

mining

Take regular samples representative of normal operating conditions. Send them to POLARIS Laboratories® for testing and analysis.



ENLUSE Laboratories® processes the sample. Testing is completed, results are analyzed, recommendations are made and a report is generated.



ENLUSE Laboratories® emails the results to the customer. The customer evaluates the recommended course of action.



Customer takes action and performs the necessary maintenance.



Harsh operating conditions, extreme load variations and the high-dollar costs involved in downtime and equipment replacement make fluid analysis a necessary part of doing business in the mining industry. Routine testing identifies small problems before they become major failures allowing you to meet the demands of your customers on time.

Maximize asset reliability and regain control of your production schedules with an effective fluid analysis program by ENLUSE Laboratories® . . . it costs so little to protect so much.



The heavy-duty equipment required by mining applications is often exposed to extreme, uncontrollable environmental factors for long periods of time, yet is still expected to maintain maximum performance levels. Contamination and wear are imminent and when left unchecked, can halt production in a heartbeat. Monitoring the condition of both the fluid and the unit through analysis identifies wear-causing contaminants and their effect on component performance. Monitoring the condition of coolant along with engine oil creates a clearer picture of what's occurring in the engine. Sampling frequency should be based on the unit's criticality to production, as well as the costs involved in replacement or repair.

Diesel Engines

Diesel engines are the power units for your business and without power, all work stops. It is imperative to monitor wear, contamination and the oil's properties to insure these engines do not fail prematurely. Unscheduled downtime is far more costly than the cost of repairs. Monitoring the condition of the coolant and the fuel along with the oil puts all of the pieces of the puzzle together to tell a clear story. Choose the testing regime below that meets your maintenance and financial goals for your fluid analysis program.

TEST PACKAGES - OIL

Basic - Monitors both the unit and the fluid for wear and contamination

- 24 Metals by ICP
- Viscosity @ 100°C
- % Fuel Dilution
- % Soot
- % Water

TEST PACKAGES - Hydraulic water glycols

Testing monitors water levels to maintain fire-resistance capabilities and pH to avoid acid formation and maintain system cleanliness.

- 18 Metals by ICP
- pH
- % Water by Karl Fischer
- ISO Particle Count

TEST PACKAGES - DIESEL

FUEL go/no go - can detect problems causing fuel filter plugging and determine fuel's impact on fuel filter life

- ICP Metals
- Pour Point
- Water and Sediment
- Bacteria, Fungi & Mold
- Thermal Stability

Advanced – Determines if product in bulk storage tanks complies with required supplier specifications

- All Basic Package Tests
- Viscosity
- PPM Sulfur
- API Gravity
- Flash Point
- Cetane Index
- Cloud Point
- Distillation

TEST PACKAGES - COOLANT

Basic - Basic testing monitors the corrosive attributes of the coolant itself – acidic or alkaline – in addition to chemical or mechanical attack on metal – additive or inhibitor present:

- Visual (color, oil and/or fuel contamination, foam magnetic/non-magnetic precipitation and odor)
- pH
- Glycol
- Freeze Point
- Boil Point
- Nitrite
- TDS (Total Dissolved Solids)
- Specific Conductance
- Carboxylic Acid Pass/Fail (Shell, Chevron or Cat ELC only)
- SCA Number
- Total Hardness
- Corrosion, Contaminant and Inhibitor Metals (Iron, Copper, Aluminum, Lead, Tin, Zinc, Silver, Calcium, Magnesium, Silicon, Phosphate, Boron, Molybdenum, Sodium, Potassium)
- ELC Basic Coolant Analysis Additive (Benzoate, 2-Ethylhexanoic acid, Sebacic acid, Octanoic acid, p-Toluic, MBT, TT Z, BZT)

Advanced - Advanced testing identifies possible sources of problems detected in Basic Coolant Analysis such as combustion gas leaks, air contamination, electrical ground problems, localized overheating, chemical breakdown or other contamination sources inside or outside the system. It includes all tests in Basic Coolant Analysis plus:

- Contaminants (Chloride and Sulfate)
- Inhibitors (Nitrite and Nitrate)
- Degradation Acids (Glycolate, Formate, Acetate and Oxalate)

Gear Systems/ wheel motors

Although contamination by dirt and water should be closely monitored in manual/auto transmissions, electric wheel motor barrings, differentials, final drives and planetaries, the biggest concern for these systems is the type of wear occurring.

TEST PACKAGES

Basic

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40°C or 100°C

Advanced

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40°C or 100°C
- Acid Number
- Oxidation
- Particle Quantifier (PQ) – ferrous density

Hydraulics

Cleanliness is critical for fluid power systems such as hydraulics and auto/powershift transmissions. If the fluid is dirty, valves will stick, components will wear and work will come to a screeching halt. Trying to fix these problems in the field without information on what needs to be corrected can create even more contamination problems, compounding your issues. Choose the testing regime below that meets your maintenance and financial goals for your fluid analysis program.

TEST PACKAGES

Basic

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40°C or 100°C

Advanced

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40°C or 100°C
- Acid Number
- Oxidation/Nitration
- Particle Count