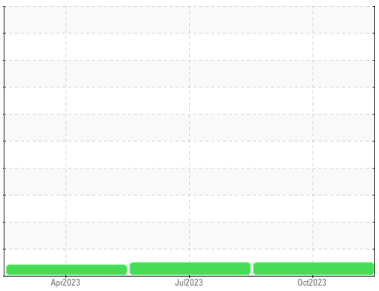
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
GFL216
Machine Id
413136
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
Metal levels are typical for a new component breaking in.

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		**GFL0099658**	GFL0089249	GFL0080282
Sample Date		Client Info		**19 Oct 2023**	20 Jul 2023	27 Apr 2023
Machine Age	kms	Client Info		**31182**	20302	10856
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	0.7
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**15**	17	28
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	**<1**	<1	3
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	1	<1
Aluminum	ppm	ASTM D5185(m)	>20	**2**	2	7
Lead	ppm	ASTM D5185(m)	>40	**4**	12	8
Copper	ppm	ASTM D5185(m)	>330	**142**	494	280
Tin	ppm	ASTM D5185(m)	>15	**<1**	1	4
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
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)	0	**5**	19	290
Barium	ppm	ASTM D5185(m)	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**62**	67	121
Manganese	ppm	ASTM D5185(m)	0	**0**	<1	4
Magnesium	ppm	ASTM D5185(m)	1010	**963**	933	648
Calcium	ppm	ASTM D5185(m)	1070	**1063**	1083	1508
Phosphorus	ppm	ASTM D5185(m)	1150	**975**	1018	706
Zinc	ppm	ASTM D5185(m)	1270	**1170**	1148	761
Sulfur	ppm	ASTM D5185(m)	2060	**2231**	2323	1995
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**8**	12	67
Sodium	ppm	ASTM D5185(m)		**1**	2	3
Potassium	ppm	ASTM D5185(m)	>20	**3**	2	10

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**0.2**	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**8.2**	7.9	10.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**20.0**	19.7	25.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**15.8**	15.0	23.8

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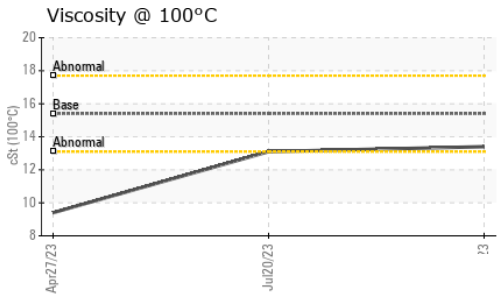
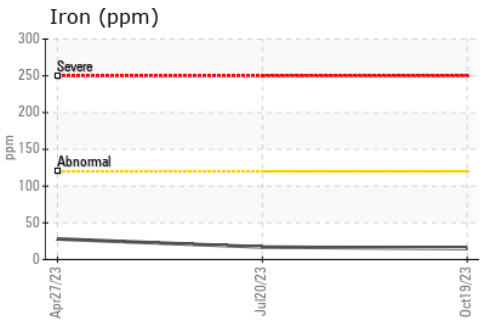
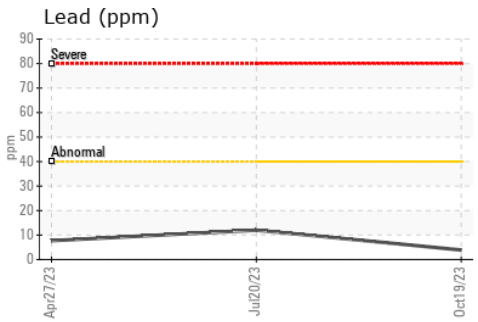


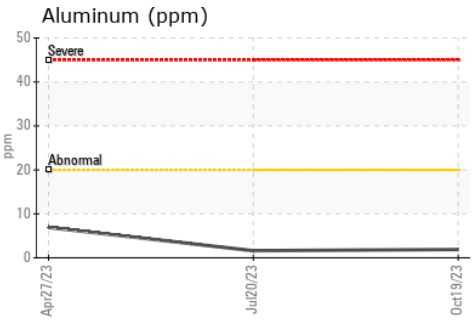
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

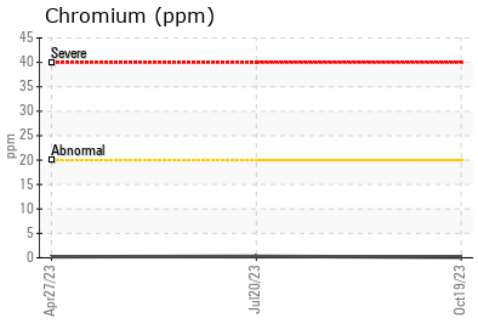
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.4**	13.1	▲ 9.4

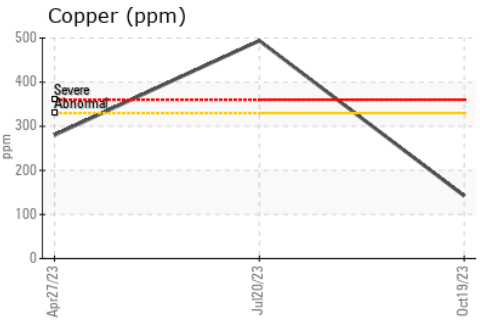
GRAPHS

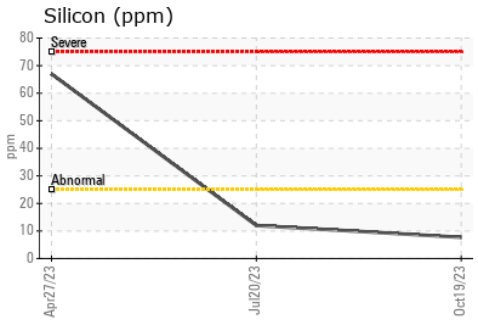


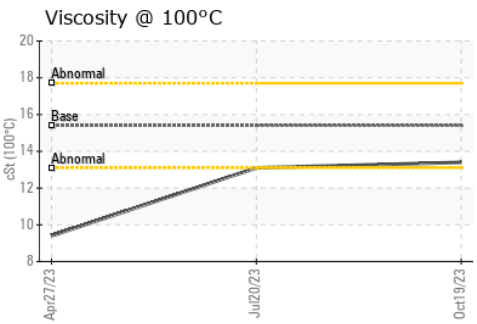


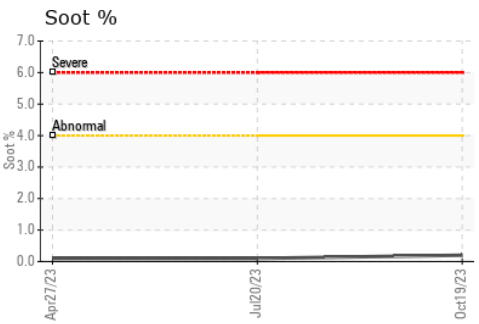












CALA
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 252 - GTA Hauling**
Sample No. : GFL0099658 **Received** : 25 Oct 2023 3668 Weston Road
Lab Number : 02591683 **Diagnosed** : 25 Oct 2023 North York, ON
Unique Number : 5668762 **Diagnostician** : Wes Davis CA M9L 1W2
Test Package : MOB 1 Contact: Tom Hatzioannidis

To discuss this sample report, contact Customer Service at 1-800-268-2131. thatzioannidis@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (416)406-2040
Validity of results and interpretation are based on the sample and information as supplied. F: