

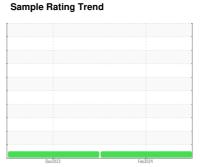
OIL ANALYSIS REPORT



948003-172502

Component **Natural Gas Engine**

PETRO CANADA DURON GEO LD 15W40 (8 GAL)





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

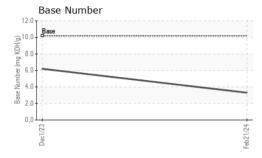
Fluid Condition

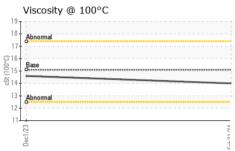
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 21 Feb 2024 01 Dec 2023 Machine Age hrs Client Info 10228 9634 Oil Age hrs Client Info 600 600 600 Oil Age Client Info Changed	GLO LD 15W40 (o ant,	,	Dec2023	Feb 2024		
Client Info 21 Feb 2024 01 Dec 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600 600	Sample Number		Client Info		GFL0110809	GFL0088455	
Oil Age	Sample Date		Client Info		21 Feb 2024	01 Dec 2023	
Contamped Client Info Changed NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Machine Age	hrs	Client Info		10228	9634	
NORMAL N	Oil Age	hrs	Client Info		600	600	
NORMAL N	Oil Changed		Client Info		Changed	Changed	
Water WC Method >0.1 NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 14 4 Chromium ppm ASTM D5185m >5 1 -1 Nickel ppm ASTM D5185m >5 -1 -1 Silver ppm ASTM D5185m >3 0 0 Alead ppm ASTM D5185m >3 0 0 Alead ppm ASTM D5185m >40 -1 0 Alead ppm ASTM D5185m >40 0 Copper ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2	Sample Status					NORMAL	
WEAR METALS	CONTAMINATI	ION	method	limit/base	current	history1	history2
Chromium	Water		WC Method	>0.1	NEG	NEG	
Chromium	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>50	14	4	
Nicke ppm ASTM D5185m >4 0 <1	Chromium	ppm	ASTM D5185m	>5	1	<1	
Silver	Nickel		ASTM D5185m	>4	0	<1	
Aluminum	Titanium	ppm	ASTM D5185m	>5	<1	<1	
Lead	Silver	ppm	ASTM D5185m	>3	0	0	
Copper	Aluminum	ppm	ASTM D5185m	>25	4	2	
Tin	Lead	ppm	ASTM D5185m	>40	<1	0	
Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 4 144 Barium ppm ASTM D5185m 5 0 0 Molybdenum ppm ASTM D5185m 50 61 19 Manganese ppm ASTM D5185m 50 61 19 Magnesium ppm ASTM D5185m 560 508 305 Calcium ppm ASTM D5185m 560 508 305 Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>150</td> <th><1</th> <td><1</td> <td></td>	Copper	ppm	ASTM D5185m	>150	<1	<1	
ADDITIVES	Tin	ppm	ASTM D5185m	>4	0	0	
ADDITIVES	/anadium	ppm	ASTM D5185m		0	0	
Boron	Cadmium	ppm	ASTM D5185m		0	<1	
Barium ppm ASTM D5185m 5 0 0 Molybdenum ppm ASTM D5185m 50 61 19 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 560 508 305 Calcium ppm ASTM D5185m 1510 1499 1856 Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m >20 0 7 INFRA-RED	ADDITIVES		method	limit/base	current	history1	history2
Barium	Boron	ppm	ASTM D5185m	50	4	144	
Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 560 508 305 Calcium ppm ASTM D5185m 1510 1499 1856 Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m >20 0 7 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0	Barium	ppm	ASTM D5185m	5	0	0	
Magnesium ppm ASTM D5185m 560 508 305 Calcium ppm ASTM D5185m 1510 1499 1856 Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m >20 0 7 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	50	61	19	
Calcium ppm ASTM D5185m 1510 1499 1856 Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m >20 0 7 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 Nitration Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method	Manganese	ppm	ASTM D5185m	0	<1	0	
Phosphorus ppm ASTM D5185m 780 641 1043 Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m >20 0 7 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base	-	ppm	ASTM D5185m	560	508	305	
Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m 10 0 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Calcium	ppm	ASTM D5185m	1510	1499	1856	
Zinc ppm ASTM D5185m 870 837 1205 Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m 10 0 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Phosphorus	ppm	ASTM D5185m	780	641	1043	
Sulfur ppm ASTM D5185m 2040 2138 4087 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m 10 0 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2			ASTM D5185m	870	837	1205	
Silicon ppm ASTM D5185m >25 5 5 Sodium ppm ASTM D5185m 10 0 Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Sulfur		ASTM D5185m	2040	2138	4087	
Sodium	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 10 0	Silicon	ppm	ASTM D5185m	>25	5	5	
Potassium ppm ASTM D5185m >20 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Sodium	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m		10	0	
Soot % % *ASTM D7844 0 0 Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Potassium		ASTM D5185m	>20	0	7	
Nitration Abs/cm *ASTM D7624 >20 11.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Soot %	%	*ASTM D7844		0	0	
Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.8 15.2	Nitration	Abs/cm	*ASTM D7624	>20	11.0	8.0	
Oxidation	Sulfation		*ASTM D7415	>30			
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.8	15.2	
		mg KOH/g	ASTM D2896	10.2	3.3	6.2	



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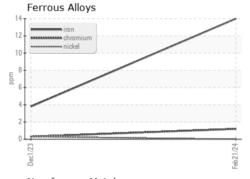


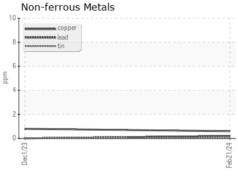


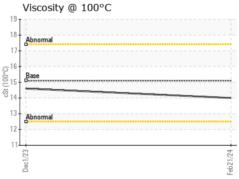
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML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

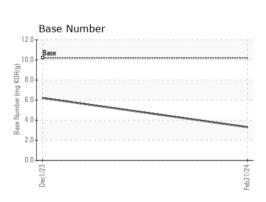
FLUID PROP	ERHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.0	14.6	

GRAPHS











Certificate L2367

Laboratory Sample No. Lab Number : 06099844 Unique Number : 10898074

: GFL0110809 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 26 Feb 2024 **Tested** : 27 Feb 2024

Diagnosed : 27 Feb 2024 - Wes Davis

GFL Environmental - 146 - Augusta

1064 Franke Industrial Augusta, GA US 30909

Contact: JEFFERY WASHINGTON jeff.washington@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

T:

F: