



CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 3573

Laboratory Name: AGAT Laboratories (Grande Prairie)

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Standard: Conforms with requirements of ISO/IEC 17025

Clients Served: All Interested Parties

Revised On: September 4, 2018

Valid To: September 3, 2020

Scope of Accreditation

Soil (Inorganic)

Atterberg Limits and Plasticity Index - Soil (077)

GSL-0651; modified from ASTM D4318-10

LIQUID LIMIT MACHINE

Liquid Limit

Plastic Index

Plastic Limit

Solids (Inorganic)

Anions - Solids (058)

GIN-0150, GSL-0650; modified from SCHED 1-4, BC HAZARDOUS WASTE REGULATIONS

IC - EXTRACTION

Fluoride

Nitrate

Nitrite

Solids (Inorganic)

Anions - Solids [Soil] (048)

GIN-0150, GSL-0140; modified from MANUAL ON SOIL SAMPLING & METHODS OF ANALYSIS, MCKEAGUE

3.21 and SM 4110 B

IC - EXTRACTION

Bromide

Chloride

Fluoride

Nitrate

Nitrite

Sulphate

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Solids (Inorganic)

Boron - Solids [Soil] (033)

GIN-0140, GSL-0270; modified from EPA 3050B and SM 3120 B and SOIL SAMPLING & METHODS OF ANALYSIS, CARTER 2008

ICP/OES - EXTRACTION

Boron

Solids (Inorganic)

Cations - Solids [Soil] (064)

GSL-0140, GIN-0140; modified from MANUAL ON SOIL SAMPLING & METHODS OF ANALYSIS, MCKEAGUE 3.2

ICP/OES - EXTRACTION

Calcium

Magnesium

Potassium

Sodium

Soluble Boron

Solids (Inorganic)

Conductivity - Solids [Soil] (003)

GMM-0205/GSL-0140; modified from MANUAL ON SOIL SAMPLING & METHODS OF ANALYSIS, MCKEAGUE 3.2 and MANUAL ON SOIL SAMPLING & METHODS OF ANALYSIS, MCKEAGUE 4.13

CONDUCTIVITY METER

Conductivity

Solids (Inorganic)

Extractable Barium - Solids [Soil] (065)

GSL-0610, GIN-0140; modified from ALBERTA ENVIRONMENT SOIL QUALITY GUIDELINES and BC MOE LABORATORY MANUAL METHOD 9

ICP/OES - EXTRACTION

Extractable Barium -0.1M CaCl₂

Extractable Barium -1.0M CaCl₂

Solids (Inorganic)

Flashpoint - Solids [Ash, Soil] (001)

GTO-2210; modified from ASTM D93-02A

PENSKY MARTENS CLOSED CUP

Flashpoint

Solids (Inorganic)

Free Liquid - Solids [Soil] (055)

GSL-0580; modified from EPA 9095

PAINT FILTER TEST

Free Liquid

Solids (Inorganic)

Hexavalent Chromium - Solids [Soil] (047)

GSL-0600; modified from SM 3500 B and SSSA PART 3 CH 25

SPECTROPHOTOMETRY - EXTRACTION

Hexavalent chromium

Solids (Inorganic)

Leachable Metals - Solids (053)

GIN-0140, GSL-0420; IN-HOUSE (PREPARATION)

ICP/OES - EXTRACTION

Antimony

Arsenic

Barium

Beryllium

Boron

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Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Uranium
Vanadium
Zinc
Zirconium

Solids (Inorganic)

Leachable Metals - Solids (056)

GIN-0140, GSL-0650; modified from SCHED 1-4, BC HAZARDOUS WASTE REGULATIONS
ICP/OES - EXTRACTION

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

Solids (Inorganic)

Mercury - Solids [Soil] (035)

GIN-0161, GSL-0390; modified from EPA 3050B and SM 3112 B
COLD VAPOUR AA

Mercury

Solids (Inorganic)

Metals - Solids [Soil] (066)

GIN-0141, GSL-0390; modified from EPA 3050B and SM 3125 B
ICP/MS - DIGESTION

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Manganese
Mercury

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Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc

Solids (Inorganic)

Oil and Grease - Solids [Soil] (006)
GMM-0330; modified from SM 5520 D
SOXHLET EXTRACTION - GRAVIMETRIC
Oil and Grease

Solids (Inorganic)

Oil and Grease - Solids [Soil] (060)
GMM-3500; modified from BC MOE LABORATORY MANUAL SECTION D
GRAVIMETRIC - SWOG
Oil and Grease

Solids (Inorganic)

Particle Size Analysis (PSA) - Solids [Soil] (049)
GSL-0540; modified from SHELDRIK, B.H. & WANG, C, CARTER MO ED. 2007
SIEVE ANALYSIS
Particle Size (75 microns)

Solids (Inorganic)

Particle Size Analysis (PSA) - Solids [Soil] (050)
GSL-0520; modified from SHELDRIK, B.H. & WANG, C, CARTER MO ED. 2007
HYDROMETER (2 PT.)
% clay
% Sand
Silt

Solids (Inorganic)

Percent Moisture - Solids [Soil] (074)
GSL-0310; modified from SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION
GRAVIMETRIC
Moisture %

Solids (Inorganic)

Percent Saturation - Solids [Soil] (073)
GSL-0140; modified from SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION
GRAVIMETRIC
% Saturation (Sat Paste)

Solids (Inorganic)

pH - Solids [Soil] (061)
GIN-0110, GIN-0111; modified from SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND ED.
pH METER
pH (Saturated Paste)
pH-1:1 Soil:Water

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Solids (Inorganic)

pH - Solids [Soil] (071)

GIN-0111; SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND EDITION

pH METER - Extraction

pH (1:2) Soil: CaCl₂

Solids (Inorganic)

Specific Gravity - Solids [Soil] (072)

GSL-0230; modified from ASTM D4380, G50 and BAROID MUD BALANCE and DRILLING WASTE MANAGEMENT

MUD BALANCE

Specific Gravity (Sat Paste)

Solids (Inorganic)

Total Barium - Solids [Sediment, Sludge, Soil] (075)

GSL-0620, GIN-0140; modified from ASTM D4503-08

LITHIUM METABORITE FUSION ICP/OES

Barium

Solids (Organic)

BTEX - Solids [Soil] (037)

GTO-0570; modified from EPA 5030B (ANALYSIS) and EPA 8260B (ANALYSIS) and IN-HOUSE (PREPARATION)

GC/MS - PURGE AND TRAP/EXTRACTION

Benzene

Ethylbenzene

m/p-xylene

o-xylene

Styrene

Toluene

Solids (Organic)

BTEX - Solids [Soil] (039)

GTO-0050; modified from EPA 5030B (ANALYSIS) and EPA 8260B (ANALYSIS) and IN-HOUSE (PREPARATION)

GC/MS - PURGE AND TRAP

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (036)

GTO-0570; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - EXTRACTION/PURGE AND TRAP

F1: C6-C10

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (038)

GTO-0560; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

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Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (052)

GTO-0560; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD
GRAVIMETRIC ANALYSIS

F4: Gravimetric

Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Solids [Soil] (043)

GTO-0500; modified from EPA 3540C and EPA 8270D
GC/MS - EXTRACTION

Acenaphthene

Acenaphthylene

Anthracene

Benzo (a) anthracene

Benzo (a) pyrene

Benzo (b) fluoranthene

Benzo (g,h,i) perylene

Benzo (k) fluoranthene

Chrysene

Dibenzo (a,h) anthracene

Fluoranthene

Fluorene

Indeno (1,2,3 - cd) pyrene

Naphthalene

Phenanthrene

Pyrene

Solids (Organic)

Total Extractable Hydrocarbons (TEH) - Solids [Soil] (045)

GTO-0510; modified from AEC V92-M2 and BC MOE CONTAMINATED SITES REGULATION (CSR) MOE-BC
PBM D-156 and EPA CH. 4

GC/FID - EXTRACTION

C10-32

C11-C30

Heavy Extractable Petroleum Hydrocarbons (HEPH): C19-C32

Light Extractable Petroleum Hydrocarbons (LEPH): C10-C19

Water (Inorganic)

Alkalinity - Water (014)

GIN-0100; modified from SM 2320 B
TITRATION

Alkalinity (pH 4.5)

Water (Inorganic)

Ammonia - Water (062)

GIN-0200; modified from SM 4500-NH3
COLORIMETRIC

Ammonia

Water (Inorganic)

Anions - Water (028)

GIN-0150; modified from SM 4110 B
ION CHROMATOGRAPHY

Bromide

Chloride

Fluoride

Nitrate

Nitrite

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Sulfate

Water (Inorganic)

Chemical Oxygen Demand (COD) - Water (024)

GIN-0280; modified from EPA 410.4

SPECTROPHOTOMETRIC

COD

Water (Inorganic)

Conductivity - Water (016)

GMM-0205; modified from SM 2510

CONDUCTIVITY METER

Conductivity (25°C)

Water (Inorganic)

Dissolved Metals - Water (029)

GIN-0140, GWT-0200; modified from SM 3120 B

ICP/OES

Aluminum

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Silicon

Silver

Sodium

Strontium

Sulfur

Tin

Titanium

Tungsten

Vanadium

Zinc

Zirconium

Water (Inorganic)

Dissolved Metals - Water (067)

GIN-0141, GWT-0200; modified from SM 3125 B

ICP/MS

Antimony

Arsenic

Barium

Beryllium

Boron

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Cadmium
Chromium
Cobalt
Copper
Lead
Lithium
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc

Water (Inorganic)

Mercury - Water (034)
GIN-0160; modified from SM 3112 B
COLD VAPOUR AA
Mercury

Water (Inorganic)

Oil and Grease - Water (027)
GMM-0330; modified from BC MOE LABORATORY MANUAL SECTION D
LIQUID - LIQUID EXTRACTION - GRAVIMETRIC
Total Oil and Grease

Water (Inorganic)

pH - Water (020)
GIN-0100; modified from SM 4500-H+ B
pH METER
pH

Water (Inorganic)

Solids - Water (021)
GWT-0610/GWT-0600; modified from SM 2540 C and SM 2540 D
GRAVIMETRIC
Total Dissolved Solids
Total Suspended Solids

Water (Inorganic)

Total Metals - Water (040)
GIN-0140, GWT-0200; modified from SM 3120 B
ICP/OES - DIGESTION
Aluminum
Barium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium

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Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Silicon
Silver
Sodium
Strontium
Sulphur
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

Water (Inorganic)

Total Metals - Water (068)

GIN-0141, GWT-0200; modified from SM 3030 E and SM 3125 B

ICP/MS - DIGESTION

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

Water (Inorganic)

Turbidity - Water (022)

GWT-0500; modified from SM 2130 B

NEPHELOMETRY

Turbidity

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Water (Organic)

Extractable Hydrocarbons - Water (076)
GTO-0511; modified from AEC V92-M2 and EPA 3510
GC/FID
F3: C16-C34
F4: C34-C50

Water (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Water (041)
GTO-0200; modified from EPA 3510B and EPA 8270D
GC/MS - EXTRACTION
Acenaphthene
Acenaphthylene
Anthracene
Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene
Benzo (k) fluoranthene
Chrysene
Dibenzo (a,h) anthracene
Fluoranthene
Fluorene
Indeno (1,2,3 - cd) pyrene
Naphthalene
Phenanthrene
Pyrene

Water (Organic)

Total Extractable Hydrocarbons (TEH) - Water (044)
GTO-0511; modified from AEC V92-M2 and EPA 3510 and MOE-BC PBM D-128
GC/FID
C11-C30
F2: C10-C16
Heavy Extractable Petroleum Hydrocarbons (HEPH): C19-C32
Light Extractable Petroleum Hydrocarbons (LEPH): C10-C19

Water (Organic)

Total Purgeable Hydrocarbons (TPH) - Water (046)
GTO-0540; modified from EPA 5030B and EPA 8260B
GC/FID - PURGE AND TRAP
F1: C6-C10
TPGH (C5-C10)

Water (Organic)

Volatile Organic Compounds (VOC) - Water (042)
GTO-0540; modified from EPA 5030C and EPA 8260B and MOE-BC PBM D-74
GC/MS - PURGE AND TRAP
Benzene
Ethylbenzene
m/p-xylene
o-xylene
Styrene
Toluene

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Water (Toxicology)

Microtox - Water (025)

GTX-0100; modified from AEUB GUIDE 50 and EPS 1/RM/24

BIOLUMINESCENCE

Microtox IC50 (15 min)

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