

Standards Council of Canada

600-55 Metcalfe Street
Ottawa, ON K1P 6L5
Canada

Conseil canadien des normes

55, rue Metcalfe, bureau 600
Ottawa, ON K1P 6L5
Canada

SCOPE OF ACCREDITATION

**AGAT LABORATORIES LTD.OIL AND GAS CHEMISTRY DIVISION WESTERN CANADA
3650 - 21st Street, N.E.
Calgary, AB
T2E 6V6**

Accredited Laboratory No. 672
(Conforms with requirements of ISO/IEC 17025:2005, RG-FORENSIC , RG-LAB)

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CLIENTS SERVED: All interested parties.

FIELDS OF TESTING: Chemical/Physical

FORENSICS Forensic Chemistry / Trace Evidence
DISCIPLINE(S):

PROGRAM SPECIALTY Environmental, Forensic
AREA:

SCOPE ISSUED ON: 2018-02-05

ACCREDITATION 2022-04-27
VALID TO:

ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

Environmental

Air

(AIR QUALITY MONITORING - Passives)

(Testing conducted at 2420-42 Avenue NE, Calgary AB T2E7T6)

AQM-43-16002	Gravimetric Determination of Particulate Matter from Stationary and Other Sources (Alberta Stacks Sampling Code Method 5, AENV, US EPA Method 5, US EPA Method 201A and US EPA 17)
AQM-43-16004	Determination of Nitrogen Dioxide (NO ₂) in the Air Using Passive Air Sampling and Ion Chromatography, (In-House method based on : Tang, H; Lau, T; Brassard, B. A New All-Season Passive Sampling System for Monitoring NO ₂ in Air, Field Analytical Chemistry and Technology (1999) 3(6): pg.338-345.)
AQM-43-16005	Determination of Nitrogen Oxide (NO _x), from stationary Sources (Modified Alberta Stack Sampling Code, Method 7A, AENV)
AQM-43-16006	Determination of Hydrogen Sulfide (H ₂ S) in Air Using Passive Air Sampling and Spectrofluorophotometry (In-House method, based on Tang, H. Sandeluk, J., Lin, L., and Lown, W. J. A New All-Season Passive Sampling System for Monitoring H ₂ S in Air, The Scientific World Journal (2002) 2, pg. 155-168)
AQM-43-16007	Determination of Sulfur Dioxide (SO ₂) in Air Using Passive Air Sampling and Ion Chromatography (In-House method, based on Tang, H; Brassard, B; Brassard, R; Peake, E, A New Passive Sampling System for Monitoring SO ₂ in the Atmosphere, Field Analytical Chemistry and Technology (1997) 1(5) pg. 307-315.
AQM-43-16008	Determination of Ozone (O ₃) in Air Using Passive Air Sampling and Ion Chromatography (In-House method, based on Tang, H & Lau, T, A New All Season Passive Sampling System for Monitoring Ozone in Air. Environmental Monitoring and Assessment. Kluwer Academic Publishers. 65: 129-137, 2000
AQM-43-16009	Determination of Dustfall (Total and Fixed) by Gravimetric Analysis (Modified Methods Manual for Chemical Analysis of Atmospheric Pollutants , 1992 Fourth Edition, Alberta Environmental Centre-Dust Fall, Total and Fixed (Gravimetric) Method No. 32020)
AQM-43-16010	Determination of Total Particulate and Dew Point in Air and Other Sources (In-House method by Gravimetric Analysis, Stain Tube Colorimetry and ASTM D1142)
AQM-43-16011	Determination of Ammonia (as N) in Aqueous Samples by Nesslerization and Spectrophotometry (Methods Manual for Chemical Analysis of Atmospheric Pollutants Method

IHF-60-25002 #41515)
Determination of Fixed Gases and Volatile Hydrocarbons
in Air Using Gas Chromatography (In-House method based
on ASTM D1946 and EPA TO-14A)

NON METALLIC MINERALS AND PRODUCTS

Petroleum Crudes and Natural Gas:

HC-0100 Determination of API and Density of Crude Oils and Gas
Condensates by Digital Density Meter (ASTM
D4052; ASTM D5002)

HC-0120 Determination of Hydrogen Sulfide by Tutweiler Titration
and Stain Tubes (GPA C1; GPA 2377)

HC-0160 Determination of Hydrocarbon from Methane (C1) to
Decane (C10) and inert gases in Gas Phase Mixtures by
GC/TCD (modified GPA 2261, modified GPA 2286)
Helium
Hydrogen
Nitrogen
Carbon
Dioxide
Methanol
Methane
Ethane
Propane
Isobutane
n-Butane
Isopentane
n-Pentane
Hexane
Heptanes+
Oxygen
Carbon
Dioxide
C1-C15+
Benzene
Ethylbenzene
m/p-Xylene
o-Xylene
Toluene

HC-0200 Determination of Basic Sediment and Water in Crude Oil
by the Centrifuge Method (Modified ASTM D4007)
Solids Fraction
Water Fraction

HC-0300 Determination of Cloud Point of Petroleum Products by
Enhanced Optical Detection using Automatic MPP-5Gs
analyzer, and ultra low temperature testing (ASTM D2500;

HC-0310	ASTM D5771) Determination of Hydrocarbon C1 to C30+ by Flame Ionization Detection (Atmospheric and pressurized samples. (Modified GPA 2186) Methane Ethane Propane Iso-butane n-Butane Iso-pentane n-Pentane Cyclopentane Hexane Methylcyclopentane Benzene Cyclohexane Heptanes Methylcyclohexane Toluene Octane Ethylbenzene o-Xylene m,p-Xylene Nonane Trimethylbenzene Decanes Undecanes Dodecanes Tridecanes Tetradecanes Pentadecanes Hexadecanes Heptadecanes Octadecanes Nonadecanes Eicosanes Heneicosanes Docosanes Tricosanes Tetracosanes Pentacosanes Hexacosanes Heptacosanes Octacosanes Nonacosanes Tricontanes+
HC-0355	Flashing a Pressurized Hydrocarbon Liquid Sample to Atmospheric Pressure by the Single Stage Cold Flash Method and Obtaining a Gas/Oil Ratio.(In House)
HC-0420	

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	Determination of Flash Point by Manual and Automatic Pensky-Martens Closed Cup Tester (ASTM D93)
HC-0500	Determination of no Flow Point and Pour Point in Crude Oils and Petroleum Products (ASTM D97)
HC-0500	Determination of no flow point and pour Point in Crude Oils and Petroleum Products by automatic Cloud/Pour Point Testing Bath (ASTM D7346)
HC-0500	Determination of Pour Point in Crude Oils (ASTM D5853)
HC-0600	Determination of Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity) (ASTM D445)
HC-0610	Determination of Dynamic Viscosity (cP or mPa*s) and Density in kg/m ³ and Calculation of Kinematic Viscosity by Stabinger Viscometer(ASTM D7042)
HC-0700	Determination of Vapor Pressure of Petroleum Products by Reid Method (ASTM D323)
HC-0801	Determination of Organosulfur Compounds in Liquid and Gaseous state using GC/SCD (Modified UOP 791; Modified ASTM D5504)
HC-0900	Determination of Natural Gas Liquid Mixtures Containing the Following Components by Gas Chromatography GC/TCD (GPA 2177) Nitrogen Carbon Dioxide Methane Ethane Propane Isobutane n-Butane Isopentane n-Pentane Hexane Heptane
HC-0904	Determination of PIONAOX(U) in Hydrocarbon Samples by GC-FID (ASTM D6730 and CAN/CGSB-3.0) P- n-paraffins I- iso-paraffins O- Olefins N-Naphthenes A- Aromatics OX-Oxygenates U-Unknown Hydrocarbons
HC-1200	Determination of Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents (ASTM D 611 Method A) Aniline Point, °C Mixed Aniline Point, °C
HC-1300	Atmospheric Distillation by Automatic Tanaka AD-6 Distillation Unit of Crude Oil and Petroleum Products

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	(ASTM D86) Initial Boiling Point, °C 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, and 90% Recovery, °C Final Boiling Point, °C Recovered, Volume % Residue, Volume % Loss, Volume %
HC-2000	Determination of Asphaltenes (pentane insoluble) %wt Content in Oil (Modified ASTM D2007 Annex A)
HC-2100	Determination of Heptane Insoluble Asphaltene Content in Oil %wt (Modified ASTM D6560)
HC-3100	Determination of Sulfur Content Mass% or ppm in Crude Oils and its Products by Energy Dispersive X-Ray Fluorescence Spectrometry(ASTM D4294)
HC-3120	Determination of Wax Content %wt of Oil (Modified UOP 46)
HC-3180	Determination of Pentane Insolubles by Membrane Filtration (Modified ASTM 4055)
HC-3181	Determination of Boiling Point Distribution by High Temperature Gas Chromatography for C5-C100 (ASTM D7169)
HC-3184	Determination of Flash Point by TAG Closed cup Tester(ASTM D56)
WAT-0100	Determination of Sulfides by Iodometric Titration Method (Modified APHA 4500-S)
WAT-0200	Determination of Chloride concentration in Produced water by mercuric Nitrate Titration (Modified D512Method A)
WAT-0300	Determination of pH, Alkalinity and Acidity by Titration Method (Modified APHA 2310B and APHA 2320B)
WAT-0301	Determination of pH and Alkalinity by PC-Titrate (Modified ASTM D1067) Autotitrator
WAT-0501	Determination of Freezing Point By Refractometer (ASTM D3321)
WAT-0600	Determination of Total Suspended Solids Dried at 103°C-105°C (APHA 2540D)
WAT-0601	Determination of Total Dissolved Solids Dried at 180°C (APHA 2540 C)
WAT-2100	Determination of Anions by Ion Chromatography (APHA 4110B) Chloride Nitrate Bromide Nitrite Sulfate
WAT-2301	Determination of Specific Gravity of Formation Water and Brine using Hydrometer ranging 0.760-1.250 (ASTM

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	D1429 Method D)
WAT-2302	Determination of Conductivity and Resistivity using Conductivity Meter of Analytical Water Samples (APHA 2510 B)
WAT-2303	Determination of the following metals by Inductively Coupled Plasma Optical Emission Spectrometry (Modified EPA 200.7) Barium Calcium Iron Magnesium Manganese Potassium Sodium Strontium
WAT-2304	Determination of Acid Producing Bacteria in Analytical Water by APB-BART™ (Acid producing bacteria-Biological Activity Reaction Test BART User Manual 2004 edition)
WAT-2305	Determination of Sulphate reducing bacteria in Analytical Water by SRB-BART™ (Sulphate reducing bacteria-Biological Activity Reaction Test BART User Manual 2004 edition)
WAT-2307	Determination of Iron Related Bacteria in Analytical Water by IRB-BART™ (Iron related bacteria Biological Activity Reaction Test BART User Manual 2004 edition)
WAT-2308	Determination of Iodide by ISE Meter (Modified ASTM D3869 Test method C) Ion selective method

Petroleum Refinery Products: (Including asphalt materials; petrochemicals; fuels and lubricants)

Fuels and Lubricants

(LUBRICATING OILS AND FUELS)

LTS-30-8001	Determination of Kinematic Viscosity of Transparent and Opaque Liquids cSt at 40 and 100 degrees Celsius Using An Automatic Viscometer(and Calculation of Dynamic Viscosity) (ASTM D445)
LTS-30-8007	Determination of Oil Contamination by Automatic Particle Count and Particle Shape Classification Using a Direct Imaging Integrated Tester (ASTM D 7596)
LTS-30-8008	Determination Of Water In Petroleum Products, Lubricating Oils And Additives By Karl Fischer Titration Water % (ASTM D6304)
LTS-30-8012	Determination of Foaming Characteristics of Lubricating Oils, Transmission Fluid and Motor Oil (ASTM D892 and

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	D6082)
LTS-30-8014	Determination of Copper Corrosion from Petroleum Products by Copper Strip Tarnish Test (ASTM D130)
LTS-30-8015	Determination of Additive Elements, Wear Metals, and Contaminants in Used and Unused Lubricating Oils and by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) (ASTM D5185) Aluminium Silver Arsenic Boron Barium Calcium Cadmium Chromium Copper Iron Potassium Magnesium Manganese Molybdenum Sodium Nickel Phosphorus Lead Antimony Silicon Strontium Titanium Vanadium Zinc Zirconium
LTS-30-8024	Determination of Freezing Point in Degrees Celsius of Aviation Fuels (Modified ASTM D2386)
LTS-30-8028	Determination of Water Separation Characteristics of Aviation Turbine Fuels by Portable Separometer as per MSEP Rating (ASTM D3948)
LTS-30-8029	Determination of Electrical Conductivity of Aviation and Distillate Fuels in pS/m (ASTM D2624)
LTS-30-8030	Determination of Saybolt Color of Petroleum Products (ASTM D156)
LTS-30-8032	Determination of Flash point in degree Celsius by Tag Closed Cup Tester (ASTM D56)
LTS-30-8034	Determination of Distillation of Petroleum Products at Atmospheric Pressure (ASTM D86) Initial Boiling Point, °C 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, and 90% Recovery, °C Final Boiling Point, °C

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	Recovered, Volume % Residue, Volume % Loss, Volume %
LTS-30-8035	Determination of Particle Contamination in Aviation Fuels by Laboratory Filtration of Solids in mg/L (Modified ASTM D5452)
LTS-30-8038	Base number in mg/g KOH of Petroleum Products by Potentiometric Perchloric Acid Titration (ASTM D 2896)
LTS-30-8040	Determination of Acid Number of Petroleum Products by Potentiometric Titration (Modified ASTM D664)
LTS-30-8041	Condition Monitoring of In-service Lubricants by Trend Analysis using Fourier Transform Infrared (FT-IR) Spectrometry (ASTM E2412) Soot Oxidation Nitration Sulphation Phosphate Antiwear
LTS-30-8042	Determination of API and Density of Jet Fuel by Digital Density Meter (Modified ASTM D4052)
LTS-30-8047	Determining Insoluble Compound Levels in Oil by Membrane Patch Colorimetry
	<ul style="list-style-type: none">• MPC Varnish Potential
LTS-30-8048	Remaining Useful Life of Lubricant Oils by Determination of Amine and Phenol Groups
	<ul style="list-style-type: none">• Amine Remaining, %• Phenol Remaining, % (ASTM D6971)
LTS-30-8049	Determination Of Percent Fuel Dilution By Gas Chromatography
	<ul style="list-style-type: none">• Diesel, %• Gasoline, %
LTS-30-8050	Determining Corrosive Properties Of Cargoes In Petroleum Product Pipelines Corrosive Rating, as per NACE TM0172

(Oil Sands)

(Testing conducted at 3801-21 Street NE, Calgary AB T2E6T5)

ROCK-04-26000	Determination of Water, Minerals and Bitumen in Oil Sands by Dean Stark Analysis Performed by Direct Determination (In-House, based on ACOSA method)
ROCK-04-26001	Determination of Water, Minerals and Bitumen in Oil Sands by Dean Stark Analysis Performed by Weight Difference (In-House, based on ACOSA method)

(Oil Sands)

ROCK-31-001	Determination of Methylene Blue Index of Oil Sands (Modified ASTM C837)
ROCK-31-002	Evaluation of Particle Size Distribution (PSD) of Oil Sands Wet and Dry Sieve Combined (API40 Recommended Practices)
ROCK-31-004	Determination of Particle Size Distribution (PSD) of Oil Sands Samples by Laser Diffraction (In-House method)

FORENSICS

Forensic Chemistry / Trace Evidence

Description of Activities:

(Testing conducted at 2420-42 Avenue NE, Calgary AB T2E7T6)

IHF-60-25001: Determination of Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry (ASTM E1618: 2014, Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry)

Notes:

ISO/IEC 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories

RG-LAB: SCC Requirements and Guidance for the Accreditation of Testing Laboratories

RG-FORENSIC: SCC Requirements and Guidance for the Accreditation for Forensic Testing Laboratories

Elias Rafoul, Vice President
Accreditation Services

Date: 2018-02-05

Number of Scope Listings: 77
SCC 1003-15/827
Partner File #0
Partner: