

GSU Field Evaluation Summary Report

Power Plant Cooling Tower

Test Setup

An Amarillo Gear mobile filtration system, GSU110 2.0 MBL, was installed and evaluated on one cell of a power plant cooling tower. The cell contained an Amarillo model 1712 gearbox. This cell had the required Ø1" supply and return oil lines. The 'as found' condition of the oil in the gearbox was considered 'well used' with an accumulated 8,095 run hours. The oil used in the gearbox was 21 gallons of ISO 220 viscosity synthetic oil. The GSU was installed and allowed to run continuously* for a period of 3 weeks with the gearbox in operation.

*A brief power outage occurred during the final week of testing due to weather.

Test Protocol

Oil samples were taken from the control panel on the GSU. The sampling line was purged (approximately 2 oz.) prior to taking each sample. Other data recorded at each sample was oil temperature and GSU run hours. A baseline sample was taken several minutes after startup. The delay was to ensure the oil supply line was adequately circulated. The sampling frequency proceeded as follows:

- 15 Passes (1 sample after 3 hours filter time)
- 3 Days (2 samples each day for 3 days)
- 3 Weeks (1 sample each week for 3 weeks)

Oil Analysis Results

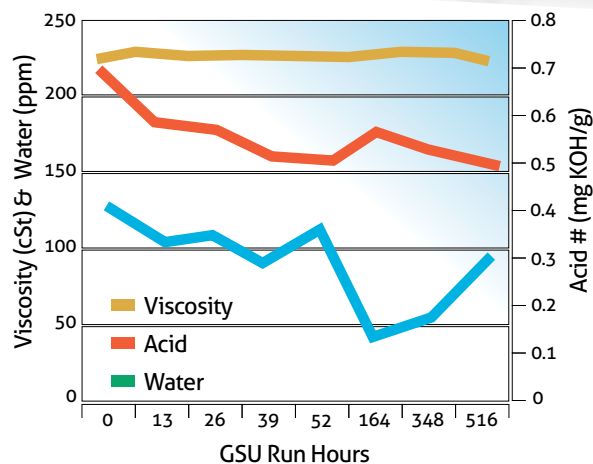
Particulate Count (ISO 4406:99)

| | |
|----------------|------------------------|
| Startup..... | 25/23/20 (condemnable) |
| 15 Passes..... | 21/20/16 16x cleaner |
| 3 Days..... | 17/16/12 256x cleaner |
| 3 Weeks..... | 18/16/12 256x cleaner |
| New Oil*..... | 16/14/10 |

Target for Industrial Gearbox: 17/15/12

*Same oil as that used for gearbox

Viscosity, Water & Acid Numbers



Conclusion

The GSU installation, startup, and operation proceeded as expected. The functionality of the mobile system met expectations. In regards to filtration performance, the GSU surpassed expectations. In 3 days the unit retrieved severely contaminated oil from the brink of disposal back to nearly virgin oil cleanliness while simultaneously dropping the water content to the sub-100 ppm level. Based on these results, the GSU evaluation at the power plant is considered a success.