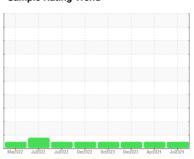


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
228037
Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 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

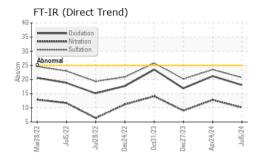
Fluid Condition

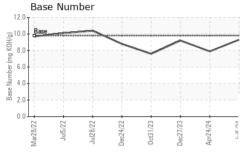
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

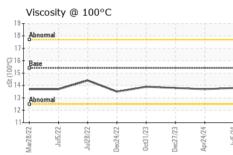
SAMPLE INFORMATION method limit/base current history1 history2	āAL)		Mar2022	Jul2022 Jul2022 Dec20	122 Oct2023 Dec2023 Apr2024	Jul2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0125451	GFL0116134	GFL0104545
Machine Age hrs Client Info 9113 8806 8104 Oil Age hrs Client Info 307 605 147 Oil Changed Client Info Changed Changed NoRMAL NORMAL <th></th> <th></th> <th>Client Info</th> <th></th> <th>05 Jul 2024</th> <th>24 Apr 2024</th> <th>27 Dec 2023</th>			Client Info		05 Jul 2024	24 Apr 2024	27 Dec 2023
Oil Changed Sample Status Client Info Changed NORMAL NoRMAL NORMAL NoRMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method 55 <1.0 <1.0 <1.0 Water WC Method 50.2 NEG NEG NEG Glycol WC Method 50.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 18 11 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 5 5 4 Lead ppm ASTM D5185m >40 <1 0 <1 Copper ppm ASTM D5185m >330 2 5 <4		hrs	Client Info		9113		8104
Sample Status	•	hrs	Client Info		307	605	147
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 18 11 Chromium ppm ASTM D5185m >4 0 0 0 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >3 0 0 0 Copper ppm ASTM D5185m >40 <1 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium<	-		Client Info		Changed	Changed	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 18 11 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >40 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method NEG NEG NEG	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 0 0 0 Nickel ppm ASTM D5185m >4 0 0 0 Tittanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 5 5 4 Lead ppm ASTM D5185m >20 5 5 4 Lead ppm ASTM D5185m >40 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	11	18	11
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 5 5 4 Lead ppm ASTM D5185m >40 <1	Chromium	ppm	ASTM D5185m	>20	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Altuminum ppm ASTM D5185m >20 5 5 4 Lead ppm ASTM D5185m >40 <1 0 <1 Copper ppm ASTM D5185m >330 2 5 <1 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 <1 0 <1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 <1 0 <1 Magnesium ppm ASTM D5185m 0 <1 0 <1 1095 1158 Phosphorus pp	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >40 <1 0 <1 Copper ppm ASTM D5185m >330 2 5 <1 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 <1 0 <1 Barium ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1070 1221 1205 <	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 2 5 <1 Tin ppm ASTM D5185m >15 0 0 <1	Aluminum	ppm	ASTM D5185m	>20	5	5	4
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 <1 0 <1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 <1 0 Magnesium ppm ASTM D5185m 0 <1 0 <1 095 Calcium ppm ASTM D5185m 1070 1221 1205 1158 Phosphorus ppm ASTM D5185m 1070 1152 1120 1119 Zinc ppm ASTM D5185m 1270 1359 1414 1373 Sulfur ppm <th< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>>40</td><th><1</th><td>0</td><td><1</td></th<>	Lead	ppm	ASTM D5185m	>40	<1	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 <1 0 <1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 62 64 64 Magnesium ppm ASTM D5185m 1010 1075 1077 1095 Calcium ppm ASTM D5185m 1070 1221 1205 1158 Phosphorus ppm ASTM D5185m 1150 1152 1120 11119 Zinc ppm ASTM D5185m 1270 1359 1414 1373 Sulfur ppm ASTM D5185m 2060 3777 3442 3341 CONTAMINANTS method limit/base curre	Copper	ppm	ASTM D5185m	>330	2	5	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 0 <1 Barium ppm ASTM D5185m 0	Tin	ppm	ASTM D5185m	>15		0	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 64 64 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1075 1077 1095 Calcium ppm ASTM D5185m 1070 1221 1205 1158 Phosphorus ppm ASTM D5185m 1150 1152 1120 1119 Zinc ppm ASTM D5185m 1270 1359 1414 1373 Sulfur ppm ASTM D5185m 2060 3777 3442 3341 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/b	ADDITIVES		method	limit/base		history1	history2
Molybdenum ppm ASTM D5185m 60 62 64 64 Manganese ppm ASTM D5185m 0 <1	Boron	ppm					
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1075 1077 1095 Calcium ppm ASTM D5185m 1070 1221 1205 1158 Phosphorus ppm ASTM D5185m 1150 1152 1120 1119 Zinc ppm ASTM D5185m 1270 1359 1414 1373 Sulfur ppm ASTM D5185m 2060 3777 3442 3341 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *AST		ppm			-		-
Magnesium ppm ASTM D5185m 1010 1075 1077 1095 Calcium ppm ASTM D5185m 1070 1221 1205 1158 Phosphorus ppm ASTM D5185m 1150 1152 1120 1119 Zinc ppm ASTM D5185m 1270 1359 1414 1373 Sulfur ppm ASTM D5185m 2060 3777 3442 3341 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm	-						
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Sulfur ppm ASTM D5185m 2060 3777 3442 3341 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9	·						
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m 4 2 2 Potassium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9							
Silicon ppm ASTM D5185m >25 4 3 3 Sodium ppm ASTM D5185m 4 2 2 Potassium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9				2060	3777		
Sodium ppm ASTM D5185m 4 2 2 Potassium ppm ASTM D5185m >20 7 11 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9							
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INFRA-RED							
Soot % % *ASTM D7844 >3 1.1 1.6 0.9 Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9		ppm					
Nitration Abs/cm *ASTM D7624 >20 10.1 12.8 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9							
Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.5 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9				>20			
Oxidation Abs/.1mm *ASTM D7414 >25 18.0 21.2 16.9				>30	20.7	23.5	20.2
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 9.3 7.9 9.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.0	21.2	16.9
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.3	7.9	9.2



OIL ANALYSIS REPORT



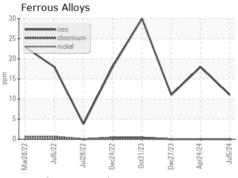


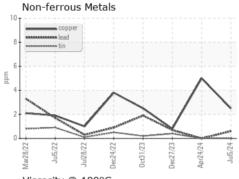


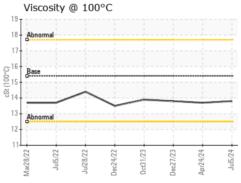
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

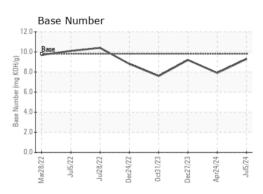
FLUID PROPI	ERHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.7	13.8

GRAPHS













Certificate 12367

Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0125451 Lab Number : 06231026 Unique Number : 11114519

Test Package : FLEET

Received **Tested** Diagnosed

: 08 Jul 2024 : 10 Jul 2024 : 10 Jul 2024 - Wes Davis

GFL Environmental - 947 - WB Horicon HC

N7296 County Rd V Horicon, WI US 53032

Contact: Tim Kieffer tim.kieffer@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.

T: (608)219-0288 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)