

Three Quick Lessons About Collecting Samples

I guess you can say that we needed a lesson on how to pull a proper oil sample from our equipment, but we thought we were doing it right. How difficult can it be to pull a simple sample of oil? Maybe that attitude is the reason our results were off the charts; we thought that all we had to do was get the sample into the bottle. We didn't really think about the equipment.

You see...our first set of samples came back with some alarming wear metals. The results were so alarming that we wanted to drain the oil and change the filters ASAP. However, we had run the oil only 250 hours and yet large amounts of iron, copper and potassium were showing up in the results. For the next 1,500 hours, the reports continued to show the same results. Why was our condition-based program not working?

We invited an oil-sampling expert to visit our site to help solve this quandary. The expert listened to our story and suggested that he pull some samples on our equipment. He would then send the samples to the same lab we sent our samples, just in case the lab was in error. When he began sampling, he opened his case, took out a pair of thin rubber gloves and slipped them on. Next, he removed tubing from a protected plastic baggy. Then we noticed that each bottle he used was individually sealed in a protective box.

We sat back and chuckled at the sterilized approach and made comments like "What is this – surgery?" He told us that we should treat sample collecting as if it were surgery, to act as if we were collecting a sample of blood from a human to read his vitals. The only difference was we were pulling a sample of oil to get the vitals of a machine.

When the results came back, the expert's samples lacked all the things that caused us concern on our samples. There were no major iron counts, and no potassium or copper limits that were cause for alarm.

The expert wanted to watch us pull a sample. He thought it was a good idea to analyze our practices. So one of our technicians walked over to a toolbox (just as anyone of us would have) and grabbed the tubing rolled up and bound with a nylon tie. He picked up the pump that was stored in an old box that had a few holes. The sampling bottle was in a different box with a few wrenches, a screwdriver and filthy rags.

The expert quickly assessed the problems with our technique:

1. The copper levels were coming from the pennies in the pocket of the technician. He put the bottle cap into his pocket filled with pennies while he pulled the sample.
2. The iron counts were coming from the wrenches and the toolbox where bottles were stored.
3. The potassium was coming from the perspiration and dirt on the skin.

Our sampling program is now structured more like the expert's program, and we haven't seen the same results since.

Believe It or Not!

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