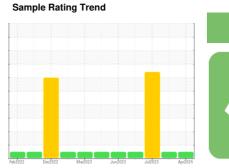


## **OIL ANALYSIS REPORT**





NORMAL

Machine Id 428072

**Diesel Engine** PETRO CANADA DURON SHP 15W40 (--- LTR)

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

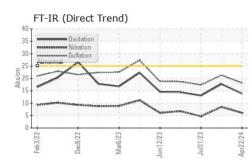
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

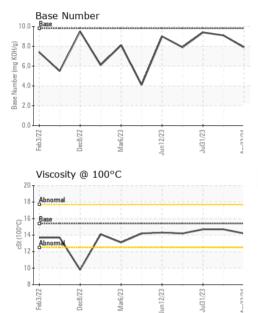
Sample Number		Client Info		GFL0114638	GFL0092564	GFL0081530
Sample Date		Client Info		22 Apr 2024	06 Dec 2023	31 Jul 2023
Machine Age	hrs	Client Info		17922	16887	15879
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINAT	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	5	26	<b>3</b> 07
Chromium	ppm	ASTM D5185m	>20	0	<1	6
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	2
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm		>20	1	2	17
Lead	ppm	ASTM D5185m	>40	0	2	1
Copper	ppm		>330	0	1	1
Tin	ppm	ASTM D5185m	>15	۰ <1	<1	<1
Antimony		ASTM D5185m	>15			0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm ppm	ASTM D5185m		0	<1	0
Oddiniani	ppin			•		0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 2	history1 37	history2 5
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	2	37	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 0	37 0	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 58	37 0 58	5 0 3
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 58 0	37 0 58 <1	5 0 3 6
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 58 0 924	37 0 58 <1 722	5 0 3 6 92
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 58 0 924 1050	37 0 58 <1 722 1554	5 0 3 6 92 3295
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 ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 58 0 924 1050 1083	37 0 58 <1 722 1554 953	5 0 3 6 92 3295 942
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 58 0 924 1050 1083 1248	37 0 58 <1 722 1554 953 1152	5 0 3 6 92 3295 942 1112
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 1010 1070 1150 1270 2060	2 0 58 0 924 1050 1083 1248 3368	37 0 58 <1 722 1554 953 1152 2692	5 0 3 6 92 3295 942 1112 3112
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	2 0 58 0 924 1050 1083 1248 3368 current	37 0 58 <1 722 1554 953 1152 2692 history1	5 0 3 6 92 3295 942 1112 3112 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 kimit/base >25	2 0 58 0 924 1050 1083 1248 3368 <u>current</u> 4	37 0 58 <1 722 1554 953 1152 2692 history1 8	5 0 3 6 92 3295 942 1112 3112 history2 ▲ 100
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 1010 1070 1150 1270 2060 kimit/base >25	2 0 58 0 924 1050 1083 1248 3368 <u>current</u> 4 6	37 0 58 <1 722 1554 953 1152 2692 history1 8 12	5 0 3 6 92 3295 942 1112 3112 history2 100 7
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> >25 >20	2 0 58 0 924 1050 1083 1248 3368 current 4 6 4	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13	5 0 3 6 92 3295 942 1112 3112 history2 ▲ 100 7 16
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 <b>Imit/base</b> >25	2 0 58 0 924 1050 1083 1248 3368 current 4 6 4	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13 history1	5 0 3 6 92 3295 942 1112 3112 history2 100 7 16 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 58 0 924 1050 1083 1248 3368 <u>current</u> 4 6 4 <u>current</u> 0.3	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13 13 history1 0.3	5 0 3 6 92 3295 942 1112 3112 history2 100 7 16 history2 0.1
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 58 0 924 1050 1083 1248 3368 <i>current</i> 4 6 4 <i>current</i> 0.3 6.1	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13 13 history1 0.3 8.5	5 0 3 6 92 3295 942 1112 3112 history2 ▲ 100 7 16 16 history2 0.1 4.7
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> >4 >20	2 0 58 0 924 1050 1083 1248 3368 <u>current</u> 4 6 4 4 <u>current</u> 0.3 6.1 18.2	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13 history1 0.3 8.5 21.3	5 0 3 6 92 3295 942 1112 3112 history2 100 7 16 history2 0.1 4.7 17.4
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	2 0 58 0 924 1050 1083 1248 3368 <i>current</i> 4 6 4 <i>current</i> 0.3 6.1 18.2 <i>current</i>	37 0 58 <1 722 1554 953 1152 2692 history1 8 12 13 history1 0.3 8.5 21.3 history1	5 0 3 6 92 3295 942 1112 3112 history2 16 history2 0.1 4.7 17.4 history2

Submitted By: TIMOTHY MOURER



# **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	14.2	14.7	14.7
GRAPHS						

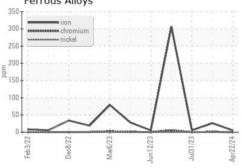
Ferrous Alloys

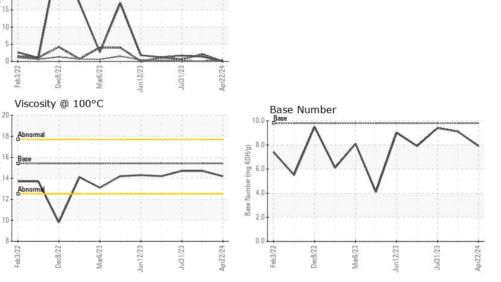
Non-ferrous Metals

3!

30 25 20

cSt (100°C)





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 885 - Orlando Sample No. : GFL0114638 Received : 25 Apr 2024 1263 W Landstreet Rd Lab Number : 06160170 Tested : 26 Apr 2024 Orlando, FL Unique Number : 10995593 Diagnosed : 26 Apr 2024 - Wes Davis US 32824 Test Package : FLEET Contact: DAWN WALLACE Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. T: \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F:

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

 Report Id: GFL885 [WUSCAR] 06160170 (Generated: 04/26/2024 07:36:45) Rev: 1
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