

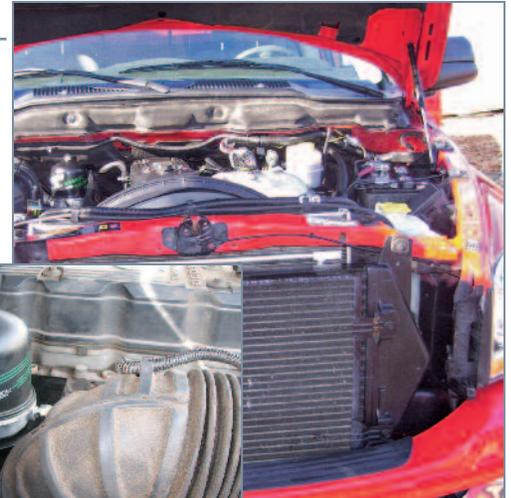
# Centrifuge Proven in Pickup Truck Application

Analysis proves oil remained clean after 20,000 miles of operation



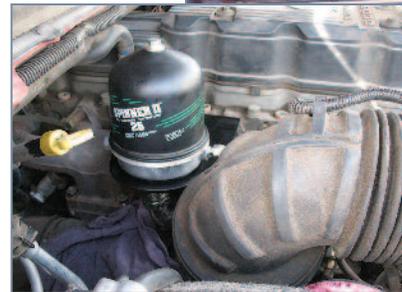
## Scenario

In 2009, California-based Midwest Lube, Inc., was looking for ways to improve engine protection and reduce maintenance costs for their service trucks. After evaluating several options, the company decided to test a Spinner II oil cleaning centrifuge on one of their pickup trucks.



## Solution

In January of that year, a Spinner II Model 25 oil cleaning centrifuge was installed on a 2006 Dodge 2500 pickup with a 5.9 liter Cummins diesel engine. At the time of installation, the truck had 51,241 miles.



According to Hart Kruppe, who managed the test for Midwest Lube: "At 66,305 miles, the Spinner II centrifuge was checked and serviced. The centrifuge rotor contained a 3/16-inch layer of soot that had been removed from the oil. We were pleased with the results. The oil was changed, the centrifuge rotor cleaned and replaced, and the truck was returned to service.

"Later in the year, we became extremely busy and – as with many companies – the first thing that gets overlooked is our internal PM program. Before we knew it, we had operated the truck from December 2009 to August of 2010 without an oil change. It had run a little over 20,000 miles. Before going any further, we took an oil sample for analysis."

Data Form: 28022510		Company: MIDWEST LUBE, INC		City: Sanger		Midwest Lube Inc:		Phone: 661-266-5884																																																			
Sample ID: 280		Address: 25880 Boulevard Canyon Rd		State: CA		Suite #300		Fax: 92390																																																			
Oil Brand: CHEVRON		Truck Make: GENERAL		Truck Model: GENERAL		Front Unit ID: CLARKINS		Unit ID: DODGE																																																			
Oil Type: DELO400LE		Engine Make: GENERAL		Engine Model: GENERAL		Equipment: Diesel Engine		Test Date: 06/05/2010																																																			
Oil Weight: 159940		Miles on Unit: 57080		Miles on Oil: 20000																																																							
<table border="1"> <thead> <tr> <th colspan="10">WEAR METALS (in Parts per Million)</th> <th colspan="5">PHYSICAL PROPERTIES</th> </tr> <tr> <th>Iron</th> <th>Copper</th> <th>Aluminum</th> <th>Chromium</th> <th>Vanadium</th> <th>Lead</th> <th>Phosphorus</th> <th>Silicon</th> <th>Sulfur</th> <th>Water</th> <th>Viscosity</th> <th>Cloud</th> <th>Acid</th> <th>TBN</th> <th>Flash</th> <th>Viscosity</th> <th>Water</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>128</td> <td>&lt;2.0</td> <td>2.7</td> <td>&lt;2.0</td> <td>5.9</td> <td>4.7</td> <td>188</td> <td>15.1</td> </tr> </tbody> </table>										WEAR METALS (in Parts per Million)										PHYSICAL PROPERTIES					Iron	Copper	Aluminum	Chromium	Vanadium	Lead	Phosphorus	Silicon	Sulfur	Water	Viscosity	Cloud	Acid	TBN	Flash	Viscosity	Water	20	N	N	N	N	N	N	N	N	N	128	<2.0	2.7	<2.0	5.9	4.7	188	15.1
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## Results

"Needless to say, we were surprised by the oil analysis results. Despite putting 20,000 miles on the oil, the test results showed that everything was normal and the lubricant performance was proper."

The analysis stated: All engine wear rates normal. Sample appears free of external contamination. Analysis indicates proper performance of the lubricant and unit.

"I don't think we would have gotten the same results without the Spinner II centrifuge on the engine," added Kruppe.

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