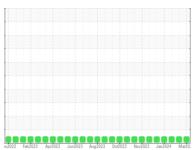


OIL ANALYSIS REPORT

Sample Rating Trend









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

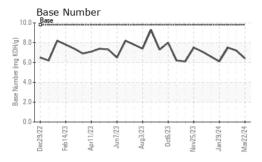
Fluid Condition

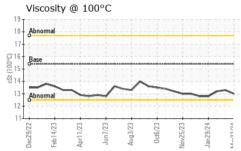
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 22 Mar 2024 19 Feb 2024 08 Feb 2024 Machine Age hrs Client Info 9236 8954 8835 Oil Age hrs Client Info 536 254 135 Oil Changed Client Info Changed Not Changd Not Changd Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <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 >120 8 5 1 Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m			sc2022 Feb20			2024 Mar20:	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 9236 8954 8835 Oil Age hrs Client Info 536 254 135 Oil Changed Not Changed Not Changed Not Changed Not Changed NoRMAL NORMAL NORMAL CONTAMINATION method Imilitbase current history1 history2 Fuel	Sample Number		Client Info		GFL0068829	GFL0068897	GFL0068872
Oil Age hrs Client Info 536 254 135 Oil Changed Sample Status Client Info Changed Not Changd Not	Sample Date		Client Info		22 Mar 2024	19 Feb 2024	08 Feb 2024
Oil Changed Sample Status Client Info Changed NORMAL Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL NOR	Machine Age	hrs	Client Info		9236	8954	8835
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		536	254	135
CONTAMINATION	Oil Changed		Client Info		Changed	Not Changd	Not Changd
Fuel WC Method S3.0 C1.0 C1.0 C1.0 C1.0 Water WC Method S0.2 NEG N	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 8 5 1 Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 1 2 1 Lead ppm ASTM D5185m >40 1 <1 0 Copper ppm ASTM D5185m >15 1 <1 0 Vanadium ppm ASTM D5185m >16 1 0	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
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >5 1 0 0 Titanium ppm ASTM D5185m >2 <1	Iron	ppm	ASTM D5185m	>120	8	5	1
Titanium	Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 1 2 1 Lead ppm ASTM D5185m >40 1 <1 0 Copper ppm ASTM D5185m >330 2 <1 0 Vanadium ppm ASTM D5185m >15 1 <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 6 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganesium ppm ASTM D5185m 0 <1 <1 <1 <1 Calcium ppm ASTM D5185m	Nickel	ppm	ASTM D5185m	>5	1	0	0
Aluminum ppm ASTM D5185m >20 1 2 1 Lead ppm ASTM D5185m >40 1 <1	Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead ppm ASTM D5185m >40 1 <1 0 Copper ppm ASTM D5185m >330 2 <1 0 Tin ppm ASTM D5185m >15 1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 6 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 2 <1 0 Tin ppm ASTM D5185m >15 1 <1	Aluminum	ppm	ASTM D5185m	>20	1	2	1
Tin ppm ASTM D5185m >15 1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 6 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 60 56 56 56 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 <th< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>>40</td><th>1</th><td><1</td><td>0</td></th<>	Lead	ppm	ASTM D5185m	>40	1	<1	0
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 6 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 60 56 56 56 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base curr	Copper	ppm	ASTM D5185m	>330	2	<1	0
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 6 Barium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	1	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 56 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1150 1035 970 970 Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 <t< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><th>4</th><td>4</td><td>6</td></t<>	Boron	ppm	ASTM D5185m	0	4	4	6
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1150 1035 970 970 Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/m *ASTM D7415	Barium	ppm	ASTM D5185m	0	<1	0	0
Magnesium ppm ASTM D5185m 1010 880 931 873 Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1150 1035 970 970 Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION *ASTM D7414	Molybdenum	ppm	ASTM D5185m	60	56	56	53
Calcium ppm ASTM D5185m 1070 1019 960 946 Phosphorus ppm ASTM D5185m 1150 1035 970 970 Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION *ASTM D7414 >25 15.5 14.1 history2 Oxidation Abs/.1mm	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1035 970 970 Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.	Magnesium	ppm	ASTM D5185m	1010	880	931	873
Zinc ppm ASTM D5185m 1270 1144 1227 1139 Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Calcium	ppm	ASTM D5185m	1070	1019	960	946
Sulfur ppm ASTM D5185m 2060 2803 2920 2782 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Phosphorus	ppm	ASTM D5185m	1150	1035	970	970
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Zinc	ppm	ASTM D5185m	1270	1144	1227	1139
Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Sulfur	ppm	ASTM D5185m	2060	2803	2920	2782
Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Silicon	ppm	ASTM D5185m	>25	6	4	3
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Sodium	ppm	ASTM D5185m		1	3	3
Soot % % *ASTM D7844 >4 0.6 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Potassium	ppm	ASTM D5185m	>20	2	2	0
Nitration Abs/cm *ASTM D7624 >20 7.8 6.4 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Soot %	%	*ASTM D7844	>4	0.6	0.4	0.3
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Nitration	Abs/cm	*ASTM D7624	>20	7.8	6.4	5.6
Oxidation Abs/.1mm *ASTM D7414 >25 15.5 14.1 13.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	18.7	18.0
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.4 7.2 7.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	14.1	13.5
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.4	7.2	7.5



OIL ANALYSIS REPORT

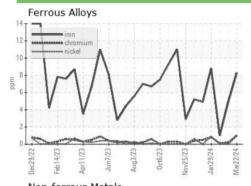


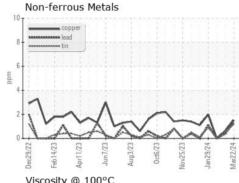


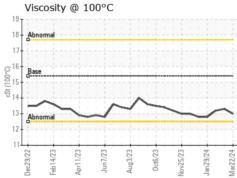
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

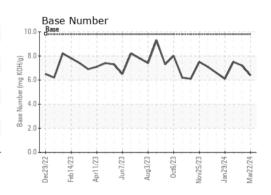
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.0	13.3	13.2

GRAPHS













Certificate L2367

Laboratory Sample No.

Test Package : FLEET

: GFL0068829 Lab Number : 06130121 Unique Number: 10949586

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 27 Mar 2024 **Tested** : 27 Mar 2024

Diagnosed : 27 Mar 2024 - Wes Davis

GFL Environmental - 073 - Warner Robins - Transwaste

155 Story Road Warner Robins, GA

US 31093 Contact: JOSH MALONEY

jmaloney@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)

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F: