

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id

### 810043

#### Component Diesel Engine

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

#### 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.

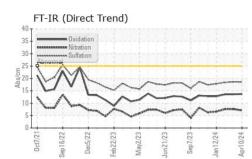
#### Fluid Condition

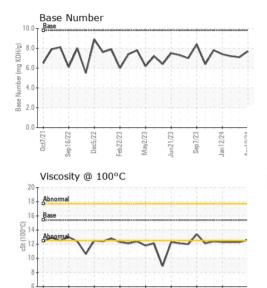
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115689	GFL0109945	GFL0107163
Sample Date		Client Info		10 Apr 2024	05 Feb 2024	05 Feb 2024
Machine Age	hrs	Client Info		10093	9677	9646
Oil Age	hrs	Client Info		416	594	584
Oil Changed		Client Info		Not Changd	Changed	Changed
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	>75	11	15	16
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>25	0	<1	<1
Copper	ppm	ASTM D5185m	>100	2	1	2
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 13	history1 4	history2 3
	ppm ppm					
Boron		ASTM D5185m	0	13	4 0 60	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	13 0	4 0	3 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	13 0 65	4 0 60	3 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	13 0 65 <1	4 0 60 <1	3 0 60 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	13 0 65 <1 908 1083 1060	4 0 60 <1 901 1050 981	3 0 60 <1 853 1017 958
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	13 0 65 <1 908 1083	4 0 60 <1 901 1050	3 0 60 <1 853 1017 958 1169
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	13 0 65 <1 908 1083 1060	4 0 60 <1 901 1050 981	3 0 60 <1 853 1017 958
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	13 0 65 <1 908 1083 1060 1243	4 0 60 <1 901 1050 981 1207	3 0 60 <1 853 1017 958 1169
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	13 0 65 <1 908 1083 1060 1243 3533 current 4	4 0 60 <1 901 1050 981 1207 2916 history1 4	3 0 60 <1 853 1017 958 1169 2813 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	13 0 65 <1 908 1083 1060 1243 3533 current 4 4	4 0 60 <1 901 1050 981 1207 2916 history1 4 4	3 0 60 <1 853 1017 958 1169 2813 history2 4 5
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	13 0 65 <1 908 1083 1060 1243 3533 current 4	4 0 60 <1 901 1050 981 1207 2916 history1 4	3 0 60 <1 853 1017 958 1169 2813 history2 4
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 2060 225 >25	13 0 65 <1 908 1083 1060 1243 3533 current 4 4 4 4 4	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 7 <i>h</i> istory1	3 0 60 <1 853 1017 958 1169 2813 <b>history2</b> 4 5 10 <b>history2</b>
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	13 0 65 <1 908 1083 1060 1243 3533 current 4 4 4 4 2 4 0.4	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 7 history1 0.5	3 0 60 <1 853 1017 958 1169 2813 history2 4 5 10 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	13 0 65 <1 908 1083 1060 1243 3533 current 4 4 4 4 4	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 4 7 history1 0.5 7.6	3 0 60 <1 853 1017 958 1169 2813 history2 4 5 10 history2 0.5 7.6
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	13 0 65 <1 908 1083 1060 1243 3533 current 4 4 4 4 2 4 0.4	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 7 history1 0.5	3 0 60 <1 853 1017 958 1169 2813 history2 4 5 10 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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 20 1imit/base >20	13 0 65 <1 908 1083 1060 1243 3533 current 4 4 4 4 4 0.4 7.1	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 4 7 history1 0.5 7.6	3 0 60 <1 853 1017 958 1169 2813 history2 4 5 10 kistory2 0.5 7.6
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 2060 225 20 225 20 <u>imit/base</u> >6 >20 20	13 0 65 <1 908 1083 1060 1243 3533 <u>current</u> 4 4 4 4 4 4 <u>current</u> 0.4 7.1 18.5	4 0 60 <1 901 1050 981 1207 2916 history1 4 4 4 7 <u>history1</u> 0.5 7.6 18.6	3 0 60 <1 853 1017 958 1169 2813 <b>history2</b> 4 5 10 <b>history2</b> 0.5 7.6 18.4



# **OIL ANALYSIS REPORT**





Aav2/23

Sep16/22 Jec5/22 Sep7/23 lan 12/24

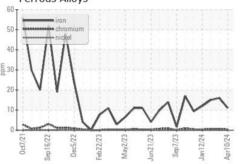
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	12.6	12.3	12.3
GRAPHS						

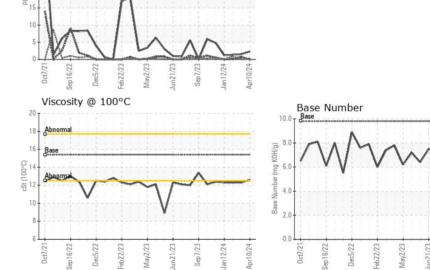
Ferrous Alloys

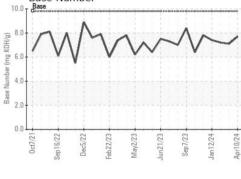
Non-ferrous Metals

35

30 25 20







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 010 - Stockbridge Sample No. : GFL0115689 Received : 11 Apr 2024 1280 Rum Creek Parkway Lab Number : 06146485 Tested : 12 Apr 2024 Stockbridge, GA Unique Number : 10976563 Diagnosed : 12 Apr 2024 - Wes Davis US 30281 Test Package : FLEET Contact: JOSHUA TINKER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. joshuatinker@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: 

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

Report Id: GFL010 [WUSCAR] 06146485 (Generated: 04/12/2024 18:45:48) Rev: 1

Submitted By: JOSHUA TINKER Page 2 of 2

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