

# **OIL ANALYSIS REPORT**

## Area {UNASSIGNED} Machine Id 913025

Front Diesel Engine

PETRO CANADA DURON SHP 15W40 (40 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 suitable for further service.



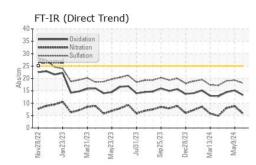
Sample Rating Trend

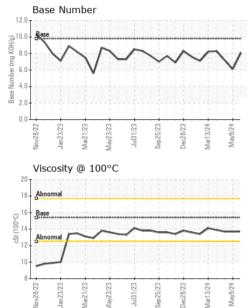
Sample Number		Client Info		GFL0098931	GFL0098934	GFL0098911
Sample Date		Client Info		30 May 2024	09 May 2024	26 Apr 2024
Machine Age	hrs	Client Info		4359	4207	4101
Oil Age	hrs	Client Info		2410	4207	2571
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
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	>120	6	20	16
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>5	<1	1	2
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	<1	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	0
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		and the set	11 11 11			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 2	history1 0	history2 0
	ppm ppm					
Boron		ASTM D5185m	0	2	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	0	0 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 53	0 0 58	0 0 54
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 53 <1	0 0 58 0	0 0 54 <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	2 0 53 <1 900	0 0 58 0 904	0 0 54 <1 853
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	2 0 53 <1 900 1013	0 0 58 0 904 1154	0 0 54 <1 853 982
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	2 0 53 <1 900 1013 990	0 0 58 0 904 1154 1005	0 0 54 <1 853 982 943
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	2 0 53 <1 900 1013 990 1179	0 0 58 0 904 1154 1005 1220	0 0 54 <1 853 982 943 1121
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 1010 1070 1150 1270 2060 limit/base	2 0 53 <1 900 1013 990 1179 3414	0 0 58 0 904 1154 1005 1220 3092	0 0 54 <1 853 982 943 1121 3100
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 limit/base	2 0 53 <1 900 1013 990 1179 3414 current	0 0 58 0 904 1154 1005 1220 3092 history1	0 0 54 <1 853 982 943 1121 3100 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> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	2 0 53 <1 900 1013 990 1179 3414 current 5	0 0 58 0 904 1154 1005 1220 3092 history1 4	0 0 54 <1 853 982 943 1121 3100 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 53 <1 900 1013 990 1179 3414 <u>current</u> 5 2	0 0 58 0 904 1154 1005 1220 3092 history1 4 1	0 0 54 <1 853 982 943 1121 3100 history2 4 <1
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 limit/base >25	2 0 53 <1 900 1013 990 1179 3414 current 5 2 3	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 53 <1 900 1013 990 1179 3414 <u>current</u> 5 2 3 3 <i>current</i>	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3 3 <i>history1</i>	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5 history2
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	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 53 <1 900 1013 990 1179 3414 <u>current</u> 5 2 3 3 <u>current</u> 0.2	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3 <i>history1</i> 0.6	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5 history2 0.5
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 >25 25 imit/base	2 0 53 <1 900 1013 990 1179 3414 <i>current</i> 5 2 3 <i>current</i> 0.2 5.8	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3 <i>history1</i> 0.6 8.8	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5 history2 0.5 8.1
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> >25 <b>imit/base</b> >20 <b>imit/base</b> >4 >20	2 0 53 <1 900 1013 990 1179 3414 <u>current</u> 5 2 3 3 <u>current</u> 0.2 5.8 18.1	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3 3 history1 0.6 8.8 19.3	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5 <b>history2</b> 0.5 8.1 19.0
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	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	2 0 53 <1 900 1013 990 1179 3414 <i>current</i> 5 2 3 <i>current</i> 0.2 5.8 18.1	0 0 58 0 904 1154 1005 1220 3092 history1 4 1 3 <i>history1</i> 0.6 8.8 19.3 history1	0 0 54 <1 853 982 943 1121 3100 history2 4 <1 5 history2 0.5 8.1 19.0 history2

Submitted By: GFL084,GFL842,GFL844,GFL846 - ROBERT THIBAULT Page 1 of 2



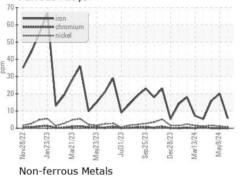
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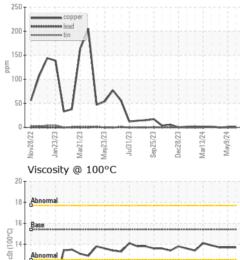


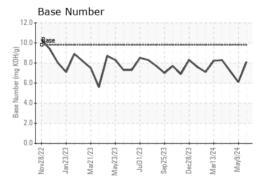


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.7	13.7
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 084 - Clarksville Sample No. : GFL0098931 Received : 17 Jun 2024 699 Jack Miller Boulevard Lab Number : 06212759 Tested : 19 Jun 2024 Clarksville, TN Unique Number : 11085623 Diagnosed : 19 Jun 2024 - Wes Davis US 37042 Test Package : FLEET Contact: ROBERT THIBAULT Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. robert.thibault@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (931)552-7276 F: (931)572-9674

Dec28/23 Mar13/24 May9/24

an 75/73

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

Mar21/23

Mav23/73

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Nov28/22

Jan 23/23

Report Id: GFL084 [WUSCAR] 06212759 (Generated: 06/22/2024 01:58:39) Rev: 1

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