

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

(AY661D) Supermarket - Tractor Machine Id FREIGHTLINER 107A1858

Component Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Fluid

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

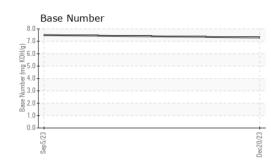
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

			Sep2023	Dec2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0111510	PCA0104820	
Sample Date		Client Info		20 Dec 2023	05 Sep 2023	
Machine Age	hrs	Client Info		80379	56331	
Oil Age	hrs	Client Info		24048	28991	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	19	11	
Chromium	ppm	ASTM D5185m	>5	1	<1	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>30	9	2	
Lead	ppm	ASTM D5185m	>30	<1	0	
Copper	ppm	ASTM D5185m	>150	22	23	
Tin	ppm	ASTM D5185m	>5	<1	<1	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 9	history1 20	history2
Boron	ppm	ASTM D5185m	2	9	20	
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0	9 0	20 0	
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	9 0 51	20 0 21	
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	9 0 51 <1	20 0 21 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	9 0 51 <1 767	20 0 21 <1 233	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	9 0 51 <1 767 1565	20 0 21 <1 233 2207	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	9 0 51 <1 767 1565 1072	20 0 21 <1 233 2207 922	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	9 0 51 <1 767 1565 1072 1365	20 0 21 <1 233 2207 922 1132	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	9 0 51 <1 767 1565 1072 1365 3142	20 0 21 <1 233 2207 922 1132 4103	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	9 0 51 <1 767 1565 1072 1365 3142 current	20 0 21 <1 233 2207 922 1132 4103 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 0 950 1050 995 1180 2600 limit/base	9 0 51 <1 767 1565 1072 1365 3142 current 4	20 0 21 <1 233 2207 922 1132 4103 history1 5	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	9 0 51 <1 767 1565 1072 1365 3142 current 4 2	20 0 21 <1 233 2207 922 1132 4103 history1 5 <<1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >20	9 0 51 <1 767 1565 1072 1365 3142 current 4 2 22	20 0 21 <1 233 2207 922 1132 4103 history1 5 < <1 17	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >20 \$20	9 0 51 <1 767 1565 1072 1365 3142 current 4 2 22 22 current	20 0 21 <1 233 2207 922 1132 4103 history1 5 < <1 17 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >20 \$20	9 0 51 <1 767 1565 1072 1365 3142 <i>current</i> 4 2 22 22 <i>current</i> 0.9	20 0 21 <1 233 2207 922 1132 4103 history1 5 <1 17 history1 0.3	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >20 <i>imit/base</i> >20	9 0 51 <1 767 1565 1072 1365 3142 <i>current</i> 4 2 22 <i>current</i> 0.9 8.0	20 0 21 <1 233 2207 922 1132 4103 history1 5 <1 17 17 history1 0.3 6.1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >20 imit/base >3 >20 >3	9 0 51 <1 767 1565 1072 1365 3142 <u>current</u> 4 2 22 22 <u>current</u> 0.9 8.0 20.6	20 0 21 <1 233 2207 922 1132 4103 history1 5 <1 17 5 <1 17 history1 0.3 6.1 16.3	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 2600 20 20 20 20 20 3 20 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	9 0 51 <1 767 1565 1072 1365 3142 <i>current</i> 4 2 22 <i>current</i> 0.9 8.0 20.6 <i>current</i>	20 0 21 <1 233 2207 922 1132 4103 history1 5 <1 17 history1 0.3 6.1 16.3 history1	 history2 history2 history2 history2



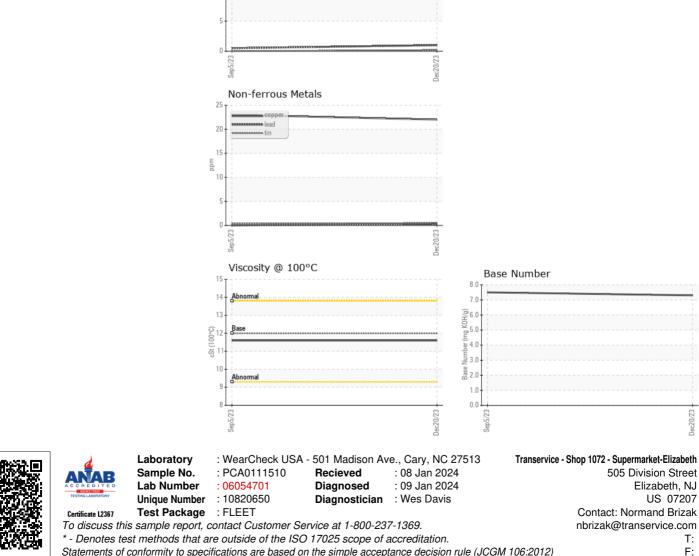
OIL ANALYSIS REPORT



Viscosity @ 100°C



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
ellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Ddor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPER	RTIES	method	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D445	12.00	11.6	11.6	
GRAPHS						
Ferrous Alloys						
iron chromium nickel	_					



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: Normand Brizak Page 2 of 2