

FLUID ANALYSIS PROGRAM OVERVIEW

LUBEWATCH®



LubeWatch®



Monitor Equipment Performance

LubeWatch® fluid analysis enables you to track the performance of equipment that is the lifeblood of your business. Through regular fluid analysis, equipment life and oil replacement intervals can be optimized and lubricant needs can be identified, and the changing environment within the equipment can be monitored. This knowledge helps in the precise scheduling of maintenance work that can reduce downtime or even eliminate the risk of catastrophic failure.

The LubeWatch Fluid Analysis Program Provides:

- Accurate results on a comprehensive list of packages and a wide variety of specialized testing procedures
- Reliable interpretation of test results and actionable recommendations based on the data
- 24 to 48-hour turnaround of tests and analyses (after receipt of the lab) with maintenance recommendations via email, mobile app, or website
- Advanced technical services including component failure and/or wear particle analysis
- Expert training and in-field counsel and support
- Cost-effective standard and specialty tests
- Added assurance of oil and system integrity when running on an extended oil drain interval program

FLUID ANALYSIS HELPS INCREASE EQUIPMENT RELIABILITY

**Reduce
Maintenance
Costs**

**Schedule Preventive
Maintenance
More Efficiently**

**Minimize
Equipment
Downtime**

**Minimize
Oil Disposal**

**Maximize
Oil Replacement
Intervals**

**Optimize
Equipment Life**



FLUID ANALYSIS CAN HELP YOUR EQUIPMENT ACHIEVE IMPROVED PERFORMANCE.

Reach a new level of reliability using the LubeWatch Fluid Analysis Program. The combination of knowledgeable people, targeted products and customized services such as LubeWatch, can help lower operational costs and maximize equipment uptime. The fluid analysis program can be used to identify contamination or wear before it results in costly downtime.

To learn more, contact your marketer or Chevron at 1-866-354-4476.



LubeWatch Fluid Test Packages

LubeWatch simplifies the process of testing by creating standard test packages for frequent, typical applications.

C1 - Basic Lubrication	Not recommended for engine applications or critical industrial systems. Limited data for trending analysis
C2 - Diesel Crankcase	Diesel, Dual Fuel & Gasoline Engines. Not recommended for drive train components, hydraulics or industrial applications. Particle count only available on new lubricant
C2AN - Diesel Crankcase	Diesel, Dual Fuel & Gasoline Engines using CK-4/FA4 Oils. Not recommended for drive train components, hydraulics or industrial applications. Particle count only available on new lubricant
Delo 600 ADF Diesel Crankcase	Diesel Engines on Delo 600 ADF Only. Not recommended for drive train components, hydraulics or industrial applications. Particle count only available on new lubricant.
C3 - Natural Gas Engines & Comp	Natural Gas Engines and Associated Compressors
C4 & C4PC - Industrial & Drive Trains	Industrial applications including hydraulics, gearboxes, circulating systems, compressors, pumps and drive train components, transmissions, axles, differentials
C5 - Metal Working	Metal Working Only
C6 - Turbines	Steam and Gas Turbines
C7 - Coolant Basic Conventional	Diesel or Gasoline Engines with conventional coolant
C8 - Coolant Basic Extended Life	Diesel Engine Cooling systems with Extended Life Coolant. Basic Test
C9 - Coolant Advanced Extended Life	Diesel Engine Cooling systems with Extended Life Coolant. Recommend testing once per year.
C10 - Basic Grease	Testing of in-service grease. Recommend using grease thief to pull proper sample. *Test procedures can vary by lab.
C11 - Advanced Grease	Testing of in-service grease. Recommend using grease thief to pull proper sample. *Test procedures can vary by lab.
C12 - Filter Debris Analysis	Analysis of component filter element. Recommend also sending in sample of lubricant for separate analysis.
C13 - Photo Patch Test	Provides a visual of the cleanliness and particles in a lubricants. Standard patch test which includes a photo of the patch on the report.
C14 - Diesel Fuel Basic	Use for basic properties of diesel fuel. *Test procedures can vary by lab.
C15 - Diesel Fuel Advanced	Comprehensive package for advanced storage as well performance properties of diesel fuel.
C16 - Diesel Fuel Cleanliness	Measurement of diesel fuel cleanliness level, water content, and metals.

**Other specialty tests are also available. Ask your Chevron Lubricants representative for more information.*

**ON- AND OFF-HIGHWAY: AGRICULTURE, AUTOMOBILE, CONSTRUCTION, FORESTRY,
MASS TRANSIT, MINING & QUARRY, RAILROAD, TRUCKING**

Equipment Type	Suggested Sampling Frequency		Sampling Location
	Hours	Miles	
Diesel Engines	250-500 hours	10,000-20,000 miles (16,000 - 32,000 km)	Through Sample Port Valve Installed Prior To Filter or Dipstick Retaining Tube
Gasoline Engines	-	5,000 miles (8,000 km)	Through Oil Level Checkpoint, Dipstick Retaining Tube or Oil Level Plug
Transmissions	500-1,000 hours	20,000-40,000 miles (32,000 - 64,000 km)	Through Oil Level Plug or Dipstick Retaining Tube
Gears, Differentials and Final Drives	500-1,000 hours	20,000-40,000 miles (32,000 - 64,000 km)	Through Oil Level Plug or Dipstick Retaining Tube
Hydraulics	1,000 hours	40,000 miles (64,000 km)	Through Sample Port Valve Installed Prior To Filter or Oil Fill Port of System Reservoir at Mid-Level

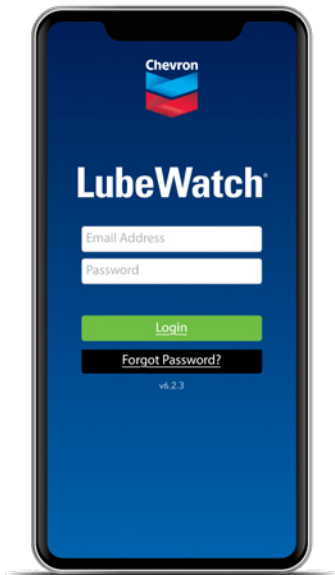
Always confirm that the sampling frequency is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

**MANUFACTURING & PROCESSING AND INLAND MARINE: CEMENT, FOOD & BEVERAGE,
MARINE EQUIPMENT, NATURAL GAS DISTRIBUTION, OIL & GAS EXPLORATION, POWER
GENERATION, PULP & PAPER, SUGAR MILLS**

Equipment Type	Suggested Sampling Frequency		Sampling Location
	Normal Use	Intermittent Use	
Diesel Engines	Monthly 500 hours	Quarterly	Through Sample Port Valve Installed Prior To Filter or Dipstick Retaining Tube
Natural Gas Engines	Monthly 500 hours	Quarterly	Through Sample Port Valve Installed Prior To Filter or Dipstick Retaining Tube
Gas Turbines	Monthly 500 hours	Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Steam Turbines	Bi-monthly	Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Air, Gas Compressors	Monthly 500 hours	Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or Out of the System Reservoir
Refrigeration Compressors	Bi-monthly	Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or Out of the System Reservoir
Gears, Bearings	Bi-monthly	Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or Out of the System Reservoir
Hydraulics	Bi-monthly	Quarterly	Through Sample Port Valve Installed Prior To Filter or Oil Fill Port of System Reservoir at Mid-Level



Add LubeWatch® To Your Maintenance Program



Contact your
Chevron Lubricants
representative for
more information.

The LubeWatch Process

Submitting oil or other lubricants for LubeWatch fluid analysis is simple. Contact your Chevron representative, or visit www.chevronlubricants.com to contact the LubeWatch program lab nearest your location. The lab will set up your account and send a sampling kit to you. After pulling a sample, simply send it back with complete sample information to the lab in the LubeWatch mailing container.

Most sample tests will be completed within 24 hours of receipt at the laboratory. Your data will be available 24/7 on the LubeWatch website. You can manage and customize your email notifications on the website. A LubeWatch Mobile App is available to both Android and iOS users. To reduce time filling manually filling out information on the sample labels there is a mobile sample submission option. Your Chevron representative will assist you during the on setup process.

Set a Foundation for Reliability

The best way to address the future is to have a firm grasp of the present. A detailed profile of the equipment's environment will help LubeWatch identify the oil, fuel and equipment types, applications and special needs. Therefore, it is important to thoroughly fill out a LubeWatch sample information form for all samples—particularly on the initial round. This confidential information will help LubeWatch labs conduct appropriate test procedures to accurately analyze the used oil samples. Providing complete and accurate equipment information allows LubeWatch analysts to make the most accurate evaluation and recommendations that benefit your overall equipment effectiveness.

Achieve World-Class Performance

Incredible care and attention to detail were brought to every aspect of the LubeWatch fluid analysis program development and lab evaluation process. The driving force behind this intensive effort was to bring greater value through accurate and insightful data interpretation—as well as outstanding technical expertise and service—to our marketers and customers. We are very proud of this program and invite you to use our achievement to create new standards of your own.

Reliability is a Commitment

Building reliability into day-to-day business operations takes commitment. We should know. At Chevron, we've created a corporate culture that revolves around safety and reliability. We combine that with our legacy of industry-leading innovation in product formulation. Operating safely and reliably is an extension of who we are, and it sets us apart from lubricant suppliers that just talk about reliability. At Chevron, we live it.



A **Chevron** company product

chevronlubricants.com/lubewatch