



CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 3573

Laboratory Name: AGAT Laboratories (Grande Prairie)

Parent Institution: AGAT Laboratories Ltd.

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Standard: Conforms with requirements of ISO/IEC 17025

Clients Served: All Interested Parties

Revised On: December 4, 2017

Valid To: October 14, 2018

Scope of Accreditation

Solids (Inorganic)

Anions - Soil (048)

GIN-0150, GSL-0140; modified from SM 4110 B and MCKEAGUE 3.21

IC - EXTRACTION

Bromide

Chloride

Fluoride

Nitrate

Nitrite

Sulphate

Solids (Inorganic)

Anions - Solid Waste (058)

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

IC - EXTRACTION

Fluoride

Nitrate

Nitrite

Solids (Inorganic)

Boron - Soil (033)

GIN-0140, GSL-0270; modified from SSMA Carter 2008 and SM 3120 B and SW 846-3050 B

ICP/OES - EXTRACTION

Boron

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Solids (Inorganic)

Cations - Soil (064)

GSL-0140, GIN-0140; modified from MCKEAGUE 3.2

ICP/OES - EXTRACTION

Calcium

Magnesium

Potassium

Sodium

Solids (Inorganic)

Conductivity - Soil (003)

GMM-0205/GSL-0140; modified from MCKEAGUE 4.13/3.2

CONDUCTIVITY METER

Conductivity

Solids (Inorganic)

Extractable Barium - Soil (065)

GSL-0610, GIN-0140; modified from AB SOIL QUALITY GUIDELINE/BC ME METHOD 9

ICP/OES - EXTRACTION

Extractable Barium -0.1M CaCl₂

Extractable Barium -1.0M CaCl₂

Solids (Inorganic)

Flashpoint - Soil (001)

GTO-2210; modified from ASTM D93-02A

PENSKY MARTENS CLOSED CUP

Flashpoint

Solids (Inorganic)

Free Liquid - Soil (055)

GSL-0580; modified from EPA SW-846 9095

PAINT FILTER TEST

Free Liquid

Solids (Inorganic)

Hexavalent Chromium - Soil (047)

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

SPECTROPHOTOMETRY - EXTRACTION

Hexavalent chromium

Solids (Inorganic)

Leachable Metals - Solid Waste (053)

GIN-0140, GSL-0420; IN-HOUSE LEACHATE

ICP/OES - EXTRACTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

Mercury

Nickel

Selenium

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Silver
Thallium
Uranium
Vanadium
Zinc
Zirconium

Solids (Inorganic)

Leachable Metals - Solid Waste (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 - Soil (035)

GIN-0161, GSL-0390; modified from SM 3112B and EPA SW-846 3050B
COLD VAPOUR AA

Mercury

Solids (Inorganic)

Metals - Soil (066)

GIN-0141, GSL-0390; modified from SM 3125 B and EPA SW-846 3050B
ICP/MS - DIGESTION

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Manganese
Mercury
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium

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Vanadium
Zinc

Solids (Inorganic)

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

Solids (Inorganic)

Oil and Grease - Soil (060)
GMM-3500; modified from METHOD D219, BC REGULATIONS
GRAVIMETRIC - SWOG
Oil and Grease

Solids (Inorganic)

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

Solids (Inorganic)

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

Solids (Inorganic)

Percent Moisture - Soil (074)
GSL-0310; modified from CARTER, ET AL - SOIL SAMPLING and METHOD ANALYSIS, 2ND EDITION
GRAVIMETRIC
Moisture %

Solids (Inorganic)

Percent Saturation - Soil (073)
GSL-0140; modified from CARTER, ET AL - SOIL SAMPLING and METHOD ANALYSIS, 2ND EDITION
GRAVIMETRIC
% Saturation (Sat Paste)

Solids (Inorganic)

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

Solids (Inorganic)

pH - Soil (071)
GIN-0111; CARTER, ET AL - SOIL SAMPLING AND METHOD ANALYSIS, 2ND EDITION
pH METER - Extraction
pH (1:2) Soil: CaCl₂

Solids (Inorganic)

Specific Gravity - Soil (072)
GSL-0230; modified from BAROID MUD BALANCE, ASTM D 4380, G50, and DRILLING WASTE
MANAGEMENT
MUD BALANCE
Specific Gravity (Sat Paste)

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Solids (Inorganic)

Total Barium - Soil, Sludge, Sediment (075)
GSL-0620, GIN-0140; modified from ASTM D4503-08
LITHIUM METABORITE FUSION ICP/OES
Barium

Solids (Organic)

BTEX - Soil (037)
GTO-0570; modified from EPA SW-846 5030B and EPA SW-846 8260B and IN-HOUSE LEACHATE
GC/MS - PURGE AND TRAP/EXTRACTION
Benzene
Ethylbenzene
m/p-xylene
o-xylene
Styrene
Toluene

Solids (Organic)

BTEX - Soil (Leachate) (039)
GTO-0050; IN-HOUSE LEACHATE / modified from 5030 B/8260 B (ANALYTISIS)
GC/MS - PURGE AND TRAP
Benzene
Ethylbenzene
m,p-Xylene
o-Xylene
Toluene

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (036)
GTO-0570; CCME TIER 1
GC/FID - EXTRACTION/PURGE AND TRAP
F1: C6-C10

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (038)
GTO-0560; modified from CCME TIER 1
GC/FID - EXTRACTION
F2: C10-C16
F3: C16-C34
F4: C34-C50

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (052)
GTO-0560; CCME TIER 1
GRAVIMETRIC ANALYSIS
F4: Gravimetric

Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Soil (043)
GTO-0500; modified from EPA SW-846 8270D and EPA SW-846 3540C
GC/MS - EXTRACTION
Acenaphthene
Acenaphthylene
Anthracene
Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene

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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) - Soil (045)

GTO-0510; modified from EPA SW-846 CH 4 and AECV92-M2 and MOE-BC PBM D-156 BCMOE CSR EPH IN SOLIDS BY GC/FID

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 (Parameter suspended on 12/4/2017)

Nitrate

Nitrite (Parameter suspended on 12/4/2017)

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)

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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
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Manganese
Molybdenum
Nickel
Selenium
Silver

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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 BCELM METHOD D-210
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, 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
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Silicon
Silver
Sodium
Strontium

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Sulphur
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

Water (Inorganic)

Total Metals - Water (068)

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

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

Water (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Water (041)

GTO-0200; modified from EPA SW-846 8270D and EPA SW-846 3510 B

GC/MS - EXTRACTION

Acenaphthene
Acenaphthylene
Anthracene
Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene
Benzo (k) fluoranthene
Chrysene

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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 EPA SW-846 3510 and AECV92-M2 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 SW-846 5030B and EPA SW-846 8260B

GC/FID - PURGE AND TRAP

F1: C6-C10

TPqH (C5-C10)

Water (Organic)

Volatile Organic Compounds (VOC) - Water (042)

GTO-0540; modified from EPA SW-846 8260B and EPA SW-846 5030C and MOE-BC PBM D-74

GC/MS - PURGE AND TRAP

Benzene

Ethylbenzene

m/p-xylene

o-xylene

Styrene

Toluene

Water (Toxicology)

Microtox - Liquid Phase - Water (025)

GTX-0100; modified from EPS 1/RM/24, AEUB DIRECTIVE G-50

BIOLUMINESCENCE

Microtox IC50 (15 min)

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