

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine

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

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.

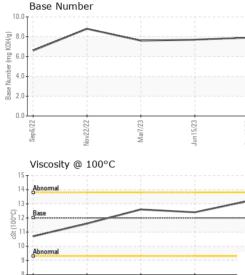
Fluid Condition

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

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106245	PCA0098048	PCA0094271
Sample Date		Client Info		19 Sep 2023	15 Jun 2023	07 Mar 2023
Machine Age	mls	Client Info		0	65214	46050
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	81	76	61
Chromium	ppm	ASTM D5185m	>20	2	2	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	10	8	6
Lead	ppm	ASTM D5185m	>40	11	2	2
Copper	ppm	ASTM D5185m	>330	8	10	29
Tin	ppm	ASTM D5185m	>15	3	3	3
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 4	history2 4
	ppm ppm					
Boron		ASTM D5185m	2	0	4	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	0 0	4	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 0 77	4 0 74	4 0 68
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 0 77 1	4 0 74 <1	4 0 68 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 0 77 1 1283	4 0 74 <1 1092	4 0 68 2 931
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	0 0 77 1 1283 1405	4 0 74 <1 1092 1349	4 0 68 2 931 1332
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	0 0 77 1 1283 1405 1365	4 0 74 <1 1092 1349 1120	4 0 68 2 931 1332 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 0 950 1050 995 1180	0 0 77 1 1283 1405 1365 1762	4 0 74 <1 1092 1349 1120 1425	4 0 68 2 931 1332 952 1286
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 0 950 1050 995 1180 2600	0 0 77 1 1283 1405 1365 1762 3617	4 0 74 <1 1092 1349 1120 1425 3559	4 0 68 2 931 1332 952 1286 2952
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 0 77 1 1283 1405 1365 1762 3617 current	4 0 74 <1 1092 1349 1120 1425 3559 history1	4 0 68 2 931 1332 952 1286 2952 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 imit/base >25	0 0 77 1 1283 1405 1365 1365 1762 3617 current 11	4 0 74 <1 1092 1349 1120 1425 3559 history1 9	4 0 68 2 931 1332 952 1286 2952 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25	0 0 77 1 1283 1405 1365 1365 1762 3617 current 11 2	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3	4 0 68 2 931 1332 952 1286 2952 history2 8 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	0 0 77 1 1283 1405 1365 1762 3617 current 11 2 <1	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0
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 Imit/base >25 >20 Imit/base >3	0 0 77 1 1283 1405 1365 1762 3617 <i>current</i> 11 2 <1 <i>current</i>	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0 0 history1	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0 0
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 limit/base >25 >20 limit/base >3	0 0 77 1 1283 1405 1365 1762 3617 <i>current</i> 11 2 <1 <i>current</i> 2.7	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0 history1 2	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0 history2 1.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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> >25 >20 <i>imit/base</i> >3 >20	0 0 77 1 1283 1405 1365 1762 3617 <i>current</i> 11 2 <1 <i>current</i> 2.7 18.1	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0 history1 2 15.9	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0 0 history2 1.5 1.5
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 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	0 0 77 1 1283 1405 1365 1762 3617 <i>current</i> 11 2 <1 <i>current</i> 2.7 18.1 30.6	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0 history1 2 15.9 28.9	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0 0 history2 1.5 1.5 15.1 27.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	0 0 77 1 1283 1405 1365 1762 3617 <i>current</i> 11 2 <1 <i>current</i> 2.7 18.1 30.6 <i>current</i>	4 0 74 <1 1092 1349 1120 1425 3559 history1 9 3 0 history1 2 15.9 28.9 history1	4 0 68 2 931 1332 952 1286 2952 history2 8 4 0 history2 1.5 15.1 27.3 history2



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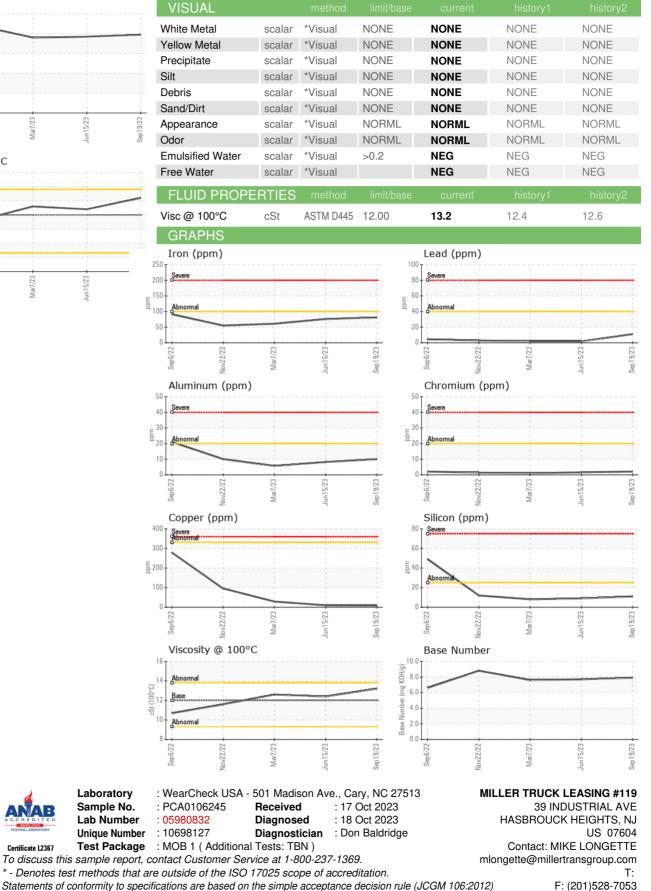


Var7/23

Jun15/23

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en6/77



Certificate L2367

Laboratory

Contact/Location: MIKE LONGETTE - MILRUT