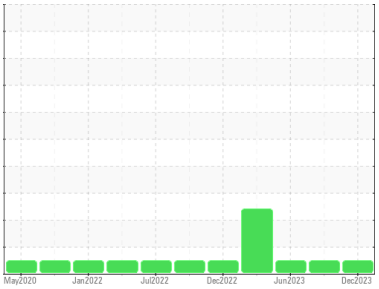
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
[1191838]
Machine Id
828013
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

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 condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0093939**	GFL0093933	GFL0062930
Sample Date		Client Info		**11 Dec 2023**	14 Sep 2023	21 Jun 2023
Machine Age	hrs	Client Info		**12160**	11816	11287
Oil Age	hrs	Client Info		**0**	0	0
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	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

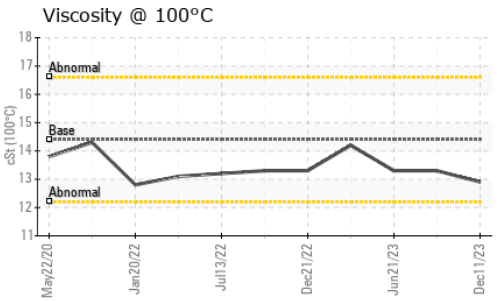
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	**13**	18	11
Chromium	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>30	**2**	2	1
Lead	ppm	ASTM D5185(m)	>30	**0**	<1	0
Copper	ppm	ASTM D5185(m)	>150	**1**	2	1
Tin	ppm	ASTM D5185(m)	>5	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**7**	6	14
Barium	ppm	ASTM D5185(m)	10	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	100	**57**	57	60
Manganese	ppm	ASTM D5185(m)		**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)	450	**880**	922	920
Calcium	ppm	ASTM D5185(m)	3000	**1038**	1037	1074
Phosphorus	ppm	ASTM D5185(m)	1150	**917**	999	1015
Zinc	ppm	ASTM D5185(m)	1350	**1119**	1144	1150
Sulfur	ppm	ASTM D5185(m)	4250	**2374**	2363	2516
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**3**	6	7
Sodium	ppm	ASTM D5185(m)	>216	**6**	7	6
Potassium	ppm	ASTM D5185(m)	>20	**<1**	4	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.2**	0.4	0.2
Nitration	Abs/cm	ASTM D7624*	>20	**8.7**	10.2	8.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	**19.3**	21.1	19.5

OIL ANALYSIS REPORT

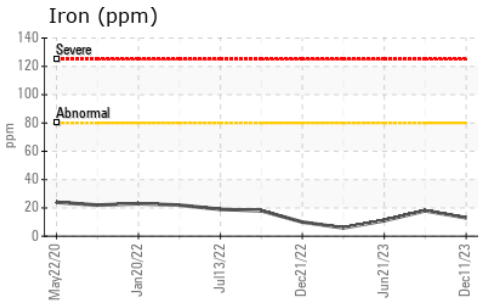


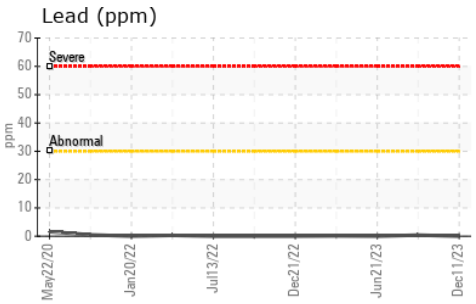
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**15.6**	17.8	16.0

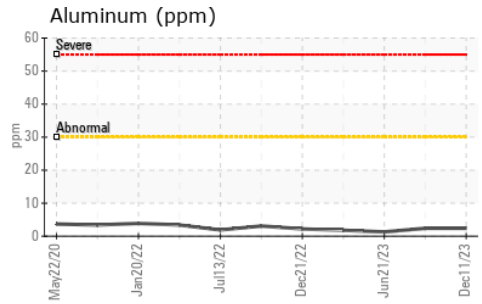
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

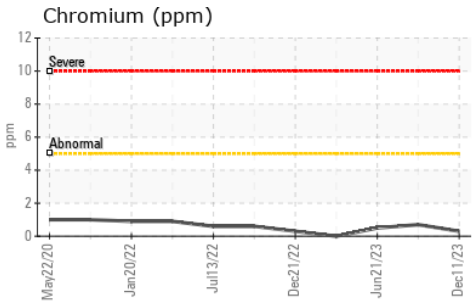
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	**12.9**	13.3	13.3

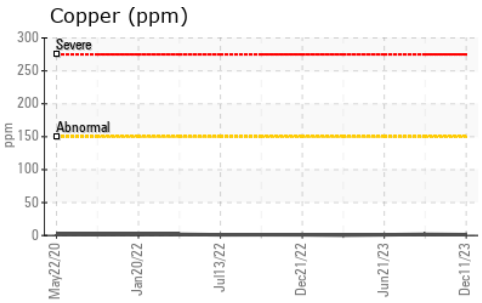
GRAPHS

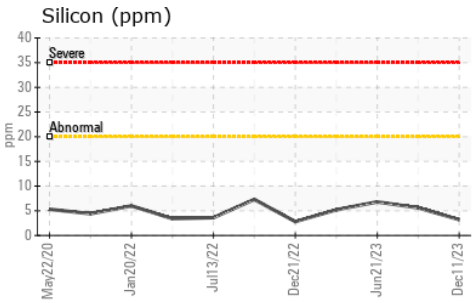


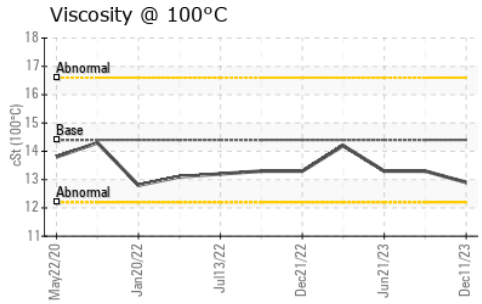


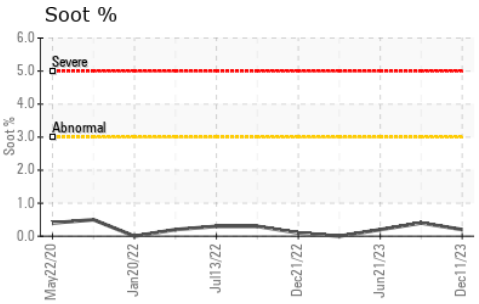












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0093939
Lab Number : 02603154
Unique Number : 5696239
Test Package : MOB 1

Received : 14 Dec 2023
Diagnosed : 14 Dec 2023
Diagnostician : Wes Davis

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.

GFL Environmental - 777 - Belleville-Municipal waste
197 Putman Industrial Road
Belleville, ON
CA K8N 4Z6
Contact: Andrea Michael
amichael@gflenv.com
T: (613)962-7144
F: (613)962-1994