

# Report of the Month

What changed between the October 2011 sample and the March 2012 sample that made this F250 start wearing so much better?

To learn more about where the elements are coming from, [click here](#).

ELEMENTS IN PARTS PER MILLION	MI/HRon Oil	9,100	UNIT/ LOCATION AVERAGES	11,371	8,782	10,080	7,643	UNIVERSAL AVERAGES
	MI/HRon Unit	256,000		246,900	221,670	206,572	198,929	
	Sample Date	03/11/12		10/28/11	08/18/11	05/11/11	04/23/11	
ALUMINUM	2	3	2	2	2	2	3	
CHROME	1	1	1	1	1	1	1	
IRON	20	49	106	52	98	67	32	
COPPER	3	4	4	3	4	3	3	
LEAD	0	11	15	9	15	10	3	
TIN	0	1	3	0	4	0	1	
MOLYBDENUM	1	4	3	3	5	2	34	
NICKEL	1	3	1	1	1	1	0	
POTASSIUM	4	5	27	52	857	855	5	
BORON	0	6	9	25	643	697	55	
SILICON	10	7	5	5	5	4	11	
SODIUM	2	7	22	23	13	16	5	
CALCIUM	3703	3441	3247	3023	2618	3065	2632	
MAGNESIUM	10	24	11	13	19	21	199	
PHOSPHORUS	1178	1119	1008	978	930	1062	1106	
ZINC	1247	1299	1114	1058	1116	1112	1275	
BARIUM	0	0	0	0	0	0	1	

Values  
Should Be\*

PROPERTIES	SJS Viscosity @210°F	64.8	64-78	73.9	70.3	71.3	67.8
	cSt Viscosity @100°C	11.56	11.3-15.3	13.98	13.02	13.29	12.37
	Flashpoint in °F	445	>415	470	465	440	445
	Fuel %	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	Antifreeze %	0.0	0.0	?	POS	0.0	0.0
	Water %	0.0	0.1	0.0	0.0	0.0	0.0
	Insolubles %	0.2	0.8	0.3	0.3	0.5	0.3
	TBN					6.5	8.3
	TAN						
	ISO Code						

\*THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

This engine was generating a lot of iron and lead. Lead is a bearing material, while iron is from a steel part such as a rotating shaft. The solution was a new high-pressure oil pump. After he replaced it, voila! Wear dropped like a rock. Potassium and sodium show a trace of coolant, but that was from an unrelated radiator problem. Also, just a post script for this engine: a lifter broke during the summer of 2012 and that, coupled with a lingering problem from the radiator, caused the engine to bite the dust. He replaced it with a used 6.0L and is happily on the road again!