



## Report of the Month

This 1985 Firebird has a problem. What happened?  
To learn where the elements are coming from, [click here](#) and scroll down.

UNIT	MAKE/MODEL:	GM LS-1 5.7L 350 CI V-8	OIL TYPE & GRADE:	Amsoil 15W/50
	FUEL TYPE:	Gasoline (Unleaded)	OIL USE INTERVAL:	14 Hours
	ADDITIONAL INFO:			

COMMENTS	Cylinder-area metals are high in this first sample. Aluminum, chrome, and iron can show piston, ring, and steel (presumably cylinder, but also rotating shaft) wear. Maybe dirt and/or coolant are factors -- silicon can show dirt (unless it's from sealers) and sodium could show coolant, though we're guessing it's just an oil additive from your previous oil. Maybe most of the metal is wear-in that still needs to wash out, but check for air intake leaks, watch for possible coolant loss, and keep an eye out for signs of cylinder trouble. Averages are based on 4,000-mile intervals.
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	MI/HR on Oil	14	UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit	55							
	Sample Date	9/28/2021							
	Make Up Oil Added								
ELEMENTS IN PARTS PER MILLION	ALUMINUM	16	16						4
	CHROMIUM	5	5						1
	IRON	58	58						16
	COPPER	7	7						26
	LEAD	7	7						9
	TIN	2	2						1
	MOLYBDENUM	29	29						76
	NICKEL	1	1						1
	MANGANESE	1	1						2
	SILVER	0	0						0
	TITANIUM	1	1						1
	POTASSIUM	1	1						2
	BORON	48	48						70
	SILICON	48	48						11
	SODIUM	116	116						17
	CALCIUM	1642	1642						2045
	MAGNESIUM	440	440						344
	PHOSPHORUS	1169	1169						759
	ZINC	1354	1354						894
	BARIIUM	0	0						0

Values  
Should Be\*

PROPERTIES	SUS Viscosity @ 210°F	81.7	75-92					
	cSt Viscosity @ 100°C	15.94	14.3-18.7					
	Flashpoint in °F	410	>390					
	Fuel %	<0.5	<2.0					
	Antifreeze %	?	0.0					
	Water %	0.0	<0.1					
	Insolubles %	0.3	<0.6					
	TBN							
	TAN							
	ISO Code							

\* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

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The owner writes: Just as a follow up: you were right on with the aluminum, chrome, and iron. We found low compression in two cylinders after sending the oil sample. We disassembled the engine and found two broken pistons (with accompanying ring wear, and some light scoring of the cylinder). Pistons were broken between top and second ring, so the engine was still running reasonably well but causing the additional wear in the cylinder, which showed up in your test.