

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 433020

Component
Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine oil sample) $% \label{eq:commutative}$

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

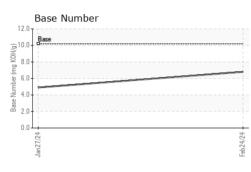
Fluid Condition

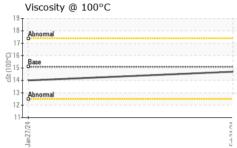
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

			Jan2024	Feb2024		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114496	GFL0103963	
Sample Date		Client Info		24 Feb 2024	27 Jan 2024	
Machine Age	hrs	Client Info		862	603	
Oil Age	hrs	Client Info		862	603	
Oil Changed		Client Info		Not Changd	Changed	
Sample Status				NORMAL	ABNORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	12	31	
Chromium	ppm	ASTM D5185m	>4	0	<1	
Nickel	ppm	ASTM D5185m	>2	0	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>9	4	11	
Lead	ppm	ASTM D5185m	>30	0	1	
Copper	ppm	ASTM D5185m	>35	3	15	
Tin	ppm	ASTM D5185m	>4	0	1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base 50	current 23	history1 7	history2
Boron	ppm ppm					
Boron Barium		ASTM D5185m	50	23	7	
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5	23 0	7 2	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	23 0 53	7 2 48	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	23 0 53 2	7 2 48 13	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	23 0 53 2 675	7 2 48 13 710	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	23 0 53 2 675 1727	7 2 48 13 710 1143	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	23 0 53 2 675 1727 930	7 2 48 13 710 1143 653	
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	50 5 50 0 560 1510 780 870	23 0 53 2 675 1727 930 1150	7 2 48 13 710 1143 653 872	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 2040 limit/base	23 0 53 2 675 1727 930 1150 2945	7 2 48 13 710 1143 653 872 2233	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 limit/base	23 0 53 2 675 1727 930 1150 2945 current	7 2 48 13 710 1143 653 872 2233 history1	 history2
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 method	50 5 50 0 560 1510 780 870 2040 limit/base	23 0 53 2 675 1727 930 1150 2945 current 8	7 2 48 13 710 1143 653 872 2233 history1 33	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	23 0 53 2 675 1727 930 1150 2945 current 8 5	7 2 48 13 710 1143 653 872 2233 history1 33 4	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040 >timit/base >+100	23 0 53 2 675 1727 930 1150 2945 current 8 5 16	7 2 48 13 710 1143 653 872 2233 history1 33 4 51	 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 TS	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 2040 >+100 >20 }	23 0 53 2 675 1727 930 1150 2945 current 8 5 16 current	7 2 48 13 710 1143 653 872 2233	 history2 history2
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	50 50 0 560 1510 780 870 2040 2040 >+100 >20 }	23 0 53 2 675 1727 930 1150 2945 <u>current</u> 8 5 16 <u>current</u> 0	7 2 48 13 710 1143 653 872 2233 history1 33 4 51 history1 0	 history2 history2 history2
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	50 50 00 560 1510 780 870 2040 2040 >+100 >20 imit/base 20	23 0 53 2 675 1727 930 1150 2945 <i>current</i> 8 5 16 <i>current</i> 0 9.2	7 2 48 13 710 1143 653 872 2233 history1 33 4 ↓ 51 history1 0 12.3	history2 history2
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	50 50 560 1510 780 870 2040 Imit/base >20 Imit/base >20 Imit/base	23 0 53 2 675 1727 930 1150 2945 <u>current</u> 8 5 16 <u>current</u> 0 9.2 19.6	7 2 48 13 710 1143 653 872 2233 history1 33 4 ► 51 history1 0 12.3 21.5	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	50 50 560 1510 780 870 2040 >+100 >+100 >20 imit/base >20 >30 imit/base	23 0 53 2 675 1727 930 1150 2945 Current 8 5 16 Current 0 9.2 19.6 Current	7 2 48 13 710 1143 653 872 2233 history1 33 4 51 history1 0 12.3 21.5 history1	history2 history2 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.7	14.0	
GRAPHS						
Iron						
0			reb24/24			

Feb24/24

Feb24/24.

:01 Mar 2024

: 05 Mar 2024

12.0

10

8 (6.0 Number

4.0 Base

2 (

0.0

Jan27/24

(mg KOH/g)

Base Number



Unique Number : 10910169 Diagnosed : 05 Mar 2024 - Sean Felton Test Package : FLEET Contact: Saul Castillo Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. saul.castillo@gflenv.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)

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

Received

Tested

6

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19

18

17

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13 Abnor

12 11

Lab Number : 06106672

Laboratory Sample No. Jan27/24

: GFL0114496

CILCUP.

Viscosity @ 100°C

Submitted By: TECHNICIAN ACCOUNT

GFL Environmental - 865 - East Mount Hauling

7213 East Mount Houston Road

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Houston, TX

US 77050

Feb24/24

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