Optimizing PMs Through Oil Analysis

At Ace Service Center a good oil analysis program combines with efficient maintenance software to save time and money.

By Tom Gelinas
Editor

It was about 20 years ago when School House Companies started as a swimming pool company in what was originally a one-room schoolhouse. When the tankers that were brought in to fill pools experienced slow periods during the off-season, the team decided to use them to haul freight. This approach proved to be more than just a lucrative side job. It was the beginning of Ace Service Center, Inc., one of seven divisions of School House Companies.

Jim Miller, the company's fleet operations director, attributes this success to the fact that his team can manage any heavy-duty maintenance need from bulldozers and tractor-trailers to golf carts—and save time and money while doing so. He says he accomplishes this by addressing the maintenance requirements of his fleet before they result in major problems. He calls this approach predictive maintenance.

Crystal ball?

No, Miller doesn't use a crystal ball, but his strategy of predictive maintenance can identify potential problems before they start. This ability allows him to replace necessary parts before they actually break, which reduces downtime and additional repairs that can prove very costly.

"We use predictive maintenance in addition to routine preventive maintenance, in order to be proactive," says Miller. "That way, rather than having breakdowns that result in expensive repair time, we can do a quick part replacement or adjustment and keep the unit functioning."

Using his predictive maintenance program, Miller says he is able to analyze trends in particular models, makes and years of equipment. He explains that if several like-vehicles seem to be suffering similar problems, he can determine what the faulty part is and replace it in other vehicles, effecting some serious damage control.

"We can order parts in advance because we have a good idea of when they will need to be replaced," he says. "We can also schedule repair cycles based on trends we identify, which maximizes efficiency and cost effectiveness."

Oil sampling and analysis

Miller says another way he is able to foretell the future need of necessary maintenance is through scheduled oil sampling. Consistent sampling can identify problems in everything from transmissions to engines. Once samples are gathered and analyzed, Miller reviews the results to determine if a problem is the effect of a one-time cross contamination or if a repair is actually necessary. He can also track trends in sampling history, which allows him to identify the source of the contamination.

"In addition to sampling, an oil analysis system allows us to detect engine trouble," says Miller. "I recommend a comprehensive system like the one we use, Kendall Lubricant Analysis System (KLAS)."

Miller says Ace has been using the KLAS system since his Kendall Motor Oil Marketer, Chris Farrell, owner of Farrell Oil, recommended that he mon-

The Ace Service Center team, one of the School House companies, can handle the maintenance of just about anything from a bulldozer to a golf cart. Trucks they consider to be "a piece of cake."

itor his truck engines every 15,000 miles. The system can identify the right time to change oil, which may lead to an extended engine life. A thorough system also detects component wear and contamination in transmission, hydraulics, differential and final drives and schedule drain intervals.

"A good oil analysis program breaks the truck into system components," he says. "It makes identifying a problem very easy, which saves time because you aren't forced to look through pages of reports in order to troubleshoot. It can also save you money because it helps to lower maintenance costs and unnecessary time and effort."

In 2002, Miller purchased a used 1997 Ottawa switching tractor, which was making 40 to 60 moves per day. The unit had a re-man engine and ran well at first. The first oil sample detected trace amounts of sodium and potassium. Miller re-sampled at 500 hours and the readings were climbing. He decided to pull the unit from service and send it to the engine shop. The engine technician stated that there were no internal leaks after pressurizing the cooling system with the oil pan removed.

After reviewing the oil samples, Miller decided to remove the cylinder head and have it pressure tested. The cylinder head had four cracks near the injector sleeves.

"Scheduled repair reduced the tractor's downtime by four to five days as well as saving towing expenses," says Miller. "And through our oil analysis, we were able to save $1,000 per day. We always use the highest quality products as they will save additional dollars in the long run."

Modern technology

The perfect partner to an effective oil analysis program is a user-friendly maintenance software program that offers the user options to computerize all records, compile data to evaluate efficiencies, track maintenance history, send reminders on scheduled maintenance and more, says Miller. Information analyzed by his oil analysis program can be easily exported to an Excel spreadsheet from the software, simplifying the organization of data.

"With this technology we can recognize trends within very specific vehicles allowing us to easily target individual problems, which ultimately saves money for the customer," explained Miller. "This makes things like reordering parts or pulling up vehicle histories simple and creates the ideal combination of cost savings and time maintenance." FE

Corrosion Control

Fleet vehicles are extremely vulnerable to electrical failures during the winter months due of the use of magnesium chloride, salts and other chemicals used to de-ice roads and highways. Fleets can significantly limit these failures by using products designed to help fight corrosion. The Phillips STA-DRY® anti-corrosive product line helps increase service intervals and limit downtime caused by moisture and contaminants introduced into the electrical system through un-sealed connections.

Phillips Industries offers an entire system of non-corrosive products which now includes STA-DRY® heat shrink connectors and a Quick Connect Plug (QCP™) assembly. The connectors' adhesive-lined shrink tubing offers a permanent, water-tight seal that maintains the integrity of the electrical system and minimizes the introduction of contaminants that can corrode the wire. The tubing also provides additional tensile strength making the connection stronger than the wire itself.

The QCP™ is a fully-sealed, coiled electrical assembly that prevents contaminants from entering the front and rear of the plug, ensuring corrosion-free performance over the life of the assembly. Additionally, there is no need to replace the plug or entire cable assembly during maintenance. With a twist of one screw, a new cartridge can be installed in around 30 seconds.

"Our line of anti-corrosive products is a direct result of working closely with fleets and understanding the challenges they face. Many of the top fleets tell us there is no longer-lasting corrosion protection for their electrical system than our STA-DRY® products," explains Bill Phillips, the company's director of sales.