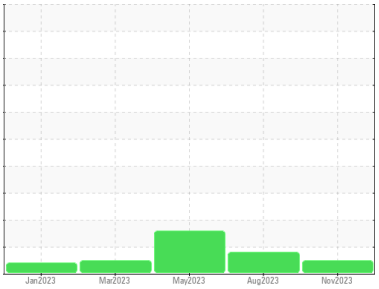
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
112019
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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		**GFL0094523**	GFL0088989	GFL0077870
Sample Date		Client Info		**01 Nov 2023**	17 Aug 2023	19 May 2023
Machine Age	hrs	Client Info		**2825**	2207	1641
Oil Age	hrs	Client Info		**0**	0	1641
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>65	**12**	13	9
Chromium	ppm	ASTM D5185(m)	>5	**2**	2	<1
Nickel	ppm	ASTM D5185(m)	>3	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)	>5	**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>35	**14**	11	5
Lead	ppm	ASTM D5185(m)	>10	**2**	8	▲ 16
Copper	ppm	ASTM D5185(m)	>180	**90**	▲ 324	▲ 681
Tin	ppm	ASTM D5185(m)	>8	**2**	3	5
Antimony	ppm	ASTM D5185(m)	>35	**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	**2**	4	5
Barium	ppm	ASTM D5185(m)	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**58**	60	58
Manganese	ppm	ASTM D5185(m)	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**966**	980	935
Calcium	ppm	ASTM D5185(m)	1070	**1055**	1045	1078
Phosphorus	ppm	ASTM D5185(m)	1150	**991**	1038	1065
Zinc	ppm	ASTM D5185(m)	1270	**1217**	1184	1152
Sulfur	ppm	ASTM D5185(m)	2060	**2286**	2259	2410
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**2**	2	1
Potassium	ppm	ASTM D5185(m)	>20	**26**	24	8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.2**	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**6.9**	7.2	7.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**19.1**	19.8	18.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**14.7**	14.8	14.9

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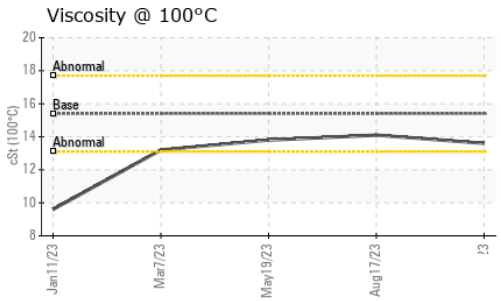
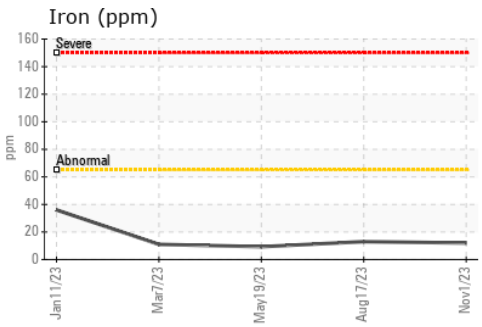
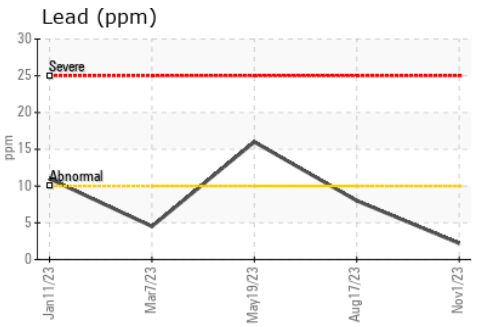


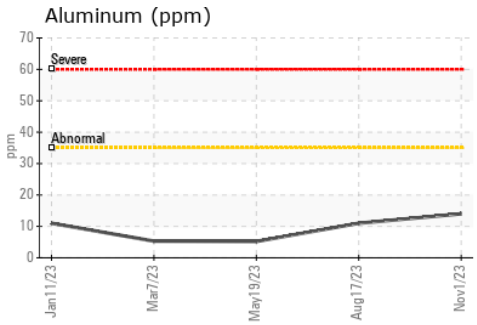
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

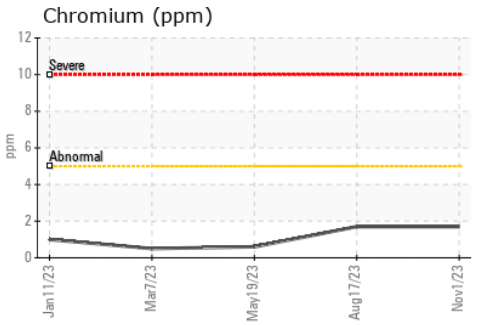
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.6**	14.1	13.8

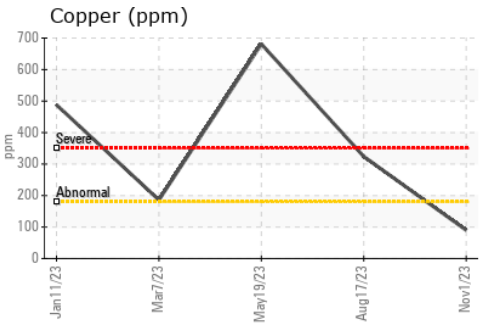
GRAPHS

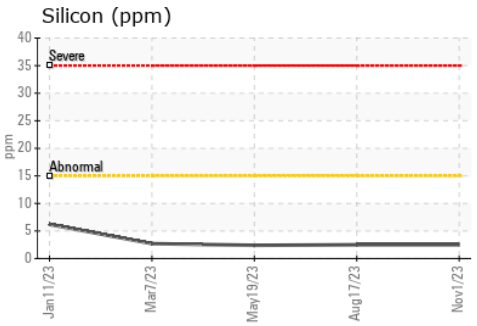


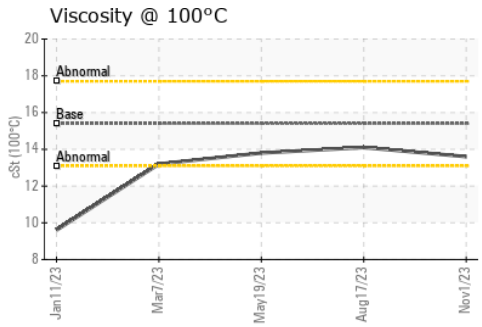


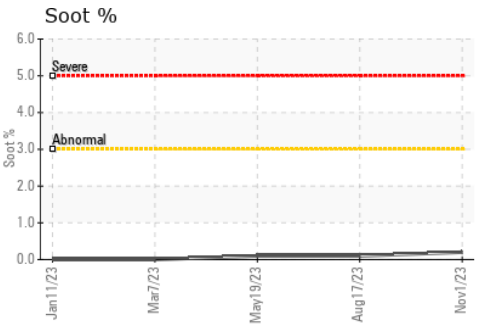












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 207 - Pickering SW**
Sample No. : GFL0094523 **Received** : 06 Nov 2023 1034 TOY AVENUE, PICKERING YARD
Lab Number : 02594418 **Diagnosed** : 06 Nov 2023 PICKERING, ON
Unique Number : 5671497 **Diagnostician** : Wes Davis CA L1W 3P1
Test Package : MOB 1 Contact: Ian Patton

To discuss this sample report, contact Customer Service at 1-800-268-2131. ipatton@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (905)831-6297
Validity of results and interpretation are based on the sample and information as supplied. F: (905)426-3577