

Dual-Gard filtration system, 10,000- to 12,000-mile intervals were easily obtainable on the full-flow filters.

For demonstration purposes, the BE-110 filter elements remained unchanged for a 2-year period. However, after review, it was determined that under normal conditions it would be beneficial to change them after a 40,000- to 50,000-mile interval.

Engine wear rates have decreased significantly since changing to AMSOIL 15W-40 Synthetic Heavy Duty Diesel and Marine Motor Oil. High temperature operating conditions have also been reduced. This leads to enhanced engine protection, and ultimately, to longer engine life. Because the engines have been operating more efficiently, three to five percent gains in fuel economy have also been realized. The chart below compares the levels of wear particles present in the previous conventional oil with the levels present in the AMSOIL as of May 2001. The condition of the AMSOIL at various testing intervals is documented to the right.

**Conclusion**

Overall, this field demonstration was highly successful for AMSOIL. The oil analysis data indicate that AMSOIL products deliver uncompromising protection and performance. AMSOIL provides longer equipment life and reduced downtime, longer drain intervals, significant decreases in wear rates and operating temperatures and dramatic improvement in engine performance when compared to conventional petroleum oils.

<b>Oil Analysis - Bus #4</b>								
Mileage	Viscosity (100°C)	Percent (%) of the amount allowable			Parts Per Million (PPM)			
		OXD	NOX	TBN	Fe (Iron)	Pb (Lead)	Cu (Copper)	Al (Aluminum)
0	15.2	0.0	0.0	12.0	0	0	0	0
3883	11.6	7.8	4.3	12.7	17	1	2	7
5378	12.3	23.3	8.6	9.9	20	3	4	8
9700	14.0	4.4	7.1	13.0	40	2	4	8
22885	12.0	7.8	15.7	12.1	89	3	11	7
34059	12.4	21.1	15.7	12.4	134	5	30	12
45465	12.2	20.0	18.6	11.9	146	7	35	16

<b>Oil Analysis - Bus #7</b>								
Mileage	Viscosity (100°C)	Percent (%) of the amount allowable			Parts Per Million (PPM)			
		OXD	NOX	TBN	Fe (Iron)	Pb (Lead)	Cu (Copper)	Al (Aluminum)
0	15.2	0.0	0.0	12.0	0	0	0	0
3614	12.8	1.0	2.8	12.9	5	1	1	6
4126	13.6	3.3	4.3	9.8	9	3	3	7
10607	13.9	2.2	10.0	11.9	12	2	2	6
22428	12.9	10.0	10.0	12.2	30	5	27	8
31569	13.2	15.6	14.3	11.0	28	1	12	5
42647	13.6	25.6	18.6	10.6	61	12	38	9
58055	14.0	27.8	21.4	10.5	73	20	30	10
71185	14.2	17.8	20.0	10.7	53	16	14	6

<b>Oil Analysis - Bus #22</b>								
Mileage	Viscosity (100°C)	Percent (%) of the amount allowable			Parts Per Million (PPM)			
		OXD	NOX	TBN	Fe (Iron)	Pb (Lead)	Cu (Copper)	Al (Aluminum)
0	15.2	0.0	0.0	12.0	0	0	0	0
2732	13.4	1.1	2.8	7.8	7	2	12	6
3680	12.3	7.8	4.3	12.8	8	1	1	8
14329	12.5	5.6	10.0	12.9	14	4	3	6
20905	13.4	11.1	10.0	12.3	26	7	5	8
30671	12.8	6.7	11.4	9.1	28	6	6	7
41196	13.1	16.7	14.3	11.7	36	6	11	7
52983	13.7	21.1	15.7	11.2	44	7	19	7
65776	13.8	12.2	14.3	11.0	49	0	10	8

**Oil Analysis Comparison: Petroleum Oil at 4,000 miles vs. AMSOIL Motor Oil at 45,465 miles to 71,185 miles**

Vehicle	Metal	Type of Oil	Parts Per Million	Type of Oil	Parts Per Million	% Reduction
<b>Bus #4</b>	Iron (Fe)	Rotella	170	AMSOIL	146	-14 %
	Copper (Cu)		34		35	+3 %
	Aluminum (Al)		68		16	-76 %
	Lead (Pb)		26		7	-73 %
	<b>Average</b>					
<b>Bus #7</b>	Iron (Fe)	Rotella	126	AMSOIL	53	-58%
	Copper (Cu)		42		14	-67%
	Aluminum (Al)		98		6	-94%
	Lead (Pb)		42		16	-62%
	<b>Average</b>					
<b>Bus #22</b>	Iron (Fe)	Rotella	136	AMSOIL	49	-64%
	Copper (Cu)		234		10	-96%
	Aluminum (Al)		117		8	-93%
	Lead (Pb)		39		0	-100%
	<b>Average</b>					