

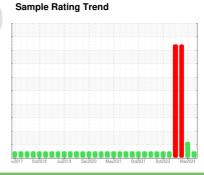
# **OIL ANALYSIS REPORT**

(P618186) 2677C

Component

**Natural Gas Engine** 

PETRO CANADA DURON GEO LD 15W40 (40 QTS)





## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

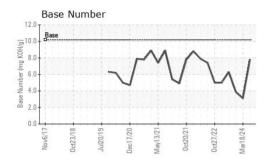
## **Fluid Condition**

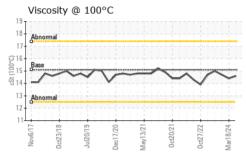
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0101786	GFL0101787	GFL0090114
Sample Date		Client Info		22 Mar 2024	18 Mar 2024	03 Oct 2023
Machine Age	hrs	Client Info		14715	14655	13526
Oil Age	hrs	Client Info		100	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ATTENTION	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method				▲ 0.012
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	4	8	6
Chromium	ppm	ASTM D5185m	>4	<1	1	2
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	1	2	3
Lead	ppm	ASTM D5185m	>30	2	4	2
Copper	ppm	ASTM D5185m	>35	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
A D D I T I V C C						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current 37	history1 9	history2 8
	ppm					
Boron		ASTM D5185m	50	37	9	8
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5	37 <1	9	8
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	37 <1 49	9 0 52	8 0 50
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	37 <1 49 <1	9 0 52 <1	8 0 50 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	37 <1 49 <1 523	9 0 52 <1 538	8 0 50 <1 563
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	37 <1 49 <1 523 1503	9 0 52 <1 538 1556	8 0 50 <1 563 1594 652 951
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	37 <1 49 <1 523 1503 777	9 0 52 <1 538 1556 676	8 0 50 <1 563 1594 652
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870	37 <1 49 <1 523 1503 777 875	9 0 52 <1 538 1556 676 946	8 0 50 <1 563 1594 652 951
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040	37 <1 49 <1 523 1503 777 875 2381	9 0 52 <1 538 1556 676 946 2438	8 0 50 <1 563 1594 652 951 2343
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040	37 <1 49 <1 523 1503 777 875 2381 current	9 0 52 <1 538 1556 676 946 2438 history1	8 0 50 <1 563 1594 652 951 2343 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040	37 <1 49 <1 523 1503 777 875 2381 current	9 0 52 <1 538 1556 676 946 2438 history1	8 0 50 <1 563 1594 652 951 2343 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	37 <1 49 <1 523 1503 777 875 2381 current 5	9 0 52 <1 538 1556 676 946 2438 history1 7 20	8 0 50 <1 563 1594 652 951 2343 history2 10 56
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	37 <1 49 <1 523 1503 777 875 2381  current 5 4	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48	8 0 50 <1 563 1594 652 951 2343 history2 10 56 173
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	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	37 <1 49 <1 523 1503 777 875 2381 current 5 4 9 current	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48 history1	8 0 50 <1 563 1594 652 951 2343 history2 10 56 ▲ 173 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	37 <1 49 <1 523 1503 777 875 2381 current 5 4 9 current	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48 history1 0	8 0 50 <1 563 1594 652 951 2343 history2 10 56 ▲ 173 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  Method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	37 <1 49 <1 523 1503 777 875 2381  current 5 4 9  current 0 7.2	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48 history1 0 11.4	8 0 50 <1 563 1594 652 951 2343 history2 10 56 ▲ 173 history2 0 11.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  Method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	50 5 50 0 560 1510 780 870 2040 limit/base >+100  >20 limit/base	37 <1 49 <1 523 1503 777 875 2381 current 5 4 9 current 0 7.2 19.7	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48 history1 0 11.4 24.6	8 0 50 <1 563 1594 652 951 2343 history2 10 56 ▲ 173 history2 0 11.5 23.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm	ASTM D5185m  MEthod  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D78144  *ASTM D7844  *ASTM D7844	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base >20 >30 limit/base	37 <1 49 <1 523 1503 777 875 2381 current 5 4 9 current 0 7.2 19.7 current	9 0 52 <1 538 1556 676 946 2438 history1 7 20 48 history1 0 11.4 24.6 history1	8 0 50 <1 563 1594 652 951 2343 history2 10 56 173 history2 0 11.5 23.9



# **OIL ANALYSIS REPORT**

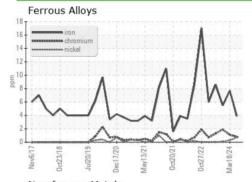


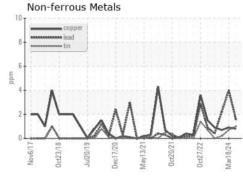


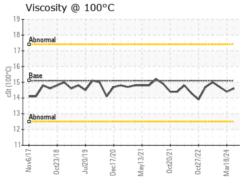
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

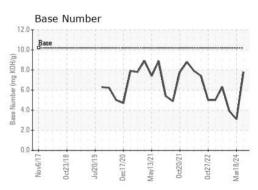
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.6	14.4	14.7

## **GRAPHS**













Certificate L2367

Report Id: GFL030 [WUSCAR] 06130128 (Generated: 03/27/2024 16:32:21) Rev: 1

Laboratory Sample No.

Lab Number : 06130128 Unique Number : 10949593

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0101786

Received **Tested** Test Package : FLEET

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

Diagnosed

: 27 Mar 2024 : 27 Mar 2024 - Wes Davis

: 27 Mar 2024

GFL Environmental - 030 - Conway Myrtle Beach

3010 HWY 378 Conway, SC US 29527

Contact: ARCILIO RUEZ

To discuss this sample report, contact Customer Service at 1-800-237-1369. aruiz@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Submitted By: TECHNICIAN ACCOUNT

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