	No

Parameter

Total Oil and Grease

049 - Organic Carbon**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:** DIGESTION, OXIDATION**Lab Method ID(s):** INOR-401-0120, SOIL-0480, SOIL-110

Method Reference	Modified From	Analytical Method	Preparation Method
METHODS OF SOIL ANALYSIS (2ND ED., 1982)	Yes	Yes	No
MSA PART 3 CH. 34	Yes	Yes	No

Parameter

Organic Carbon

Organic Matter

050 - Ammonia**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** COLORIMETRIC**Preparation Method:** EXTRACTION**Lab Method ID(s):** INOR-401-0120, INST-0340, SOIL-0110, SOIL-0630

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-NH ₃ G	Yes	Yes	No
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER	No	Yes	No

Parameter

Ammonia-N

052 - Total Purgeable Hydrocarbons (TPH)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0570

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	Yes	Yes	No

Parameter

Total Purgable Hydrocarbons (TPgH): (C5-C10)
VH: C6-C10

053 - Total Extractable Hydrocarbons (TEH)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0510

Method Reference	Modified From	Analytical Method	Preparation Method
AEC V92-M2	Yes	Yes	No
BC MOE CONTAMINATED SITES REGULATION (CSR)	Yes	Yes	No
EPA 8015D	Yes	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19
Extractable Petroleum Hydrocarbons (EPH): C19-C32
SASK (C11-C22)
SASK (C23-C60)
Total Extractable Hydrocarbons (TEH): C10-C32

058 - Particle Size Analysis (PSA)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** HYDROMETER**Preparation Method:****Lab Method ID(s):** SOIL-520

Method Reference	Modified From	Analytical Method	Preparation Method
JONES J. 2001 LAB GUIDE FOR CONDUCTING SOIL TEST & PLANT ANALYSIS	Yes	Yes	No

Parameter

Percent Clay
Percent Sand
Percent Silt

059 - Particle Size Analysis (PSA)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** SIEVE**Lab Method ID(s):** SOIL-540

Method Reference	Modified From	Analytical Method	Preparation Method
SHELDRIK, B.H. & WANG, C, CARTER MO ED. 2007	Yes	Yes	No

Parameter

Particle Size

061 - Chemical Oxygen Demand (COD)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:****Lab Method ID(s):** INST-0280

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 410.4	Yes	Yes	No

Parameter

COD

062 - Carbon

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** INFRARED SPECTROSCOPY (IR)/COMBUSTION**Preparation Method:****Lab Method ID(s):** INST-0170

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5310 B	Yes	Yes	No

Parameter

Inorganic Carbon
Organic Carbon

063 - Ammonia

Field of Accreditation: Environmental**Matrix:** Water

Analytical Method: COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0340

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-NH3 G	Yes	Yes	No

Parameter

Ammonia

065 - Total Purgeable Hydrocarbons (TPH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/FID-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TO-0540

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No
EPA 5030C	Yes	Yes	No
EPA 8260D	Yes	Yes	No

Parameter

F1: C6-C10

Total Purgable Hydrocarbons (TPgH): (C5-C10)

VH: C6-C10

066 - Total Extractable Hydrocarbons (TEH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0511

Method Reference	Modified From	Analytical Method	Preparation Method
AEC V92-M2	Yes	Yes	No
BC MOE CONTAMINATED SITES REGULATION (CSR)	Yes	Yes	No
EPA 3510	Yes	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19

Extractable Petroleum Hydrocarbons (EPH): C19-C32

F2: C10-C16

F3: C16-C34

F4: C34-C50

Hydrocarbons: C10-C32

SASK (C11-C22)

SASK (C23-C60)

068 - Heterotrophic Plate Count (HPC)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** SPREAD PLATE**Preparation Method:****Lab Method ID(s):** MIC-0300

Method Reference	Modified From	Analytical Method	Preparation Method
SM 9215 C	Yes	Yes	No

Parameter

Heterotrophic Plate Count (HPC)

069 - Oil and Grease**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** FTIR**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-2200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5220 C	Yes	Yes	No

Parameter

Total Oil and Grease

071 - Polychlorinated Biphenyls (PCB)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/ECD**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-0410

Method Reference	Modified From	Analytical Method	Preparation Method
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Method Reference	Modified From	Analytical Method	Preparation Method
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AEC G106.0	Yes	Yes	No
EPA 8082	Yes	Yes	No

Parameter

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
Aroclor 1262
Aroclor 1268
Total PCB

073 - Mercury

Field of Accreditation: Environmental

Matrix: Water

Analytical Method: COLD VAPOUR ATOMIC ABSORPTION (CVAA)

Preparation Method:
Lab Method ID(s): INST-0160

Method Reference	Modified From	Analytical Method	Preparation Method
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BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
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Parameter

Mercury

085 - Hot Water Extractable Boron

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: ICP/OES

Preparation Method: EXTRACTION

Lab Method ID(s): INST-0140, SOIL-0270

Method Reference	Modified From	Analytical Method	Preparation Method
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SM 3120 B	Yes	Yes	No
SM 3125 B	Yes	Yes	No
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER 2008	Yes	Yes	No

Parameter

Boron

086 - Conductivity

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: CONDUCTIVITY METER

Preparation Method: EXTRACTION

Lab Method ID(s): INST-0120, SOIL-0140, SOIL-0260

Method Reference	Modified From	Analytical Method	Preparation Method
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METHODS OF SOIL ANALYSIS 15.2	Yes	Yes	No
SM 2510 B	Yes	Yes	No

Parameter

Conductivity (1:2 soil:water)
Conductivity (saturated paste)

088 - Flashpoint

Field of Accreditation: Environmental

Matrix: Solids [Ash, Soil]

Analytical Method: PENSKY-MARTENS CLOSED CUP

Preparation Method:
Lab Method ID(s): TO-2210

Method Reference	Modified From	Analytical Method	Preparation Method
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ASTM D93-02A	Yes	Yes	No
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Parameter

Flashpoint

091 - Hexavalent Chromium

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: SPECTROPHOTOMETRIC

Preparation Method: EXTRACTION

Lab Method ID(s): SOIL-0600

Method Reference	Modified From	Analytical Method	Preparation Method
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SSSA PART 3 CH 25	Yes	Yes	No
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Parameter

Parameter

Hexavalent Chromium

092 - BTEX**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:** LEACH**Lab Method ID(s):** TO-0050

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030B	Yes	Yes	No
EPA 8260B	No	Yes	No
IN-HOUSE	No	No	Yes

Parameter

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

093 - Percent Saturation**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** SATURATED PASTE**Lab Method ID(s):** SOIL-0140

Method Reference	Modified From	Analytical Method	Preparation Method
CURTIN, MILLER, SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2007	Yes	Yes	No

Parameter

Percent Saturation

099 - Volatile Organic Compounds (VOC)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TO-0330

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030C	Yes	Yes	No
EPA 8260D	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane

1,1,1-Trichloroethane

1,1,2,2-Tetrachloroethane

1,1,2-Trichloroethane

1,1-Dichloroethane

1,1-Dichloroethylene

1,2,4-Trichlorobenzene

1,2-Dichlorobenzene

1,2-Dichloroethane

1,2-Dichloropropane

1,3-Dichlorobenzene

1,4-Dichlorobenzene

2-Hexanone (Methyl butyl ketone, MBK)

Acetone (2-Propanone)

Benzene

Bromodichloromethane

Bromoform

Bromomethane

Carbon tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane (Ethyl chloride)

Chloroethene (Vinyl chloride)

Chloroform

Chloromethane (Methyl chloride)

cis-1,2-Dichloroethylene

cis-1,3-Dichloropropene

Dichloromethane

Ethylbenzene

Ethylene Dibromide

m,p-Xylene

Methyl ethyl ketone

Methyl isobutyl ketone (MIBK)

Parameter

Methyl t-butyl ether
o-Xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane

103 - Phosphate

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0410, INST-0530

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-P F	Yes	Yes	No

Parameter

Phosphate

105 - Sulphide

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** WATR-0100

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-S2- D	Yes	Yes	No

Parameter

Sulphide

107 - Turbidity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** NEPHELOMETRIC**Preparation Method:****Lab Method ID(s):** WATR-0500

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2130 B	Yes	Yes	No

Parameter

Turbidity

124 - Phenols

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0300

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 420.2	Yes	Yes	No

Parameter

Total Phenolics

125 - Volatile Organic Compounds (VOC)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TO-0330

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030C	Yes	Yes	No
EPA 8260D	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene

Parameter

1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane (Ethyl chloride)
Chloroform
Chloromethane (Methyl chloride)
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane
Ethylbenzene
Ethylene Dibromide
m,p-Xylene
Methyl ethyl ketone
Methyl isobutyl ketone (MIBK)
Methyl t-butyl ether
Methyl tert-butyl ether (MTBE)
o-Xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethene
Trichloroethylene
Trichlorofluoromethane
Vinyl chloride

129 - Dissolved Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:****Lab Method ID(s):** INST-0141, WATR-0200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3125	Yes	Yes	No

Parameter

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Chromium
Cobalt
Copper
Lead
Lithium
Manganese
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

132 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: GC/FID-PURGE AND TRAP

Preparation Method:

Lab Method ID(s): TO-0570

Method Reference

CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

F1: C6-C10

135 - pH

Field of Accreditation: Environmental

Matrix: Water

Analytical Method: PH METER

Preparation Method:

Lab Method ID(s): INST-0104

Method Reference

SM 4500-H+ B

Modified From

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

pH

136 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: GC/FID

Preparation Method: COLD SHAKE EXTRACTION

Lab Method ID(s): TO-0560

Method Reference

CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

F2: C10-C16

F3: C16-C34

F4: C34-C50

137 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: GRAVIMETRIC

Preparation Method: COLD SHAKE EXTRACTION

Lab Method ID(s): TO-0560

Method Reference

CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

F4: Gravimetric

143 - Total Metals

Field of Accreditation: Environmental

Matrix: Water

Analytical Method: ICP/OES

Preparation Method: DIGESTION

Lab Method ID(s): INST-0140, WATR-0200

Method Reference

SM 3120

Modified From

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

Aluminum

Antimony

Arsenic

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

Magnesium

Manganese

Molybdenum

Parameter

Nickel
Phosphorus
Potassium
Selenium
Silicon
Silver
Sodium
Strontium
Sulphur (Sulfur)
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

144 - Total Metals**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0141, WATR-0200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3125	Yes	Yes	No

Parameter

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silicon
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Tungsten
Uranium
Vanadium
Zinc
Zirconium

145 - Metals**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/MS**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0141, SOIL-390

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
EPA 3050B	Yes	Yes	No
SM 3125	Yes	Yes	No

Parameter

Antimony
Arsenic

Parameter

Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Mercury
Nickel
Strontium
Tin
Titanium
Uranium
Vanadium
Zinc

150 - Total Purgeable Hydrocarbons (TPH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** TO-0542

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No
EPA 5021A	Yes	Yes	No
EPA 8260	Yes	Yes	No

Parameter

F1: C6-C10
Total Purgeable Hydrocarbons (TPgH): (C5-C10)
VH: C6-C10

151 - Petroleum Hydrocarbons (PHC)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** TO-0543

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	Yes	Yes	No

Parameter

F1: C6-C10

152 - Volatile Organic Compounds (VOC)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** TO-0332

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021A	Yes	Yes	No
EPA 8260D	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene

Parameter

Chlorodibromomethane
 Chloroethane (Ethyl chloride)
 Chloroethene (Vinyl chloride)
 Chloroform
 Chloromethane (Methyl chloride)
 cis-1,2-Dichloroethylene
 cis-1,3-Dichloropropene
 Dichloromethane
 Ethylbenzene
 Ethylene Dibromide
 m,p-Xylene
 Methyl ethyl ketone
 Methyl isobutyl ketone (MIBK)
 Methyl t-butyl ether
 o-Xylene
 Styrene
 Tetrachloroethylene
 Toluene
 trans-1,2-Dichloroethylene
 trans-1,3-Dichloropropene
 Trichloroethylene
 Trichlorofluoromethane

153 - Volatile Organic Compounds (VOC)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** TO-0332

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021A	Yes	Yes	No
EPA 8260D	Yes	Yes	No

Parameter

1,1,1-Trichloroethane
 1,1,2-Trichloroethane
 1,1-Dichloroethane
 1,1-Dichloroethylene
 1,2,4-Trichlorobenzene
 1,2-Dibromoethane (Ethylene dibromide)
 1,2-Dichlorobenzene
 1,2-Dichloroethane
 1,2-Dichloropropane
 1,3-Dichlorobenzene
 1,4-Dichlorobenzene
 2-Hexanone (Methyl butyl ketone, MBK)
 Acetone (2-Propanone)
 Benzene
 Bromodichloromethane
 Bromoform
 Bromomethane
 Carbon tetrachloride
 Chlorobenzene
 Chlorodibromomethane
 Chloroethane (Ethyl chloride)
 Chloroform
 Chloromethane (Methyl chloride)
 cis-1,2-Dichloroethylene
 cis-1,3-Dichloropropene
 Dichloromethane
 Ethylbenzene
 Ethylene Dibromide
 m,p-Xylene
 Methyl ethyl ketone
 Methyl isobutyl ketone (MIBK)
 Methyl t-butyl ether
 o-Xylene
 Styrene
 Tetrachloroethylene
 Toluene
 trans-1,2-Dichloroethylene
 trans-1,3-Dichloropropene
 Trichloroethylene
 Trichlorofluoromethane
 Vinyl chloride

160 - Polychlorinated Biphenyls (PCB)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/ECD**Preparation Method:****Lab Method ID(s):** TO-0400

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8082	Yes	Yes	No

Parameter

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
Aroclor 1262
Aroclor 1268
Total PCB

161 - Glycols

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** TO-1410

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8015D	No	Yes	No

Parameter

Diethylene glycol
Ethylene glycol
Propylene glycol
Tetraethylene glycol
Triethylene glycol

162 - Glycols

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** TO-1410

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8015D	Yes	Yes	No

Parameter

Diethylene glycol
Ethylene glycol
Propylene glycol
Tetraethylene glycol
Triethylene glycol

165 - Alcohols

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** TO-1420

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8015C	No	Yes	No

Parameter

1-Butanol (n-Butanol)
1-Propanol (Propanol)
2-Butanol (sec-Butanol)
2-Methyl-1-propanol (Isobutanol)
2-Propanol (Isopropyl alcohol)
Ethanol
Methanol
Pentanol
tert-Butanol (2-Methyl-2-propanol)

166 - Alcohols

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** TO-1420

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8015C	No	Yes	No

Parameter

1-Butanol (n-Butanol)
1-Propanol (Propanol)
2-Butanol (sec-Butanol)
2-Methyl-1-propanol (Isobutanol)
2-Propanol (Isopropyl alcohol)
Allyl alcohol
Ethanol
Methanol
Pentanol
tert-Butanol (2-Methyl-2-propanol)

169 - Glyphosate

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** HPLC**Preparation Method:****Lab Method ID(s):** TO-1320

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Glyphosate

170 - Glyphosate

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** HPLC**Preparation Method:****Lab Method ID(s):** TO-1320

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Glyphosate

171 - Alkalinity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** TITRIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0101

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2320 B	Yes	Yes	No

Parameter

Alkalinity (pH 4.5)

172 - pH

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** TITRIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0101

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-H+	Yes	Yes	No

Parameter

pH

173 - Conductivity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** TITRIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0101

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2510	Yes	Yes	No

Parameter

Parameter

Conductivity (25C)

174 - Conductivity**Field of Accreditation:** Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** CONDUCTIVITY METER**Preparation Method:****Lab Method ID(s):** INST-0101, SOIL-0140

Method Reference	Modified From	Analytical Method	Preparation Method
METHODS OF SOIL ANALYSIS 15.2	Yes	Yes	No
SM 2510	Yes	Yes	No

Parameter

Conductivity (saturated paste)

177 - Chloride**Field of Accreditation:** Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0330, INST-0500

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-CL- E	Yes	Yes	No

Parameter

Chloride

179 - Metals**Field of Accreditation:** Environmental**Matrix:** Waste**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** INST-0140, SOIL-0420

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Parameter

Antimony
 Arsenic
 Barium
 Beryllium
 Boron
 Cadmium
 Chromium
 Cobalt
 Copper
 Iron
 Lead
 Mercury
 Nickel
 Selenium
 Silver
 Thallium
 Uranium
 Vanadium
 Zinc
 Zirconium

180 - Mercury**Field of Accreditation:** Environmental**Matrix:** Waste**Analytical Method:** COLD VAPOUR ATOMIC ABSORPTION (CVAA)**Preparation Method:** LEACH**Lab Method ID(s):** INST-0160, SOIL-0420

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
IN-HOUSE	No	No	Yes

Parameter

Mercury

181 - Free Liquid**Field of Accreditation:** Environmental**Matrix:** Waste [Liquid]**Analytical Method:** VISUAL**Preparation Method:** PAINT FILTER**Lab Method ID(s):** SOIL-0580

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 9095	Yes	Yes	No

Parameter
Free Liquids

182 - Metals

Field of Accreditation: Environmental

Matrix: Waste

Analytical Method: ICP/OES

Preparation Method: MODIFIED SWEP EXTRACTION

Lab Method ID(s): INST-0140, SOIL-0650

Method Reference	Modified From	Analytical Method	Preparation Method
SCHED 4, BC HAZARDOUS WASTE REGULATIONS	Yes	Yes	No
SM 3120 B	Yes	Yes	No

Parameter
Arsenic
Barium
Boron
Cadmium
Chromium
Copper
Lead
Mercury
Selenium
Silver
Uranium
Zinc

184 - Anions

Field of Accreditation: Environmental

Matrix: Waste

Analytical Method: ION CHROMATOGRAPHY (IC)

Preparation Method: MODIFIED SWEP EXTRACTION

Lab Method ID(s): INST-0150, SOIL-0650

Method Reference	Modified From	Analytical Method	Preparation Method
SCHED 4, BC HAZARDOUS WASTE REGULATIONS	Yes	Yes	No
SM 4110 B	Yes	Yes	No

Parameter
Fluoride
Nitrate (NO3)
Nitrite (NO2)

185 - Cyanide

Field of Accreditation: Environmental

Matrix: Waste

Analytical Method: COLORIMETRIC

Preparation Method: MODIFIED SWEP EXTRACTION

Lab Method ID(s): INST-0310, SOIL-0650

Method Reference	Modified From	Analytical Method	Preparation Method
SCHED 4, BC HAZARDOUS WASTE REGULATIONS	Yes	Yes	No

Parameter
Cyanide

186 - Oil and Grease

Field of Accreditation: Environmental

Matrix: Waste

Analytical Method: GRAVIMETRIC

Preparation Method:

Lab Method ID(s): TO-3500

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter
Total Oil and Grease

189 - Soluble Cations

Field of Accreditation: Environmental

Matrix: Solids [Soil]

Analytical Method: ICP/OES

Preparation Method: SATURATED PASTE

Lab Method ID(s): INST-0140, SOIL-0140

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SAMPLING & METHODS OF ANALYSIS CHAPTER 15	Yes	Yes	No
Parameter			
Boron			
Calcium			
Magnesium			
Potassium			
Sodium			
Sulphur (Sulfur)			

190 - Extractable Barium

Field of Accreditation: Environmental	Matrix: Solids [Soil]
Analytical Method: ICP/OES	Preparation Method: EXTRACTION
Lab Method ID(s): INST-0140, SOIL-0610	

Method Reference	Modified From	Analytical Method	Preparation Method
ALBERTA ENVIRONMENT SOIL QUALITY GUIDELINES	Yes	Yes	No
BC MOE LABORATORY MANUAL METHOD 9	Yes	Yes	No
SM 3120 B	Yes	Yes	No
Parameter			
Extractable Barium (0.1M CaCl ₂)			
Extractable Barium (1.0M CaCl ₂)			

194 - Sterilant Herbicides

Field of Accreditation: Environmental	Matrix: Water
Analytical Method: HPLC	Preparation Method:
Lab Method ID(s): TO-1315	

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No
Parameter			
Atrazine			
Bromacil			
Diuron			
Linuron			
Simazine			
Tebuthiuron			

195 - Sterilant Herbicides

Field of Accreditation: Environmental	Matrix: Solids [Sediment, Soil]
Analytical Method: HPLC	Preparation Method:
Lab Method ID(s): TO-1315	

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No
Parameter			
Atrazine			
Bromacil			
Diuron (DCPMU)			
Linuron			
Simazine			
Tebuthiuron			

196 - Total Barium

Field of Accreditation: Environmental	Matrix: Solids [Soil]
Analytical Method: ICP	Preparation Method: FUSION
Lab Method ID(s): INST-0140, SOIL-0620	

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4503	Yes	Yes	No
SM 3120 B	Yes	Yes	No
Parameter			
Total Barium			

197 - Phenols

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0300

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 420.2	Yes	Yes	No
EPA 600/4-79/20	Yes	Yes	No

Parameter

Total Phenolics

198 - Phenols

Field of Accreditation: Environmental**Matrix:** Water [Wastewater]**Analytical Method:** HPLC/UV**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-1200

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

2,3,4,5-Tetrachlorophenol
2,3,4,6-Tetrachlorophenol
2,3,4-Trichlorophenol
2,3,5,6-Tetrachlorophenol
2,3,5-Trichlorophenol
2,3,6-Trichlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,6-Dichlorophenol
2-Chlorophenol
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol, DNOC)
2-Methylphenol (o-Cresol)
2-Nitrophenol
3,4,5-Trichlorophenol
3-Methylphenol + 4-Methylphenol (m-Cresol + p-Cresol)
4-Chloro-3-methylphenol
4-Nitrophenol
Dinoseb
Pentachlorophenol
Phenol

199 - Phenols

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** HPLC/UV**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-1200

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8321B	Yes	Yes	No

Parameter

2,3,4,5-Tetrachlorophenol
2,3,4,6-Tetrachlorophenol
2,3,4-Trichlorophenol
2,3,5,6-Tetrachlorophenol
2,3,5-Trichlorophenol
2,3,6-Trichlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,6-Dichlorophenol
2-Chlorophenol
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol, DNOC)
2-Methylphenol (o-Cresol)
2-Nitrophenol
3,4,5-Trichlorophenol
3-Methylphenol + 4-Methylphenol (m-Cresol + p-Cresol)
4-Chloro-3-methylphenol
4-Nitrophenol
Dinoseb

Parameter

Pentachlorophenol
Phenol

202 - pH

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** PH METER**Preparation Method:** EXTRACTION**Lab Method ID(s):** INOR-401-0120, INST-0104, SOIL-0110, SOIL-0260**Method Reference**

SM 4500-H+

Modified From

Yes

Analytical Method

Yes

Preparation Method

No

SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION

Yes

Yes

No

Parameter

pH (1:1) soil:water
pH (1:2) soil:CaCl₂
pH (1:2) soil:water

206 - Mercury

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLD VAPOUR ATOMIC FLUORESCENCE
SPECTROSCOPY (CVAFS)**Preparation Method:** DIGESTION**Lab Method ID(s):** INST-0162**Method Reference**

EPA 1631

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

Mercury

208 - Coliforms

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** QUANTI-TRAY (COLILERT)**Preparation Method:****Lab Method ID(s):** MIC-0205**Method Reference**

SM 9223

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

Escherichia coli
Fecal (Thermotolerant) Coliforms
Total Coliforms

209 - Ethanolamines

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** HPLC**Preparation Method:****Lab Method ID(s):** TO-2240**Method Reference**

IN-HOUSE

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

Diethanolamine (DEA)
Diisopropanolamine (DIPA)
Monoethanolamine (MEA)
Monoisopropanolamine (MIPA)

210 - Ethanolamines

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** HPLC**Preparation Method:****Lab Method ID(s):** TO-2240**Method Reference**

IN-HOUSE

Modified From

No

Analytical Method

Yes

Preparation Method

No

Parameter

Diethanolamine (DEA)
Diisopropanolamine (DIPA)
Monoethanolamine (MEA)
Monoisopropanolamine (MIPA)

212 - Volatile Organic Acids

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:****Lab Method ID(s):** TO-2230

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Acetic acid
 Butyric acid
 Caproic Acid (Hexanoic Acid)
 Formic acid
 Isobutyric acid
 Isovaleric acid
 Propionic acid
 Valeric acid

213 - Available Nutrients**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** INST-0140, SOIL-0131, SOIL-0132

Method Reference	Modified From	Analytical Method	Preparation Method
RECOMMENDED METHODS FOR SOIL ANALYSIS, ALBERTA AGRICULTURE (RMSA) SM 3120 B	Yes No	Yes Yes	No No

Parameter

Potassium
 Sulphur (Sulfur)

214 - Available Nutrients**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0400, SOIL-0130

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 600/R-93/100	Yes	Yes	No
RECOMMENDED METHODS FOR SOIL ANALYSIS, ALBERTA AGRICULTURE (RMSA)	No	Yes	No

Parameter

Phosphate

224 - Sulphur**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** HPLC**Preparation Method:****Lab Method ID(s):** TO-3502

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Elemental Sulphur (Elemental Sulfur)

227 - Total Purgeable Hydrocarbons (TPH)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID-HEADSPACE**Preparation Method:****Lab Method ID(s):** TO-0543-HEADSPACE

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	Yes	Yes	No

Parameter

Total Purgable Hydrocarbons (TPgH): (C5-C10)
 VH: C6-C10

228 - BTEX**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:** LEACH**Lab Method ID(s):** TO-0050

Method Reference	Modified From	Analytical Method	Preparation Method
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Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021A	Yes	Yes	No
EPA 8260D	No	Yes	No
IN-HOUSE	No	No	Yes

Parameter

Benzene
Ethylbenzene
m,p-Xylene
o-Xylene
Toluene

229 - Phosphorus

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0530, WATR-0720

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-P F	No	Yes	No

Parameter

Total Dissolved Phosphorus
Total Phosphorus

231 - Total Kjeldahl Nitrogen (TKN)

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Sludge, Soil]**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0430, SOIL-0500

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 351.2	Yes	Yes	No

Parameter

Kjeldahl Nitrogen

232 - Bulk Density

Field of Accreditation: Environmental**Matrix:** Solids [Bulk, Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** SOIL-0220

Method Reference	Modified From	Analytical Method	Preparation Method
BLAKE, G.R., MSA BULK DENSITY, 1986	Yes	Yes	No

Parameter

Bulk Density

233 - Specific Gravity

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** MUD BALANCE**Preparation Method:****Lab Method ID(s):** SOIL-0230

Method Reference	Modified From	Analytical Method	Preparation Method
PROCEDURE FOR USING THE BAROID MUD BALANCE	No	Yes	No

Parameter

Specific Gravity

234 - Moisture

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** SOIL-310

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER 2008	Yes	Yes	No

Parameter

Percent Moisture

235 - Total Hexavalent Chromium

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** WATR-0300

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3500-CR	Yes	Yes	No

Parameter

Hexavalent Chromium

236 - Nitrate plus Nitrite

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Sludge, Soil]**Analytical Method:** AUTOMATED COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INST-0470, SOIL-0130, SOIL-0630

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 600	Yes	Yes	No
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER	No	Yes	No

Parameter

Nitrate plus Nitrite (NO3 + NO2)

Nitrite (NO2)

237 - Organic Matter

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Sludge, Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** COMBUSTION**Lab Method ID(s):** SOIL-0470

Method Reference	Modified From	Analytical Method	Preparation Method
LOSS ON IGNITION METHOD, 1996	Yes	Yes	No
SSSA	Yes	Yes	No

Parameter

Organic Matter

238 - Residual Chlorine

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** IODOMETRIC TITRATION**Preparation Method:****Lab Method ID(s):** WATR-0700

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-CL	Yes	Yes	No

Parameter

Total Chlorine

239 - Naphthenic Acids

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** FTIR**Preparation Method:** EXTRACTION**Lab Method ID(s):** TO-2220

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Naphthenic Acids

240 - Sulfolane

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS**Preparation Method:****Lab Method ID(s):** TO-3501

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Sulfolane

241 - Sulfolane

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS**Preparation Method:****Lab Method ID(s):** TO-3501

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	Yes	No

Parameter

Sulfolane

242 - Atterberg Plasticity Index**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** LIQUID LIMIT DEVICE**Preparation Method:****Lab Method ID(s):** SOIL-0655

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4318-10E1	Yes	Yes	No

Parameter

Liquid Limit

Plastic Limit

Plasticity Index

243 - Colour**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC-UV/VISIBLE**Preparation Method:****Lab Method ID(s):** WATR-0710

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2120 C	No	Yes	No

Parameter

Apparent Colour

True Colour

244 - Hydraulic Conductivity**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** FALLING HEAD**Preparation Method:****Lab Method ID(s):** SOIL-0660

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SCIENCE SOCIETY OF AMERICA	Yes	Yes	No

Parameter

Hydraulic Conductivity

245 - Amines[Access Lab](#)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** HPLC/MS**Preparation Method:****Lab Method ID(s):** TO-4003

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8321	Yes	Yes	No

Parameter

Diethanolamine (DEA)

Diisopropanolamine (DIPA)

MDEA (Methyldiethanolamine)

Monoethanolamine (MEA)

Triethanolamine (TEA)

246 - Amines[Access Lab](#)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** HPLC/MS**Preparation Method:****Lab Method ID(s):** TO-4003

Method Reference	Modified From	Analytical Method	Preparation Method
ALBERTA ENVIRONMENT GUIDELINES FOR MEA AND DEA APP. C DEC 2010	Yes	Yes	No
EPA 8321	Yes	Yes	No

Parameter

Diethanolamine (DEA)

Diisopropanolamine (DIPA)

MDEA (Methyldiethanolamine)

Monoethanolamine (MEA)

Triethanolamine (TEA)

251 - Sulfolane[Access Lab](#)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** HPLC/MS**Preparation Method:****Lab Method ID(s):** TO-4005

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8321	Yes	Yes	No

Parameter
Sulfolane

252 - Sulfolane

[Access Lab](#)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** HPLC/MS**Preparation Method:****Lab Method ID(s):** TO-4005

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 8321	Yes	Yes	No

Parameter
Sulfolane

255 - Available Nitrate and Nitrite

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Sludge, Soil]**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:****Lab Method ID(s):** INST-0150, SOIL-0630

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No
SOIL SAMPLING & METHOD OF ANALYSIS, CHAPTER 15, SECTION 15.2.1	No	Yes	Yes

Parameter
Available Nitrate

256 - Volatile Organic Compounds (VOC)

Field of Accreditation: Environmental**Matrix:** Air [Soil Vapour]**Analytical Method:** GC/MS-THERMAL DESORPTION**Preparation Method:****Lab Method ID(s):** TO-4006

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION H	Yes	Yes	No
EPA TO-17	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene (1,1-Dichloroethylene)
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2:3,4-Diepoxybutane
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide)
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Butadiene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
1-Chlorobutane
1-Chlorohexane
2,2-Dichloropropane
2-Butanone (Methyl ethyl ketone, MEK)
2-Chlorotoluene
2-Nitropropane
4-Chlorotoluene (p-Chlorotoluene)
4-Isopropyltoluene (p-Cymene)

Parameter

4-Methyl-2-pentanone (MIBK)
 Acetone (2-Propanone)
 Acetonitrile
 Acrylonitrile
 Allyl chloride (3-chloropropene)
 Benzene
 Benzyl chloride (a-Chlorotoluene)
 Bromobenzene
 Bromochloromethane
 Bromoform
 Bromomethane
 Butylbenzene (n-Butylbenzene)
 Carbon disulfide
 Carbon tetrachloride
 Chlorobenzene
 Chlorodibromomethane
 Chlorodibromomethane
 Chloroethane (Ethyl chloride)
 Chloroform
 Chloromethane (Methyl chloride)
 cis-1,3-Dichloropropene
 cis-1,4-Dichloro-2-butene
 Decane (n-Decane)
 Dibromofluoromethane
 Dibromomethane
 Dichlorodifluoromethane (CFC-12, Freon 12)
 Dichloromethane
 Dodecane (n-Dodecane)
 Epichlorohydrin
 Ethyl acetate
 Ethyl ether
 Ethyl methacrylate (Ethyl-2-Methyl-2-Propenoate)
 Ethylbenzene
 Hexachlorobutadiene (1,1,2,3,4,4-Hexachloro-1,3-butadiene)
 Hexachloroethane
 Hexane (n-Hexane)
 Isobutanol (2-Methyl-1-propanol)
 Isopropylbenzene (Cumene)
 m,p-Xylene
 Methacrylonitrile
 Methyl acrylate
 Methyl methacrylate
 Methyl tert-butyl ether (MTBE)
 Methylcyclohexane
 Naphthalene
 Nitrobenzene
 n-Propylbenzene
 n-Tridecane
 o-Xylene
 p-Dioxane
 Pentachloroethane
 Pentafluorobenzene
 Propionitrile
 Pyridine
 sec-Butylbenzene ((1-Methylpropyl)benzene)
 Styrene
 tert-Butylbenzene
 Tetrachloroethene
 Toluene
 trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
 trans-1,3-Dichloropropene
 trans-1,4-Dichloro-2-butene
 Trichloroethene
 Trichlorofluoromethane
 Vinyl chloride
 Volatile Hydrocarbons (VH): C6-C13

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† "OSDWA" indicates the appendix is used for the analysis of Ontario drinking water samples, which is subject to the rules and related regulations under the Ontario "Safe Drinking Water Act" (2002).

The list of tests and measurement capabilities for which a laboratory is accredited can change at any time due to circumstances such as scope extensions, voluntary withdrawal of tests by the laboratory and suspension. Scopes are published by the CALA via the Internet at http://www.cala.ca/cala_directories.html

Canadian Association for Laboratory Accreditation Inc.

Certificate of Accreditation



AGAT Laboratories - Edmonton
AGAT Laboratories Ltd.
6310 Roper Road
Edmonton, Alberta

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Accreditation No.: A3775
Issued On: January 19, 2021
Accreditation Date: October 19, 2011
Expiry Date: July 20, 2023


President & CEO



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CALA Scope of Accreditation

Laboratory Name: AGAT Laboratories (Edmonton)**Client ID:** 1003775**Parent Institution:** AGAT Laboratories Ltd.**Address:** 6310 Roper Road, Edmonton, Alberta, T6B 3P9**Contact:** Ms. Amie Weymes**Email:** weymes@agatlabs.com; jroberts@agatlabs.com;
vhill@agatlabs.com; vhill@agatlabs.com**Phone:** (780) 469-0106**Fax:** (780) 468-2887**Standard:** Conforms with requirements of ISO/IEC 17025:2017**Clients Served:** All Interested Parties**Revised On:** 02/22/2023**Valid To:** 07/03/2025

001 - Anions

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:** EXTRACTION**Lab Method ID(s):** INOR-171-6002, INOR-171-6200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	No	Yes	No
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER	No	Yes	No

ParameterChloride
Fluoride
Nitrate-N
Nitrite (NO₂)
Sulphate

002 - Boron

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP**Preparation Method:** HOT WATER EXTRACTION**Lab Method ID(s):** INOR-171-6005, INOR-171-6201

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	No	Yes	No
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER	No	Yes	No

Parameter

Boron

004 - Conductivity

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** CONDUCTIVITY METER**Preparation Method:****Lab Method ID(s):** INOR-171-6002, INOR-171-6208

Method Reference	Modified From	Analytical Method	Preparation Method
CURTIN, 2007 EC SOLUBLE IONS PG 161-171 SM 2510	No	Yes	No
MILLER, J.M.	No	Yes	No

ParameterConductivity (1:2 soil:water)
Conductivity (saturated paste)

005 - Extractable Barium

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/OES**Preparation Method:** EXTRACTION**Lab Method ID(s):** INOR-171-6007, INOR-171-6201

Method Reference	Modified From	Analytical Method	Preparation Method
ALBERTA ENVIRONMENT SOIL QUALITY GUIDELINES 6.2.2	Yes	Yes	No

ParameterExtractable Barium (0.1M CaCl₂)

006 - Hexavalent Chromium

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:** EXTRACTION**Lab Method ID(s):** INOR-171-6215

Method Reference	Modified From	Analytical Method	Preparation Method
SSSA PART 2 BY REISENAUER	Yes	Yes	No

Parameter

Hexavalent Chromium

008 - Metals**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/MS**Preparation Method:** DIGESTION**Lab Method ID(s):** INOR-171-6006, INOR-171-6202

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	Yes	Yes	No
EPA 3050B	Yes	Yes	No
SM 3125	Yes	Yes	No

Parameter

Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Manganese
Mercury
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Zinc
Zirconium

009 - Organic Carbon**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** CHEMICAL OXIDATION UV/VISIBLE**Preparation Method:****Lab Method ID(s):** INOR-171-6216

Method Reference	Modified From	Analytical Method	Preparation Method
MSA PART 3 CH. 34	Yes	Yes	No

Parameter

Organic Carbon
Total Organic Carbon (TOC)

010 - Particle Size Analysis (PSA)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** HYDROMETER**Preparation Method:****Lab Method ID(s):** INOR-171-6010

Method Reference	Modified From	Analytical Method	Preparation Method
JONES J. 2001 LAB GUIDE FOR CONDUCTING SOIL TEST & PLANT ANALYSIS	No	Yes	No

Parameter

Percent Clay
Percent Sand
Percent Silt

011 - Particle Size Analysis (PSA)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** SIEVE**Lab Method ID(s):** INOR-171-6009**Method Reference**

SHELDRIK, B.H. & WANG, C., ♦ PARTICLE SIZE DISTRIBUTION IN SOIL ♦ SAMPLING & METHODS OF ANALYSIS

Modified From

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

Particle Size (75um)

012 - Percent Saturation**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** SATURATED PASTE**Lab Method ID(s):** INOR-171-6000, INOR-171-6002, INOR-401-0120**Method Reference**

SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION

Modified From

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

Percent Saturation

014 - pH**Field of Accreditation:** Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** ION SELECTIVE ELECTRODE (ISE)**Preparation Method:****Lab Method ID(s):** INOR-171-6002, INOR-171-6205**Method Reference**

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Modified From

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

pH (1:2) soil:CaCl₂

016 - Total Barium**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP**Preparation Method:** FUSION**Lab Method ID(s):** INOR-171-6008, INOR-171-6201**Method Reference**

ASTM D4503

Yes

Analytical Method

Yes

Preparation Method

No

SM 3120 B

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

Total Barium

017 - Free Liquid**Field of Accreditation:** Environmental**Matrix:** Solids**Analytical Method:** VISUAL**Preparation Method:** PAINT FILTER**Lab Method ID(s):** INOR-171-6012**Method Reference**

EPA 9095

Yes

Analytical Method

Yes

Preparation Method

No

Parameter

Free Liquids

018 - Metals**Field of Accreditation:** Environmental**Matrix:** Solids**Analytical Method:** ICP/OES**Preparation Method:** LEACH**Lab Method ID(s):** INOR-171-6011, INOR-171-6201**Method Reference****Modified From****Analytical Method****Preparation Method**

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	No	Yes

Parameter

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Uranium
Vanadium
Zinc
Zirconium

019 - Oil and Grease

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** FTIR**Preparation Method:** EXTRACTION**Lab Method ID(s):** ORG-170-5200

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 1664	Yes	Yes	No
SM 5520 C	Yes	Yes	No

Parameter

Total Oil and Grease

021 - BTEX

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS**Preparation Method:** LEACH**Lab Method ID(s):** ORG-170-5100, ORG-170-5430, ORG-170-5440

Method Reference	Modified From	Analytical Method	Preparation Method
IN-HOUSE	No	No	Yes

Parameter

Benzene
Ethylbenzene
m,p-Xylene
o-Xylene
Toluene

022 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID**Preparation Method:** COLD SHAKE EXTRACTION**Lab Method ID(s):** ORG-170-5120, ORG-170-5300

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

F2: C10-C16
F3: C16-C34
F4: C34-C50

023 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:** COLD SHAKE EXTRACTION**Lab Method ID(s):** ORG-170-5120

Method Reference	Modified From	Analytical Method	Preparation Method
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Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

F4: Gravimetric

024 - Petroleum Hydrocarbons (PHC)**Field of Accreditation:** Environmental **Matrix:** Solids [Soil]**Analytical Method:** GC/FID-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** ORG-170-5140, ORG-170-5430

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

F1: C6-C10

Total Purgable Hydrocarbons (TPgH): (C5-C10)

025 - Polycyclic Aromatic Hydrocarbons (PAH) and Alkylated Polycyclic Aromatic Hydrocarbons (PAH)**Field of Accreditation:** Environmental **Matrix:** Solids [Soil]**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):** ORG-170-5420

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3540C	Yes	Yes	No
EPA 3570	Yes	Yes	No
EPA 8270E	Yes	Yes	No

Parameter

1-Methylnaphthalene

2-Methylnaphthalene

Acenaphthene

Acenaphthylene

Acridine

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(e)pyrene

Benzo(g,h,i)perylene

Benzo(k)fluoranthene

Biphenyl (1,1-Biphenyl)

C1-Acenaphthenes

C1-Benz(a)anthracenes/Chrysenes

C1-Benzofluoranthenes/Benzopyrenes

C1-Biphenyls

C1-Dibenzothiophenes

C1-Fluoranthenes/Pyrenes

C1-Fluorenes

C1-Phenanthrenes/Anthracenes

C2-Benz(a)anthracenes/Chrysenes

C2-Benzofluoranthenes/Benzopyrenes

C2-Biphenyls

C2-Dibenzothiophenes

C2-Fluoranthenes/Pyrenes

C2-Fluorenes

C2-Naphthalenes

C2-Phenanthrenes/Anthracenes

C3-Dibenzothiophenes

C3-Fluoranthenes/Pyrenes

C3-Fluorenes

C3-Naphthalenes

C3-Phenanthrenes/Anthracenes

C4-Dibenzothiophenes

C4-Fluoranthenes/Pyrenes

C4-Naphthalenes

C4-Phenanthrenes/Anthracenes

Chrysene

Dibenzo(a,h)anthracene

Dibenzothiophene

Fluoranthene

Fluorene

Parameter

Indeno(1,2,3 - cd)pyrene
Naphthalene
Perylene
Phenanthrene
Pyrene
Quinoline
Retene

026 - Total Extractable Hydrocarbons (TEH)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** ORG-170-5120, ORG-170-5300

Method Reference	Modified From	Analytical Method	Preparation Method
AEC V92-G108	Yes	Yes	No
BC MOE LABORATORY MANUAL SECTION D	Yes	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19
Extractable Petroleum Hydrocarbons (EPH): C19-C32
SASK (C11-C22)
SASK (C23-C60)
Total Extractable Hydrocarbons (TEH): C10-C32
Total Extractable Hydrocarbons (TEH): C11-C30

027 - Volatile Organic Compounds (VOC)**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:** EXTRACTION**Lab Method ID(s):** ORG-170-5170, ORG-170-5400

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030C	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane (Ethyl chloride)
Chloroethene (Vinyl chloride)
Chloroform
Chloromethane (Methyl chloride)
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichloromethane
Ethylbenzene
Ethylene Dibromide
m,p-Xylene
Methyl ethyl ketone
Methyl isobutyl ketone (MIBK)
Methyl t-butyl ether
o-Xylene
Styrene

Parameter

Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane

028 - Volatile Organic Compounds (VOC)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** ORG-170-5160, ORG-170-5410

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021A	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane (Ethyl chloride)
Chloroethene (Vinyl chloride)
Chloroform
Chloromethane (Methyl chloride)
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichloromethane
Ethylbenzene
Ethylene Dibromide
m,p-Xylene
Methyl ethyl ketone
Methyl isobutyl ketone (MIBK)
Methyl t-butyl ether
o-Xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane

029 - Flashpoint

Field of Accreditation: Environmental**Matrix:** Solids [Ash, Soil]**Analytical Method:** PENSKY-MARTENS CLOSED CUP**Preparation Method:****Lab Method ID(s):** ORG-170-5210

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D93	Yes	Yes	No

Parameter

Flashpoint

030 - Alkalinity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** TITRIMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6205

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2320 B	Yes	Yes	No

Parameter

Alkalinity (pH 4.5)

031 - Ammonia

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6211

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-NH3 G	Yes	Yes	No

Parameter

Ammonia

032 - Anions

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:****Lab Method ID(s):** INOR-171-6200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No

Parameter

Bromide

Chloride

Fluoride

Nitrate

Nitrite

Phosphate

Sulfate

034 - Chemical Oxygen Demand (COD)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6210

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 410.4	Yes	Yes	No

Parameter

COD

035 - Conductivity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION SELECTIVE ELECTRODE (ISE)**Preparation Method:****Lab Method ID(s):** INOR-171-6205

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2510 B	Yes	Yes	No

Parameter

Conductivity (25C)

037 - Dissolved Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** INOR-171-6100, INOR-171-6201

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Parameter

Parameter

Aluminum
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Nickel
Phosphorus
Potassium
Silicon
Sodium
Strontium
Sulphur (Sulfur)
Titanium
Tungsten
Zinc
Zirconium

038 - Dissolved Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:****Lab Method ID(s):** INOR-171-6100, INOR-171-6202

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3125	Yes	Yes	No

Parameter

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Manganese
Molybdenum
Nickel
Phosphorus
Selenium
Silver
Strontium
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Zinc

039 - Mercury

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLD VAPOUR ATOMIC ABSORPTION (CVAA)**Preparation Method:****Lab Method ID(s):** INOR-171-6204

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3112 B	Yes	Yes	No

Parameter
Mercury

040 - pH

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** PH METER**Preparation Method:****Lab Method ID(s):** INOR-171-6205

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-H+	Yes	Yes	No

Parameter
pH

042 - Solids

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6102, INOR-171-6104

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2540 C	No	Yes	No
SM 2540 D	No	Yes	No

Parameter
Total Dissolved Solids
Total Suspended Solids

043 - Total Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/OES**Preparation Method:** DIGESTION**Lab Method ID(s):** INOR-171-6100, INOR-171-6201

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Parameter
Aluminum
Barium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Silicon
Silver
Sodium
Strontium
Sulphur (Sulfur)
Tin
Tungsten
Uranium
Vanadium
Zinc
Zirconium

044 - Total Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:** DIGESTION**Lab Method ID(s):** INOR-171-6100, INOR-171-6202

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3030 E	Yes	Yes	No
SM 3125	Yes	Yes	No

Parameter

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Manganese
Mercury
Molybdenum
Nickel
Phosphorus
Selenium
Silver
Strontium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Zinc
Zirconium

045 - Turbidity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** NEPHELOMETRIC**Preparation Method:****Lab Method ID(s):** NOR-171-6101

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2130 B	No	Yes	No

Parameter

Turbidity

046 - Oil and Grease

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** FTIR**Preparation Method:** EXTRACTION**Lab Method ID(s):** RG-170-5200

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5520 C	Yes	Yes	No

Parameter

Total Oil and Grease

048 - Polycyclic Aromatic Hydrocarbons (PAH) and Alkylated Polycyclic Aromatic Hydrocarbons (PAH)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):** RG-170-5421

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3510B	Yes	Yes	No
EPA 3511	Yes	Yes	No
EPA 8270E	Yes	Yes	No

Parameter

1-Methylnaphthalene
2-Methylnaphthalene
Acenaphthene
Acenaphthylene
Acridine
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(e)pyrene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Biphenyl (1,1-Biphenyl)
C1-Acenaphthenes
C1-Benz(a)anthracenes/Chrysenes
C1-Benzofluoranthenes/Benzopyrenes
C1-Biphenyls
C1-Dibenzothiophenes
C1-Fluoranthenes/Pyrenes
C1-Fluorenes
C1-Phenanthrenes/Anthracenes
C2-Benz(a)anthracenes/Chrysenes
C2-Benzofluoranthenes/Benzopyrenes
C2-Biphenyls
C2-Dibenzothiophenes
C2-Fluoranthenes/Pyrenes
C2-Fluorenes
C2-Naphthalenes
C2-Phenanthrenes/Anthracenes
C3-Benz(a)anthracenes/Chrysenes
C3-Dibenzothiophenes
C3-Naphthalenes
C3-Phenanthrenes/Anthracenes
C4-Benzanthracenes/Chrysenes
C4-Dibenzothiophenes
C4-Naphthalenes
C4-Phenanthrenes/Anthracenes
Chrysene
Dibenzo(a,h)anthracene
Dibenzothiophene
Fluoranthene
Fluorene
Indeno(1,2,3 - cd)pyrene
Naphthalene
Perylene
Phenanthrene
Pyrene
Quinoline
Retene

049 - Total Extractable Hydrocarbons (TEH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** ORG-170-5120, ORG-170-5300

Method Reference	Modified From	Analytical Method	Preparation Method
AEC V92-M2	Yes	Yes	No
BC MOE LABORATORY MANUAL SECTION D	Yes	Yes	No
EPA 3510	Yes	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19
Extractable Petroleum Hydrocarbons (EPH): C19-C32
F2: C10-C16
Hydrocarbons: C11-C30
SASK (C11-C22)
SASK (C23-C60)

Parameter

Total Extractable Hydrocarbons (TEH): C10-C32

050 - Total Petroleum Hydrocarbons (TPH)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/FID-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** ORG-170-5140, ORG-170-5430

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030B	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

F1: C6-C10

Total Purgable Hydrocarbons (TPgH): (C5-C10)

051 - Volatile Organic Compounds (VOC)**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** ORG-170-5170, ORG-170-5400

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030C	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane (Ethyl chloride)
Chloroform
Chloromethane (Methyl chloride)
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane
Ethylbenzene
Ethylene Dibromide
m,p-Xylene
Methyl ethyl ketone
Methyl isobutyl ketone (MIBK)
Methyl t-butyl ether
Methyl tert-butyl ether (MTBE)
o-Xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane
Vinyl chloride

052 - Volatile Organic Compounds (VOC)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS-HEADSPACE**Preparation Method:****Lab Method ID(s):** ORG-170-5160, ORG-170-5410

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021A	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,4-Trichlorobenzene
1,2-Dibromomethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Hexanone (Methyl butyl ketone, MBK)
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane (Ethyl chloride)
Chloroform
Chloromethane (Methyl chloride)
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichloromethane
Ethylbenzene
Ethylene Dibromide
m,p-Xylene
Methyl ethyl ketone
Methyl isobutyl ketone (MIBK)
Methyl t-butyl ether
o-Xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane
Vinyl chloride

053 - Microtox

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** BIOLUMINESCENCE**Preparation Method:****Lab Method ID(s):** TOX-171-7100

Method Reference	Modified From	Analytical Method	Preparation Method
EPS 1/RM/24	No	Yes	No

Parameter

Microtox IC50 (15 min)

056 - Cations

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** ICP/OES**Preparation Method:** SATURATED PASTE**Lab Method ID(s):** INOR-171-6002, INOR-171-6201

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3120 B	Yes	Yes	No

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SAMPLING & METHODS OF ANALYSIS CHAPTER 15	Yes	Yes	No

Parameter

Boron
Calcium
Magnesium
Potassium
Sodium
Sulphur (Sulfur)

057 - Chloride

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6002, INOR-171-6212

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-CL- E	Yes	Yes	No

Parameter

Chloride

058 - pH

Field of Accreditation: Environmental**Matrix:** Solids [Sediment, Soil]**Analytical Method:** PH METER**Preparation Method:****Lab Method ID(s):** INOR-171-6207

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION	Yes	Yes	No

Parameter

pH (1:1) soil:water
pH (1:2) soil:CaCl2
pH (1:2) soil:water
pH (saturated paste)

059 - Petroleum Hydrocarbons (PHC)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID-HEADSPACE**Preparation Method:****Lab Method ID(s):** ORG-170-5110, ORG-170-5440

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION D	Yes	Yes	No
EPA 5021A	Yes	Yes	No
EPA 8260C	Yes	Yes	No

Parameter

F1: C6-C10
Total Purgable Hydrocarbons (TPgH): (C5-C10)
VH: C6-C10

060 - Flashpoint

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** PENSKY-MARTENS CLOSED CUP**Preparation Method:****Lab Method ID(s):** HC-320-22000

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D93	Yes	Yes	No

Parameter

Flashpoint

061 - Elemental Sulphur

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** X-RAY FLUORESCENCE (XRF)**Preparation Method:****Lab Method ID(s):** HC-320-22001

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4294	No	Yes	No

Parameter

Parameter

Elemental Sulphur (Elemental Sulfur)

062 - Viscosity

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** VISCOMETER**Preparation Method:****Lab Method ID(s):** HC-320-22002

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D7042	No	Yes	No

Parameter

Dynamic Viscosity

Kinematic Viscosity

063 - Pour Point

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** POUR POINT ANALYZER**Preparation Method:****Lab Method ID(s):** HC-320-22003

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D5853	No	Yes	No
ASTM D97	No	Yes	No

Parameter

Pour Point

064 - Cloud Point

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** CLOUD POINT ANALYZER**Preparation Method:****Lab Method ID(s):** HC-320-22004

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D2500	No	Yes	No

Parameter

Cloud Point

065 - Density and API

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** DIGITAL DENSITY ANALYZER**Preparation Method:****Lab Method ID(s):** HC-320-22005

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4052	Yes	Yes	No
ASTM D5002	Yes	Yes	No

Parameter

API Gravity

Density

066 - Colour

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** VISUAL EXAMINATION**Preparation Method:****Lab Method ID(s):** HC-320-22006

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D1500	No	Yes	No

Parameter

Colour

067 - Micro Carbon Residue

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** MICRO METHOD**Preparation Method:****Lab Method ID(s):** HC-320-22007

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4530	No	Yes	No

Parameter Micro Carbon Residue			
068 - Salt		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: ELECTROMETRIC		Preparation Method:	
Lab Method ID(s): HC-320-22008			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D3230	No	Yes	No
Parameter Salt Content			
069 - Sediment		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: MEMBRANE FILTRATION		Preparation Method:	
Lab Method ID(s): HC-320-22009			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4807	Yes	Yes	No
Parameter Total Solids (TS)			
070 - Basic Sediment and Water (BSW)		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: CENTRIFUGE		Preparation Method:	
Lab Method ID(s): HC-320-22010			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4007	Yes	Yes	No
Parameter Sediment Water			
071 - Atmospheric Distillation		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: THERMOMETER		Preparation Method: DISTILLATION	
Lab Method ID(s): HC-320-22011			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D86	No	Yes	No
Parameter Atmospheric Distillation			
072 - Total Acid Number		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: POTENTIOMETRIC TITRATION		Preparation Method:	
Lab Method ID(s): HC-320-22012			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D664	Yes	Yes	No
Parameter Total Acid Number			
073 - True Vapour Pressure		Petroleum Lab	
Field of Accreditation: Environmental		Matrix: Oil	
Analytical Method: VAPOUR PRESSURE ANALYZER		Preparation Method:	
Lab Method ID(s): HC-320-22013			
Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D6377	No	Yes	No
Parameter Vapour Pressure			

074 - Simulated Distillation

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** GAS CHROMATOGRAPHY**Preparation Method:****Lab Method ID(s):** HC-320-22014

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D7169	Yes	Yes	No

Parameter

Crude oil-Boiling Point Fractions

075 - Volatile Organic Phosphorus

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** HC-320-22015

Method Reference	Modified From	Analytical Method	Preparation Method
CCQTA	No	Yes	No

Parameter

Phosphorus in crude oil 250 degrees C cut

076 - Metals

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** ICP/OES**Preparation Method:****Lab Method ID(s):** HC-320-22017

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D5708 A	No	Yes	No

ParameterAluminum
Barium
Boron
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Silicon
Silver
Sodium
Tin
Titanium
Vanadium
Zinc

078 - Sulphur Compounds

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** GC/SCD**Preparation Method:****Lab Method ID(s):** HC-320-22019

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM 5504	Yes	Yes	No
ASTM D5623	Yes	Yes	No

ParameterButyl mercaptan (1-Butanethiol)
Carbon sulfide
Cobalt Sulfide
Diethyl disulfide
Dimethyl disulfide
Ethyl mercaptan (Ethanethiol)
Ethyl methyl sulfide
Ethyl sulfide (Diethyl sulfide)

Parameter

Hydrogen Sulfide (H₂S)
 Isobutyl mercaptan (2-Methyl-1-propanethiol)
 Isopropyl mercaptan (2-Propanethiol)
 Methyl mercaptan (Methanethiol)
 Methyl sulfide
 Propyl mercaptan (1-Propanethiol)
 sec-Butyl mercaptan (2-Butanethiol)
 tert-Butyl mercaptan (2-Methyl-2-propanethiol)
 tert-Butyl methyl mercaptan
 Thiophene

079 - Total Mercury

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** ATOMIC ABSORPTION SPECTROSCOPY (AAS)-
THERMAL DECOMPOSITION**Preparation Method:****Lab Method ID(s):** HC-320-22021

Method Reference	Modified From	Analytical Method	Preparation Method
UOP 938	Yes	Yes	No

Parameter

Total Mercury

080 - Organic Chlorides

Petroleum Lab

Field of Accreditation: Environmental**Matrix:** Oil**Analytical Method:** POTENTIOMETRIC TITRATION**Preparation Method:****Lab Method ID(s):** HC-320-22023

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4929 A	Yes	Yes	No

Parameter

Chloride from 204 degrees cut of crude oil

081 - Total Extractable Hydrocarbons (TEH)

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Solids**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** MO-0300

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	No	Yes	No
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19
 Extractable Petroleum Hydrocarbons (EPH): C19-C32
 F2: C10-C16
 F3: C16-C34
 F4: C34-C50
 Total Extractable Hydrocarbons (TEH): C10-C32

082 - Total Petroleum Hydrocarbons (TPH)

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID-HEADSPACE**Preparation Method:****Lab Method ID(s):** MO-0500

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	No	Yes	No
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

F1: C6-C10
 Total Purgable Hydrocarbons (TPgH): (C5-C10)
 VH: C6-C10

083 - BTEX

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Solids**Analytical Method:** GC/PID-HEADSPACE**Preparation Method:****Lab Method ID(s):** MO-0500

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8021B	Yes	Yes	No

Parameter

Benzene
Ethylbenzene
m,p-Xylene
o-Xylene
Toluene

084 - Total Purgeable Hydrocarbons (TPH)

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID-HEADSPACE**Preparation Method:****Lab Method ID(s):** MO-0500

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No

Parameter

F1: C6-C10
Total Purgable Hydrocarbons (TPgH): (C5-C10)
VH: C6-C10

085 - Total Extractable Hydrocarbons (TEH)

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:** EXTRACTION**Lab Method ID(s):** MO-0300

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL	Yes	Yes	No

Parameter

Extractable Petroleum Hydrocarbons (EPH): C10-C19
Extractable Petroleum Hydrocarbons (EPH): C19-C32
F2: C10-C16
F3: C16-C34
F4: C34-C50
Total Extractable Hydrocarbons (TEH): C10-C32

086 - BTEX

Mobile Lab

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/PID-HEADSPACE**Preparation Method:****Lab Method ID(s):** MO-0500

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8021B	Yes	Yes	No

Parameter

Benzene
Ethylbenzene
m,p-Xylene
o-Xylene
Toluene

091 - Alcohols**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** ORG-170-5442

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8015C	Yes	Yes	No

Parameter

1-Butanol (n-Butanol)

Parameter

1-Propanol (Propanol)
 2-Butanol (sec-Butanol)
 2-Methyl-1-propanol (Isobutanol)
 2-Propanol (Isopropyl alcohol)
 Ethanol
 Methanol
 Pentanol
 tert-Butanol (2-Methyl-2-propanol)

094 - Alcohols**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:****Lab Method ID(s):** ORG-170-5442

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5021	Yes	Yes	No
EPA 8015C	Yes	Yes	No

Parameter

1-Butanol (n-Butanol)
 1-Propanol (Propanol)
 2-Butanol (sec-Butanol)
 2-Methyl-1-propanol (Isobutanol)
 2-Propanol (Isopropyl alcohol)
 Ethanol
 Methanol
 Pentanol
 tert-Butanol (2-Methyl-2-propanol)

097 - Hexavalent Chromium**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6219

Method Reference	Modified From	Analytical Method	Preparation Method
SM 3500-CR B	Yes	Yes	No

Parameter

Hexavalent Chromium

099 - Reid Vapor Pressure

Petroleum Lab

Field of Accreditation: Petroleum**Matrix:** Fuel**Analytical Method:** VAPOUR PRESSURE ANALYZER**Preparation Method:****Lab Method ID(s):** HC-320-22026

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D323	No	Yes	No

Parameter

Reid Vapor Pressure

100 - Vapor Pressure

Petroleum Lab

Field of Accreditation: Petroleum**Matrix:** Fuel**Analytical Method:** VAPOUR PRESSURE ANALYZER**Preparation Method:****Lab Method ID(s):** HC-320-22025

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4953	No	Yes	No
ASTM D5191	No	Yes	No

Parameter

Dry Vapor Pressure

101 - Sediment

Petroleum Lab

Field of Accreditation: Petroleum**Matrix:** Oil**Analytical Method:** GRAVIMETRIC**Preparation Method:** EXTRACTION**Lab Method ID(s):** HC-320-22027

Method Reference	Modified From	Analytical Method	Preparation Method
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Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D473	Yes	Yes	No

Parameter
Sediment

103 - Bulk Density

Field of Accreditation: Environmental	Matrix: Solids [Bulk, Soil]
Analytical Method: GRAVIMETRIC	Preparation Method:
Lab Method ID(s): INOR-171-6004	

Method Reference	Modified From	Analytical Method	Preparation Method
BLAKE, G.R., MSA BULK DENSITY, 1986	No	Yes	No

Parameter
Bulk Density

104 - Specific Gravity

Field of Accreditation: Environmental	Matrix: Solids [Soil]
Analytical Method: MUD BALANCE	Preparation Method:
Lab Method ID(s): INOR-171-6003	

Method Reference	Modified From	Analytical Method	Preparation Method
PROCEDURE FOR USING BAROID MUD BALANCE	No	Yes	No

Parameter
Specific Gravity

105 - Moisture

Field of Accreditation: Environmental	Matrix: Solids
Analytical Method: GRAVIMETRIC	Preparation Method:
Lab Method ID(s): LAB-175-4002	

Method Reference	Modified From	Analytical Method	Preparation Method
SOIL SAMPLING & METHODS OF ANALYSIS, CARTER 2008	No	Yes	No

Parameter
Percent Moisture

106 - Sulphide

Field of Accreditation: Environmental	Matrix: Water
Analytical Method: COLORIMETRIC	Preparation Method:
Lab Method ID(s): INOR-171-6222	

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-S2-	No	Yes	No

Parameter
Sulphide

107 - Atterberg Plasticity Index

Field of Accreditation: Environmental	Matrix: Solids [Soil]
Analytical Method: LIQUID LIMIT DEVICE	Preparation Method:
Lab Method ID(s): INOR-171-6218	

Method Reference	Modified From	Analytical Method	Preparation Method
D4318 STANDARD TEST METHOD FOR LIQUID PLASTICITY INDEX OF SOILS METHOD B	Yes	Yes	No

Parameter
Liquid Limit
Plastic Limit
Plasticity Index

108 - Ammonia Nitrogen

Field of Accreditation: Environmental	Matrix: Solids [Soil]
Analytical Method: COLORIMETRIC	Preparation Method:
Lab Method ID(s): INOR-171-6211	

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-NH3 G	Yes	Yes	No

Parameter

Ammonia-N

109 - Total Purgeable Hydrocarbons (TPH)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID-HEADSPACE**Preparation Method:****Lab Method ID(s):** ORG-170-5110, ORG-170-5440

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION D	Yes	Yes	No
EPA 5021A	Yes	Yes	No
EPA 8260	No	Yes	No

Parameter

F1: C6-C10

Total Purgable Hydrocarbons (TPgH): (C5-C10)

VH: C6-C10

110 - Polycyclic Aromatic Hydrocarbons (PAH)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):** MO-0200

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3510B	Yes	Yes	No
EPA 3511	Yes	Yes	No
EPA 8270E	Yes	Yes	No

Parameter

1-Methylnaphthalene

2-Methylnaphthalene

Acenaphthene

Acenaphthylene

Acridine

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(e)pyrene

Benzo(g,h,i)perylene

Benzo(k)fluoranthene

Chrysene

Dibenzo(a,h)anthracene

Fluoranthene

Fluorene

Indeno(1,2,3 - cd)pyrene

Naphthalene

Perylene

Phenanthrene

Pyrene

Quinoline

111 - Polycyclic Aromatic Hydrocarbons (PAH)

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS**Preparation Method:** EXTRACTION**Lab Method ID(s):**

Method Reference	Modified From	Analytical Method	Preparation Method
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Parameter

1-Methylnaphthalene

2-Methylnaphthalene

Acenaphthene

Acenaphthylene

Acridine

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Parameter

Benzo(e)pyrene
 Benzo(g,h,i)perylene
 Benzo(k)fluoranthene
 Chrysene
 Dibenzo(a,h)anthracene
 Fluoranthene
 Fluorene
 Indeno(1,2,3 - cd)pyrene
 Naphthalene
 Perylene
 Phenanthrene
 Pyrene
 Quinoline

112 - Organic Chloride Content**Field of Accreditation:** Environmental**Matrix:** Oil**Analytical Method:** COULOMETRIC TITRATION**Preparation Method:** COMBUSTION**Lab Method ID(s):** HC-320-22030

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D4929 B	No	Yes	No

Parameter

Organic Chloride Content

113 - Total Residual Chlorine**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:****Lab Method ID(s):** INOR-171-6221

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 330.5	Yes	Yes	No
SM 4500-CL- G	Yes	Yes	No

Parameter

Total Chlorine

114 - pH**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** PH METER**Preparation Method:****Lab Method ID(s):** INOR-171-6207

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500 H+	No	Yes	No

Parameter

pH

115 - Conductivity**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** CONDUCTIVITY METER**Preparation Method:****Lab Method ID(s):** INOR-171-6208

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2510 B	No	Yes	No

Parameter

Conductivity

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116 - Metals**Field of Accreditation:** Environmental**Matrix:** Solids**Analytical Method:** ICP/OES**Preparation Method:** ACID DIGESTION**Lab Method ID(s):** INOR-171-6201, INOR-171-6006

Method Reference	Modified From	Analytical Method	Preparation Method
BC MOE LABORATORY MANUAL SECTION C	No	Yes	No
BC MOE LABORATORY MANUAL, SALM	No	No	Yes

Parameter

Parameter

Aluminum
Boron
Calcium
Iron
Magnesium
Manganese
Phosphorus
Potassium
Silicon
Sodium
Strontium
Sulphur (Sulfur)

† “OSDWA” indicates the appendix is used for the analysis of Ontario drinking water samples, which is subject to the rules and related regulations under the Ontario “Safe Drinking Water Act” (2002).

The list of tests and measurement capabilities for which a laboratory is accredited can change at any time due to circumstances such as scope extensions, voluntary withdrawal of tests by the laboratory and suspension. Scopes are published by the CALA via the Internet at http://www.cala.ca/cala_directories.html

Canadian Association for Laboratory Accreditation Inc.

Certificate of Accreditation

ALS Environmental (Calgary)
ALS Canada Ltd.
2559 - 29th Street NE
Calgary, Alberta



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Accreditation No.: 1002601
Issued On: 4/25/2022
Accreditation Date: 1/3/2005
Expiry Date: 10/25/2024


Acting President and CEO



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CALA Scope of Accreditation

Laboratory Name: Taiga Environmental Laboratory**Client ID:** 1002635**Parent Institution:** Government of Northwest Territories (GNWT)**Address:** P.O. Box 1320, 4601 - 52nd Avenue, Yellowknife, Northwest Territories, X1A 2L9**Contact:** Mr. Bruce Stuart**Email:** bruce_stuart@gov.nt.ca; taiga@gov.nt.ca; glen_hudy@gov.nt.ca**Phone:** (867) 767-9235**Fax:** (867) 920-8740**Standard:** Conforms with requirements of ISO/IEC 17025:2017**Clients Served:** All Interested Parties**Revised On:** 08/17/2022**Valid To:** 03/27/2024

004 - Biochemical Oxygen Demand (BOD)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** DISSOLVED OXYGEN METER (DO)**Preparation Method:****Lab Method ID(s):** TEL019

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5210 A	Yes	Yes	No
SM 5210 B	Yes	Yes	No

Parameter

BOD (5 day)
CBOD (5 day)

011 - Solids

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** TEL008, TEL009

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2540 C	Yes	Yes	No
SM 2540 D	Yes	Yes	No

Parameter

Total Dissolved Solids
Total Suspended Solids

013 - Dissolved Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:****Lab Method ID(s):** TEL035

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 200.8	Yes	Yes	No

Parameter

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Cesium
Chromium
Cobalt
Copper
Gallium
Iron
Lead
Lithium
Magnesium
Manganese

Parameter

Molybdenum
 Nickel
 Phosphorus
 Potassium
 Rubidium
 Selenium
 Silicon
 Silver
 Sodium
 Strontium
 Sulphur (Sulfur)
 Tellurium
 Thallium
 Thorium
 Tin
 Titanium
 Tungsten
 Uranium
 Vanadium
 Zinc
 Zirconium

028 - Turbidity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** NEPHELOMETRIC**Preparation Method:****Lab Method ID(s):** TEL006

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2130 B	Yes	Yes	No

Parameter

Turbidity

029 - Carbon

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** INFRARED SPECTROSCOPY (IR)**Preparation Method:****Lab Method ID(s):** TEL033

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5310 B	Yes	Yes	No

Parameter

Organic Carbon

030 - Moisture

Field of Accreditation: Environmental**Matrix:** Solids [Soil]**Analytical Method:** GRAVIMETRIC**Preparation Method:****Lab Method ID(s):** TEL007

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

Percent Moisture

041 - Fecal (Thermotolerant) Coliforms

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** MEMBRANE FILTRATION (M-FC)**Preparation Method:****Lab Method ID(s):** TEL017

Method Reference	Modified From	Analytical Method	Preparation Method
SM 9222 D	Yes	Yes	No

Parameter

Fecal (Thermotolerant) Coliforms

042 - Cations

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:**

Lab Method ID(s): TEL055

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No

Parameter

Calcium
Magnesium
Potassium
Sodium

045 - Coliforms

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** QUANTI-TRAY (COLILERT)**Preparation Method:****Lab Method ID(s):** TEL053

Method Reference	Modified From	Analytical Method	Preparation Method
IDEXX QUANTI-TRAY	Yes	Yes	No

Parameter

Escherichia coli
Total Coliforms

054 - Total Metals

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ICP/MS**Preparation Method:****Lab Method ID(s):** TEL035

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 200.8	Yes	Yes	No

Parameter

Aluminum
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Cesium
Chromium
Cobalt
Copper
Gallium
Iron
Lead
Lithium
Magnesium
Manganese
Mercury
Molybdenum
Nickel
Phosphorus
Potassium
Rubidium
Selenium
Silicon
Silver
Sodium
Strontium
Sulphur (Sulfur)
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Zinc
Zirconium

055 - Fecal Streptococci

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** QUANTI-TRAY (COLILERT)**Preparation Method:****Lab Method ID(s):** TEL053

Method Reference	Modified From	Analytical Method	Preparation Method
IDEXX QUANTI-TRAY	Yes	Yes	No

Parameter

Fecal Streptococci

059 - Anions

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ION CHROMATOGRAPHY (IC)**Preparation Method:****Lab Method ID(s):** TEL055

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4110 B	Yes	Yes	No

Parameter

Chloride

Fluoride

Nitrate

Nitrite

Sulfate

060 - Oil and Grease

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GRAVIMETRIC**Preparation Method:** EXTRACTION**Lab Method ID(s):** TEL024: HEM

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 1664A (REVISION A)	Yes	Yes	No

Parameter

Total Oil and Grease

061 - Chemical Oxygen Demand (COD)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:** REFLUX**Lab Method ID(s):** TEL016

Method Reference	Modified From	Analytical Method	Preparation Method
SM 5220 D	Yes	Yes	No

Parameter

COD

063 - Colour

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** SPECTROPHOTOMETRIC**Preparation Method:****Lab Method ID(s):** TEL051

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2120 C	Yes	Yes	No

Parameter

Apparent Colour

True Colour

066 - Alkalinity

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** AUTOMATED TITRIMETRIC**Preparation Method:****Lab Method ID(s):** TEL060:PC TITRATE

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2320 A	Yes	Yes	No
SM 2320 B	Yes	Yes	No

Parameter

Parameter

Alkalinity (pH 4.5)

067 - pH**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** AUTOMATED PH METER**Preparation Method:****Lab Method ID(s):** TEL058:PC TITRATE

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-H+ A	Yes	Yes	No
SM 4500-H+ B	Yes	Yes	No

Parameter

pH

068 - Conductivity**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** AUTOMATED CONDUCTIVITY METER**Preparation Method:****Lab Method ID(s):** TEL059:PC TITRATE

Method Reference	Modified From	Analytical Method	Preparation Method
SM 2510 B	Yes	Yes	No

Parameter

Conductivity (25C)

070 - BTEX**Field of Accreditation:** Environmental**Matrix:** Water**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TEL037:BTEX

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 502.2	Yes	Yes	No
EPA 5030B	Yes	Yes	No
EPA 602	Yes	Yes	No

Parameter

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

072 - BTEX**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TEL038

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 502.2	Yes	Yes	No
EPA 5030B	Yes	Yes	No
EPA 602	Yes	Yes	No

Parameter

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

074 - Purgeable Hydrocarbons**Field of Accreditation:** Environmental**Matrix:** Solids [Soil]**Analytical Method:** GC/FID-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TEL056

Method Reference	Modified From	Analytical Method	Preparation Method
CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD	No	Yes	No

Parameter

F1: C6-C10 Withdrawn on 3/28/2022

077 - Trihalomethanes (THM)

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/MS-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TEL039:THM

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 502.2	Yes	Yes	No
EPA 5030B	Yes	Yes	No
EPA 602	Yes	Yes	No

Parameter

Bromodichloromethane
Bromoform
Chlorodibromomethane
Chloroform

080 - Mercury

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** ATOMIC FLUORESCENCE SPECTROSCOPY (AFS)**Preparation Method:****Lab Method ID(s):** TEL062

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 245.7	Yes	Yes	No

Parameter

Mercury

084 - Purgeable Hydrocarbons

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID-PURGE AND TRAP**Preparation Method:****Lab Method ID(s):** TEL044

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 5030	Yes	Yes	No
EPA 8000	Yes	Yes	No
EPA 8015	Yes	Yes	No
EPA 8260B	Yes	Yes	No

Parameter

Hydrocarbons: C6-C10

085 - Extractable Hydrocarbons

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** GC/FID**Preparation Method:** SOLID PHASE EXTRACTION (SPE)**Lab Method ID(s):** TEL067

Method Reference	Modified From	Analytical Method	Preparation Method
EPA 3510C	Yes	Yes	No
EPA 3630C	Yes	Yes	No
SM 6010	Yes	Yes	No

Parameter

Hydrocarbons: C10-C50

086 - Total and Dissolved Nitrogen

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** CHEMILUMINESCENCE-PYROLYSIS**Preparation Method:****Lab Method ID(s):** TEL066

Method Reference	Modified From	Analytical Method	Preparation Method
ASTM D5176-91	Yes	Yes	No
ISO 11905	Yes	Yes	No

Parameter

Dissolved Nitrogen
Total Nitrogen

087 - Phosphate

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** TEL069

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-P F	Yes	Yes	No

Parameter

Phosphate

088 - Total and Dissolved Phosphorus

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** TEL069

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-P F	Yes	Yes	No

Parameter

Dissolved Phosphorus

Total Phosphorus

089 - Ammonia Nitrogen

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** TEL068

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-NH3 G	Yes	Yes	No

Parameter

Ammonia

090 - Reactive Silica

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** TEL070

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-SI F	Yes	Yes	No

Parameter

Reactive Silica

093 - Chlorine

Field of Accreditation: Environmental**Matrix:** Water**Analytical Method:** COLORIMETRIC**Preparation Method:****Lab Method ID(s):** TEL049

Method Reference	Modified From	Analytical Method	Preparation Method
SM 4500-CL G	Yes	Yes	No

Parameter

Free Chlorine

Total Chlorine

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† "OSDWA" indicates the appendix is used for the analysis of Ontario drinking water samples, which is subject to the rules and related regulations under the Ontario "Safe Drinking Water Act" (2002).

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