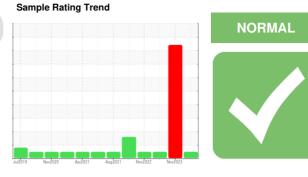


OIL ANALYSIS REPORT

(YA154603) 3857C

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (10 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

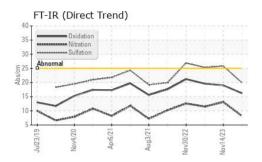
Fluid Condition

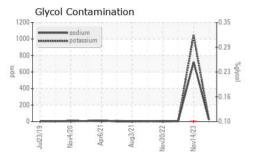
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

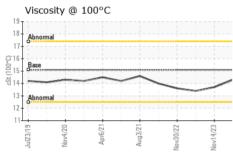
Sample Number Client Info GFL0123407 GFL0082416 GFL0082456 Sample Date Client Info 18 Jun 2024 14 Nov 2023 02 Jun 2023 Machine Age hrs Client Info 21978 21978 21978 8900 Oil Age hrs Client Info N/A Changed Changed Changed Oil Changed Client Info N/A Changed Changed Changed Sample Status Client Info N/A Changed Changed Changed Ward WC Method 20.1 NEG NEG NEG WEAR METALS method limit/base current history2 Iron ppm ASTM 55185m 24 4.1 3 -1 Chromium ppm ASTM 55185m 2.2 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 <	SAMPLE INFORM	MAT <u>ION</u>	method	limit/base	current	history1	history2
Sample Date Client Info 18 Jun 2024 14 Nov 2023 02 Jun 2023 Machine Age hrs Client Info 21978 21978 8900 Oil Age hrs Client Info 21978 21978 1213 Oil Changed Client Info N/A Changed Changed Changed Sample Status Image: Client Info N/A Changed Changed Changed CONTAMINATION method Imitibase current history1 history2 WEAR METALS method limit/base current history2 Iron ppm ASTM D5185m >50 4 26 6 Chromium ppm ASTM D5185m >4 <1 3 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 <1 Aluminum ppm ASTM D5185m >3 0 0 0 0 Aluminum ppm ASTM D5185m >3 <td< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>GFL0123407</th><th>GFL0082416</th><th>GFL0082456</th></td<>	Sample Number		Client Info		GFL0123407	GFL0082416	GFL0082456
Machine Age hrs Client Info 21978 21978 21978 1213 Oil Changed Client Info N/A Changed Current Mistory Delation Current Mistory Delation Current Mistory Call 4 26 6 6 Changed Changed Changed Changed Changed Chan	•		Client Info		18 Jun 2024	14 Nov 2023	02 Jun 2023
Oil Changed Sample Status Client Info N/A Changed NORMAL Changed NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 4 26 6 Chromium ppm ASTM D5185m >50 4 26 6 Chromium ppm ASTM D5185m >20 0 <1 <1 0 Nickel ppm ASTM D5185m >3 0 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 0 Lead ppm ASTM D5185m >30 3 10 3 4 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Machine Age	hrs	Client Info		21978	21978	8900
Sample Status	Oil Age	hrs	Client Info		21978	21978	1213
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 4 26 6 Chromium ppm ASTM D5185m >4 <1 3 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 3 10 3 Lead ppm ASTM D5185m >30 3 10 3 Copper ppm ASTM D5185m >30 3 10 3 Cadadium ppm ASTM D5185m >4 0 <1 <1 Cadmium ppm ASTM D5185m 50 25 8 3<	Oil Changed		Client Info		N/A	Changed	Changed
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 4 26 6 Chromium ppm ASTM D5185m >4 <1	Sample Status				NORMAL	SEVERE	NORMAL
Iron	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 <1	Iron	ppm	ASTM D5185m	>50	4	26	6
Titanium ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>4	<1	3	<1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 1 5 4 Lead ppm ASTM D5185m >30 3 10 3 Copper ppm ASTM D5185m >35 <1	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum ppm ASTM D5185m >9 1 5 4 Lead ppm ASTM D5185m >30 3 10 3 Copper ppm ASTM D5185m >35 <1 8 4 Tin ppm ASTM D5185m >4 0 <1 <1 Vanadium ppm ASTM D5185m <1 <1 <1 <1 Cadmium ppm ASTM D5185m O 0 0 0 Boron ppm ASTM D5185m 50 25 8 3 Barium ppm ASTM D5185m 50 25 8 3 Barium ppm ASTM D5185m 50 <1 0 0 Molybdenum ppm ASTM D5185m 50 49 73 50 Manganese ppm ASTM D5185m 0 <1 1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Titanium	ppm	ASTM D5185m		<1	<1	0
Lead ppm ASTM D5185m >30 3 10 3 Copper ppm ASTM D5185m >35 <1		ppm			0		
Copper ppm ASTM D5185m >35 <1	Aluminum	ppm				5	
Tin ppm ASTM D5185m >4 0 <1		• • • • • • • • • • • • • • • • • • • •					
Vanadium ppm ASTM D5185m <1		ppm					
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 25 8 3 Barium ppm ASTM D5185m 5 0 <1 0 Molybdenum ppm ASTM D5185m 50 49 73 50 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 560 586 490 527 Calcium ppm ASTM D5185m 780 832 607 699 Phosphorus ppm ASTM D5185m 780 832 607 699 Zinc ppm ASTM D5185m 870 1025 905 962 Sulfur ppm ASTM D5185m >2040 3080 2496 2539 CONTAMINANTS method limit/base current		• • • • • • • • • • • • • • • • • • • •		>4			
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Barium ppm ASTM D5185m 5 0 <1	ADDITIVES						
Molybdenum ppm ASTM D5185m 50 49 73 50 Manganese ppm ASTM D5185m 0 <1		• • • • • • • • • • • • • • • • • • • •					
Manganese ppm ASTM D5185m 0 <1					-		
Magnesium ppm ASTM D5185m 560 586 490 527 Calcium ppm ASTM D5185m 1510 1692 1519 1598 Phosphorus ppm ASTM D5185m 780 832 607 699 Zinc ppm ASTM D5185m 870 1025 905 962 Sulfur ppm ASTM D5185m 2040 3080 2496 2539 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 24 11 Sodium ppm ASTM D5185m >20 720 7 Potassium ppm ASTM D5185m >20 25 1044 2 Glycol % *ASTM D5185m >20 25 1044 2 Glycol % *ASTM D5185m >20 25 1044 2 Soot % % *ASTM D7844 0 <th>-</th> <th>• • • • • • • • • • • • • • • • • • • •</th> <th></th> <th></th> <th></th> <th></th> <th></th>	-	• • • • • • • • • • • • • • • • • • • •					
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Phosphorus ppm ASTM D5185m 780 832 607 699 Zinc ppm ASTM D5185m 870 1025 905 962 Sulfur ppm ASTM D5185m 2040 3080 2496 2539 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 24 11 Sodium ppm ASTM D5185m >20 25 1044 2 Potassium ppm ASTM D5185m >20 25 1044 2 Glycol % *ASTM D2982 1044 2 Glycol % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
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Potassium ppm ASTM D5185m >20 25 ▲ 1044 2 Glycol % *ASTM D2982 ▲ 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Silicon	ppm	ASTM D5185m	>+100	4	24	11
Glycol % *ASTM D2982 ▲ 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Sodium	ppm	ASTM D5185m		20	<u>▲</u> 720	7
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Potassium	ppm	ASTM D5185m	>20	25	<u>1044</u>	2
Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Glycol	%	*ASTM D2982			▲ 0.10	
Nitration Abs/cm *ASTM D7624 > 20 8.2 13.1 11.5 Sulfation Abs/.1mm *ASTM D7415 > 30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 16.2 19.0 19.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.9 25.8 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Soot %	%	*ASTM D7844		0	0	0
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm Abs/.	Nitration	Abs/cm	*ASTM D7624	>20	8.2	13.1	11.5
Oxidation Abs/.1mm *ASTM D7414 >25 16.2 19.0 19.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	25.8	25.3
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.2 7.2 4.1 2.9	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	19.0	19.6
	Base Number (BN)	mg KOH/g	ASTM D2896	10.2	7.2	4.1	2.9

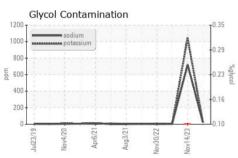


OIL ANALYSIS REPORT





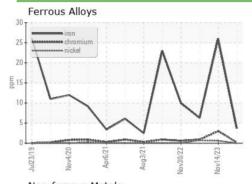


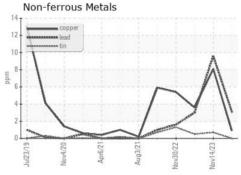


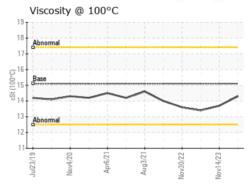
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

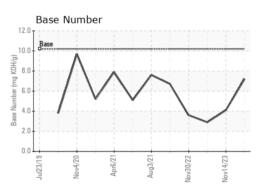
FLUID PROP	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.3	13.7	13.4

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0123407 Lab Number : 06215565 Unique Number : 11088429 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 20 Jun 2024 **Tested** : 21 Jun 2024

Diagnosed : 21 Jun 2024 - Sean Felton

GFL Environmental - 007 - Brunswick

2809 Galloway Road Bolivia, NC US 28422

Contact: DONALD CRAVEN dcraven@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)

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

F: (910)253-4179 Submitted By: DONALD CRAVEN

T: