

CALA Directory of Laboratories

Membership Number: 2702

Laboratory Name: AGAT Laboratories (Calgary)

Parent Institution:

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Standard: Conforms with requirements of ISO/IEC 17025

Clients Served: All Interested Parties Revised On: August 2, 2018 Valid To: March 26, 2020

Scope of Accreditation

Oil (Organic)

Polychlorinated Biphenyls (PCB) - Oil (015)

TO-0420; modified from AEC M106.0 and ASTM D4059-00

GC/ECD - EXTRACTION

Arochlor 1016

Aroclor 1221

Aroclor 1232

Aroclor 1242

Aroclor 1248

Aroclor 1254

Aroclor 1260

Aroclor 1262

Aroclor 1268

Total PCB

Paint (Inorganic)

Lead - Paint (230)

PANT-0280; modified from AOAC 974.02 and SM 3120 B

ICP[']

Lead

Solids (Inorganic)

Ammonia - Solids [Soil] (050)

INOR-401-0120, INST-0340, INST-0420, SOIL-0110, SOIL-0630; modified from SM 4500-NH3 G

COLORÍMETRIC - EXTRACTION

Ammonia-N

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Solids (Inorganic)

Anions - Solids [Soil] (043)

INST-0150, SOIL-140; modified from SM 4110 B

IC - SATURATED PASTE EXTRACTION

Chloride

Nitrate-N

Nitrite

Sulphate

Solids (Inorganic)

Atterberg Plasticity Index - Solids [Soil] (242)

SOIL-0655: ASTM D4318-10E1

LIQUID LIMIT DEVICE

Liquid Limit

Plastic Limit

Plasticity Index

Solids (Inorganic)

Available Nutrients - Solids [Soil] (213)

SOIL-0131, SOIL-0132, INST-0140; RECOMMENDED METHODS FOR SOIL ANALYSIS, ALBERTA

AGRICULTURE (RMSA) and SM 3120 B

ICP/OES

Potassium

Sulphur

Solids (Inorganic)

Available Nutrients - Solids [Soil] (214)

SOIL-0130, INST-0400; EPA 600/R-93/100 and RECOMMENDED METHODS FOR SOIL ANALYSIS, ALBERTA AGRICULTURE (RMSA)

COLORIMETRIC

Phosphorus

Solids (Inorganic)

Boron - Solids [Soil] (085)

SOIL-270, INST-0140, INST-0141; modified from SM 3120 B and SM 3125 B and SOIL SAMPLING & METHODS OF ANALYSIS, CARTER 2008

ICP - HOT WATER EXTRACTION

Boron

Solids (Inorganic)

Bulk Density - Solids [Bulk, Soil] (232)

SOIL-0220; BLAKE, G.R., MSA BULK DENSITY, 1986

GRAVIMETRIC

Bulk Density

Solids (Inorganic)

Chloride - Solids [Sediment, Soil] (177)

INST-0330, INST-0500; modified from SM 4500-CL- E

AUTO COLOR

Chloride

Solids (Inorganic)

Conductivity - Solids [Sediment, Soil] (174)

INST-0101, SOIL-0260; SM 2510

CONDUCTIVITY METER

Conductivity

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Solids (Inorganic)

Conductivity - Solids [Soil] (086)

INST-0120, SOIL-0260; modified from SM 2510 B

CONDUCTIVITY METER - EXTRACTION

Conductivity (2:1)

Conductivity (saturated paste)

Solids (Inorganic)

Extractable Barium - Solids [Soil] (190)

SOIL-0610, INST-0140; modified from ALBERTA ENVIRONMENT SOIL QUALITY GUIDELINES and BC MOE LABORATORY MANUAL METHOD 9 and SM 3120 B

ICP/OES - EXTRACTION

Extractable Barium -0.1M CaCl2

Extractable Barium -1.0M CaCl2

Solids (Inorganic)

Flashpoint - Solids [Ash, Soil] (088) TO-2210: modified from ASTM D93-02A

PENSKY MARTENS CLOSED CUP TESTER

Flashpoint

Solids (Inorganic)

Hexavalent Chromium - Solids [Soil] (091)

SOIL-0600; modified from SSSA PART 3 CH 25

SPECTROPHOTOMETRIC - EXTRACTION

Hexavalent chromium

Solids (Inorganic)

Hydraulic Conductivity - Solids [Soil] (244)

SOIL-0660; modified from SOIL SCIENCE SOCIETY OF AMERICA

FALLING-HEAD METHOD

Hydraulic Conductivity

Solids (Inorganic)

Mercury - Solids [Soil] (024)

INST-0161, SOIL-390; modified from BC MOE LABORATORY MANUAL SECTION C and EPA 3050B and SM 3112 B

COLD VAPOUR AA - DIGESTION

Mercurv

Solids (Inorganic)

Metals - Solids [Soil] (026)

INST-0140, SOÎL-390; modified from BC MOE LABORATORY MANUAL SECTION C and EPA 3050B and SM 3120

ICP - DIGESTION

Aluminum

Arsenic

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

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Magnesium

Manganese

Molybdenum

Nickel

Phosphorus

Potassium

Selenium

Silicon

Silver

Sodium

Strontium

Sulphur

Thallium

Titanium

Tungsten

Vanadium

Zinc

Zirconium

Solids (Inorganic)

Metals - Solids [Soil] (145)

INST-0141, SOIL-390; modified from BC MOE LABORATORY MANUAL SECTION C and EPA 3050A and SM 3125

ICP/MS - DIGESTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Lead

Manganese

Mercury

Nickel

Strontium

Tin

Titanium

Uranium

Vanadium

Zinc

Solids (Inorganic)

Moisture - Solids [Soil] (234)

SOIL-310; SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2008

GRAVIMETRIC

Moisture Content

Solids (Inorganic)

Nitrate plus Nitrite - Solids [Sediment, Sludge, Soil] (236) INST-0470, SOIL-0130, SOIL-0630; modified from EPA 600

AUTO COLOR

Nitrate plus Nitrite

Nitrite

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Oil and Grease - Solids [Soil] (047)
TO-2200; modified from EPA 821-R-98-002 METHOD 1664
       FTIR - EXTRACTION
       Oil and Grease
Solids (Inorganic)
Organic Carbon - Solids [Soil] (049)
INOR-401-0120, SOIL-110, SOIL-480; modified from MSA PART 3 CH. 34
       WALKLEY-BLACK WET OXID.
       Organic Carbon
       Organic Matter
Solids (Inorganic)
Organic Matter - Solids [Sediment, Sludge, Soil] (237)
SOIL-0470; modified from LOSS ON IGNITION METHOD, 1996 and SSSA
       LOSS ON IGNITION
       Organic Matter
Solids (Inorganic)
Particle Size Analysis (PSA) - Solids [Soil] (058)
SOIL-520; modified from JONES J. 2001 LAB GUIDE FOR CONDUCTING SOIL TEST & PLANT ANALYSIS
       HYDROMETER (2 PT.)
       % clay
       % Sand
       % silt texture
Solids (Inorganic)
Particle Size Analysis (PSA) - Solids [Soil] (059)
SOIL-540; modified from SHELDRICK, B.H. & WANG, C, CARTER MO ED. 2007
       GRAVIMETRIC - SIEVE
       Particle Size
Solids (Inorganic)
Percent Saturation - Solids [Soil] (093)
SOIL-0140; modified from CURTIN, MILLER, SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2007
       GRAVIMETRIC - SATURATED PASTE
       Percent Saturation (Saturated Paste)
Solids (Inorganic)
pH - Solids [Soil] (046)
INOR-401-0120, INST-0104, SOIL-0110, SOIL-0140; modified from SM 4500-H+
       PH METER
       Hq
       pH (2:1)
       pH (Saturated Paste)
Solids (Inorganic)
pH - Solids [Soil] (202)
SOIL-0260; modified from SM 4500-H+ and SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2ND
EDITION
       pH METER - EXTRACTION
       pH (1:2) Soil: CaCl2
Solids (Inorganic)
Phenols - Solids [Soil] (197)
INST-0300; modified from EPA 420.2 and EPA 600/4-79-20
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Solids (Inorganic)

AUTO COLOR Total Phenolics

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Solids (Inorganic)

Soluble Cations - Solids [Soil] (189)

INST-0140, SOIL-0140; modified from SM 3120 B and SOIL SAMPLING & METHODS OF ANALYSIS CHAPTER 15

ICP/OES - SATURATED PASTE EXTRACTION

Boron

Calcium

Magnesium

Potassium

Sodium

Sulphur

Solids (Inorganic)

Specific Gravity - Solids [Soil] (233)

SOIL-0230: PROCEDURE FOR USING THE BAROID MUD BALANCE

MUD BALANCE

Specific Gravity

Solids (Inorganic)

Sulphur - Solids [Soil] (224)

TO-3502; IN-HOUSE

HPLC

Elemental Sulfur

Solids (Inorganic)

Total Barium - Solids [Soil] (196)

INST-0140, SOIL-0620; modified from ASTM D4503 and SM 3120 B

ICP - FUSION

Total Barium

Solids (Inorganic)

Total Kjeldahl Nitrogen (TKN) - Solids [Sediment, Sludge, Soil] (231)

INST-0430, INST-0520, SOIL-0500; modified from EPA 351.2

COLORIMETRIC

Kjeldahl Nitrogen

Solids (Microbiology)

Heterotrophic Plate Count (HPC) - Solids [Soil] (055)

MIC-0300, MIC-0400; modified from SM 9215 C and SOIL SAMPLING & METHODS OF ANALYSIS CH.27 SPREAD PLATE

Heterotrophic Plate Count (HPC)

Solids (Organic)

Alcohols - Solids [Sediment, Soil] (165)

TO-1420; EPA 5021 and EPA 8015B

ĠC/FID

1-Butanol

2-Butanol

Ethanol

Isobutanol

Isopropanol

Methanol

Pentanol

Propanol

tert-Butyl alcohol

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Solids (Organic)

Amines - Solids [Soil] (141)

TO-1400; IN-HOUSE

GC/FID - EXTRACTION

Diethanolamine

Diethylethanolamine

Diisopropanolamine

Ethanolamine

Methyl diethanolamine

Monoisopropylamine

Sulfolane

Solids (Organic)

Base Neutral Extractables - Solids [Sediment, Soil] (200)

TO1500; modified from EPA 8270D

GC/MS

1,2-Dichlorobenzene

1.2.3-Trichlorobenzene

1,2,3,4-Tetrachlorobenzene (1,2,3,4-TCB)

1.2.3.5-Tetrachlorobenzene

1,2,4-Trichlorobenzene

1,2,4,5-Tetrachlorobenzene (1,2,4,5-TCB)

1,3-Dichlorobenzene

1.3.5-Trichlorobenzene

1.4-Dichlorobenzene

Hexachlorobenzene

Hexachlorobutadiene

Hexachlorocyclopentadiene

Hexachloroethane

Pentachlorobenzene

Solids (Organic)

BTEX - Solids [Soil] (092)

TO-0050; EPA 5030B (ANALYSIS) and EPA 8260B (ANALYSIS) and IN-HOUSE (PREPARATION)

GC/MS - LEACHATE

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

Solids (Organic)

BTEX - Solids [Soil] (228)

TO-0050; EPA 5030B (ANALYSIS) and EPA 8260B (ANALYSIS) and IN-HOUSE (PREPARATION)

GC/MS - LEACHATE

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

Solids (Organic)

Ethanolamines - Solids [Soil] (209)

TO-2240; IN-HOUSE

HPLC

Diethanolamine

Diisopropanolamine

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Monoethanolamine (MEA)
Monoisopropanolamine
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Solids (Organic)

Glycols - Solids [Sediment, Soil] (161)

TO-1410; EPA 3570 and EPA 8015D and NIOSH 5523

ĠC/FID

Diethylene glycol

Ethlyene Glycol

Propylene glycol

Tetraethylene glycol

Triethylene glycol

Solids (Organic)

Glyphosate - Solids [Sediment, Soil] (170)

TO-1320; IN-HOUSE

HPLC

Glyphosate

Solids (Organic)

Nitroaromatics and Nitramines and Nitrate Esters - Solids [Sediment, Soil] (203)

TO-1100, TO-2100; EPA 8330

HPLC

1,3-Dinitrobenzene (1,3-DNB)

1,3,5-Trinitrobenzene (1,3,5-TNB)

2-A-4, 6-DNT (2-am-dnt)

2-Nitrotoluene (2-NT)

2.4-DNT

2.4.6-TNT

2.6-DNT

3-Nitrotoluene

3,5-DNA

4-A-2, 6-DNT (4-am-dnt)

4-Nitrotoluene

Cyclotetramethylenetetranitramine (HMX)

Nitrobenzene

Nitroglycerin

PETN

RDX

Tetrvl

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (132)

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

GC/FID - PURGE AND TRAP

F1: C6-C10

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (133)

TO-0550; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GRAVIMETRIC - SOXHLET EXTRACTION

F4: Gravimetric

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (136)

T0-0560; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - COLD SHAKE EXTRACTION

F2: C10-C16

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F3: C16-C34 F4: C34-C50

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (137)

TO-0560; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GRAVIMETRIC - COLD SHAKE EXTRACTION

F4: Gravimetric

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (151)

TO-0543; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/MS - HEADSPACE

F1: C6-C10

Solids (Organic)

Phenols - Solids [Sediment, Soil] (199)

TO1200; modified from EPA 8321B

HPLC/UV - EXTRACTION

2-Chlorophenol

2-Methyl-4,6-dinitrophenol

2-Methylphenol (o-Cresol)

2-Nitrophenol

2.3.4-Trichlorophenol

2,3,4,5-Tetrachlorophenol

2,3,4,6-Tetrachlorophenol

2,3,5-Trichlorophenol

2,3,5,6-Tetrachlorophenol

2,3,6-Trichlorophenol

2,4-Dichlorophenol

2.4-Dimethylphenol

2,4-Dinitrophenol

2,4,5-Trichlorophenol

2.4.6-Trichlorophenol

2.6-Dichlorophenol

3/4-Methylphenol

3,4,5-Trichlorophenol

4-Chloro-3-methyl phenol

4-Nitrophenol

Dinoseb

Pentachlorophenol

Phenol

Solids (Organic)

Polychlorinated Biphenyls (PCB) - Solids [Soil] (071)

TO-0410; modified from AEC G106.0 and EPA 8082

GC/ECD - EXTRACTION

Arochlor 1016

Arochlor 1221

Arochlor 1232

Arochlor 1262

Arochlor 1268

Aroclor 1242

Aroclor 1248

Aroclor 1254

Aroclor 1260

Total PCB

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Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Solids [Soil] (028)

TO-0210; modified from EPA 3540C and EPA 3570 and EPA 8270D

GC/MS - EXTRACTION

1-Methylnaphthalene

Acenaphthene

Acenaphthylene

Acridine

Anthracene

Benzo (a) anthracene

Benzo (a) pyrene

Benzo (b) fluoranthene

Benzo (q,h,i) pervlene

Benzo (k) fluoranthene

Chrysene

Dibenzo (a,h) anthracene

Fluoranthene

Fluorene

Indeno (1,2,3 - cd) pyrene

Naphthalene

Pervlene

Phenanthrene

Pyrene

Quinoline

Solids (Organic)

Sterilant Herbicides - Solids [Sediment, Soil] (195)

TO-1315; IN-HOUSE

HPLC

Atrazine

Bromacil

Diuron

Linuron

Simazine

Tebuthiuron

Solids (Organic)

Sulfolane - Solids [Soil] (241)

TO-3501; IN-HOUSE

GC/MS

Sulfolane

Solids (Organic)

Total Extractable Hydrocarbons (TEH) - Solids [Soil] (053)

TO-0510; modified from AEC V92-M2 and BC MOE CONTAMINATED SITES REGULATION (CSR) and EPA 8015D

GC/FID - EXTRACTION

EPH C10-C19

EPH C19-C32

SASK (C11-C22)

SASK (C23-C60)

Total Extractable Hydrocarbons (TEH): C10-C30

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Solids (Organic)

Total Petroleum Hydrocarbons (TPH) - Solids [Soil] (082)

TO-0550; CCME ĆWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - SOXHLET EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

Solids (Organic)

Total Purgeable Hydrocarbons (TPH) - Solids [Soil] (052)

TO-0570; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - EXTRACTION

TPGH (C5-C10)

Volatile Hyrocarbons (VH): C6-C10

Solids (Organic)

Total Purgeable Hydrocarbons (TPH) - Solids [Soil] (227)

TO-0543-HEADSPACE; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - HEADSPACE

TPGH (C5-C10)

Volatile Hyrocarbons (VH): C6-C10

Solids (Organic)

Volatile Organic Compounds (VOC) - Solids [Soil] (099)

TO-0330; modified from EPA 5030C and EPA 8260C

GC/MS - PURGE AND TRAP

- 1.1-Dichloroethane
- 1.1-dichloroethylene
- 1,1,1-Trichloroethane
- 1.1.1.2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1.2-dichlorobenzene
- 1,2-dichloroethane
- 1,2-Dichloropropane
- 1,2,4-Trichlorobenzene
- 1,3-Dichlorobenzene
- 1.4-dichlorobenzene
- 2-Hexanone (MBK)

Acetone (2-Propanone)

Benzene

Bromform

Bromodichloromethane

Bromomethane

Carbon Tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane

Chloroform

Chloromethane

cis-1,2-Dichloroethylene

cis-1.3-Dichloropropene

cis-1,3-Dichloropropene

Dichloromethane

Ethylbenzene

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Ethylene Dibromide

m/p-xylene

Methyl Ethyl Ketone

Methyl isobutyl Ketone

Methyl t-butyl ether

o-xylene

Stvrene

Tetrachloroethylene

Toluene

trans-1,2-Dichloroethylene

trans-1,2-Dichloroethylene

trans-1,3-Dichloropropene

Trichloroethylene

Trichlorofluoromethane

Vinvl chloride

Solids (Organic)

Volatile Organic Compounds (VOC) - Solids [Soil] (152) TO-0332; modified from EPA 5021A and EPA 8260C

GC/MS - HEADSPACE

- 1.1-Dichloroethane
- 1,1-dichloroethylene
- 1,1,1-Trichloroethane
- 1,1,1,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,2-dichlorobenzene
- 1,2-dichloroethane
- 1,2-Dichloropropane
- 1,2,4-Trichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-dichlorobenzene
- 2-Hexanone (MBK)

Acetone (2-Propanone)

Benzene

Bromomethane

Carbon Tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane

Chloroform

Chloromethane

cis-1,2-Dichloroethylene

cis-1,3-Dichloropropene

Dichloromethane

Ethylbenzene

Ethylene Dibromide

m/p-xylene

Methyl Ethyl Ketone

Methyl isobutyl Ketone

Methyl t-butyl ether

o-xylene

Styrene

Tetrachloroethylene

Toluene

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trans-1,2-Dichloroethylene trans-1,3-Dichloropropene Trichloroethylene Trichlorofluoromethane

Vinvl chloride

Waste (Inorganic)

Anions - Waste (184)

INST-0150, SOIL-0650; modified from SCHED 4, BC HAZARDOUS WASTE REGULATIONS and SM 4110 B

IC - EXTRACTION (MODIFIED SWEP)

Fluoride

Nitrate

Nitrite

Waste (Inorganic)

Cyanide - Waste (185)

INST-0310, SOIL-0650; modified from SCHED 4, BC HAZARDOUS WASTE REGULATIONS

COLORIMETRIC (MODIFIED SWEP)

Cvanide

Waste (Inorganic)

Free Liquid - Waste [Liquid] (181) SOIL-0580; modified from EPA 9095 PAINT FILTER TEST

Free Liquid

Waste (Inorganic)

Mercury - Waste (180)

INST-0160, SOIL-0420; BC MOE LABORATORY MANUAL SECTION C

COLD VAPOUR AA - Leachate

Mercury

Waste (Inorganic)

Mercury - Waste (183)

INST-0160, SOIL-0650; modified from SCHED 4, BC HAZARDOUS WASTE REGULATIONS

COLD VAPOUR AA - EXTRACTION (MODIFIED SWEP)

Mercury

Waste (Inorganic)

Metals - Waste (179)

INST-0140, SOIL-0420; IN-HOUSE (PREPARATION) and SM 3120 B (ANALYSIS)

ICP/OES

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

Mercury

Nickel

Selenium

Silver

Thallium

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Uranium

Vanadium

Zinc

Zirconium

Waste (Inorganic)

Metals - Waste (182)

INST-0140, SOIL-0650; modified from SCHED 4, BC HAZARDOUS WASTE REGULATIONS and SM 3120 B ICP/OES - EXTRACTION (MODIFIED SWEP)

Arsenic

Barium

Boron

Cadmium

Chromium

Copper

Lead

Mercury

Selenium

Silver

Uranium

Zinc

Waste (Inorganic)

Oil and Grease - Waste (186)

TO-3500; modified from SECTION D219, BC MOE LABORATORY MANUAL, 2013 EDITION

GRAVIMETRIC (SWOG)

Oil and Grease

Water (Inorganic)

Adsorbable Organic Halides (AOX) - Water (219)

INST-480; modified from SM 5320

COLORIMETRIC - TITRATION

Adsorbent Organic Halides

Water (Inorganic)

Alkalinity - Water (001)

INST-0100: modified from SM 2320 B

TITRIMETRIC

Alkalinity (pH 4.5)

Water (Inorganic)

Alkalinity - Water (171)

INST-0101; modified from SM 2320 B

AUTO TITRIMETRIC (PC TITRATE)

Alkalinity (pH 4.5)

Water (Inorganic)

Ammonia - Water (063)

INST-0340, INST-0420; modified from SM 4500-NH3 G

COLORIMETRIC

Ammonia

Water (Inorganic)

Anions - Water (002)

INS-0150, WATR-0200; modified from SM 4110 B

IÓN CHROMATOGRAPHY

Bromate

Bromide

Chlorate

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Chloride

Chlorite

Fluoride

Nitrate

Nitrite

Sulfate

Water (Inorganic)

Biochemical Oxygen Demand (BOD) - Water (010) MIC-1500; modified from SM 4500-O D and SM 5210 B

D.O. METER

BOD (5 day)

CBOD (5 day)

Water (Inorganic)

Carbon - Water (062)

INST-0170; modified from SM 5310 B

COMBUSTION - INFRARED

Inorganic Carbon

Organic Carbon

Water (Inorganic)

Chemical Oxygen Demand (COD) - Water (061)

INST-0280; modified from EPA 410.4

SPECTROPHOTOMETRIC

COD

Water (Inorganic)

Colour - Water (243) WATR-0710; SM 2120 C

COLORIMETRIC - UV/VISIBLE

Apparent Colour

True Colour

Water (Inorganic)

Conductivity - Water (003)

INST-0120; modified from SM 2510 B

CONDUCTIVITY METER

Conductivity (25°C)

Water (Inorganic)

Conductivity - Water (173)

INST-0101; SM 2510

AUTO TITRIMETRIC (PC TITRATE)

Conductivity (25°C)

Water (Inorganic)

Cyanide - Water (021)

INST-0310; modified from EPA 335.4

COLOR - DISTILLATION

Cyanide (SAD)

Free Cyanide

Water (Inorganic)

Dissolved Metals - Water (004)

INST-0140, WATR-0200; modified from SM 3120 B

ICP/OES

Aluminum

Antimony

Arsenic

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Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

Magnesium

Manganese

Molybdenum

Nickel

Phosphorus

Potassium

Selenium

Silicon

Silver

Sodium

Strontium

Sulfur

Thallium

Vanadium

Zinc

Zirconium

Water (Inorganic)

Dissolved Metals - Water (129)

INST-0141, WATR-0200; modified from SM 3125

ICP/MS

Aluminum

Antimony

Arsenic

Barium

Beryllium

Bismuth

Boron

Cadmium

Chromium

Cobalt

Copper

Lead

Lithium

Manganese

Molybdenum

Nickel

Selenium

Silver

Strontium

Thallium

Tin

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Titanium Uranium Vanadium Zinc Zirconium

Water (Inorganic)

Mercury - Water (073) INST-0160: BC MOE LABORATORY MANUAL SECTION C **COLD VAPOUR AA** Mercury

Water (Inorganic)

Mercury - Water (206) INST-0162; EPA 1631

COLD VAPOUR ATOMIC FLUORESCENCE - DIGESTION

Water (Inorganic)

Naphthenic Acids - Water (239) TO-2220; IN-HOUSE

FTIR - EXTRACTION Naphthenic Acids

Water (Inorganic)

Oil and Grease - Water (069) TO-2200; modified from EPA 821-R-98-002 METHOD 1664 FTIR - EXTRACTION Total Oil and Grease

Water (Inorganic)

pH - Water (135) INST-0104; modified from SM 4500-H+ B pH METER Ηq

Water (Inorganic)

pH - Water (172) INST-0101; modified from SM 4500-H+ AUTO TITRIMETRIC (PC TITRATE) Hq

Water (Inorganic)

Phenols - Water (124) INST-0300: modified from EPA 420.2 AUTO COLOR **Total Phenolics**

Water (Inorganic)

Phosphate - Water (103) INST-0410, INST-0530; SM 4500-P F **AUTO COLOR** Phosphate

Water (Inorganic)

Phosphorus - Water (229) INST-0530, WATR-0720; SM 4500-P F **AUTO COLOR**

Total Dissolved Phosphorus

Total Phosphorus

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Water (Inorganic)

Reactive Silica - Water (007)

INST-0460, INST-0510; modified from EPA 600/4-79-20

AUTO COLOR

Reactive Silica

Water (Inorganic)

Residual Chlorine - Water (238)

WATR-0700; modified from SM 4500-CL

IODOMETRIC

Total Chlorine

Water (Inorganic)

Solids - Water (011)

WATR-0600, WATR-0610; SM 2540 C and SM 2540 D

GRÁVIMETRIC

Total Dissolved Solids

Total Suspended Solids

Water (Inorganic)

Sulphide - Water (105)

WATR-0100; modified from SM 4500-S2- D

COLORIMETRIC

Sulphide

Water (Inorganic)

Total Hexavalent Chromium - Water (235)

WATR-0300; modified from SM 3500-CR

COLORIMETRIC

Hexavalent Chromium

Water (Inorganic)

Total Kjeldahl Nitrogen (TKN) - Water (009)

INST-0430, INST-0520; modified from EPA 351.2

AUTO COLOR - DIGESTION

Total Kjeldahl Nitrogen

Water (Inorganic)

Total Metals - Water (143)

INST-0140, WATR-0200; modified from SM 3120

ICP/OES - NITRIC ACID DIGESTION

Aluminum

Antimony

Arsenic

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

Magnesium

Manganese

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Molybdenum

Nickel

Phosphorus

Potassium

Selenium

Silicon

Silver

Sodium

Strontium

Sulfur

Thallium

Tin

Titanium

Uranium

Vanadium

Zinc

Zirconium

Water (Inorganic)

Total Metals - Water (144)

INST-0141, WATR-0200; modified from SM 3125

ICP/MS - NITRIC ACID DIGESTION

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

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Zirconium

Water (Inorganic)

Turbidity - Water (107) WATR-0500; SM 2130 B

NEPHELOMETRY

Turbidity

Water (Microbiology)

Coliforms - Water (208) MIC-0205; SM 9223

MOST PROBABLE NUMBER (COLILERT - QUANTI-TRAY)

Escherichia coli (E. coli)

Fecal (Thermotolerant) Coliforms

Total Coliforms

Water (Microbiology)

Coliforms - Water (211)

MIC-0202; modified from SM 9222 B

MEMBRANE FILTRATION (MI AGAR)

Escherichia coli (E. coli)

Total Coliforms

Water (Microbiology)

Fecal (Thermotolerant) Coliforms - Water (012)

MIC-0203; SM 9222 D

MEMBRANE FILTRATION (mFC)

Fecal (Thermotolerant) Coliforms

Water (Microbiology)

Heterotrophic Plate Count (HPC) - Water (068)

MIC-0300; modified from SM 9215 C

SPREAD PLATE

Heterotrophic Plate Count (HPC)

Water (Microbiology)

Pseudomonas - Water (215)

MIC-0630; modified from SM 9213

IDEXX PSEUDALERT QUANTI-TRAY

Pseudomonas aeruginosa

Water (Organic)

Alcohols - Water (166)

TO-1420; EPA 5021 and EPA 8015B

ĠC/FID

1-Butanol

2-Butanol

Ethanol

Isobutanol

Isopropanol

Methanol

Pentanol

Propanol

tert-Butyl alcohol

Water (Organic)

Base Neutral Extractables - Water [Wastewater] (201)

TO1500; modified from EPA 8270D

GC/MS

1,2-Dichlorobenzene

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1.2.3-Trichlorobenzene
1,2,3,4-Tetrachlorobenzene (1,2,3,4-TCB)
1,2,3,5-Tetrachlorobenzene
1.2.4-Trichlorobenzene
1,2,4,5-Tetrachlorobenzene (1,2,4,5-TCB)
1,3-Dichlorobenzene
1,3,5-Trichlorobenzene
1,4-Dichlorobenzene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Pentachlorobenzene
HPLC
Diethanolamine
```

Water (Organic)

Ethanolamines - Water (210) TO-2240; IN-HOUSE

Diisopropanolamine

Monoethanolamine (MEA)

Monoisopropanolamine

Water (Organic)

Glycols - Water (162)

TO-1410; modified from NIOSH 5523

GC/FID

Diethylene glycol

Ethylene glycol

Propylene glycol

Tetraethylene glycol

Triethylene glycol

Water (Organic)

Glyphosate - Water (169) TO-1320; OSHA PV2067

HPLC

Glyphosate

Water (Organic)

Nitrilotriacetic Acid (NTA) - Water (218)

TO-3503; IN-HOUSE

HPLC

Nitrilotriacetic acid (NTA)

Water (Organic)

Nitroaromatics and Nitramines and Nitrate Esters - Water (204)

TO-1100, TO-2100; EPA 8330

HPLC

1.3-Dinitrobenzene (1.3-DNB)

1,3,5-Trinitrobenzene (1,3,5-TNB)

2-A-4, 6-DNT (2-am-dnt)

2-Nitrotoluene (2-NT)

2.4-DNT

2,4,6-TNT

2,6-DNT

3-Nitrotoluene

3,5-DNA

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

OSDWA †

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4-A-2, 6-DNT (4-am-dnt)

4-Nitrotoluene

Cyclotetramethylenetetranitramine (HMX)

Nitrobenzene

Nitroglycerin

PETN

RDX

Tetryl

Water (Organic)

Phenols - Water [Wastewater] (198)

TO-1100, TO-1200; IN-HOUSE

HPLC/UV - EXTRACTION

- 2-Chlorophenol
- 2-Methyl-4,6-dinitrophenol
- 2-Methylphenol (o-Cresol)
- 2-Nitrophenol
- 2,3,4-Trichlorophenol
- 2,3,4,5-Tetrachlorophenol
- 2,3,4,6-Tetrachlorophenol
- 2,3,5-Trichlorophenol
- 2,3,5,6-Tetrachlorophenol
- 2,3,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- 2,4,5-Trichlorophenol
- 2,4,6-Trichlorophenol
- 2,6-Dichlorophenol
- 3,4,5-Trichlorophenol
- 4-Chloro-3-methyl phenol
- 4-Nitrophenol

Dinoseb

m,p-Cresol

Pentachlorophenol

Phenol

Water (Organic)

Polychlorinated Biphenyls (PCB) - Water (160)

TO-0400; modified from EPA 8082

GC/ECD

Arochlor 1016

Arochlor 1221

Arochlor 1232

Arochlor 1262

Arochlor 1268

Aroclor 1242

Aroclor 1248

Aroclor 1254

Aroclor 1260

Total PCB

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Water (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Water (014)

TO-0200; modified from EPA 3510B and EPA 3511 and EPA 8270C

GC/MS - EXTRACTION

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

Pervlene

Phenanthrene

Pyrene

Quinoline

Water (Organic)

Sterilant Herbicides - Water (194)

TO-1315; IN-HOUSE

HPLC

Atrazine

Bromacil

Diuron

Linuron

Simazine

Tebuthiuron

Water (Organic)

Sulfolane - Water (240)

TO-3501; IN-HOUSE

GC/MS

Sulfolane

Water (Organic)

Total Amines - Water (142)

TO-1400; IN-HOUSE

GC/FID - EXTRACTION

Diethanolamine

Diethylethanolamine

Diisopropanolamine

Ethanolamine

Methyl diethanolamine

Monoisopropylamine

Sulfolane

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Water (Organic)

Total Extractable Hydrocarbons (TEH) - Water (066)

TO-0511; modified from AEC V92-M2 and BC MOE CONTAMINATED SITES REGULATION (CSR) and EPA 3510

GC/FID - EXTRACTION

C10-C32

EPH C10-C19

EPH C19-C32

F2: C10-C16

F3: C16-C34

F4: C34-C50

SASK (C11-C22)

SASK (C23-C60)

Water (Organic)

Total Purgeable Hydrocarbons (TPH) - Water (065)

TO-0540; modified from EPA 5030B and EPA 8260B

GC/FID - PURGE AND TRAP

F1: C6-C10

TPGH (C5-C10)

Volatile Hyrocarbons (VH): C6-C10

Water (Organic)

Total Purgeable Hydrocarbons (TPH) - Water (150)

TO-0542; modified from BC MOE LABORATORY MANUAL and EPA 5021A and EPA 8260

GC/MS - HEADSPACE

F1: C6-C10

TPGH (C5-C10)

Volatile Hyrocarbons (VH): C6-C10

Water (Organic)

Volatile Organic Acids - Water (212)

TO-2230; IN-HOUSE

ION CHROMATOGRAPHY

Acetic acid

Butiric acid

Caproic acid

Formic acid

Isobutvric acid

Isovaleric acid

Propionic acid

Valeric acid

Water (Organic)

Volatile Organic Compounds (VOC) - Water (125)

TO-0330; modified from EPA 5030C and EPA 8260C

GC/MS - PURGE AND TRAP

1,1-Dichloroethane

1,1-dichloroethylene

1,1,1-Trichloroethane

1,1,1,2-Tetrachloroethane

1,1,2-Trichloroethane

1,1,2,2-Tetrachloroethane

1,2-dichlorobenzene

1,2-dichloroethane

1,2-Dichloropropane

1,2,4-Trichlorobenzene

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1,3-Dichlorobenzene

1,4-dichlorobenzene

2-Hexanone (MBK)

Acetone (2-Propanone)

Benzene

Bromodichloromethane

Bromoform

Bromomethane

Carbon Tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane

Chloroform

Chloromethane

cis-1,2-Dichloroethylene

cis-1,3-Dichloropropene

Dibromochloromethane

Dichloromethane

Ethylbenzene

Ethylene Dibromide

m/p-xvlene

Methy t-butyl ether (MTBE)

Methyl Ethyl Ketone

Methyl isobutyl Ketone

Methyl t-butyl ether

o-xvlene

Stvrene

Tetrachloroethylene

Toluene

trans-1,2-Dichloroethylene

trans-1,3-Dichloropropene

Trichloroethene

Trichloroethylene

Trichlorofluoromethane

Vinyl Chloride

Water (Organic)

Volatile Organic Compounds (VOC) - Water (153) TO-0332; modified from EPA 5021A and EPA 8260C

GC/MS - HEADSPACE

- 1,1-Dichloroethane
- 1,1-dichloroethylene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- 1,2-Dibromomethane
- 1,2-dichlorobenzene
- 1,2-dichloroethane
- 1,2-Dichloropropane
- 1,2,4-Trichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-dichlorobenzene
- 2-Hexanone (MBK)

Acetone (2-Propanone)

Benzene

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Bromodichloromethane

Bromoform

Bromomethane

Carbon Tetrachloride

Chlorobenzene

Chlorodibromomethane

Chloroethane

Chloroform

Chloromethane

cis-1,2-Dichloroethylene

cis-1,3-Dichloropropene

Dichloromethane

Ethylbenzene

m/p-xylene

Methyl Ethyl Ketone

Methyl isobutyl Ketone

Methyl t-butyl ether

o-xylene

Styrene

Tetrachloroethylene

Toluene

trans-1,2-Dichloroethylene

trans-1,3-Dichloropropene

Trichloroethylene

Trichlorofluoromethane

Vinyl Chloride

Water (Toxicology)

Microtox - Water (020) TOX-0100; EPS 1/RM/24 BIOLUMINESCENCE

Microtox IC50 (15 min)

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