

Customer Testimonial



Monolec® Natural Gas Engine Oil (8945)

Large Drilling Company – Wyoming

CAT G3516 Engines (Power Generators)

- Oil consumption cut in half
- Extended oil drains by more than three times
- Saved over \$3,330 in oil and labor costs during a 3,000-hour interval, with projected annual savings of nearly \$9,000

Customer Profile

This large drilling company has been an LE customer since 2007. It is the premier drilling contractor working in the Rocky Mountain and California regions, providing equipment and services for the drilling of oil and gas wells.

Application

The company relies on two 1,400-kW CAT G3516 engines to generate electrical power for its Automated Drill Rig equipment.

Challenge

Using Mobil Pegasus oil, the drilling company was consuming approximately 5 gallons of oil per day per engine and draining the oil every 1,000 hours. The company wanted to safely extend its oil drains and reduce its oil consumption.

LE Solution

LE recommended its Monolec Natural Gas Engine Oil (8945 / SAE 40), which they began using in December 2008. Since that time, the condition of the oil has been monitored using LEAPSM, the LE Oil Analysis Program, at 500-hour intervals. Monolec 8945 continues to show consistently good characteristics in viscosity, oxidation, nitration and TAN, as well as minimal levels of wear metals. See analysis reports for actual numbers.

Wear metals have been well below normal for engines of this type.




#1 CAT 3516G Engine

Oil consumption for the two engines has been reduced from 10 gallons per day to 4.7 gallons per day. Consumption was reported to be 5 gallons per day per engine with the Mobil Pegasus oil. During approximately 11,000 hours of operation with LE's Monolec 8945 oil, the carefully documented data showed that oil consumption averaged 2.3 gallons per day on the #1 engine and 2.4 gallons per day on the #2 engine.



LEAP Report


#1 CAT 3516G Engine with 3,629 hours.

UNIT ID		COMPANY INFORMATION																																																																																																																																																																																																			
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LEAP Report

#2 CAT 3516G Engine with 3,567 hours.

UNIT ID				COMPANY INFORMATION																				
SECOND ID CARTER-556 UNIT TYPE NATURAL GAS ENGINE APPLICATION UNKNOWN																								
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20	3	0	0	2	4	2	0	0	0	0	2	3	0	0	0	0	0	0	79	7	1364	0	725	874
21	3	0	0	2	3	3	1	0	0	0	2	3	0	0	0	0	0	0	79	7	1270	0	701	897
22	6	0	0	3	6	7	0	0	0	0	3	9	1	0	0	0	0	0	111	13	1928	0	1062	1288
23	4	0	0	1	3	4	0	0	0	0	1	4	0	0	0	0	0	0	74	9	1296	0	706	862
24	4	0	0	3	4	4	0	0	0	0	2	4	0	0	0	0	0	0	86	8	1498	0	803	1009
25	5	0	0	3	4	2	0	0	0	0	2	5	0	0	0	0	0	0	84	10	1514	0	775	941
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21	03/31/10 04/08/10	18304 2169	N	N		<.1%	<.1		14.9	3.07		5	8											
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Extended drains have been achieved. The drilling company has been able to use Monolec 8945 three to three-and-a-half times longer than the Mobil Pegasus oil. During the first 11,000 hours of operation with the new oil, they performed four oil changes. Filters were changed at 1,000-hour intervals. LEAP was used to monitor the condition of the oil and engine during each change. Using this analysis, they were able to progressively extend the oil drain interval each time.

The first drains in March 2009 were at 1,575 and 1,899 hours, and oil analysis showed the oil and engine wear components to be in good condition. The next drains were in August 2009 at 2,568 and 2,739 hours, with the same results. The third drains were in December 2009 at 2,956 and 2,914 hours. The final extended drains of this testing period were in June 2010 at 3,567 and 3,629 hours. The Monolec 8945 in both engines still had useful life. Based on these results, it would be safe to establish a drain interval of 3,000 hours using LE's Monolec Natural Gas Engine Oil (8945), with filter changes at 1,000 hours.

Results

The rig manager, said that extending drains using Monolec 8945 has been a great success. In addition to the dollar savings outlined below, the switch has reduced the frequency of oil changes to every 3,000 hours instead of every 1,000 hours, meaning less used oil to dispose of and less production downtime.

The following savings were calculated using the more conservative three times lubricant life estimated for the Monolec 8945 oil, versus the Mobil Pegasus oil.

- Total oil capacity per unit: 110 gallons x 2 units = 220 gallons
- Cost of LE Monolec 8945 oil: \$21.14 per gallon x 220 gallons = \$4,650
- Cost of Mobil Pegasus oil: \$10.91 per gallon x 220 gallons x 3 oil changes = \$7,600
- Labor cost for oil changes: 2 men, 4 hours @ \$25/hour = \$200 x 2 extra Mobil oil changes = \$400

Total oil and labor costs for two engines during 3,000 hours of operation

- Mobil Pegasus oil: \$8,000
- LE Monolec 8945 oil: \$4,650

Total savings per hours of operation using Monolec 8945

- 3,000 hours \$3,350
- 8,000 hours (approx. one year): \$8,933

In addition, Monolec 8945 is designed to reduce cylinder, valve and head deposits, which will lead to additional savings from deferred maintenance on these components. The rig manager reported that during 13,000 hours of operation using Monolec 8945, there have been no turbo, valve or head problems on either of the engines.

Other LE Products Used

- Almagard® Vari-Purpose Lubricant (3752 / NLGI 2)
- Almagard® Vari-Purpose Lubricant (3751 / NLGI 1)

Thank you to the rig manager, and to Mike Carter, LE lubrication consultant (pictured), for providing the information used in this report.



Monolec® and Almagard® are registered trademarks and LEAP™ is a service mark of Lubrication Engineers, Inc.

Based on actual user experience. Individual results may vary. Not intended to supersede manufacturer specifications.

SIC 1381
L170794 09-10