

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 727157 Component Fluid

**Diesel Engine** 

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

SAMPLE INFORMATION method

## 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.

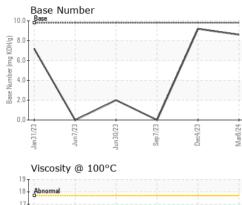
#### Fluid Condition

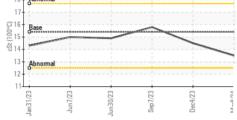
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0086978	GFL0086963	GFL0086936
Sample Date		Client Info		08 Mar 2024	04 Dec 2023	07 Sep 2023
Machine Age	hrs	Client Info		5000	4700	4666
Oil Age	hrs	Client Info		602	502	468
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	11	8	24
Chromium	ppm	ASTM D5185m	>20	0	<1	1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	<1	<1
Lead	ppm	ASTM D5185m	>40	2	0	4
Copper	ppm	ASTM D5185m	>330	<1	<1	5
Tin	ppm	ASTM D5185m	>15	0	0	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		and the set	11 1. 0			le te te un o
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 4	history1 5	nistory2 6
	ppm ppm		0			
Boron		ASTM D5185m	0	4	5	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	5 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 59	5 0 56	6 0 68
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 59 0	5 0 56 0	6 0 68 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 59 0 1008	5 0 56 0 952	6 0 68 <1 1071
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	4 0 59 0 1008 1140	5 0 56 0 952 848	6 0 68 <1 1071 1214
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	0 0 60 0 1010 1070 1150	4 0 59 0 1008 1140 1040	5 0 56 0 952 848 853	6 0 68 <1 1071 1214 1129
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	0 0 60 0 1010 1070 1150 1270	4 0 59 0 1008 1140 1040 1269	5 0 56 0 952 848 853 1072	6 0 68 <1 1071 1214 1129 1385
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	0 0 60 0 1010 1070 1150 1270 2060	4 0 59 0 1008 1140 1040 1269 3708	5 0 56 0 952 848 853 1072 2924	6 0 68 <1 1071 1214 1129 1385 3687
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	4 0 59 0 1008 1140 1040 1269 3708 current	5 0 56 0 952 848 853 1072 2924 history1	6 0 68 <1 1071 1214 1129 1385 3687 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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060	4 0 59 0 1008 1140 1040 1269 3708 <i>current</i> 2	5 0 56 0 952 848 853 1072 2924 history1 5	6 0 68 <1 1071 1214 1129 1385 3687 history2 3
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	4 0 59 0 1008 1140 1040 1269 3708 <u>current</u> 2 <	5 0 56 0 952 848 853 1072 2924 history1 5 < 1	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	4 0 59 0 1008 1140 1040 1269 3708 current 2 < 2 <1 <1	5 0 56 0 952 848 853 1072 2924 <b>history1</b> 5 < <1 0	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2 5
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	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	4 0 59 0 1008 1140 1040 1269 3708 current 2 <1 <1 <1	5 0 56 0 952 848 853 1072 2924 history1 5 < 1 0 bistory1	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2 5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 >20 <b>Imit/base</b>	4 0 59 0 1008 1140 1269 3708 current 2 <1 <1 <1 current 0.2	5 0 56 0 952 848 853 1072 2924 history1 5 <1 0 history1 0.4	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2 5 5 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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >20	4 0 59 0 1008 1140 1269 3708 <i>current</i> 2 <1 <1 <1 <i>current</i> 0.2 6.1	5 0 56 0 952 848 853 1072 2924 history1 5 < 10 0 history1 0.4 4.6	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2 5 5 history2 5 5 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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 20 <b>imit/base</b> >4 >20	4 0 59 0 1008 1140 1269 3708 <u>current</u> 2 <1 <1 <1 <1 0.2 6.1 17.8	5 0 56 0 952 848 853 1072 2924 history1 5 <1 0 V history1 0.4 4.6 17.6	6 0 68 <1 1071 1214 1129 1385 3687 <b>history2</b> 3 2 5 <b>bistory2</b> ▲ 5.1 13.5 30.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >20 20 30 imit/base	4 0 59 0 1008 1140 1269 3708 <i>current</i> 2 <1 <1 <1 <i>current</i> 0.2 6.1 17.8	5 0 56 0 952 848 853 1072 2924 history1 5 <1 0 history1 0.4 4.6 17.6 history1	6 0 68 <1 1071 1214 1129 1385 3687 history2 3 2 5 history2 ↓ 5.1 13.5 30.5

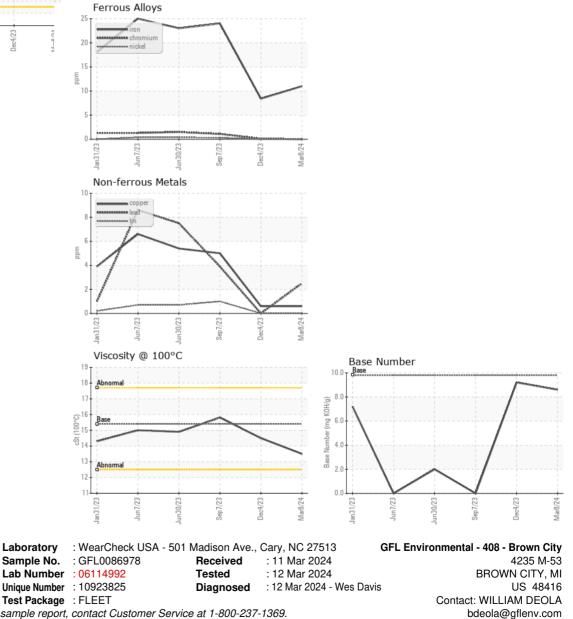


# **OIL ANALYSIS REPORT**





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	15.4	13.5	14.5	15.8
GRAPHS						





 Certificate L2367
 Test Package
 : FLEET
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 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)

F:

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