



CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 3990
Laboratory Name: Paracel Laboratories Ltd. (Calgary)
Parent Institution: Paracel Laboratories Ltd.
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Standard: Conforms with requirements of ISO/IEC 17025
Clients Served: All Interested Parties
Revised On: June 5, 2018
Valid To: January 23, 2020

Scope of Accreditation

Air

Fungi - Air (002)
PM-002; modified from ASTM D7391
MICROSCOPIC
Fungal Propagule - Genus

Air (Inorganic)

Asbestos and Other Fibres - Air (001)
PM-003; modified from NIOSH 7400
PCM FIBRE COUNTING
Asbestos

Paint (Inorganic)

Metals - Paint (038)
PI-020; modified from EPA 6020A
ICP/MS - DIGESTION
Lead

Soil (Inorganic)

Conductivity - Solids [Soil] (008)
PI-006; modified from EPA 120.1 and ON MOECC E3138
CONDUCTIVITY METER
Conductivity (saturated paste)

Soil (Inorganic)

Hot Water Soluble Boron - Solids [Soil] (031)
PI-025; modified from EPA 6020A
ICP/MS - HOT WATER EXTRACTION
Boron (hot water soluble)

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Soil (Inorganic)

Metals - Solids [Soil] (028)

PI-020; modified from EPA 6020A

ICP/MS - DIGESTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Nickel

Potassium

Selenium

Silver

Sodium

Strontium

Thallium

Tin

Uranium

Vanadium

Zinc

Soil (Inorganic)

Particle Size Analysis (PSA) - Solids [Soil] (019)

PI-036; modified from SOIL SAMPLING & METHODS OF ANALYSIS, CARTER

HYDROMETER

% clay

% Sand

Silt

Soil (Inorganic)

pH - Solids [Soil] (020)

PI-010; modified from EPA 150.1 and ON MOECC E3137

pH METER

pH

Soil (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (013)

PO-007; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

Soil (Organic)

Petroleum Hydrocarbons (PHC) - Solids [Soil] (015)

PO-009; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GRAVIMETRIC - EXTRACTION

F4: Gravimetric

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Soil (Organic)

Volatile Organic Compounds (VOC) - Solids [Soil] (024)

PO-001; modified from EPA 8260C

GC/MS - HEADSPACE

1,1-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
1,1,1,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichlorodifluoromethane
Dichloromethane
Ethylbenzene
Ethylene Dibromide
Hexane
m/p-xylene
Methyl isobutyl ketone
Methyl t-butyl ether
o-xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane
Vinyl chloride

Soil (Organic)

Volatile Petroleum Hydrocarbons (VPH) - Solids [Soil] (011)

PO-006; CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD

GC/FID - HEADSPACE

F1: C6-C10

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Solid Waste (Inorganic)

Anions - Waste [Solid] (041)

PI-039; modified from EPA 1311 (PREPARATION) and EPA 300.1 (ANALYSIS)

COLORIMETRIC - TCLP

Nitrite as Nitrogen

Solid Waste (Inorganic)

Fluoride - Waste [Solid] (040)

PI-007; EPA 1311 (PREPARATION) and EPA 340.2 (ANALYSIS)

SELECTIVE ION ELECTRODE - TCLP

Fluoride

Solid Waste (Inorganic)

Metals - Waste [Solid] (039)

PI-020; modified from EPA 1311 (PREPARATION) and EPA 200.8 (ANALYSIS)

ICP/MS - TCLP EXTRACTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

Nickel

Selenium

Silver

Thallium

Uranium

Vanadium

Zinc

Zirconium

Solid Waste (Organic)

Volatile Organic Compounds (VOC) - Waste [Solid] (042)

PO-001; modified from EPA 1311 (PREPARATION) and EPA 8260C (ANALYSIS)

GC/MS - TCLP EXTRACTION

1,2-Dichlorobenzene

1,2-Dichloroethane

1,4-Dichlorobenzene

Benzene

Carbon tetrachloride

Chlorobenzene

Chloroform

Dichloromethane

Ethylbenzene

m,p-Xylene

o-Xylene

Tetrachloroethylene

Toluene

Total Xylenes (Calculation)

Trichloroethylene

Vinyl chloride

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Solids

Fungi - Solids (003)
PM-002; modified from ASTM D7391
MICROSCOPIC
Fungal Propagule - Genus

Solids (Inorganic)

Anions - Solids (047)
PI-039; modified from HACH 8171 and HACH 8507
COLORIMETRIC-Saturated Paste
Nitrate (calculation)
Nitrate plus Nitrite
Nitrite

Solids (Inorganic)

Asbestos - Solids [Bulk] (049)
PM-004; modified from EPA 600/M4-82-020 and EPA 600/R-93/116
POLARIZED LIGHT MICROSCOPY (PLM)
Bulk Asbestos

Solids (Inorganic)

Chloride - Solids (045)
PI-040; modified from SM 4500-CL- B
TITRATION-Saturated Paste
Chloride

Solids (Inorganic)

Fluoride - Solids (048)
PI-007; modified from EPA 340.2
SELECTIVE ION ELECTRODE-Saturated Paste
Fluoride

Solids (Inorganic)

Metals - Solids (044)
PI-020; modified from EPA 200.8
ICP/MS-Saturated Paste
Boron
Calcium
Magnesium
Potassium
Sodium

Solids (Inorganic)

Paint Filter - Solids [Paint] (043)
PI-038; modified from EPA 9095B
GRAVITY FILTRATION
Free Liquid

Solids (Inorganic)

Sulphate - Solids (046)
PI-041; modified from EPA 375.4
TURBIDIMETRIC-Saturated Paste
Sulphate

Solids (Organic)

Perfluoroalkyl Acid Substances - Solids (050)
PO-018; modified from ON MOECC E3506
LC-MS/MS
Perfluorobutanesulfonate (PFBS)
Perfluorobutanoic acid (PFBA)

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Perfluorodecanesulfonate (PFDS)
Perfluorodecanoic acid (PFDA)
Perfluorododecanoic acid (PFDoA)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonate (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorononanoic acid (PFNA)
Perfluorooctane sulfonamide (PFOSA)
Perfluorooctanesulfonate (PFOS)
Perfluorooctanoic acid (PFOA)
Perfluoropentanoic acid (PFPeA)
Perfluorotetradecanoic acid (PFTeDA)
Perfluorotridecanoic acid (PFTrDA)
Perfluoroundecanoic acid (PFUnA)

Water (Inorganic)

Alkalinity - Water (004)
PI-003; modified from EPA 310.1
TITRIMETRIC
Alkalinity (pH 4.5)

Water (Inorganic)

Biochemical Oxygen Demand (BOD) - Water (005)
PI-014; modified from SM 5210 B
D.O. METER
BOD (5 day)
CBOD (5 day)

Water (Inorganic)

Chloride - Water (037)
PI-040; SM 4500-CL- B
TITRATION
Chloride

Water (Inorganic)

Chlorine - Water (006)
PI-005; modified from SM 4500-CL G
COLORIMETRIC
Free Chlorine
Total Chlorine

Water (Inorganic)

Colour - Water (026)
PI-019; modified from HACH 8025
SPECTROPHOTOMETRIC
True Colour

Water (Inorganic)

Conductivity - Water (009)
PI-006; modified from SM 2510 B
CONDUCTIVITY METER
Conductivity (25°C)

Water (Inorganic)

Dissolved and Extractable Metals - Water (029)
PI-020; modified from EPA 200.8
ICP/MS
Aluminum
Antimony

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Arsenic
Barium
Beryllium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Molybdenum
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Tin
Uranium
Vanadium
Zinc

Water (Inorganic)

Dissolved Oxygen - Water (010)
PI-037; modified from SM 4500-O C
TITRATION
Dissolved Oxygen

Water (Inorganic)

Fluoride - Water (034)
PI-007; modified from EPA 340.2
ION SELECTIVE ELECTRODE
Fluoride

Water (Inorganic)

Hexavalent Chromium - Water (007)
PI-013; modified from ON MOECC E3056A-1
COLORIMETRIC
Hexavalent Chromium

Water (Inorganic)

Nitrate and Nitrite - Water (036)
PI-039; modified from HACH 8171 and HACH 8507
COLORIMETRIC
Nitrate (Parameter suspended on 5/11/2018)
Nitrate plus Nitrite (Parameter suspended on 5/11/2018)

Water (Inorganic)

pH - Water (021)
PI-010; modified from EPA 150.1
pH METER
pH

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Water (Inorganic)

Solids - Water (022)

PI-012; modified from SM 2450 C and SM 2450 D

GRAVIMETRIC

Total Dissolved Solids

Total Suspended Solids

Water (Inorganic)

Sulphate - Water (035)

PI-041; modified from HACH 8051

TURBIDIMETRIC

Sulfate

Water (Inorganic)

Sulphide - Water (023)

PI-001; modified from SM 4500-S2- D

COLORIMETRIC (METHYLENE BLUE)

Sulphide

Water (Inorganic)

Total Metals - Water (033)

PI-020; modified from EPA 200.8

ICP/MS - DIGESTION

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

(Parameter suspended on 5/11/2018)

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Selenium

Silver

Sodium

Strontium

Thallium

Tin

Uranium

Vanadium

Zinc

Water (Inorganic)

Turbidity - Water (027)

PI-017; modified from SM 2130 B

NEPHELOMETRY

Turbidity

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Water (Microbiology)

Coliforms - Water (018)
PW-005; modified from HACH 10029
MEMBRANE FILTRATION (mCOLIBLUE)
Background Counts
Escherichia coli (E. coli)
Total Coliforms

Water (Microbiology)

Fecal (Thermotolerant) Coliforms - Water (016)
PW-006; modified from SM 9222 D
MEMBRANE FILTRATION (mFC)
Fecal (Thermotolerant) Coliforms

Water (Microbiology)

Heterotrophic Plate Count (HPC) - Water (017)
PW-007; modified from SM 9215 E
IDEXX (SIMPLATE)
Heterotrophic Plate Count (HPC)

Water (Organic)

Petroleum Hydrocarbons (PHC) - Water (014)
PO-007; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD (ANALYSIS)
and ON MOECC E3421 (PREPARATION)
GC/FID - EXTRACTION
F2: C10-C16
F3: C16-C34
F4: C34-C50

Water (Organic)

Polyfluoroalkyl Substances (PFAS) - Water (051)
PO-017; modified from ON MOECC E3457
LC-MS/MS
Perfluorobutanesulfonate (PFBS)
Perfluorobutanoic acid (PFBA)
Perfluorodecanesulfonate (PFDS)
Perfluorodecanoic acid (PFDA)
Perfluorododecanoic acid (PFDoA)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonate (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorononanoic acid (PFNA)
Perfluorooctane sulfonamide (PFOSA)
Perfluorooctanesulfonate (PFOS)
Perfluorooctanoic acid (PFOA)
Perfluoropentanoic acid (PFPeA)
Perfluoroundecanoic acid (PFUnA)

Water (Organic)

Volatile Organic Compounds (VOC) - Water (025)
PO-001; modified from EPA 624
GC/MS - HEADSPACE
1,1-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
1,1,1,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane

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1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
Acetone (2-Propanone)
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichlorodifluoromethane
Dichloromethane
Ethylbenzene
Ethylene Dibromide
Hexane
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 (Organic)

Volatile Petroleum Hydrocarbons (VPH) - Water (012)

PO-006; modified from CCME CWS PETROLEUM HYDROCARBONS IN SOIL - TIER 1 METHOD (ANALYSIS)
and ON MOECC E3421 (PREPARATION)

GC/FID - HEADSPACE

F1: C6-C10

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