

NATURAL AND REFINED GAS ANALYSES

2286-C7	Gas Analysis C1 to C7+ which includes He, H2, N2, CO2, and H2S, with default AER Directive 17 observed properties (GPA 2286X)
2286-C702	Gas Analysis C1 to C7+ which includes He, H2, N2, O2, CO2, and H2S, properties using Directive 17 observed properties. (GPA 2286X)
2286-C10	Gas Analysis C1 to C10+ which includes He, H2, N2, CO2, and H2S, with default AER Directive 17 properties (GPA 2286) (Available in two report formats Operations basic or Measurement)
2286-C10O2	Gas Analysis C1 to C10+ which includes He, H2, N2, O2, CO2, and H2S, properties using observed properties. (GPA 2286)
2286-C15E	Gas Analysis C1 to C15+ Extended, includes component analysis to C15 including, He, H2, N2, CO2, H2S using observed properties. Hydrocarbons by boiling point group to C15+ and individually quantified n-Hexane, methylcyclopentane, benzene, cyclohexane, 2,2,4-Trimethylpentane, methylcyclohexane, toluene, ethylbenzene, m&p-Xylene, o-Xylene, (BTEX) and 1,2,4- Trimethylbenzene (TMB). Calculated gas properties based on measured C15+ composition. (GPA 2286 extended)
2286-CG	Combustion Gas/Burner Efficiency compositional analysis to C7+ including N2, CO, CO2 and O2.
2286-C10SG	Combustion Gas/Burner Efficiency compositional analysis to C10+ including N2, CO, CO2 and O2.
2286CBM	Gas Analysis for coal bed methane. Gas composition analysis to C7+ or C10+ for AER well testing requirements.9
2286-C15GHG	Greenhouse Gas Analysis to C15+ Extended, includes component analysis C1 to C10+, He, H2, N2, O2, CO2, H2S with n-Hexane, methylcyclopentane, benzene, cyclohexane, 2,2,4- Trimethylpentane, methylcyclohexane, toluene, ethylbenzene, m&p-Xylene, o-Xylene, (BTEX) and 1,2,4- Trimethylbenzene (TMB). Calculated gas properties based on measured C15+ composition.
FTIR-RAR	Trace rare gas analysis in gas by FTIR. FTIR able to identify numerous rare and trace gases. Please specify target analyte.
SRI-TS	Trace sulphur in Natural Gas, Propane or Butane. Includes hydrogen sulphide, carbonyl sulphide, methyl mercaptan, ethyl mercaptan, dimethyl sulphide, carbon disulphide, n-butanethiol, n-pentanethiol, n-hexanethiol, tert-butanethiol, n- propanethiol, methylethyl sulphide, thiophene/sec-butanethiol, di-ethyl sulphide, iso- butnethiol, dimethyl disulphide, n-hepanethiol, 5 major boiling point groups and total sulphur content determined separately by UV fluorescence. (ASTM D5504M)

ANT-DEW	Dew Point Analysis
TRACE-GAS	Tracer presence in gas sample – Sulfur Hexafluoride (ppm)

CONDENSATE / OIL ANALYSES

COND-BUBP	Bubble-point determination by physical analysis.
CONDI-BUBC	Calculation of bubble point using PVT. Requires liquid analysis. Calculated using phase behavior software, temperature and pressure must be specified by client.
CONDI-C30PONA	PONA (U) Unsaturated Hydrocarbons. Includes all unsaturated, cyclic and aromatic compounds to C13. Lists compounds and groups by paraffin's, olefins, naphathenes, aromatics and unknowns by boiling point. (CGSB 14.3 PONA).
CONDI-KF	Water content on oil by Karl Fischer. (ASTM D1744W)
CONDI-BTEX	BTEX Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) (Carcinogen Check).
CONDI-C30FLASH	Condensate Analysis (C1-C10+, CO2, H2S) includes C1 to C5 by detail. Oils with density less than 700 kg/m3. (O2 and other gasses available upon request)
C30FLASHEXT	Condensate Analysis (C1-C30+, CO2, H2S) Flash. This analysis specifically characterizes light gasses well.
OIL-F1	F1 (C1-C9 Hydrocarbons).
OIL-F2	F2 (C10-C16 Hydrocarbons).
OIL-F3	F3 (C16-C34 Hydrocarbons).
OIL-F3+	F3+ (C34 + Hydrocarbons).
OIL-F1F4	F1-F4 (C1 - C45 Hydrocarbons).
OIL-VOP	Phosphorus Content, Volatile Organo Phosphorous content, with Total Phosphorous reported. Light vapours condensed. (ASTM D4951)
OIL-C30VDSU	Pipeline Specifications includes the following: Hydrogen Sulfide (H2S), Viscosity at 15C Density at 15C C3+ Sulfur (%/ppm) (please define units for Sulfur reporting) Alternate temperatures may be specified (eg 7.5,25,45, 65 ect)

HYDROCARBON LIQUID ANALYSES

CONDI-FLASHHP	Condensate Analysis High Pressure (4000-10000 kPa).
CONDI-C30	Condensate Analysis Atmospheric (stabilized oils). C1 to C30+ analysis with BTEX (price dependent on weight and contamination).
OIL-PONA	Compositional Hydrocarbon heavy oil analysis - atmospheric, heavy, corrected for column losses. PONA (U) unsaturated hydrocarbons. Includes all unsaturated, cyclic and aromatic compounds to C13 by chromatography. Lists compounds and grouped paraffins, olefins, naphthenes and aromatics. (CGSB 14.3 PONA)
OIL-PIONA	PIONA Analysis. Includes all unsaturated, cyclic and aromatic compounds to C13 by chromatography. Lists compounds and groups by paraffins, isoparaffins, olefins, naphthenes, aromatics and unknowns by boiling point. (CGSB 14.3 M)
EnviroBTEX	F1 Volatiles
BTEX F1-F4	F1-F4 Fractions+ - BTEX in water analysis.
BTEX/Solids	BTEX+ - Class II Landfill Criteria. In oily sludge or like.
OIL-PARTICLE	ISO Particle Count
OIL-KFM2	Karl Fischer Method. (Water in Oil)
OIL-TOTMET	Total Metals Scan. Please contact lab for additional information.
OIL-21MET	Metals in Oil includes Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V and Zn.
OIL-KV7.5	Kinematic Viscosity @ 7.5 deg. C. ASTM D445
OIL-KV15	Kinematic Viscosity @ 15 deg. C. ASTM D445
OIL-KV25	Kinematic Viscosity @ 25 deg. C. ASTM D445
OIL-KV45	Kinematic Viscosity @ 45 deg. C. ASTM D445
OIL-KV60	Kinematic Viscosity @ 60 deg. C. ASTM D445
OIL-KVLT	Kinematic Viscosity @ client specified temperature (<45 deg C.) (Please request specific temp)
OIL-KVHT	Kinematic Viscosity @ client specified temperature (>45 deg C.) (Please request specific temperature)
OIL-C30	Compositional analysis of stabilized Oil sample (C1 – C30+, including Benzene, Toluene, Ethylbenzene, O-Xylene, M+P-Xylene, 1,2,4-Trimethylbenzene, Cyclohexane, Cyclopentane, Methylcyclohexane, Methylcyclopentane)

OIL-C100+	Compositional analysis of oil sample (<C7 – C100+)
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LPG/NGL COMPOSITIONAL ANALYSES

2177-C7	LPG Analysis. Includes component analysis C1 to C7+, including He, H ₂ , N ₂ , O ₂ , CO ₂ , and H ₂ S. Calculated liquid properties. Applicable to samples less than 10% mole C7+. (GPA 2177M)
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2186-C15LPGE	LPG Extended Analysis. Includes compositional analysis as above plus hydrocarbons by boiling point and individually quantified cyclohexane, methylcyclohexane, 2,2,4-trimethylpentane, benzene, toluene, ethyl benzene and xylene. (Applicable to samples with <0.5 mole C16+).
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LPG-RVP	Vapor Pressure of Liquefied Petroleum (LP) Gases. ASTM D1267
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LPG-BSW	BS&W (Bitumen, Sediment, and Water) reported as percent composition.
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EMULSION TESTING

EMUL-PROP	Emulsion Properties Testing Package includes: pH Viscosity Color Specific gravity Separation Conductivity Composition Metals BS&W
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EMUL-BRK	Identification of methods to break emulsion. Recommendations are made based off of lab based testing.
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SULPHUR COMPOUND AND OTHER SULPHUR SERVICES

SRI-TS	Trace Sulphur in Natural Gas, propane or butane. Reports component in concentrations <200ppm ASTM D5504M
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ICP-TOTS	Total Sulphur content on atmospheric liquids by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES).
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SUL-PLPKG	Pelletized Sulfur Purity Package includes: Ash Content % H2S Content% Moisture % Organic Impurities % % Purity
SUL-MRPKG	Molten Sulfur Purity Package includes: Ash Content % H2S Content% Moisture % Organic Impurities % % Purity (Includes molten sample care)
SUL-H2S	H2S present in pelletized or molten sulfur samples.
SUL-SO2	SO2 present in pelletized or molten sulfur samples. (Other gases rare can be analysed by request)
SUL-C	Carbon content in pelletized or molten sulfur samples.

CRUDE OIL ANALYSES

COIL-DS	Pipeline Specifications Oil Analysis Package Includes relative density, API gravity, Absolute density and total Sulphur content.
COIL-TAN	Total Acid Number -TAN. (ASTM D664)
COIL-ASPHC6	Asphaltene, n-heptane insoluble. (ASTM D4055)
COIL-ASPHC5	Asphaltene, n-pentane insoluble (ASTM D4055)
COIL-FP	Flash point (closed cup). (ASTM D93)
COIL-FRZ	Freezing point. (ASTM D2386) Additional methods available upon request.
COIL-H2S	H2S in Oil.
COIL-TOTMET	ICP Scan-Petroleum Products (29 elements). Aluminum (AL), Arsenic (As), Barium (Ba), Beryllium (Be), Boron (B), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Phosphorous (P), Potassium (K), Selenium (Se), Silicon (Si), Silver (Ag), Sodium (Na), Strontium (Sr), Sulphur (S), Tin (Sn), Titanium (Ti), Vanadium (V), Zinc (Zn). (D5708M)
COIL-OLEFNMR	Olefin content of crude oil by NMR.

COIL-PP	Pour point, crude oil. (ASTM D5853A)
ROIL-PP	Pour point, refined products. (ASTM D97)
OIL-RVPHP	Reid Vapor Pressure, pressurized samples. (ASTM D323)
OIL-RVP	Reid Vapor Pressure, atmospheric samples. (ASTM D323)
COIL-CL	Salt in crude (chloride).
OIL-VOP	Phosphorus Content, Volatile Organo Phosphorous content, with Total Phosphorous reported. (ASTM D4951)
BITU-CL	Chloride in bitumen, sediment in crude, mass %. (ASTM D4807)
COIL-TS	Sediment by extraction. (ASTMD473)
OIL-SZRF	Sulphur content EDXRF. (ASTM D4294)
OIL-SZRF	Sulphur content in oil. Please define required unit (ppm, mg/L or %)
OIL-KV7.5	Kinematic Viscosity @ 7.5 deg. C. ASTM D445
OIL-KV15	Kinematic Viscosity @ 15 deg. C. ASTM D445
OIL-KV25	Kinematic Viscosity @ 25 deg. C. ASTM D445
OIL-KV45	Kinematic Viscosity @ 45 deg. C. ASTM D445
OIL-KV60	Kinematic Viscosity @ 60 deg. C. ASTM D445
OIL-KVLT	Kinematic Viscosity @ client specified temperature (<45 deg C.)
OIL-KVHT	Kinematic Viscosity @ client specified temperature (>45 deg C.)
COIL-KF	Water content, Karl Fischer in crude oil, colorimetric, mass % (ASTM D4928)
COIL-AS	Asphaltenes insoluble in pentane.
COIL-BPFP	Boiling and freezing points.
COIL-CL	Chloride in oil (reported in mg/L unless requested ppm or mg/kg).

COIL-WAX UOP 46	Standard Wax (UOP_46). This method is based on the UOP-46 method. Designed to determine the paraffin wax content (white wax) in crude oils and asphalts. Includes only totally saturated hydrocarbons. The wax precipitation temperature is -18C.
COIL-SLT	Salinity in oil (reported in mg/L unless requests ppm or mg/kg).
COIL-ST	Interfacial tension (dynes).
COIL-MASS	Mini Assay Package includes: Oil Composition by Chromatograph Simulated Distillation Sulfur Content Phosphorous Content Total Solids Water Content Reid Vapor Pressure Viscosity Density *Olefins can be added on request at cost.
DRILL-CUTTC30	Oil in cuttings/drilling fluid/drilling mud.
DRILL-C30FP	Oil in Cuttings/Drilling Fluid/Drilling Mud Fingerprinting. Subtraction of oil in original fluid from drilling production fluid, to determine oil being produced.
COIL-OLEFWT	Olefins (total by wt%).
COIL-WAX	Paraffin wax (mol percent).
OIL-ISO	ISO Partial count oil & coolant (with photograph).
OIL-BSW	BS&W (Bitumen, Sediment, and Water) reported as percent composition.

DILUENT STUDY

DIL-PRF	Diluent profiling.
DIL-COM	Diluent compatibility with specified heavy oil.
DIL-STAB	Diluent – Heavy Oil stability study.
DIL-BLEND	Diluent blend development.

COALBED METHANE (CBM) PACKAGE (C7+)

CBM-C7	Gas analysis including oxygen C1 to C7+ (without interpretation). (GPA 2286X)
CBM-C10	Gas analysis (C1-C10+, includes He, H2, N2, O2, CO2, and H2S). (GPA 2286X)
CBM-C15EXT	Gas analysis (C1-C15+, includes He, H2, N2, O2, CO2, and H2S). (GPA 2286X)

DIESEL FUEL TESTING

DIESEL-CLOUD	Cloud Point. (ASTM D2500)
DIESEL-SIMDIS	Distillation of Fuel by boiling point. (ASTM D86)
DIESEL-ASH	Ash content by percent composition.
DIESEL-FLSHP	Flash point, Pensky-Martens Closed Cup. (ASTM D93)
DIESEL-SIMDIS	Sulphur content. (CAN/CGSB 3.0 NO. 16.0)
DIESEL-CON	Determination of contaminant present. (Metals, other)

BIODIESEL FUEL TESTING

BIODIESEL-PKGE	Biodiesel includes the following: Flash point, Pensky-Martens, Water and Sediment, Kinematic Viscosity, Sulfated ash, sodium, potassium, calcium and magnesium (ICP). (ASTM D93A, ASTM D2709, ASTM D445, ASTM D874)
BIODIESEL-DENS	Density (absolute) at 15 deg C. (ASTM D4052)
BIODIESEL-FLSHP	Flash point, Pensky-Martens.
BIODIESEL-ICPNCKM	Na, Ca, K, Mg in Biodiesel
BIODIESEL-VOP	Phosphorus Content, Volatile Organo Phosphorous content, with Total Phosphorous reported. (ASTM D4951)
BIODIESEL-TOTMET	Atomic emissions scan for typical metals. Please indicate required need.
BIODIESEL-SAR	SAR - Sodium Absorption Ratio.

MINERAL, SOIL AND ROCK TESTING

MIN-TOTMET	Atomic Scan for Al, Ti, Fe, Ca, Mg, Na, K, P, S, Be, Ag, Cr, Co, Ni, Cu, Zn, Mn, Cd, Ba, Tl.
MIN-SPECMET	Atomic Scan Specialty for Si, B, W, Zr, Ce, Th, Ls, Li, V, U.
MIN-RARE	Atomic Scan for rare earth metals - Ga, Ta, Nb, Sc.

PRODUCED WATER ANALYSES

PRODW-PCKG1	Produced Water analysis includes sodium, potassium, calcium, magnesium, barium, strontium, iron, manganese chloride, sulphate, carbonate, bicarbonate, pH, conductivity/resistivity, density, total alkalinity, total hardness, refractive index, total dissolved solids
PRODW-BOOTPKG	Basic Produced Water/ Boot Water - Sediment and water (S&W) includes pH, chlorides, % water, % oil, % sediment. (ASTM D1796)
PRODW-STIFF	Stiff-Davis diagram.
PRODW-LANG	Water Scaling tendencies simulation to predict scaling tendencies analysis.
PRODW-PH	pH in produced water.
PRODW-CL	Chloride in produced water
PRODW-SO4	Sulphate in produced water.
PRODW-THIS	Sulphide in produced water.
PRODW-DISSMET_mgl	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr,S, Ti, Sn, Ti, V, Z, Zn.
PRODW-DISSMET_ppm	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr,S, Ti, Sn, Ti, V, Z, Zn.

PRODW- DISSMET_mgkg	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr,S, Ti, Sn, Ti, V, Z, Zr.
PROD-TOTMET	ICP Scan includes up to 35 elements, specified by client. Packaging available.
PRODW-FEMN	ICP Scan Total Iron (Fe), and Total Manganese (Mn).
PRODW-SRB	Sulphate reducing bacteria (SRB).
BRIN-STGH	Brine strength testing

BOILER AND CONDENSED WATER ANALYSES

WATER-BOILION	Specialty IONS for boiler feed waters. Low level ION Analysis developed a unique package of water testing for low level ion analysis in the 1 to 10 ppb range. Ions include Calcium, Chloride, Sulphate, Sodium, Magnesium, Nitrate, Nitrite, Ammonia and potassium. Detection limits as low as 14 ppb can be achieved on total hardness calculations. Analysis is applicable for SAGD facilities or any boiler feed water.
WATER- BOILBASIC	Specialty IONS for boiler feed waters Ions include Calcium, Chloride, Sulphate, Magnesium. Analysis is applicable for SAGD facilities or any boiler feed water.

GENERAL WATER ANALYSES (Can be performed on most water types included)

WATER-PH	pH of water.
WATER-BTEX	Benzene, Toluene, ethylbenzene, xylenes.
WATER-EHC	Total extractable hydrocarbons C11 to C30.
WATER-METH	Methanol Content by GC.
WATER-ACID	Acidity of water by titration.
WATER-ALK	Alkalinity - Carbonate and Bicarbonate.
WATER-CO2	Carbon dioxide (calculated Alk.)
WATER-EC	Conductivity/Resistivity.
WATER- HARDNESS	Hardness (Ca & Mg determination).

WATER-SAL%	Salinity of produced or processed waters reported as percent
WATER-SAL	Salinity of produced or processed waters reported as mg/L
WATER-SI	Silica (as SiO ₂).
WATER-D SG	Specific gravity (kg/m ³)
WATER-TSS	Total suspended solids.
WATER-DISSMET_mgl	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-DISSMET_ppm	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-DISSMET_mgkg	Atomic Scan-Industrial water-35 elements (dissolved). Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-TOTMET_mgl	Atomic Scan-Industrial water-35 elements. Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-TOTMET_ppm	Atomic Scan-Industrial water-35 elements. Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-TOTMET_MGKG	Atomic Scan-Industrial water-35 elements. Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Ag, Na, Sr, S, Ti, Sn, Ti, V, Z, Zr.
WATER-AL	Aluminum.
WATER-TURB	Turbidity.
WATER-ASH	Ash content by weight %.
WATER-BOD	Biological oxygen demand (BOD).
WATER-BSW	BS&W (Oil, Sediment and Water content reported as percent).
WATER-COD	Chemical oxygen demand. (SM5220D)
WATER-CL	Chloride (in water done with BS&W) Argentometric.
WATER-TOTCHL	Chlorine (Total).
WATER-FRCHL	Chlorine (Free)

WATER-F1	F1 (C1-C9 Hydrocarbons)
WATER-F2	F2 (C10-C16 hydrocarbons).
WATER-F3	F3 (C16-C34 hydrocarbons).
WATER-F3+	F3+ (C34+ hydrocarbons).
WATER-TPH	Hydrocarbon content.
WATER-PAH	Total Polyromantic Hydrocarbons.
WATER-ST	Interfacial tension (dynes).
WATER-IC	ION chromatography study. (ASTM D4327).
WATER-FE	Iron total in water. (Fe)
WATER-MN	Manganese in water.
WATER-HG	Mercury in water (EPA 200.2).
WATER-U	Uranium in water (EPA 200.2)
WATER-METH	Methanol (%) in water.
WATER-MICROTOXLC50	Microtox. Determination of LC50 (lethal concentration of contaminant to kill 50% of population). Determines ability for organisms to safely live in water. (Coal filtration test available)
WATER-MICROTOXLC20	Microtox. Determination of LC50 (lethal concentration of contaminant to kill 20% of population). (Coal filtration test available)
WATER-MOLY	Molybdate in water.
WATER-ORGHAL	Organic Halogen (absorbable).
WATER-SAR	Sodium Absorption Ratio (SAR) - calculated based on sodium, calcium and magnesium concentrations present in sample.
WATER-DEHA	DEHA Iron - iron reduction method for oxygen scavengers.
WATER-HYDRZ	Hydrazine testing - oxygen scavenger replacement.
WATER-PO4	Phosphate and Orthophosphate.
WATER-TDS	Total Dissolved Solids in water. (TDS)

WATER-TS	Total solids in water.
WATER-TOC	Total Organic Carbon in water.
WATER-TKN	Total Kjeldahl Nitrogen. (TKN)
WATER-NH4	Ammonia
WATER-ZN	Zinc (Zn).
WATER-VISOG	Visible oil and Grease - can be offered onsite.
WATER-NO3	Nitrate in water (NO3).
WATER-NO2	Nitrite in water (NO2).
WATER-H2S	Hydrogen sulphide (H2S) in water.
WATER-SO3	Sulfite (SO3).
WATER-NA	Sodium (Na) in water.
WATER-K	Potassium (K) in water.
WATER-TPH	Total petroleum hydrocarbons in water (TPH reported as equivalents).
WATER-PROVLAB	Shipping samples to provincial lab for micro-biological analysis.
WATER-D	Density of water.
WATER-DRINK	Drinking Water Package Analysis of water for both commercial and residential use. Includes: pH Visible Oil and Grease Ammonia Chlorine (free and total) Chloride Turbidity Chemical Oxygen Demand Sulphate Conductivity Total Dissolved Solids Hardness Iron.

WATER-SWRP	Surface Water Release package includes: pH Ammonia Sulfate Chloride Chemical Oxygen Demand Total Suspended Solids Visible Oil and Grease
WATER-SWREXT	Surface Water Release Extended Package includes: pH Ammonia Sulfate Chloride Chemical Oxygen Demand (COD) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Visible Oil and Grease Sodium (Na) Total Petroleum Hydrocarbons (TPH)
WATER-UNK	Please describe method requested. Used for contaminant identification. "whatsit". (Charged per hour tech work including required analysis)

GLYCOL, AMINES AND SULFINOL ANALYSES

GLYCOL-PCKG1	Standard gas treating glycol package includes water, methanol, EG, Ethel, DEG, TEG percent, will also indicate amines as contaminants, reserve alkalinity, chloride, pH, suspended solids, foaming tendency and hydrocarbon co (choose any of the above for the analysis).
GLYCOL-TS	Total solids in Glycol.
GLYCOL-TOTMET	Total Metals in Glycol - Please specify metals required. Reported in mg/L. Atomic emissions scan.
GLYCOL-UNK	Unknowns in Glycol, please speak with laboratory regarding testing.
GLYCOL-FTEN	Foaming tendency of Glycol.
GLYCOL-ALK	Alkalinity of Glycol, reported as total.
GLYCOL-FP	Glycol freezing point.
GLYCOL-BP	Glycol boiling point.
GLYCOL-CL	Chloride in Glycol.

GLYCOL-STRENGTH	Percent Glycol strength in water.
GLYCOL-ENGPKG	Engine coolant glycol package includes water, EG (or other specified glycol), pH, reserve alkalinity, hydrocarbon content and freeze point.
GLYCOL-ADENG	Advanced (Engine) Coolant Analysis. Additional Analysis done beyond the basic coolant analysis.
AMINE-STDPCKG	Standard amine package includes water, total amine by alkalinity, MEA, DEA, MDEA, EG, DEG, TEG, heat stable salts, thiosulphate, H ₂ S, CO ₂ , suspended solids, iron, sodium, chloride, oil & grease and foaming tendency.
AMINE-ADV	Includes Standard Amine Package testing plus a breakdown of heat stable salts and an atomic metals scan.
GLYCOL-PH	pH of Glycol.
AMINE-STRENGTH	Amine strength.
AMINE-ASH	Amine Ash Content reported as percent
AMINE-GLY	Amine/Glycol GC scan.
AMINE-CL	Chloride content Amine.
AMINE-CO ₂	CO ₂ loading Amine.
AMINE-FT	Foaming tendency of amine.
AMINE-FP	Freeze point amine.
AMINE-H ₂ S	H ₂ S loading of amine by titration.
AMINE-RGL	Rich/Sour Grain loading in Amine.
AMINE-LGL	Lean Grain loading in Amine.
AMINE-HC	Hydrocarbon content, %/ppm level.
AMINE-TOTMET	Metals scan - 35 elements by ICP (dissolved) amine.
AMINE-METH	Methanol content by Chromatograph.
AMINE-HAS	Residual amine salts (heat stable salts) Amine.
AMINE-NAFE	Sodium and iron content (dissolved) Amine.

AMINE-THEED	THEED (N, N, N-tris(hydroxyethyl)-ethylenediamine) by GC, HEP and DEA.
AMINE-THIO	Thiocyanate by IC.
AMINE-SOLIDS	Includes total suspended and total solids present in Amine. (Characterization is an additional cost.)
AMINE-THIOS	Thiosulfates in DEA.
AMINE-CO2	Carbon dioxide (wt%) amine.
AMINE-SU	Sulphur content in DEA
AMINE-FERRO	Metals lost or accumulated in amine from piping or gas.
AMINE-RACID	Determination of Residual acid in amine responsible for corrosion.
AMINE-ISO	ISO partial count oil & coolant (with photograph optional).
AMINE-AVALALK	Available alkalinity

AIR QUALITY MONITORING

AIR-VOC	VOC (extraction and analysis) includes Dichloromethane, Benzene, Toluene, Ethylbenzene, Total Xylenes, Styrene, Isopropylene, 3- ethyltolene, 1, 2,5-trimethylbenzene, 1,2,4-trimethylbenzene, Heptane, Octane, n-Nonane, Decane, n-Undecane, n-Dodecane, 2,2,4-Trimethylpentane Methylcyclohexane, Chloroform, 1,1,1-trichloroethylene, 1,1,2-trichloroethane, Tetrachloroethylene, Chlorobenzene, 1,4-dichlorobene 1,2-dichlorobene, 1,2-dichlorobenzene, Methyl isobutyl ketone, Methyl butyl ketone (2-hexanone), Naphthalene, d-Limonene, Total VOCs
AIR-CBREATH	Aviators Breathing Air Analysis includes: Odor Oxygen as % Nitrogen and rare gases (ppm) Methane (ppm) Propane (ppm) Propane (ppm) Acetylene (ppm) Dew point (ppm) Water content/ Dew pt Carbon dioxide (ppm) Carbon monoxide (ppm) Particulates (ppm) Nitrous oxide (ppm) Ethane (ppm) Ethylene (ppm) Volatile halogenated hydrocarbons (ppm)

	<p>Volatile non-halogenated hydrocarbons (ppm) Freon (ppm) Trichloroethylene (ppm) Sulfur hexafluoride. (ppm)</p>
AIR-BASIC	<p>Breathing Air Analysis includes: Oxygen as % Nitrogen Carbon Monoxide Carbon Dioxide Methane Volatile halogenated hydrocarbons Volatile non-halogenated hydrocarbons Water Content / dew pt. Contaminants</p>
AIR-PART	<p>Particulate solids content present in Breathing Air Sample</p>

ASBESTOS

ASBESTOS	<p>Asbestos analysis (Accredited). Asbestos can be analysed from a surface sample, broken up sample or from an air sample.</p>
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MOLD

MOLD	<p>Mold analysis – please specific if concerned about a particular mold variety. Mold can be analysed from a surface sample, swab of a surface or an air sample.</p>
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OCCUPATIONAL TESTING

OCC-BAC	<p>Breath Alcohol testing (BAC).</p>
OCC-ADV	<p>Drug Screening Test (DOT or Confirmation). Sample analyzed through Mass Spectrometry in order to determine specific metabolites and their concentrations. Includes review of results by a physician (Medical Review Officer-MRO) in order to proof prescribed metabolite use.</p>
OCC-SAMSHA	<p>POCT testing within SAMSHA guidelines (10-panel, 7-panel or 5-panel – client must specify when booking testing).</p>
OCC-POCTU10	<p>Drug screening testing POCT in urine (10-panel).</p>
OCC-POCTU7	<p>Drug screening testing POCT in urine (7-panel).</p>
OCC-POCTU5	<p>Drug screening testing POCT in urine (5-panel).</p>
OCC-POCTS	<p>Drug screening testing POCT in sputum.</p>

OCC-POCTH	Drug testing in hair samples.
OCC-TPA	Third Party Collection – TPA Supplies
OCC-K2	Drug screening testing POCT – K2/Spice/Synthetic THC
OCC-FEN	Drug screening testing POCT – Fentanyl
OCC-SPC	Drug Screening – Client Specified Metabolites, must be specified in advanced
OCC-HEALTH	Pre-Employment Health Assessment
OCC-MOBILE	Mobile Testing Unit available to perform testing on site.

CORROSION ANALYSIS

PRODW-LANG	Langelier Saturation Index (LSI) corrosion analysis.
PRODW-CUST	Copper Strip Tarnish Test (ASTM D130)
PRODW-METAL	Metals by Subtraction
PRODW-CORR	Corrosion Inhibitor ppm.

MICRO ANALYSES

PROVLAB	Coliform fecal.
PROVLAB	Coliforms total.
WATER-COLOR	Color.
PROVLAB-ECOLI	E.coli

SOILS AND MUDS

SOIL-PAINT	Paint filter test.
SOIL-PH	pH (in dirt/sludge).
SOIL-TCLP	Metals (TCLP/ leached) by ICP/solids.
SOIL-TOTMET	Metals (total) by ICP.

SOIL-VSOL	Alberta landfill solvent scan-leachate (soil).
SOIL-D50	Directive 50 Package includes: Electric Conductivity (EC) D50 Required Metals Scan Microtox pH SAR (Sodium Absorption Ratio) Sodium Specific Gravity TKN (Total Kjeldahl Nitrogen) (* Hydrocarbon Screen can be added at cost if requested)
SOIL-CLASS1	Class I Landfill Package includes: Alberta Landfill Volatile Solvent Scan BTEX Analysis Flash Point (Closed Cup) Alberta Landfill Metals (TCLP) Paint Filter Test pH
SOIL-CLASS2	Class 2 Landfill Package includes: BTEX Analysis Flash Point (Closed Cup) Hexavalent Chromium Alberta Landfill Metals (TCLP) Paint Filter Test pH (Class I and Class II can done as one analysis in combination ask lab for details) This test is generally used for landfill waste classification)
SOIL-DS	Detailed Salinity Package includes: Bulk Dry Weight Density Chloride Electric Conductivity Metals for Salinity Scan pH Saturation Percentage SAR (Sodium Absorption Ratio) Specific Gravity Sulfate TDS (Total Dissolved Solids) TKN (Total Kjeldahl Nitrogen) Particle Size Distribution (Soil Classification)
SOIL-BASIC	Basic Salinity (SAR) Package includes: pH Electric Conductivity (EC) SAR (Sodium Absorption Ratio) Sodium
SOIL-F1F4BTEX	F1-F4 Fractions+ with BTEX analysis.
SOIL-F1	F1 (C1-C9 Hydrocarbons).

SOIL-F2	F2 (C10-C16 Hydrocarbons).
SOIL-F3	F3 (C16-C34 Hydrocarbons).
SOIL-F3+	F3+ (C34 + Hydrocarbons).
SOIL-F1F4	F1-F4 (C1 - C45 Hydrocarbons).
SOIL-BTEX	BTEX Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)
MUD-PSA	Particle Size Analysis by Laser Diffraction

SPILL ANALYSIS / UNKNOWN IDENTIFICATION

WHTSIT-SPILL	Identification of unknown spilled fluid. Remediation recommendations can be made if requested.
WHTSIT-FLUID	Identification of unknown fluids. In some cases, recommendations to break/remove fluids can be provided.
WHTSIT-SOLID	Identification of unknown solid or semi-solid materials. In some cases, recommendations to break/remove the material can be provided.

FIELD SERVICES

TRUCK-TECH	Sample Technician hourly rate.
SAFETY	Second Technician/ safety hourly rate.
HOTSHOT	Hot shot services per hour.
CONSULT	Technologist regular time (includes travel and working time) per hour.
CONSULT-SAFE	Second technologist onsite (as required) per hour.
MONITOR-DAYRATE	4-head gas monitor rental per day.
VEHICLE-KM	Vehicle charge (per kilometer) - only applied to long term contracts.
VEHICLE-NORTHKM	Vehicle charge Saskatchewan and BC (per kilometer) - only applied to long term contracts.
SCBA-DAYRATE	SCBA air pack (per tank) rate per day.



UTV-DAYRATE	All Terrain Remote access equipment rate, per day (Equipment available includes snowmobile, All-Terrain Vehicle, Canoe, or Utility Task Vehicle). Costing per vehicle used.
UTV-TRAILER	All terrain equipment transport trailer rate, per day.
SAMPLE-HIRISK	High Risk sampling rate, per sample.
RENT-AUTOFYRTIE	Combustion analyzer rate, per day.
MONITOR-CAL	MSA Altair 4 monitor calibrations.
GAS-DRAGER	Dragger gas tester rate, per test.
GAS-DRAGER	H2S by gas detection tube when gas analysis requested (per tube).
GAS-DRAGERX	H2S by gas detection tube when gas analysis not requested (per tube).
GAS-TUT	H2S by Tutweiler onsite, per test when gas analysis is present.
GAS-GONE	Sample cylinder charge (if returned through a competitor's lab), per cylinder.
RENT-PHCHK	Calibration check of customer pH meter.
RENT-BUMP	Calibration bump Altair 4.
FYRITE-SERV	Fyrite Rebuild/Service. Description: Bacharach solution is approx. 94-100% plus hazardous shipping. Several weeks' order time. Disposal of solution costly. Solution is highly caustic and toxic.
FYRITE-RENTAL	Rental of Fyrite instrument.

TRANSFORMER OIL ANALYSES

TRANS-ACIDNO	Acid Number.
TRANS-DIEL	Dielectric breakdown.
TRANS-COLOR	Color number (T-Oil).

TRANS-TESTPKG	Transformer Oil Test Package includes: Water Content Dielectric Strength Acidity (NN) Interfacial Tension IFT-NN Relationship Quality Index Dissipation Factor Polychlorinated Biphenyl (PCBs)
TRANS-MOIST	Moisture in transformer oil.
TRANS-IFTENS	Interfacial tension of transformer oil.
TRANS-D	Specific gravity.
TRANS-V	Viscosity.
TRANS-RESIS	Resistivity.
TRANS-S	Corrosive sulphur.
TRANS-ISO	Particle count.
TRANS-METALS	Metals in transformer oil - please define.
TRANS-PCB	PCBs.
TRANS-REFRAC	Refractive index.

FOOD GRADE OIL

FOOD-MTLS	Atomic Scan for Metals in Food Grade Oil
FOOD-H2O	Water Content reported as percent
FOOD-CLR	Colour of Food Grade Oil

ANALYTICAL/PRECISION WEIGHING

WGHT-ANA	Analytical weight on a certified balance to 4 decimal places. Weight up to 200g.
WGHT-PRCS	Precision weight on a certified balance to 2 decimal places. Weight up to 20 kg.

INCIDENTAL CHARGES

HOTSHOT	Courier/freight charges.
REPORT	Customized data exports at no additional cost, however if specialized reporting or extensive changes are required; clients are billed at cost + 10%.
MINBILL	Minimum billing.
LABHOURS	Additional laboratory work (1 hour).
PAS-FILE	PAS file submission to AER (requested after primary).
PAS-FILE	PAS file submission to the client with well information as received with sample.
HAZ-SAMP	Hazardous Sample Handling Surcharge – required when additional safety precautions are required to complete analysis, or additional preparations are required to maintain volatile samples integrity.
SAMP-DISTL	Additional Sample Preparation/Distillation Required
CALLOUT	Charge applied to samples/work that is completed outside regular operating hours.
ENV-FEE	Environmental Fee

Sample Containers are available free of charge to our customers providing samples to the lab unless otherwise noted.

Sample costs are associated with environment fees.