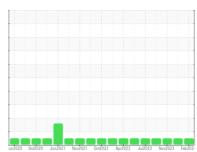


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 922000-901

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (--- LTR)

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

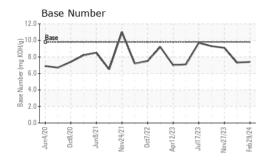
Fluid Condition

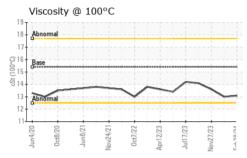
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL06105705 GFL0058085 GFL0100172 Sample Date Client Info 29 Feb 2024 28 Feb 2024 27 Nov 2023 Machine Age hrs Client Info 0 25970 25635 Oil Age hrs Client Info 0 449 114 Oil Changed Client Info N/A N/A N/A Sample Status NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	0.11.151.5						
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		GFL06105705	GFL0058085	GFL0100172
Oil Age hrs Client Info N/A N/A N/A N/A Oil Changed Client Info N/A N/A N/A N/A N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Date		Client Info		29 Feb 2024	28 Feb 2024	27 Nov 2023
Oil Changed Client Info N/A N/A N/A N/A NORMAL NOR	Machine Age	hrs	Client Info		0	25970	25635
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Age	hrs	Client Info		0	449	114
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 NEG <	Oil Changed		Client Info		N/A	N/A	N/A
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 17 12 4 Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 <1 Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >15 <1 1 <1 <1 Vanadium ppm ASTM D5185m >15 <t< th=""><th>CONTAMINAT</th><th>ION</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 17 12 4 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	17	12	4
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 <1 Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 30 8 7 Tin ppm ASTM D5185m >15 <1 1 <1 Vanadium ppm ASTM D5185m <1 0 <1 <1 Cadmium ppm ASTM D5185m <1 <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 6 62 57 58 Manganesium ppm ASTM D5185m 1010	Nickel	ppm	ASTM D5185m	>5	1	1	<1
Aluminum ppm ASTM D5185m >20 2 3 <1 Lead ppm ASTM D5185m >40 <1	Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 30 8 7 Tin ppm ASTM D5185m >15 <1 1 <1 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 ADDITIVES method 60 62 57 58 Barium <t< td=""><td>Silver</td><td>ppm</td><td>ASTM D5185m</td><td>>2</td><th>0</th><td>0</td><td>0</td></t<>	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 30 8 7 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2	3	<1
Tin ppm ASTM D5185m >15 <1 1 0 <1 Vanadium ppm ASTM D5185m >15 <1 0 <1 Cadmium ppm ASTM D5185m <1 0 <1 O <1 ADDITIVES	Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Tin	Copper	ppm	ASTM D5185m	>330	30	8	7
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 57 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 888 948 954 Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1					<1		<1
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 5 3 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1	Vanadium	• •	ASTM D5185m		<1	0	<1
Boron	Cadmium		ASTM D5185m		<1	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 57 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 888 948 954 Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m 20 <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 62 57 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 888 948 954 Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m 20 1	Boron	ppm	ASTM D5185m	0	5	3	4
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 888 948 954 Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m >20 1 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7845	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 888 948 954 Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m >20 1 <1	Molybdenum	ppm	ASTM D5185m	60	62	57	58
Calcium ppm ASTM D5185m 1070 1027 1018 1057 Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1030 1011 1053 Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1	Magnesium	ppm	ASTM D5185m	1010	888	948	954
Zinc ppm ASTM D5185m 1270 1217 1256 1252 Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1	Calcium	ppm	ASTM D5185m	1070	1027	1018	1057
Sulfur ppm ASTM D5185m 2060 3104 3318 3028 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1	Phosphorus	ppm	ASTM D5185m	1150	1030	1011	1053
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1	Zinc	ppm	ASTM D5185m	1270	1217	1256	1252
Silicon ppm ASTM D5185m >25 6 6 3 Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Sulfur	ppm	ASTM D5185m	2060	3104	3318	3028
Sodium ppm ASTM D5185m 5 4 3 Potassium ppm ASTM D5185m >20 1 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Silicon	ppm	ASTM D5185m	>25	6	6	3
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Sodium	ppm	ASTM D5185m		5	4	3
Soot % % *ASTM D7844 >4 0.2 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Potassium	ppm	ASTM D5185m	>20	1	<1	0
Nitration Abs/cm *ASTM D7624 >20 8.0 8.0 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Soot %	%	*ASTM D7844	>4	0.2	0.3	0.1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Nitration	Abs/cm	*ASTM D7624	>20	8.0	8.0	5.6
Oxidation Abs/.1mm *ASTM D7414 >25 14.8 15.2 13.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	18.3	17.9
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.8	15.2	13.9
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.4	7.3	9.1



OIL ANALYSIS REPORT

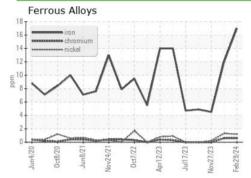


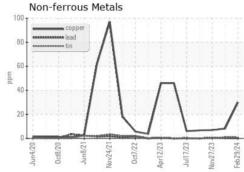


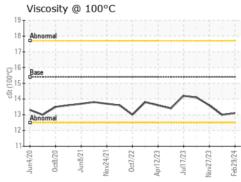
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

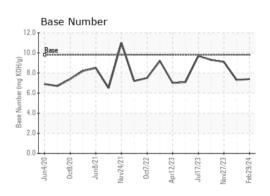
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.0	13.6

GRAPHS













Certificate L2367

Laboratory Sample No.

: GFL06105705 Lab Number : 06105705

Unique Number : 10903935 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Mar 2024 **Tested**

: 01 Mar 2024 Diagnosed : 01 Mar 2024 - Wes Davis

GFL Environmental - 657 - Charlottesville Hauling

5498 Richmond Road Troy, VA US 22974

Contact: Brian Ulickas bulickas@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)

Report Id: GFL657 [WUSCAR] 06105705 (Generated: 03/01/2024 19:43:27) Rev: 1

T:

F: