Case Study / Energy

Backup Power Generator

The customer observed that his backup generator was experiencing power loss, abnormal temperature, and altered smoke color.

To prevent further damage and avoid a potential failure, the client reached out to ALS for fluid analysis to locate the source of these issues. Utilizing the analysis for predictive maintenance for their backup generator. Potential risks of not performing predictive maintenance:

- Catastrophic failure
- Loss of production
- Reduced resale value

Analysis

The sample presented high external contamination by dust (silicon) and high concentration of iron, copper, chromium, aluminum and excess filings. Thus, indicating external contamination and causing engine wear. The analysis carried out by ALS concluded the sample presented:

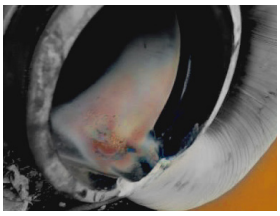
- High concentration of iron, copper, chromium, aluminum and excess filings (Cr, Fe, Cu, Al, Si, and vis.)

Diagnosis

ALS contacted the customer to suggest detailed inspection actions such as, checking for damage to the seals, and the condition of the clamps and hoses.

Solution

After following ALS recommendations, the customer discovered the root cause of the problem. Highly contaminated air was entering the system due to poor clamp positioning at the air filter outlet. This contamination resulted in wear on the turbine and cylinder kit, requiring their replacement. Once the parts were replaced, the generator was able to return to operation.



Result

The client estimated that without the insights provided by ALS fluid analysis and diagnosis, the costs due to external contamination, overheating, internal engine wear, piston damage, and engine failure would have totaled $15,588.12 USD.

75%
COST SAVINGS

By replacing the cylinder kit and turbinefor $3,901.48 USD, the client avoided an additional $11,686.64 USD in expenses.