

# **OIL ANALYSIS REPORT**



Machine Id

# 429060-402468

#### 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.

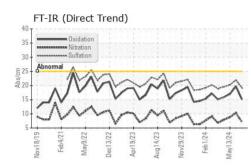
## Fluid Condition

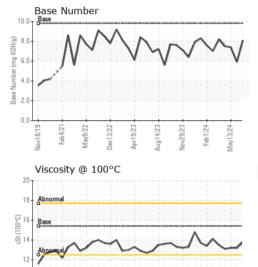
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0121204	GFL0121232	GFL0118624
Sample Date		Client Info		02 Jul 2024	12 Jun 2024	13 May 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	600	0
Oil Changed		Client Info		N/A	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	4	8	8
Chromium	ppm	ASTM D5185m	>4	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	<1
Lead	ppm	ASTM D5185m	>45	<1	2	1
Copper	ppm	ASTM D5185m	>85	<1	0	0
Tin	ppm	ASTM D5185m	>4	0	<1	0
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 3	history1 4	history2 0
	ppm ppm					-
Boron		ASTM D5185m	0	3	4	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 0	4 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 55	4 0 60	0 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 55 0	4 0 60 <1	0 0 60 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 55 0 891	4 0 60 <1 974	0 0 60 0 968
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	3 0 55 0 891 1134	4 0 60 <1 974 1200	0 0 60 0 968 1218
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	3 0 55 0 891 1134 1229	4 0 60 <1 974 1200 1144	0 0 60 0 968 1218 1067
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	3 0 55 0 891 1134 1229 1268	4 0 60 <1 974 1200 1144 1344	0 0 60 0 968 1218 1067 1293
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	3 0 55 0 891 1134 1229 1268 3322	4 0 60 <1 974 1200 1144 1344 3598	0 0 60 968 1218 1067 1293 3568
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	3 0 555 0 891 1134 1229 1268 3322 current	4 0 60 <1 974 1200 1144 1344 3598 history1	0 0 60 968 1218 1067 1293 3568 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	3 0 555 0 891 1134 1229 1268 3322 current 4	4 0 60 <1 974 1200 1144 1344 3598 history1 4	0 0 60 968 1218 1067 1293 3568 history2 3
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 >30	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6	0 0 60 968 1218 1067 1293 3568 history2 3 3
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> >30	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6 5	0 0 60 968 1218 1067 1293 3568 history2 3 3 3 0
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >20 <b>limit/base</b>	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3 3 Current	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6 5 5	0 0 60 968 1218 1067 1293 3568 history2 3 3 0 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 limit/base >30 200 limit/base	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3 3 current 0.1	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6 5 5 history1 0.3	0 0 60 968 1218 1067 1293 3568 history2 3 3 0 history2 0.2
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 >30 200 imit/base >30	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3 3 current 0.1 7.1 19.2	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6 5 5 history1 0.3 10.3	0 0 60 968 1218 1067 1293 3568 history2 3 3 3 0 history2 0.2 8.8
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	3 0 55 0 891 1134 1229 1268 3322 current 4 3 3 3 current 0.1 7.1 19.2	4 0 60 <1 974 1200 1144 1344 3598 history1 4 6 5 5 history1 0.3 10.3 21.9	0 0 60 968 1218 1067 1293 3568 history2 3 3 0 history2 0.2 8.8 20.2



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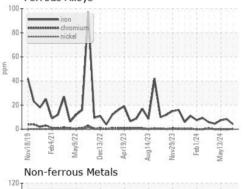
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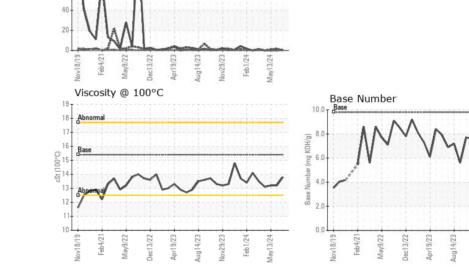
Vug14/23

hw18/19 eh4/71 CC/ 6/101 ec13/77

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	13.8	13.2	13.2
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 846 - Mayfield Hauling Sample No. : GFL0121204 Received : 08 Jul 2024 3426 State Route 45 Lab Number : 06229978 Tested : 09 Jul 2024 Mayfield, KY US 42066 Unique Number : 11113471 Diagnosed : 09 Jul 2024 - Wes Davis Test Package : FLEET Contact: Jack Lindsey Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jack.lindsey@gflenv.com T: (270)970-3690 \* - 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: GFL846 [WUSCAR] 06229978 (Generated: 07/09/2024 10:46:20) Rev: 1

Feb1/24 May13/24 .

Contact/Location: Jack Lindsey - GFL846

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