



Used Oil Analysis - Knowing Sooner Is Better

Oil analysis is a tool to gauge what is going on inside an engine. By analyzing the condition of the used oil and examining it for wear metals, used oil analysis can help reduce unnecessary downtime by catching potential problems early. Further, it can lead to savings in reduced oil changes when test results indicate that drain intervals can be extended. Oil analysis can help support warranty claims and enhance resale value of equipment, too. Over time, consistent, repeated oil analyses will build a trend history to analyze long-term conditions of moving components.

Catching Problems Early – Wear metal reports, which can help an owner visualize the condition of the crankshaft, bearings, cylinder liners, pistons, and piston rings, provide an indication to the owner whether the wear is normal or needs attention immediately. Viscosity and total base number (TBN) are also presented in the analysis. Reported viscosity tells whether the oil is falling out of grade and leaving equipment vulnerable to excessive wear. When a viscosity report indicates an increase in viscosity, it is usually due to oxidation. Oxidized oil can lead to deposit buildup, sludge, and reduced fuel economy.

Extending Drain Intervals – Several tests are run with oil analysis, including testing for soot to check combustion efficiency of an engine and testing for oxidation, which measures the effective service life of the oil. Testing for nitration indicates whether there is an improper air/fuel ratio that could lead to oil thickening. Lab results showing water in the oil typically indicate a coolant leak or condensation due to low operating temperatures or inadequate crankcase ventilation. Water in the oil can prevent extending drain intervals due to improper lubrication and the potential for sludge formation.

Building a Trend History – Keeping a trend history for each piece of equipment is the best way to optimize the benefits of used oil analysis. For the trend to be most valuable, oil should be sampled at consistent intervals and after the engine has operated at normal operating temperature for several hours. These practices help ensure the small sample will be representative of the relatively large amount of oil that circulates throughout the engine.

The sooner the lab results are in, the sooner you'll know what's going on inside your engine. For more information on how used oil analysis can benefit your operation, talk to an FS Energy Specialist today.