

## **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

### Machine Id

### 812034

#### 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.

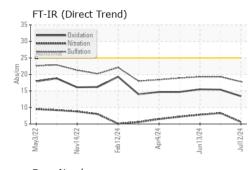
#### Fluid Condition

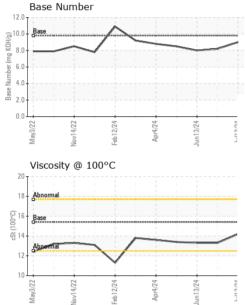
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0122591	GFL0122574	GFL0117927
Sample Date		Client Info		12 Jul 2024	18 Jun 2024	13 Jun 2024
Machine Age	hrs	Client Info		3969	3820	3787
Oil Age	hrs	Client Info		0	600	0
Oil Changed		Client Info		Not Changd	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>110	5	18	16
Chromium	ppm	ASTM D5185m	>4	0	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		2	7	5
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	4	7	6
Lead	ppm	ASTM D5185m	>45	0	0	<1
Copper	ppm	ASTM D5185m	>85	0	<1	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<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 10	history2 11
	ppm ppm					
Boron		ASTM D5185m	0	0	10	11
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	10 0	11 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 59	10 0 53	11 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 59 0	10 0 53 <1	11 0 59 <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 0 59 0 943	10 0 53 <1 922	11 0 59 <1 885
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 0 59 0 943 1101	10 0 53 <1 922 1176	11 0 59 <1 885 1135
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 0 59 0 943 1101 1142	10 0 53 <1 922 1176 1098	11 0 59 <1 885 1135 825
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 0 59 0 943 1101 1142 1305	10 0 53 <1 922 1176 1098 1293	11 0 59 <1 885 1135 825 1140
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	0 0 59 0 943 1101 1142 1305 3870	10 0 53 <1 922 1176 1098 1293 3755	11 0 59 <1 885 1135 825 1140 2894
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	0 0 60 1010 1070 1150 1270 2060	0 0 59 0 943 1101 1142 1305 3870 current	10 0 53 <1 922 1176 1098 1293 3755 history1	11 0 59 <1 885 1135 825 1140 2894 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 59 0 943 1101 1142 1305 3870 current 5	10 0 53 <1 922 1176 1098 1293 3755 history1 5	11 0 59 <1 885 1135 825 1140 2894 history2 13
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	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30	0 0 59 0 943 1101 1142 1305 3870 current 5 1	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2	11 0 59 <1 885 1135 825 1140 2894 history2 13 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30	0 0 59 0 943 1101 1142 1305 3870 current 5 1 2	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2 6	11 0 59 <1 885 1135 825 1140 2894 history2 13 <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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >30 >20 <b>Imit/base</b>	0 0 59 0 943 1101 1142 1305 3870 current 5 1 <1 <1 <1	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2 6 Kistory1	11 0 59 <1 885 1135 825 1140 2894 <b>history2</b> 13 <1 5 <b>history2</b>
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> >30 >20 <b>Imit/base</b>	0 0 59 0 943 1101 1142 1305 3870 current 5 1 <1 <1 current 0.2	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2 6 history1 0.4	11 0 59 <1 885 1135 825 1140 2894 history2 13 <1 5 history2 0.4
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 >30 220 imit/base >3 >20	0 0 59 0 943 1101 1142 1305 3870 current 5 1 current 0.2 5.6	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2 6 kistory1 0.4 8.3	111 0 59 <1 885 1135 825 1140 2894 history2 13 <1 5 history2 0.4 7.8
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> >30 <b>imit/base</b> >3 >20	0 0 59 0 943 1101 1142 1305 3870 <u>current</u> 5 1 <1 <1 <1 <u>current</u> 0.2 5.6 17.8	10 0 53 <1 922 1176 1098 1293 3755 history1 5 2 6 <u>history1</u> 0.4 8.3 19.3	11 0 59 <1 885 1135 825 1140 2894 history2 13 <1 5 history2 0.4 7.8 19.3



# **OIL ANALYSIS REPORT**





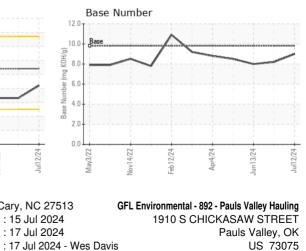
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.3	13.3
GRAPHS						

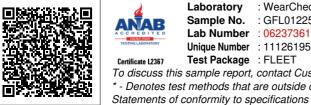
Ferrous Alloys 25 20 15 10 Apr4/24 Feb12/24 Jun 13/24 Jul12/24 Vov14/22 May3/22 Non-ferrous Metals 10 lead 2 0 Feb12/24 Mav3/7: 20 Viscosity @ 100°C 19 12.0 18 10. 17 (mg KOH/g) 16 8 ( 6.0 nber ( 4.0 Base 12 2 ( 10 0.0 Jun13/24 -Jul12/24 . Feb12/24 Apr4/24 Mav3/77 Nov14/22 : WearCheck USA - 501 Madison Ave., Cary, NC 27513

ppm

cSt (100°C)

: GFL0122591





Unique Number : 11126195 Diagnosed : 17 Jul 2024 - Wes Davis Test Package : FLEET Contact: Tony Graham To discuss this sample report, contact Customer Service at 1-800-237-1369. tgraham2@wcamerica.com \* - 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)

Received

Tested

Report Id: GFL892 [WUSCAR] 06237361 (Generated: 07/17/2024 07:43:11) Rev: 1

Contact/Location: Tony Graham - GFL892 Page 2 of 2

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