

OIL ANALYSIS REPORT

[62307] Wachine Id VOLVO VNL740 4505

Component
Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

🔺 Wear

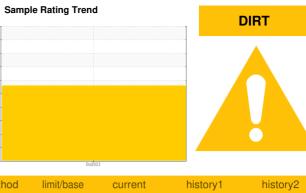
Iron and nickel ppm levels are abnormal. Aluminum ppm levels are noted. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated.

Contamination

Water treatment chemicals present, indicating slow coolant leak. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Test for glycol is negative. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).



SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0853674		
Sample Date		Client Info		02 Oct 2023		
Machine Age	kms	Client Info		576968		
Oil Age	kms	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				ABNORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0		
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0		
Iron	ppm	ASTM D5185(m)	>100	<u> </u>		
Chromium	ppm	ASTM D5185(m)	>20	3		
Nickel	ppm	ASTM D5185(m)	>2	<u> </u>		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)	>2	<1		
Aluminum	ppm	ASTM D5185(m)	>25	17		
Lead	ppm	ASTM D5185(m)	>40	2		
Copper	ppm	ASTM D5185(m)	>330	18		
Tin	ppm	ASTM D5185(m)	>15	1		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 8	history1	history2
	ppm ppm					
Boron	ppm	ASTM D5185(m)	2	8		
Boron Barium		ASTM D5185(m) ASTM D5185(m)	2 0 50	8 <1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50	8 <1 74		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0	8 <1 74 2		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950	8 <1 74 2 889		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050	8 <1 74 2 889 1157	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995	8 <1 74 2 889 1157 846	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180	8 <1 74 2 889 1157 846 1159	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180	8 <1 74 2 889 1157 846 1159 2206 <1	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600	8 <1 74 2 889 1157 846 1159 2206 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 Limit/base	8 <1 74 2 889 1157 846 1159 2206 <1 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 Limit/base	8 <1 74 2 889 1157 846 1159 2206 <1 current ▲ 31	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 limit/base >25	8 <1 74 2 889 1157 846 1159 2206 <1 2206 <1 Current ∴ 31	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 limit/base >25	8 <1 74 2 889 1157 846 1159 2206 <1 <urrent <urrent 31 ▲ 1228 ▲ 335</urrent </urrent 	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 limit/base >25 >20	 8 <1 74 2 889 1157 846 1159 2206 <1 current ▲ 31 ▲ 1228 ▲ 335 0.0 current 	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600 iimit/base >25 >20 iimit/base	8 <1 74 2 889 1157 846 1159 2206 <1 current ▲ 31 ▲ 1228 ▲ 335 0.0	 history1 history1	 history2 history2



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