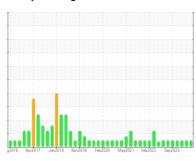


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 10482 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (13 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.

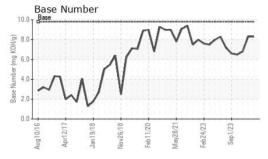
Fluid Condition

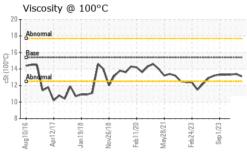
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 GFL0094321 Sample Number Client Info GFL0107238 GFL0101211 GFL0094321 Sample Date Client Info 12 Jan 2024 21 Nov 2023 28 Sep 2023 Machine Ag hrs Client Info 2388 1951 1544 O7 589 Oil Changed hrs Client Info 417 407 589 Oil Changed Changed Changed Changed Changed NoRMAL N	QAL) Q2016 Apr2017 Jan2018 Nov2018 Fee52020 May2021 Fee52023 Sep52023						
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		GFL0107238	GFL0101211	GFL0094321
Oil Age Oil Changed Oil Changed Oil Changed Sample Status Client Info Not Changed Changed Changed Changed Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method method state of the property of the	Sample Date		Client Info		12 Jan 2024	21 Nov 2023	28 Sep 2023
Oil Changed Sample Status Client Info MoRMAL Not Changed NORMAL Changed NoRMAC Changed NoRMAC Changed NoRMAC Changed NoRMAC Changed NoRMAC Changed NoRMAC Change NEG Chan	Machine Age	hrs	Client Info		2368	1951	1544
Sample Status	Oil Age	hrs	Client Info		417	407	589
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Not Changd	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method PC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >10.0 5 2 68 Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >20 8 1 8 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >40 0 0 <1 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m >10 0 0 <1 Vanadium ppm ASTM D5185m 0 4 8	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >100 5 2 68 Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >4 0 0 <1 Titanium ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 8 1 8 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >40 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m </td <td>Fuel</td> <td></td> <td>WC Method</td> <td>>5</td> <th><1.0</th> <td><1.0</td> <td><1.0</td>	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >4 0 0 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	5	2	68
Titanium ppm ASTM D5185m 0 0 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 8 1 8 Lead ppm ASTM D5185m >40 0 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	0	2
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 8 1 8 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 <1 <1 5 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 56 55 63 Magnesium ppm ASTM D5185m 1010 880 864	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 <1 <1 5 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 3 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1270 1147 1149 <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>3</td> <th>0</th> <td>0</td> <td>0</td>	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 <1 <1 5 Tin ppm ASTM D5185m >15 0 0 <1	Aluminum	ppm	ASTM D5185m	>20	8	1	8
Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 60 56 55 63 Manganese ppm ASTM D5185m 1010 880 864 787 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 histor	Lead	ppm	ASTM D5185m	>40	0	0	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 56 55 63 Manganese ppm ASTM D5185m 1010 880 864 787 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	<1	<1	5
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 56 55 63 Manganese ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>15		0	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 4 8 4 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 60 56 55 63 Manganese ppm ASTM D5185m 0 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 60 56 55 63 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 55 63 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 880 864 787 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m 20 2 <1 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th></th> <td></td> <td></td>	Boron	ppm	ASTM D5185m	0			
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 880 864 787 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1	Barium	ppm	ASTM D5185m	0	3	0	0
Magnesium ppm ASTM D5185m 1010 880 864 787 Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1	Molybdenum	ppm					63
Calcium ppm ASTM D5185m 1070 980 977 1048 Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1	Manganese	ppm	ASTM D5185m	0	0	<1	
Phosphorus ppm ASTM D5185m 1150 929 942 921 Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1		ppm					
Zinc ppm ASTM D5185m 1270 1147 1149 1154 Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1		ppm				977	
Sulfur ppm ASTM D5185m 2060 3175 2839 2533 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 2 <1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m 1 1 24 Potassium ppm ASTM D5185m >20 2 <1		ppm			1147		
Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m 1 1 24 Potassium ppm ASTM D5185m >20 2 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 2.4 Nitration Abs/cm *ASTM D7624 >20 4.9 4.4 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	Sulfur	ppm	ASTM D5185m	2060	3175	2839	2533
Sodium ppm ASTM D5185m 1 1 24 Potassium ppm ASTM D5185m >20 2 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 2.4 Nitration Abs/cm *ASTM D7624 >20 4.9 4.4 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 2.4 Nitration Abs/cm *ASTM D7624 >20 4.9 4.4 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	Silicon	ppm	ASTM D5185m	>25	6	4	11
INFRA-RED	Sodium	ppm	ASTM D5185m		1	1	24
Soot % % *ASTM D7844 >3 0.2 0.1 2.4 Nitration Abs/cm *ASTM D7624 >20 4.9 4.4 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	Potassium	ppm	ASTM D5185m	>20	2	<1	2
Nitration Abs/cm *ASTM D7624 >20 4.9 4.4 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.0 16.6 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	Soot %	%	*ASTM D7844	>3	0.2	0.1	2.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 11.5 15.2	Nitration	Abs/cm	*ASTM D7624	>20	4.9	4.4	10.4
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.0	16.6	23.0
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.3 8.3 6.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.2	11.5	15.2
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	8.3	6.8



OIL ANALYSIS REPORT

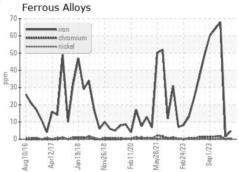


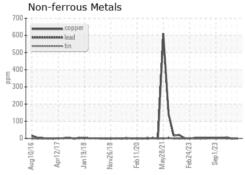


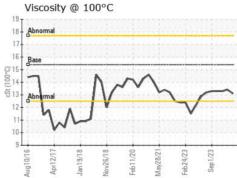
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

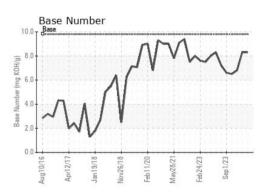
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.4	13.3

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number **Unique Number** Test Package : FLEET

: GFL0107238 : 06064085 : 10835467

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 18 Jan 2024 : 19 Jan 2024 Diagnosed Diagnostician : Wes Davis

GFL Environmental - 010 - Stockbridge 1280 Rum Creek Parkway

Stockbridge, GA US 30281

Contact: JOSHUA TINKER joshuatinker@gflenv.com T:

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)

F: