

# "Blood Test For Your Vehicle"



VIN GASOLINE

5 MAIN STREET

BOSTON, MA 01701

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Sample ID: 91	VIN: 1C3AL56R24N356459	Test Date: 05/10/2005
Vehicle Make: Chrysler	Miles On Vehicle: 36003	Equipment: Gasoline Engine
Vehicle Model: Sebring	Miles On Oil: 4500	Vehicle Year: 2004

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## Engine Condition

	Pass	Fail	Comments
Bearings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bushings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Camshaft	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Elevated iron level detected.
Crankshaft	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Elevated iron level detected.
Cylinders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Elevated iron level detected.
Engine Block	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Piston Rings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pistons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abnormal aluminum level detected.

Overall Engine Result: **Fail** For service suggestions, see page two.

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## Oil Condition

	Pass	Fail	Comments
Air Filter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abnormal silicon level detected.
Coolant Contamination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	High Sodium or Potassium detected
Oil Condition	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Oil no longer serviceable due to high contamination.
Sludge Potential	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Water Contamination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Overall Oil Result: **Fail** For service suggestions, see page two.

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ACCURACY OF RECOMMENDATIONS IS DEPENDENT ON REPRESENTATIVE OIL SAMPLES AND COMPLETELY CORRECT DATA ON BOTH VEHICLE AND OIL. THIS ANALYSIS IS INTENDED AS AN AID IN PREVENTING MECHANICAL WEAR. NO GUARANTEE, EXPRESSED OR IMPLIED, IS MADE AGAINST FAILURE OF THESE COMPONENTS. ON-SITE ANALYSIS LIABILITY IN ANY CASE IS LIMITED TO THE COST OF THE REPORTED ANALYSIS.



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Vehicle Make: Chrysler	Miles On Unit: 36003	Vehicle Year: 2004
Vehicle Model: Sebring	Miles On Oil: 4500	Sample Date: 05/10/2005

*Just like getting a "Blood Test" from your Doctor, the OSA gives you a "Blood Test" of your vehicle fluid. Below are the Service Suggestions.*

### SERVICE SUGGESTIONS

- 1 Abnormal silicon can indicate dirt present. Check air induction system and inspect air filter.
- 2 Change engine oil and filter.
- 3 Check for power loss, blow-by, smoking, oil consumption, etc.
- 4 Check for possible coolant contamination in oil; Check for proper coolant mixture in radiator.

### EXPLANATIONS

#### Air Filter System = Silicon in Oil

Dirt is in the air all around us and it is really important to keep it out of your engine. Dirt that gets past your air filter acts like sand paper and causes engine parts to wear out quickly. If dirt, Silicon is found in your engine oil at an elevated level, change your oil and check your air filter and any other sources where it may gain entrance, such as cracked ducts/boots, loose clamps, air filter seals and vacuum hoses.

#### Camshaft

Camshafts, timing chains, timing gears, push rods, and rockers are all parts of the valve train system, which open and close the valves that let the fuel mixture into the engine and exhaust out. Iron can come from many places in an engine, but when there is high Iron only in the oil, it most likely tells you that there are one or more parts in the valve train that need to be serviced. In some overhead cam engines, Aluminum with Iron can indicate cam bearing wear.

#### Coolant Contamination = Antifreeze (Glycol) in Oil

Antifreeze is added to your radiator to help keep your engine from freezing in the winter and overheating in the summer. Antifreeze should never mix with oil. Catching this problem early can save the high cost of engine replacement. Antifreeze can mix with oil from a bad intake gasket or head gasket, cracked head or block. In rare instances, if Antifreeze ONLY is detected and there is NO Potassium or Sodium, then an oil additive may cause a false positive reading for Glycol. If you are unaware of any oil additive being used it is recommended to retest your oil at the next change interval.

#### Crankshaft = Iron + Lead + Tin (Copper / Aluminum)

Just about every moving part in the engine is driven by the crankshaft. It is the largest moving part in an engine and it is critical that it is properly lubricated. The crankshaft spins on bearings and has the connecting rods and pistons attached to it also. Crankshaft wear is normally caused by other issues; bearing wear, dirt, sludge or low pressure. When Lead and Tin, along with Copper or Aluminum, and Iron are in the oil, this indicates crankshaft wear. Often a deep knocking sound can be heard.

#### Pistons = Aluminum + Fuel or Dirt

High aluminum indicated piston wear.

#### Wear Metals = Wear Contamination

The useful life of oil has reached its end due to the presence of wear metal contamination. This may be caused by incoming dirt, overheating, poor lubrication or going too long between oil drain intervals, and that can cause carbon and sludge build up. On new or recently rebuilt engines, it is normal for break-in material to be found.

#### Oil Condition

The useful life of oil has reached its end due to the presence of wear metal contamination. This may be caused by incoming dirt, overheating, poor lubrication or just going too long between oil drain intervals (causing carbon and sludge build-up.) On new or recently rebuilt engines, it is normal for break-in material to be found.

ASSUMING NORMAL OIL CONSUMPTION AND BASED ON PROVIDED INFORMATION, WEAR METAL EVALUATION VARIES PER MAKE AND MODEL, TOTAL MILES/HOURS AND THE MILES/HOURS THE OIL HAS BEEN IN SERVICE.

A=ABNORMAL S=SEVERE NA=NOT APPLICABLE ND=NOT DETECTED N=NORMAL X=NOT TESTED HN=HIGH NORMAL



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WEAR METAL CONCENTRATION ( In Parts Per Million )									PHYSICAL PROPERTIES								
Aluminum	Chromium	Copper	Iron	Lead	Tin	Silicon	Potassium	Sodium	Moly	Water	Oxidation	V100C	Glycol	Fuel	Tbn	Nitration	SAE
63	11	13	230	8	3	57	67	61	14	0	17	13	1	0	7	9	30
A	N	N	HN	N	N	A	A	A	N	N	N	N	HN	N	N	N	N

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