WEAR CONTAMINATION FLUID CONDITION

NORMAL MARGINAL NORMAL



Machine Id 200200 Component

Diesel Engine

Sample Number Cilient Info GFL011339 GFL0092241 GFL0092241	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
No commended at this time. Sample Date Client Info 1902a 15 Nov 2023 31 Moy 20 15 Nov 2024 15 Nov	The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.	Sample Number		Client Info		GFL0113391	-	GFL005639
Machine Age n's Cient Info 500 658 600 618 61		Sample Date				01 Apr 2024	15 Nov 2023	31 May 202
Filter Age		Machine Age	hrs	Client Info		19028	18428	17770
Oil Changed Client Info Changed Chang		Oil Age	hrs	Client Info		600	658	600
Filter Changed Sample Status		Filter Age	hrs	Client Info		500	658	600
Part		Oil Changed		Client Info		Changed	Changed	Changed
Iron		Filter Changed		Client Info		Changed	Changed	Changed
Chromium ppm ASTM DS185/m >20 0 <1 <1 <1 <1 <1 <1 <1		Sample Status				MARGINAL	ABNORMAL	ABNORMA
Nickel	WEAR	Iron	ppm	ASTM D5185(m)	>100	7	6	5
Nickel ppm ASTM DS185/m 22 c1 0 0 1 Titanium ppm ASTM DS185/m 22 c1 0 0 1 Silver ppm ASTM DS185/m 22 c1 0 0 1 Aluminum ppm ASTM DS185/m 22 c2 3 3 Lead ppm ASTM DS185/m 340 0 2 1 Copper ppm ASTM DS185/m 330 c1 c1 c1 Tin ppm ASTM DS185/m 330 c1 c1 c1 Tin ppm ASTM DS185/m 515 0 0 0 0 Vanadium ppm ASTM DS185/m 515 0 0 0 0 Vanadium ppm ASTM DS185/m 515 0 0 0 0 Vanadium ppm ASTM DS185/m 515 0 0 0 0 DEDITAMINATION Potassium ppm ASTM DS185/m 525 2 3 4 Light fuel dilution occurring. No other contaminants were detected in the oil. Fuel % ASTM DS185/m 525 2 3 4 Fuel % ASTM DF188/m 525 2 3 4 Water WC Method 0.2 NEG NEG NEG Glycol WC Method 0.2 NEG NEG NEG Glycol WC Method 0.2 NEG NEG NEG Soot % % ASTM DF188/m 530 18.0 17.4 17.6 Emulsified Water scalar Visual Visual 50.2 NEG NEG NEG Soot % % ASTM DF188/m 0 5 2 3 Sulfation Abs/cm ASTM DF188/m 0 5 2 3 The condition of the oil is acceptable for the time in service. Boron ppm ASTM DS185/m 0 0 0 0 0 Molybdenum ppm ASTM DS185/m 0 0 0 0 0 Molybdenum ppm ASTM DS185/m 0 0 0 0 0 0 Magnesium ppm ASTM DS185/m 1010 904 891 898 Calcium ppm ASTM DS185/m 1010 904 891 898 Calcium ppm ASTM DS185/m 1010 904 891 1048 Phosphorus ppm ASTM DS185/m 1070 1057 993 1048 Phosphorus ppm ASTM DS185/m 1070 1057 993 1048 Phosphorus ppm ASTM DS185/m 1070 1057	All component wear rates are normal.	Chromium	ppm	ASTM D5185(m)	>20	0	<1	<1
Silver ppm ASTM D5185(m) >2 0 <1 0 0		Nickel	ppm	ASTM D5185(m)	>50	0	0	0
Aluminum ppm		Titanium	ppm	ASTM D5185(m)	>2	<1	0	<1
Lead ppm ASTM D5185(m) >40 0 2 1		Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Copper ppm ASTM D5185 m >330 <1 <1 <1 <1 <1 <1 <1 <		Aluminum	ppm	ASTM D5185(m)	>50	2	2	3
Tin ppm ASTM D5185(m) >15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Lead	ppm	ASTM D5185(m)	>40	0	2	1
Vanadium ppm ASTM D5185(m) 0 0 0 0 0		Copper	ppm	ASTM D5185(m)	>330	<1	<1	<1
Silicon ppm ASTM D5185(m) >25 2 3 4		Tin	ppm	ASTM D5185(m)	>15	0	0	0
Potassium ppm ASTM D5185(m) >20 <1 0 <1		Vanadium	ppm	ASTM D5185(m)		0	0	0
Potassium ppm ASTM D5185(m) >20 <1 0 <1	CONTAMINATION	Silicon	ppm	ASTM D5185(m)	>25	2	3	4
Fuel % ASTM D7593* >5	Light fuel dilution occurring. No other contaminants were detected in the oil.	Potassium		, ,		<1	0	<1
Glycol		Fuel	%			▲ 4.1	△ 6.3	△ 6.3
Soot %		Water		WC Method	>0.2	NEG	NEG	NEG
Nitration Abs/cm ASTM D7624* >20 5.7 5.6 5.1		Glycol		WC Method		NEG	NEG	NEG
Sulfation Abs/.1mm ASTM D7415* >30 18.0 17.4 17.6		Soot %	%	ASTM D7844*	>3	0	0	0
Emulsified Water scalar Visual* >0.2 NEG NEG NEG		Nitration	Abs/cm	ASTM D7624*	>20	5.7	5.6	5.1
Sodium ppm ASTM D5185(m) 1 2 2		Sulfation	Abs/.1mm	ASTM D7415*	>30	18.0	17.4	17.6
Boron ppm ASTM D5185(m) 0 5 2 3		Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Barium ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FLUID CONDITION	Sodium	ppm	ASTM D5185(m)		1	2	2
Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 60 55 54 55 Manganese ppm ASTM D5185(m) 0 0 0 <1 Magnesium ppm ASTM D5185(m) 1010 904 891 899 Calcium ppm ASTM D5185(m) 1070 1057 993 1084 Phosphorus ppm ASTM D5185(m) 1150 961 948 1048 Zinc ppm ASTM D5185(m) 1270 1122 1115 1140	The condition of the oil is acceptable for the time in service.	Boron	ppm	ASTM D5185(m)	0	5	2	3
Manganese ppm ASTM D5185(m) 0 0 0 <1 Magnesium ppm ASTM D5185(m) 1010 904 891 899 Calcium ppm ASTM D5185(m) 1070 1057 993 1084 Phosphorus ppm ASTM D5185(m) 1150 961 948 1048 Zinc ppm ASTM D5185(m) 1270 1122 1115 1140		Barium	ppm	ASTM D5185(m)	0	0	0	0
Magnesium ppm ASTM D5185(m) 1010 904 891 899 Calcium ppm ASTM D5185(m) 1070 1057 993 1084 Phosphorus ppm ASTM D5185(m) 1150 961 948 1048 Zinc ppm ASTM D5185(m) 1270 1122 1115 1140		Molybdenum	ppm	ASTM D5185(m)	60	55	54	55
Calcium ppm ASTM D5185(m) 1070 1057 993 1084 Phosphorus ppm ASTM D5185(m) 1150 961 948 1048 Zinc ppm ASTM D5185(m) 1270 1122 1115 1140		Manganese	ppm	ASTM D5185(m)	0	0	0	<1
Phosphorus ppm ASTM D5185(m) 1150 961 948 1048 Zinc ppm ASTM D5185(m) 1270 1122 1115 1140		Magnesium	ppm	ASTM D5185(m)	1010	904	891	899
Zinc ppm ASTM D5185(m) 1270 1122 1115 1140		Calcium	ppm	ASTM D5185(m)	1070	1057	993	1084
		Phosphorus	ppm	ASTM D5185(m)	1150	961	948	1048
Sulfur ppm ASTM D5185(m) 2060 2382 2377 2564		Zinc	ppm	ASTM D5185(m)	1270	1122	1115	1140
		Sulfur	nnm	ASTM D5185(m)	2060	2382	2377	2564

Oxidation

Visc @ 100°C cSt

12.1

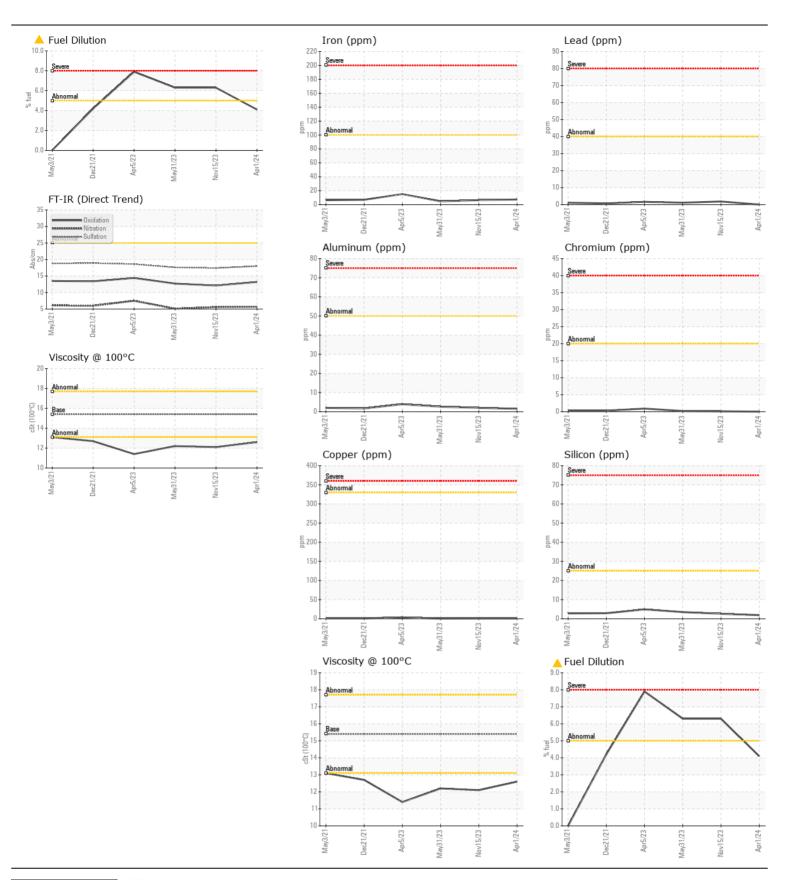
13.2

12.6

ASTM D7279(m) 15.4

12.7

12.2





CALA ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No. Lab Number

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 720 - Lafleche - Landfill : GFL0113391 : 02626381

Unique Number : 5759513

Received **Tested** Diagnosed

: 04 Apr 2024 Test Package: MOB 1 (Additional Tests: PercentFuel)

: 04 Apr 2024 - Wes Davis

: 03 Apr 2024 17125 Lafleche Road, Moose Creek, ON CA K0C 1W0 Contact: Charles Bergeron cbergeron@gflenv.com T: (613)538-4853

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

Submitted By: Charles Bergeron

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