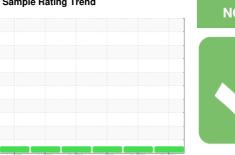


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 359M Component **Diesel Engine** PETRO CANADA DURON SHP 15W40 (9 QTS)

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

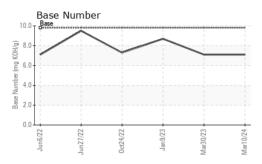
Fluid Condition

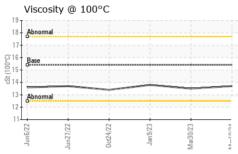
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0115187 GFL0072931 GFL006070 Sample Date Client Info 10 Mar 2024 30 Mar 2023 09 Jan 2023 09			Jun2022	Jun 2022 Oct 2022	Jan 2023 Mar 2023	Mar2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 17095 16480 14707	Sample Number		Client Info		GFL0115187	GFL0072931	GFL0060704
Oil Age hrs Client Info 615 818 650 Oil Changed	Sample Date		Client Info		10 Mar 2024	30 Mar 2023	09 Jan 2023
Client Info	Machine Age	hrs	Client Info		17095	16480	14707
NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 history2	Oil Age	hrs	Client Info		615	818	650
Fuel	Oil Changed		Client Info		Changed	Changed	Changed
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 7 6 4 Chromium ppm ASTM D5185m >5 <1 0 <1 Nickel ppm ASTM D5185m >5 <1 0 <1 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >20 <1 0 <1 Lead ppm ASTM D5185m >40 0 0 2 Copper ppm ASTM D5185m >15 <1 0 <1 Vanadium ppm ASTM D5185m >15 <1 0 <1 Vanadium ppm ASTM D5185m 0 0 4 <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	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
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	7	6	4
Titanium	Chromium	ppm	ASTM D5185m	>20	0	0	<1
Silver	Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Aluminum ppm ASTM D5185m >20 <1 0 <1 Lead ppm ASTM D5185m >40 0 0 2 Copper ppm ASTM D5185m >330 5 <1	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	<1	0	0
Lead	Aluminum	ppm	ASTM D5185m	>20	<1	0	<1
Copper ppm ASTM D5185m >330 5 <1 <1 Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>40	0	0	2
Tin	Copper		ASTM D5185m	>330	5	<1	<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 0 4 1 Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 0 57 56 57 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 897 896 1036 Calcium ppm ASTM D5185m 1070 989 1112 1144 Phosphorus ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1					<1	0	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 4 1 Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 0 <1	Vanadium	• •	ASTM D5185m		0	0	0
Boron	Cadmium		ASTM D5185m		0		0
Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 60 57 56 57 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 56 57 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 897 896 1036 Calcium ppm ASTM D5185m 1070 989 1112 1144 Phosphorus ppm ASTM D5185m 1270 1186 1233 1306 Zinc ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 22 3 2 Potassium ppm ASTM D5185m 20 0 <1 <1 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>0</th> <td>4</td> <td>1</td>	Boron	ppm	ASTM D5185m	0	0	4	1
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 897 896 1036 Calcium ppm ASTM D5185m 1070 989 1112 1144 Phosphorus ppm ASTM D5185m 1150 1010 979 1032 Zinc ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m >20 0 <1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.2 0.1 Nitration Abs/cm *ASTM D7845	Barium	ppm	ASTM D5185m	0	0	2	0
Magnesium ppm ASTM D5185m 1010 897 896 1036 Calcium ppm ASTM D5185m 1070 989 1112 1144 Phosphorus ppm ASTM D5185m 1150 1010 979 1032 Zinc ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 20 0 <1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D74	Molybdenum	ppm	ASTM D5185m	60	57	56	57
Calcium ppm ASTM D5185m 1070 989 1112 1144 Phosphorus ppm ASTM D5185m 1150 1010 979 1032 Zinc ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 20 0 <1	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 1010 979 1032 Zinc ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1	Magnesium	ppm	ASTM D5185m	1010	897	896	1036
Zinc ppm ASTM D5185m 1270 1186 1233 1306 Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1	Calcium	ppm	ASTM D5185m	1070	989	1112	1144
Sulfur ppm ASTM D5185m 2060 3196 2769 3588 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1	Phosphorus	ppm	ASTM D5185m	1150	1010	979	1032
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 4 Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1	Zinc	ppm	ASTM D5185m	1270	1186	1233	1306
Silicon ppm ASTM D5185m >25 4 4 4 4 Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 19.0 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Sulfur	ppm	ASTM D5185m	2060	3196	2769	3588
Sodium ppm ASTM D5185m 2 3 2 Potassium ppm ASTM D5185m >20 0 <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 <1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 19.0 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Silicon	ppm	ASTM D5185m	>25	4	4	4
INFRA-RED	Sodium	ppm	ASTM D5185m		2	3	2
Soot % % *ASTM D7844 >4 0.5 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 19.0 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Potassium	ppm	ASTM D5185m	>20	0	<1	<1
Nitration Abs/cm *ASTM D7624 >20 7.7 7.5 5.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 19.0 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.2 19.0 18.1 FLUID DEGRADATION method limit/base current bistory1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Soot %	%	*ASTM D7844	>4	0.5	0.2	0.1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Nitration	Abs/cm	*ASTM D7624	>20	7.7	7.5	5.9
Oxidation Abs/.1mm *ASTM D7414 >25 15.3 15.8 14.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	19.0	18.1
	FLUID DEGRAD	OATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.1 7.1 8.7	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	15.8	14.1
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.1	7.1	8.7



OIL ANALYSIS REPORT

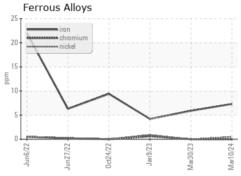


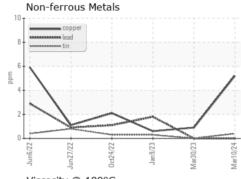


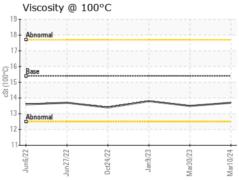
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

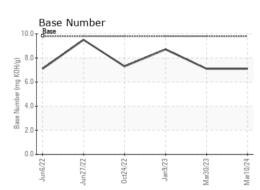
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.5	13.8

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number : 06116796 Unique Number: 10925629 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0115187

Received : 13 Mar 2024 **Tested** Diagnosed

: 14 Mar 2024 : 14 Mar 2024 - Wes Davis

GFL Environmental - 405 - Arbor Hills

7400 Napier Rd NORTHVILLE, MI

US 48168 Contact: John Nahal jnahal@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)

T:

F: