

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

NORMAL

## Area (YA154653) 2866

## Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (12 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

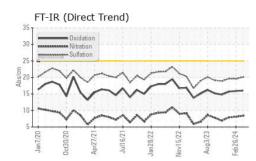
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

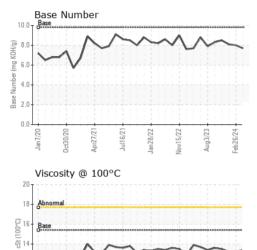
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0079628	GFL0112922	GFL0088513
Sample Date		Client Info		05 Jun 2024	26 Feb 2024	19 Feb 2024
Machine Age	hrs	Client Info		691	691	691
Oil Age	hrs	Client Info		420	529	494
Oil Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	11	10	8
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	3
Lead	ppm	ASTM D5185m	>150	2	0	<1
Copper	ppm	ASTM D5185m	>90	2	1	<1
Tin	ppm	ASTM D5185m	>5	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
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 1	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	0	1	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 1	1 8	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 1 66	1 8 63	2 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 1 66 0	1 8 63 0	2 0 60 <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	0 1 66 0 984 1159 1064	1 8 63 0 875	2 0 60 <1 951
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 1 66 0 984 1159	1 8 63 0 875 1014	2 0 60 <1 951 1043
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	0 1 66 0 984 1159 1064	1 8 63 0 875 1014 963	2 0 60 <1 951 1043 1075
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	0 1 66 0 984 1159 1064 1326 3323	1 8 63 0 875 1014 963 1142	2 0 60 <1 951 1043 1075 1264
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	0 0 60 0 1010 1070 1150 1270 2060	0 1 66 0 984 1159 1064 1326 3323	1 8 63 0 875 1014 963 1142 2925	2 0 60 <1 951 1043 1075 1264 2968
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	0 0 60 1010 1070 1150 1270 2060	0 1 66 0 984 1159 1064 1326 3323 current	1 8 63 0 875 1014 963 1142 2925 history1	2 0 60 <1 951 1043 1075 1264 2968 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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060	0 1 66 0 984 1159 1064 1326 3323 current 5	1 8 63 0 875 1014 963 1142 2925 history1 4	2 0 60 <1 951 1043 1075 1264 2968 history2 4
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 <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >35	0 1 66 0 984 1159 1064 1326 3323 current 5 <1 8	1 8 63 0 875 1014 963 1142 2925 history1 4 1	2 0 60 <1 951 1043 1075 1264 2968 history2 4 4
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	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >35	0 1 66 0 984 1159 1064 1326 3323 current 5 <1 8	1 8 63 0 875 1014 963 1142 2925 history1 4 1 33	2 0 60 <1 951 1043 1075 1264 2968 history2 4 4 4 7
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 235 >35 >20	0 1 66 0 984 1159 1064 1326 3323 current 5 <1 8 current	1 8 63 0 875 1014 963 1142 2925 history1 4 1 333 history1	2 0 60 <1 951 1043 1075 1264 2968 history2 4 4 7 <i>history2</i>
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	0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base	0 1 66 0 984 1159 1064 1326 3323 current 5 <1 8 current 0.3	1 8 63 0 875 1014 963 1142 2925 history1 4 1 33 history1 0.3	2 0 60 <1 951 1043 1075 1264 2968 history2 4 4 4 7 <i>history2</i> 0.3
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20	0 1 66 0 984 1159 1064 1326 3323 <u>current</u> 5 <1 8 <u>current</u> 0.3 8.4 20.1	1 8 63 0 875 1014 963 1142 2925 history1 4 1 33 history1 0.3 8.1	2 0 60 <1 951 1043 1075 1264 2968 history2 4 4 4 7 Vistory2 0.3 7.9
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >35 >20 <b>imit/base</b> >7.5 >20 >30	0 1 66 0 984 1159 1064 1326 3323 <u>current</u> 5 <1 8 <u>current</u> 0.3 8.4 20.1	1 8 63 0 875 1014 963 1142 2925 history1 4 1 33 history1 0.3 8.1 19.6	2 0 60 <1 951 1043 1075 1264 2968 <b>history2</b> 4 4 4 7 <b>history2</b> 0.3 7.9 19.6



10 Jan7/20

# **OIL ANALYSIS REPORT**





116/21

Vov15/22

an28/22

Aug3/23

Feb26/24

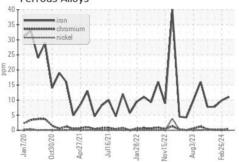
300

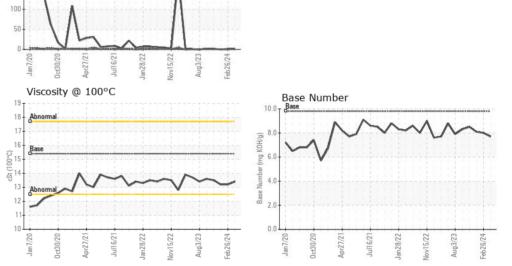
250 200 50

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	13.4	13.2	13.2
GRAPHS						

Ferrous Alloys

Non-ferrous Metals





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 017 - Durham Sample No. : GFL0079628 Received : 05 Jun 2024 148 Stone Park Court Lab Number : 06200996 Tested : 07 Jun 2024 Durham, NC US 27703 Unique Number : 11063119 Diagnosed : 07 Jun 2024 - Wes Davis Test Package : FLEET Contact: William Russel Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. william.russell@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Т: 

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

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