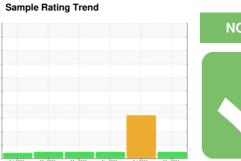


OIL ANALYSIS REPORT









Machine Id 921015 Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 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

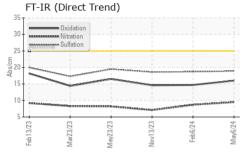
Fluid Condition

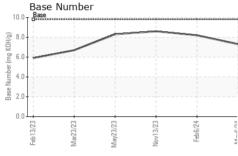
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

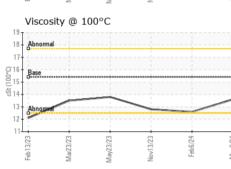
Sample Number Client Info GFL0113015 GFL0108407 GFL0098422 Sample Date Client Info 06 May 2024 06 Feb 2024 13 Nov 2023 Machine Age hrs Client Info 28076 29597 27565 Oil Changed Client Info 28076 29597 27565 Oil Changed Client Info Changed Changed <td< th=""><th>SAMPLE INFORM</th><th>ATION</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 28076 29597 27565 Oil Age hrs Client Info 28076 29597 27565 Oil Changed Client Info Changed Changed </td <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <th>GFL0113015</th> <td>GFL0108407</td> <td>GFL0098422</td>	Sample Number		Client Info		GFL0113015	GFL0108407	GFL0098422
Oil Age hrs Client Info 28076 29597 27565 Oil Changed Sample Status Client Info Changed Changed Changed Changed Changed NORMAL ABNORMAL NORMAL ADROPMAL NORMAL ABNORMAL NORMAL ADROPMAL NORMAL ADROPMAL NORMAL ADROPMAL NORMAL ADROPMAL NORMAL ADROPMAL NORMAL NORMAL NORMAL ABNORMAL NORMAL NORMAL NORMAL ADROPMAL NORMAL NORMAL NORMAL ADROPMAL NORMAL NORMAL NORMAL ADROPMAL NORMAL NORMAL NORMAL	Sample Date		Client Info		06 May 2024	06 Feb 2024	13 Nov 2023
Client Info Changed Changed Changed NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		28076	29597	27565
CONTAMINATION	Oil Age	hrs	Client Info		28076	29597	27565
CONTAMINATION method militibase current history1 history2	Oil Changed		Client Info		Changed	Changed	Changed
Fuel					NORMAL	ABNORMAL	
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 18 6 7 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 <1 Silver ppm ASTM D5185m >2 0 <1 <1 <1 Silver ppm ASTM D5185m >20 4 <1 <1 <1 Silver ppm ASTM D5185m >40 0 <1 0 Silver ppm ASTM D5185m >40 0 <1 0 Copper ppm ASTM D5185m >15 <1 <1 0 Vanadium	CONTAMINATIO	N	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<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	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	18	6	7
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Description			ASTM D5185m	>5	<1	<1	<1
Silver	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum ppm ASTM D5185m >20 4 <1 1 Lead ppm ASTM D5185m >40 0 <1			ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >40 0 <1 0 Copper ppm ASTM D5185m >330 5 ▲ 190 1 Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 4 11 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 11 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 11 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method 1 1 0 0			ASTM D5185m	>20	4	<1	1
Copper ppm ASTM D5185m >330 5 ▲ 190 1 Tin ppm ASTM D5185m >15 <1				>40	0	<1	0
Tin			ASTM D5185m	>330	5	<u></u> 190	1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 11 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 1 1 0 Molybdenum ppm ASTM D5185m 0 1 1 0 Manganese ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 <t< td=""><td></td><td></td><td></td><td></td><th></th><td></td><td>0</td></t<>							0
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Boron ppm ASTM D5185m 0 4 11 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 82 56 Manganese ppm ASTM D5185m 0 1 1 0 Magnesium ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base							
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 82 56 Manganese ppm ASTM D5185m 0 1 1 0 Magnesium ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 82 56 Manganese ppm ASTM D5185m 0 1 1 0 Magnesium ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 48 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 0.6 </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>4</th> <td>11</td> <td>0</td>	Boron	ppm	ASTM D5185m	0	4	11	0
Manganese ppm ASTM D5185m 0 1 1 0 Magnesium ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 0 48 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 942 954 879 Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m 3 473 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/amm *ASTM D7415 <	Molybdenum	ppm	ASTM D5185m	60	59	82	56
Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m 3 473 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415	Manganese	ppm	ASTM D5185m	0	1	1	0
Calcium ppm ASTM D5185m 1070 1101 995 1005 Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DE	Magnesium	ppm	ASTM D5185m	1010	942	954	879
Phosphorus ppm ASTM D5185m 1150 1041 946 922 Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs	Calcium	ppm	ASTM D5185m	1070	1101	995	1005
Zinc ppm ASTM D5185m 1270 1229 1236 1140 Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m 3 473 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM			ASTM D5185m	1150	1041	946	
Sulfur ppm ASTM D5185m 2060 3357 2651 3212 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m 3 473 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6			ASTM D5185m	1270	1229	1236	1140
Silicon ppm ASTM D5185m >25 4 9 4 Sodium ppm ASTM D5185m 3 473 2 Potassium ppm ASTM D5185m >20 0 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6			ASTM D5185m	2060	3357	2651	3212
Sodium ppm ASTM D5185m 3 ▲ 473 2 Potassium ppm ASTM D5185m >20 0 ▲ 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 ▲ 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6	Silicon	ppm	ASTM D5185m	>25	4	9	4
Potassium ppm ASTM D5185m >20 0 ▲ 48 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6			ASTM D5185m		3	473	2
Soot % % *ASTM D7844 >4 0.6 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6	Potassium	ppm	ASTM D5185m	>20	0	▲ 48	2
Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 9.5 8.7 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current bistory1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6	Soot %	%	*ASTM D7844	>4	0.6	0.1	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.7 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6							
Oxidation Abs/.1mm *ASTM D7414 >25 16.0 14.7 14.6							
	FLUID DEGRADATION method limit/base current history1 history2						
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.0	14.7	14.6
					7.3	8.2	8.6



OIL ANALYSIS REPORT



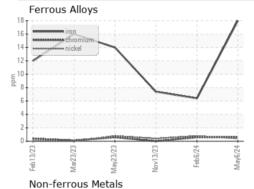


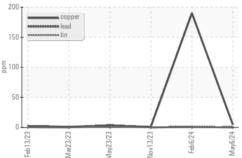


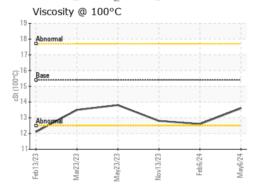
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

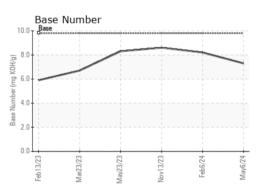
FLUID PROP	EHILO	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	12.6	12.8

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0113015 Lab Number : 06176745 Unique Number : 11022798

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

: 13 May 2024 **Tested** : 14 May 2024 Diagnosed

GFL Environmental - 918 - Hartland HC 630 E Industrial Drive Hartland, WI US 53029

: 14 May 2024 - Wes Davis

Contact: David McCall david.mccall@gflenv.com T: (262)369-3069

Test Package : FLEET 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)