

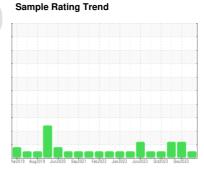
OIL ANALYSIS REPORT



422027-402279

Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (--- GAL)





DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

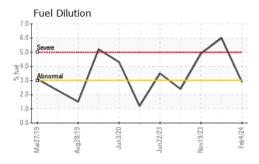
Fluid Condition

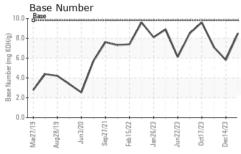
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

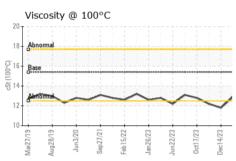
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0074791	GFL0086410	GFL0086400
Sample Date		Client Info		04 Feb 2024	14 Dec 2023	19 Nov 2023
Machine Age	hrs	Client Info		23871	23685	23532
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
						9
Iron	ppm	ASTM D5185m	>120	0	13	
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	6	5
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	1	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base		history1	history2
ADDITIVEO		method	IIIIII/ basc	Current	TilStory I	motoryz
Boron	ppm	ASTM D5185m	0	3	3	6
Boron Barium	ppm				•	
Boron		ASTM D5185m	0	3	3	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	3 0	3	6
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 58	3 0 52	6 0 55
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 58 0	3 0 52 <1	6 0 55 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 58 0 874	3 0 52 <1 724	6 0 55 <1 787
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 0 58 0 874 1010	3 0 52 <1 724 1112	6 0 55 <1 787 1230
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 58 0 874 1010 952	3 0 52 <1 724 1112 927	6 0 55 <1 787 1230 1023
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 58 0 874 1010 952 1183	3 0 52 <1 724 1112 927 1123	6 0 55 <1 787 1230 1023
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	3 0 58 0 874 1010 952 1183 2853	3 0 52 <1 724 1112 927 1123 2883	6 0 55 <1 787 1230 1023 1241 3126
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	3 0 58 0 874 1010 952 1183 2853	3 0 52 <1 724 1112 927 1123 2883 history1	6 0 55 <1 787 1230 1023 1241 3126 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	3 0 58 0 874 1010 952 1183 2853 current	3 0 52 <1 724 1112 927 1123 2883 history1	6 0 55 <1 787 1230 1023 1241 3126 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	3 0 58 0 874 1010 952 1183 2853 current 4	3 0 52 <1 724 1112 927 1123 2883 history1 8 5	6 0 55 <1 787 1230 1023 1241 3126 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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	3 0 58 0 874 1010 952 1183 2853 current 4 0	3 0 52 <1 724 1112 927 1123 2883 history1 8 5	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 0 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0 history1 0.3	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2 ▲ 4.9 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2 ▲ 4.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9 current 0.2 6.5	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0 history1 0.3 8.8	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2 △ 4.9 history2 0.3 8.5 18.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D78185m ASTM D7824 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30 limit/base	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9 current 0.2 6.5 17.8	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0 history1 0.3 8.8 20.0 history1	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2 14.9 history2 0.3 8.5 18.9 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30	3 0 58 0 874 1010 952 1183 2853 current 4 0 0 2.9 current 0.2 6.5 17.8	3 0 52 <1 724 1112 927 1123 2883 history1 8 5 3 ▲ 6.0 history1 0.3 8.8 20.0	6 0 55 <1 787 1230 1023 1241 3126 history2 8 4 2 △ 4.9 history2 0.3 8.5 18.9



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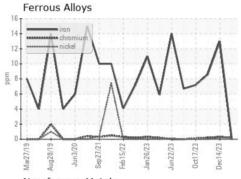


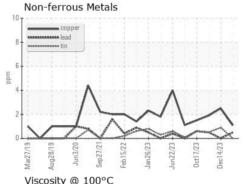


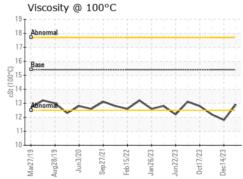
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

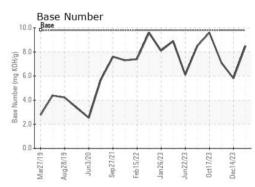
FLUID PROPERTIES		method			history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	<u> 11.8</u>	12.2	

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

: GFL0074791 : 06080408 : 10862499

Recieved : 05 Feb 2024 Diagnosed Diagnostician : Wes Davis

: 07 Feb 2024

Test Package : FLEET (Additional Tests: PercentFuel) To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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