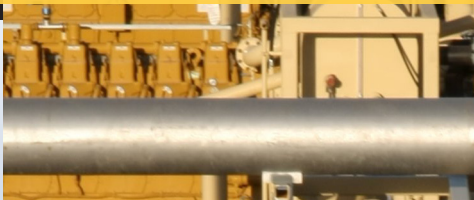




RICE-MACT COMPLIANCE

Oil analysis has always been an important tool for reliability centered maintenance, now it is an integral part of remaining within compliance with RICE-MACT EPA regulations. ALS Tribology offers up analysis and service to help you remain compliant while reducing your overall spending on downtime, parts replacement, and labor costs.

Testing supports compliance of RICE-MACT EPA regulations



Why test with ALS?

- EPA Compliance for NESHAP RICE-MACT rule
- RICE-MACT alert reporting
- Reduce unscheduled maintenance incidents
- Stay informed and plan maintenance activities
- Improve asset reliability and availability
- Reduce downtime, labor costs, and parts replacement

What to test for to remain compliant?

| Parameter | Condemning Limits |
|------------------------------------|------------------------------------|
| Total Base Number (diesel engines) | <30% of TBN of new oil |
| Total Acid Number (CNG engines) | Increase of >3.0 mg TAN of new oil |
| Viscosity | Change \pm 20% of new oil |
| Water | >0.5% |

The EPA has National Emission Standards for Hazardous Air Pollutants (NESHAP) for certain stationary engines that go into effect on October 19, 2013. The EPA regulations come under RICE-MACT rules, which apply to any piece of equipment driven by stationary reciprocating internal combustion engines located at a major source of hazardous air pollutants (HAP). "RICE-MACT" refers to "Reciprocating Internal Combustion Engines" (RICE) and "Maximum Achievable Control Technology" (MACT).

These rules are designed to regulate emission standards for stationary reciprocating engines, which go into full effect under NESHAP Subpart ZZZZ. This new regulation will require the industry to implement new processes when it comes to testing in-service engine oils. Oil and filter changes will be mandated depending on the horsepower of the engine, engine design, and whether the application is emergency or non-emergency. This will impact lubrication management practices. The use of in-service oil analysis allows for alternative oil change frequencies instead of the prescribed frequencies detailed in the NESHAP ZZZZ regulations.

In the midstream sector the need to test the oil for EPA compliance of the RICE-MACT ruling is a necessity. Natural gas engines that fall under this provision are required to test or change their oil depending upon the horsepower and other factors. ALS can provide you with the tools needed to maintain your equipment's availability and provide compliance with the EPA Ruling. ALS

Tribology programs are designed to provide accurate and timely information allowing you the most flexibility in equipment maintenance actions, reducing the potential for costly repairs and possible penalties.

Testing of the used engine oil provides a tool for documenting compliance of the oil change requirements as well as allowing for drain intervals that may be more favorable to maintenance practices. ALS test reports provide horsepower ratings on applicable equipment when this information is provided. Diagnostics protocols can then note a "RICE-MACT alert!" on applicable test reports. This would involve mandatory re-testing of the data outlier to confirm original data reported and recommending an immediate oil change if not done at time of sampling. Operators will have two business days to change their oil or take the unit out of operation upon receipt of the RICE-MACT alert sample analysis.

Delivering information that provides more value to lubrication management practices is one more way ALS partners with its clients to make informed decisions.



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