

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 111044

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

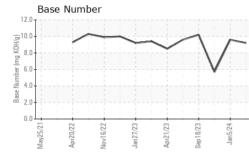
Fluid Condition

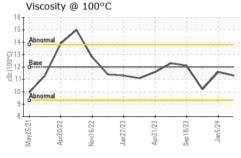
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0116928	PCA0113579	PCA0105761
Sample Date		Client Info		29 Feb 2024	05 Jan 2024	03 Nov 2023
Machine Age	mls	Client Info		157950	148726	141373
Oil Age	mls	Client Info		0	7353	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL		ABNORMAL
CONTAMINAT	ION	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 METAL	9	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14		71
Chromium	ppm		>20	<1		1
Nickel	ppm	ASTM D5185m	>4	0		<1
Titanium	ppm	ASTM D5185m		<1		0
Silver	ppm	ASTM D5185m	>3	<1		0
Aluminum	ppm	ASTM D5185m		3		0 10
Lead	ppm	ASTM D5185m	>40	2		6
Copper	ppm	ASTM D5185m		2		<u> </u>
Tin	ppm	ASTM D5185m	>15	<1		4
Vanadium	ppm	ASTM D5185m		<1		0
Cadmium	ppm	ASTM D5185m		0		0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1	history2 94
	ppm ppm					
Boron		ASTM D5185m	2	4		94
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	4 2		94 6
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	4 2 62		94 6 11
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	4 2 62 <1		94 6 11 3
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	4 2 62 <1 901		94 6 11 3 96
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	4 2 62 <1 901 1164	 	94 6 11 3 96 1140
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	4 2 62 <1 901 1164 1039	 	94 6 11 3 96 1140 719
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	4 2 62 <1 901 1164 1039 1207		94 6 11 3 96 1140 719 961
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	4 2 62 <1 901 1164 1039 1207 3294		94 6 11 3 96 1140 719 961 2700
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	4 2 62 <1 901 1164 1039 1207 3294 current		94 6 11 3 96 1140 719 961 2700 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 50 950 1050 995 1180 2600 limit/base >25	4 2 62 <1 901 1164 1039 1207 3294 current 4	 history1 	94 6 11 3 96 1140 719 961 2700 history2 ▲ 39
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	4 2 62 <1 901 1164 1039 1207 3294 current 4 0	 history1 	94 6 11 3 96 1140 719 961 2700 history2 ▲ 39 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25	4 2 62 <1 901 1164 1039 1207 3294 current 4 0 2	 history1 	94 6 11 3 96 1140 719 961 2700 history2 ▲ 39 5 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	4 2 62 <1 901 1164 1039 1207 3294 <i>current</i> 4 0 2 2	 history1 history1	94 6 11 3 96 1140 719 961 2700 history2 39 5 7 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	4 2 62 <1 901 1164 1039 1207 3294 current 4 0 2 2 current 1	 history1 history1 1.1	94 6 11 3 96 1140 719 961 2700 history2 ▲ 39 5 7 7 history2 0.6
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 t ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	4 2 62 <1 901 1164 1039 1207 3294 <u>current</u> 4 0 2 <u>current</u> 1 8.7 19.3	 history1 history1 1.1 8.5 19.2	94 6 11 3 96 1140 719 961 2700 history2 39 5 7 7 history2 0.6 9.6 21.9
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	4 2 62 <1 901 1164 1039 1207 3294 Current 4 0 2 Current 1 8.7 19.3 Current	 history1 history1 1.1 8.5 19.2 history1	94 6 11 3 96 1140 719 961 2700 history2 ▲ 39 5 7 7 history2 0.6 9.6 21.9 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 t ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	4 2 62 <1 901 1164 1039 1207 3294 <u>current</u> 4 0 2 <u>current</u> 1 8.7 19.3	 history1 history1 1.1 8.5 19.2	94 6 11 3 96 1140 719 961 2700 history2 39 5 7 7 history2 0.6 9.6 21.9



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Certificate L2367