



OIL REPORT

LAB NUMBER: D51677
 REPORT DATE: 9/10/2008
 CODE: 20/286

UNIT ID: 01 SEVILLE STS
 CLIENT ID: 32687
 PAYMENT: CC: Visa

UNIT	MAKE/MODEL: GM 4.6L V-6	OIL TYPE & GRADE: Amsoil 0W/30
	FUEL TYPE: Gasoline (Unleaded)	OIL USE INTERVAL: 20,000 Miles
	ADDITIONAL INFO:	

CLIENT	KEITH CLARK	PHONE: (866) 379-8437
	P.O. BOX 564	FAX:
	EAST HAMPSTEAD, NH 03826	ALT PHONE:
		EMAIL: wa1hzk@comcast.net

COMMENTS KEITH: For an oil run 20,000 miles wear looks great in this sample. Universal averages for the 4.6L are based on an oil run of ~4,000 miles so you can see that your engine is wearing far better than most. Iron was the only wear metal that was enough above average to mention. Iron tends to track directly with miles on the oil (more miles = more iron), so it's okay. As long as all other wear looks good we don't consider high iron a problem. No harmful contaminants were found. The TBN read 3.6 so you still have active additive left. Go on up to 25K miles. Nice engine!

ELEMENTS IN PARTS PER MILLION	M/HR on Oil	20,000	UNIT / LOCATION AVERAGES					UNIVERSAL AVERAGES
	M/HR on Unit							
	Sample Date	09/06/08						
	Make Up Oil Added	1.2 qts						
ALUMINUM	4	4					3	
CHROMIUM	2	2					0	
IRON	43	43					9	
COPPER	4	4					2	
LEAD	1	1					1	
TIN	2	2					1	
MOLYBDENUM	6	6					115	
NICKEL	1	1					0	
MANGANESE	1	1					0	
SILVER	0	0					0	
TITANIUM	0	0					0	
POTASSIUM	2	2					11	
BORON	11	11					44	
SILICON	13	13					10	
SODIUM	6	6					26	
CALCIUM	4506	4506					2058	
MAGNESIUM	19	19					100	
PHOSPHORUS	798	798					664	
ZINC	934	934					812	
BARIUM	0	0					0	

Values Should Be*

PROPERTIES	SUS Viscosity @ 210°F	61.1	55-67				
	cSt Viscosity @ 100°C	10.54	8.6-12.4				
	Flashpoint in °F	420	>375				
	Fuel %	<0.5	<2.0				
	Antifreeze %	0.0	0				
	Water %	0.0	0.0				
	Insolubles %	0.4	<0.6				
	TBN	3.6					
	TAN						
	ISO Code						

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

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UNDERSTANDING THE ELEMENTS

Gas/Diesel Engines

Elements are quantified in the oil at part per million levels (PPM). This list shows the most common sources of the elements in a gasoline or diesel engine oil.

Aluminum: Pistons, bearings, cases (heads & blocks).

Chromium: Rings, a trace element in steel.

Iron: Cylinders, rotating shafts, the valve train, and any steel part sharing the oil.

Copper: Brass or bronze parts, copper bushings, bearings, oil coolers, also an additive in some gasoline engine oils.

Lead: Bearings.

Tin: Bearings, bronze parts, piston coatings.

Molybdenum: Anti-wear additive, coating on some new rings (washes off as break-in occurs).

Nickel: Trace element in steel.

Manganese: Trace element, additive in gasoline.

Silver: Trace element.

Titanium: Trace element.

Potassium: Antifreeze inhibitor, additive in some oil types.

Boron: Detergent/dispersant additive, antifreeze inhibitors.

Silicon: Airborne dirt, sealers, gaskets, antifreeze inhibitors.

Sodium: Antifreeze inhibitors, additive in some gasoline engine oils.

Calcium: Detergent/dispersant additive.

Magnesium: Detergent/dispersant additive.

Phosphorus: Anti-wear additive.

Zinc: Anti-wear additive.

Barium: Detergent/dispersant additive.



Physical properties: Viscosity, flashpoint, % fuel and antifreeze, % water and insolubles are all measured in gasoline and diesel engine oils. If fuel is present in the oil, the viscosity and flashpoint will often be lower than what was stated in the "Should be" line. Insolubles are solid material that is centrifuged out of the oil. They are typically free carbon from the oxidation of the oil itself, along with blow-by past the rings.



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GAS/DIESEL REPORT

LAB NUMBER: 095618
 REPORT DATE: 7/25/2007
 CODE: 22/16

UNIT ID: 05 F250
 CLIENT: 20751
 PAYMENT: CC: Visa

You'll need your client ID if you want to log on to www.blackstone-labs.net and view your reports.

This is a good place to identify things like bypass filtration, mods, etc.

EQUIP. MAKE/MODEL: Navistar 6.0L Power Stroke
 FUEL TYPE: Diesel
 OIL TYPE & GRADE: Shell Rotella T 15W/40
 OIL USE INTERVAL: 4,907 Miles
 ADDITIONAL INFO: This vehicle is the love of my life. I will never sell it.

OSCAR HUFF
 OSCAR'S WORKSHOP
 132 PERWINKLE RD
 STE. 102
 SWANNANOVA, NC 18752
 PHONE: (828) 123-5897
 FAX: (828) 123-1547
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 EMAIL: oscar@bellsouth.com

OSCAR: The fuel we spoke of last time improved to 0.5% in this sample. Iron took a big step in the right direction, too. All wear now reads much closer to universal averages and in the proper balance to indicate your engine is free of any obvious mechanical problems. The low viscosity is common to the 6.0L but the fuel may have lowered it as well. No coolant or moisture was found. Both silicon and insolubles read normally showing good air and oil filtration. At 47,356 total miles your PSD is wearing well. We think you could run the oil a little longer. If you're interested.

The amount of oil you added between oil changes.

This is the average wear for this particular type of engine for you or your business.

		UNIT LOCATION AVERAGES				UNIVERSAL AVERAGES
ALUMINIUM	4		4	3	4	6
CHROMIUM	2		1	1	1	2
IRON	30		44	24	23	33
COPPER	2		3	2	2	3
LEAD	2		3	4	5	5
TIN	0		0	1	2	2
MOLYBDENUM	4		5	5	4	4
NICKEL	1		1	1	0	1
MANGANESE	0		0	0	0	1
SILVER	0		0	0	0	0
TITANIUM	0		0	0	0	0
POTASSIUM	3		2	1	2	2
BORON	0			2	0	1
SILICON	9		1	8	9	13
SODIUM	4		3	3	3	4
CALCIUM	3430		3970	3632	3525	3015
MAGNESIUM	10		11	9	10	11
PHOSPHORUS	1204		1289	1274	1212	1246
ZINC	1345		1508	1381	1392	1387
BARIUM	0		0	0	0	1

This column shows average wear for all the samples we've seen from this type of engine.

The additives in this column are a mix of all different types of oil, so you can't compare them to your sample.

The tests in the Properties box look at the physical condition of the oil.

		Values Should Be*	From left to right, these are your past samples.			
SUS Viscosity @ 210°F	65.5	69-80	65.9	65.7	63.4	60.3
cSt Viscosity @ 100°C	11.74	12.7-15.5	11.85	11.79	11.16	10.29
Flashpoint in °F	405	>410	390	430	390	400
Fuel %	0.5	<2.0	2.0	<0.5	<0.5	1.0
Antifreeze %	0.0	0.0	0.0	0.0	0.0	0.0
Water %	0.0	0.0	0.0	0.0	0.0	0.0
Insolubles %	0.3	<0.6	0.3	0.2	0.3	0.3
TBN	6.3		6.4	9.5	6.6	12.5
TAN						
ISO Code						

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