

OIL ANALYSIS REPORT

Sample Rating Trend

Area (AU402U) Supermarket - Tractor FREIGHTLINER 107A8839

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (11 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

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.

	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0124125	PCA0116958	PCA0104066
Sample Date		Client Info		15 Jun 2024	17 Feb 2024	07 Oct 2023
Machine Age	mls	Client Info		246043	230887	214089
Oil Age	mls	Client Info		15156	16798	13471
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	11	10	19
Chromium	ppm	ASTM D5185m	>5	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	~-	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>30	6	2	8
Lead		ASTM D5185m	>30	0	0	0
	ppm	ASTM D5185m	>150	4	4	9
Copper Tin	ppm	ASTM D5185m	>5	4 <1	4	1
Vanadium	ppm ppm	ASTM D5185m	>0	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm			•	0	0
		method			history1	history2
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	5	7	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	5 0	7 <1	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	5 0 65	7 <1 63	7 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	5 0 65 0	7 <1 63 0	7 0 63 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	5 0 65 0 953	7 <1 63 0 857	7 0 63 <1 862
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	5 0 65 0 953 1081	7 <1 63 0 857 964	7 0 63 <1 862 1068
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	5 0 65 0 953 1081 1050	7 <1 63 0 857 964 839	7 0 63 <1 862 1068 952
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	5 0 65 0 953 1081 1050 1262	7 <1 63 0 857 964 839 1110	7 0 63 <1 862 1068 952 1186
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	5 0 65 0 953 1081 1050 1262 2855	7 <1 63 0 857 964 839 1110 2595	7 0 63 <1 862 1068 952 1186 2527
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	5 0 65 0 953 1081 1050 1262 2855 current	7 <1 63 0 857 964 839 1110 2595 history1	7 0 63 <1 862 1068 952 1186 2527 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	5 0 65 0 953 1081 1050 1262 2855 current 4	7 <1 63 0 857 964 839 1110 2595 history1 4	7 0 63 <1 862 1068 952 1186 2527 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 50 950 1050 995 1180 2600 limit/base >20	5 0 65 0 953 1081 1050 1262 2855 <u>current</u> 4 <	7 <1 63 0 857 964 839 1110 2595 history1 4 0	7 0 63 <1 862 1068 952 1186 2527 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >20	5 0 65 0 953 1081 1050 1262 2855 current 4	7 <1 63 0 857 964 839 1110 2595 history1 4	7 0 63 <1 862 1068 952 1186 2527 history2 6
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 50 950 1050 995 1180 2600 limit/base >20	5 0 65 0 953 1081 1050 1262 2855 <u>current</u> 4 <	7 <1 63 0 857 964 839 1110 2595 history1 4 0	7 0 63 <1 862 1068 952 1186 2527 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >20	5 0 65 0 953 1081 1050 1262 2855 current 4 < 3	7 <1 63 0 857 964 839 1110 2595 history1 4 0 3 history1 0.5	7 0 63 <1 862 1068 952 1186 2527 history2 6 3 6 3 6 history2 1.1
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 0 950 1050 995 1180 2600 limit/base >20 limit/base	5 0 65 0 953 1081 1050 1262 2855 current 4 <1 3 current	7 <1 63 0 857 964 839 1110 2595 history1 4 0 3 history1	7 0 63 <1 862 1068 952 1186 2527 history2 6 3 6 3 6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >20 >20 imit/base >3	5 0 65 0 953 1081 1050 1262 2855 current 4 <1 3 current 0.6	7 <1 63 0 857 964 839 1110 2595 history1 4 0 3 history1 0.5	7 0 63 <1 862 1068 952 1186 2527 history2 6 3 6 3 6 history2 1.1
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 r spm ppm ppm ppm ppm spm ppm spm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >20 <i>limit/base</i> >3 >20	5 0 65 0 953 1081 1050 1262 2855 current 4 <1 3 current 0.6 7.5	7 <1 63 0 857 964 839 1110 2595 history1 4 0 3 history1 0.5 6.6	7 0 63 <1 862 1068 952 1186 2527 history2 6 3 6 3 6 history2 1.1 9.0
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 r spm ppm ppm ppm ppm spm ppm spm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >20 imit/base >3 >20 >30	5 0 65 0 953 1081 1050 1262 2855 current 4 <1 3 current 0.6 7.5 18.8	7 <1 63 0 857 964 839 1110 2595 history1 4 0 3 history1 0.5 6.6 18.7	7 0 63 <1 862 1068 952 1186 2527 history2 6 3 6 3 6 history2 1.1 9.0 21.6

NORMAL



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Abnorma

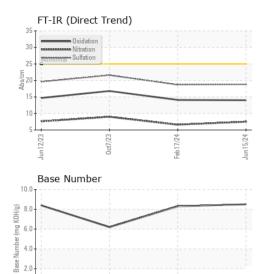
15 14 13 cSt (100°C) B

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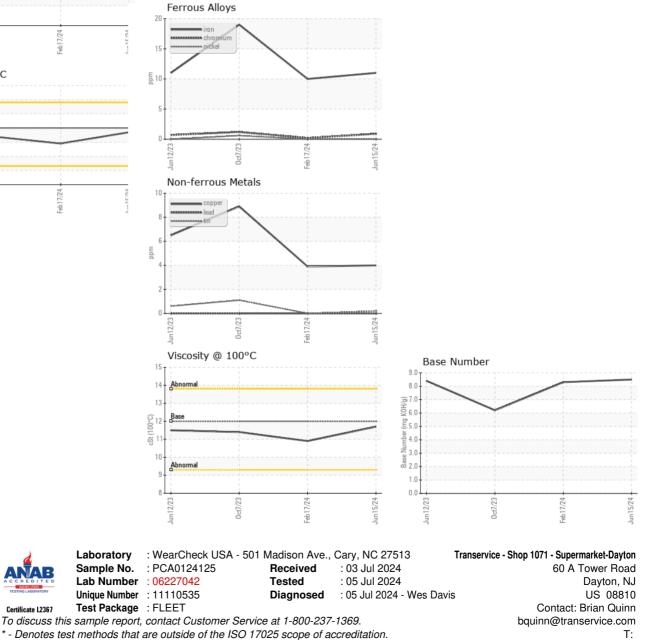
Jun12/23

Viscosity @ 100°C

OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	10.9	11.4
GRAPHS						



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

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