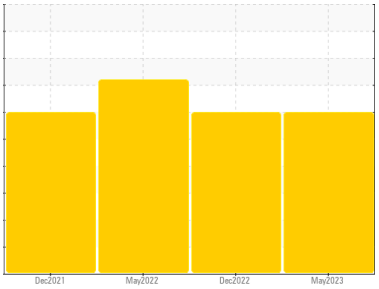
OIL ANALYSIS REPORT

Area
[1087678]
Machine Id
1119
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Aluminum ppm levels are severe. Piston wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0077884**	GFL0066501	GFL0050672
Sample Date		Client Info		**23 May 2023**	02 Dec 2022	19 May 2022
Machine Age	hrs	Client Info		**4484**	4279	4045
Oil Age	hrs	Client Info		**0**	0	4045
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	▲ 2.9
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**30**	21	84
Chromium	ppm	ASTM D5185(m)	>20	**4**	3	10
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	1
Titanium	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	**68**	51	180
Lead	ppm	ASTM D5185(m)	>40	**<1**	<1	2
Copper	ppm	ASTM D5185(m)	>330	**3**	2	11
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	1
Antimony	ppm	ASTM D5185(m)		**<1**	<1	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)	0	**4**	4	4
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**57**	58	56
Manganese	ppm	ASTM D5185(m)	0	**1**	1	4
Magnesium	ppm	ASTM D5185(m)	1010	**932**	901	939
Calcium	ppm	ASTM D5185(m)	1070	**1068**	1079	990
Phosphorus	ppm	ASTM D5185(m)	1150	**1076**	1064	1018
Zinc	ppm	ASTM D5185(m)	1270	**1150**	1152	1162
Sulfur	ppm	ASTM D5185(m)	2060	**2732**	2695	2658
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	4	8
Sodium	ppm	ASTM D5185(m)		**5**	3	7
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.2**	0	0.4
Nitration	Abs/cm	ASTM D7624*	>20	**6.5**	6.8	9.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	**18.4**	19.6	20.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**14.5**	14.6	14.4

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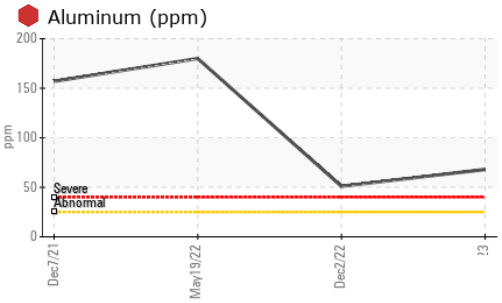
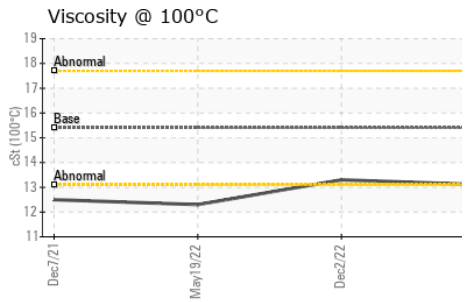
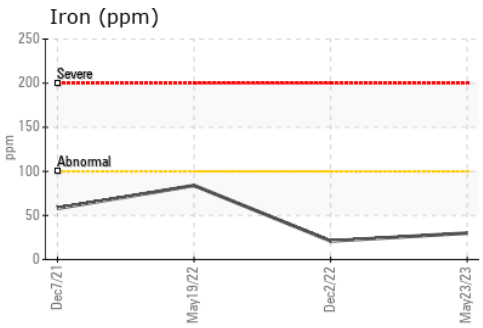


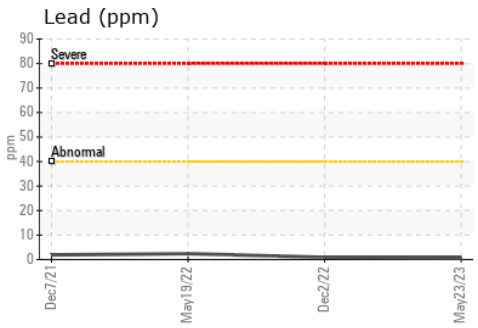


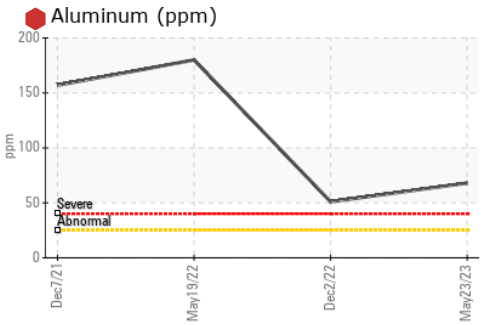
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

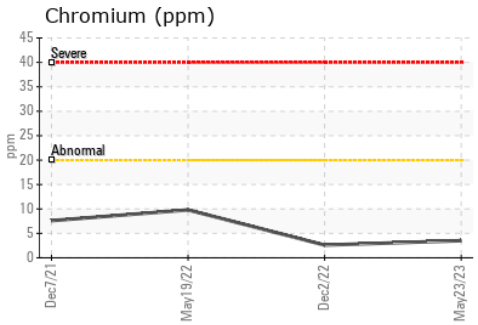
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.1**	13.3	▲ 12.3

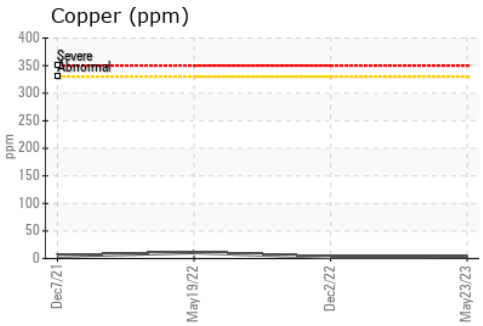
GRAPHS

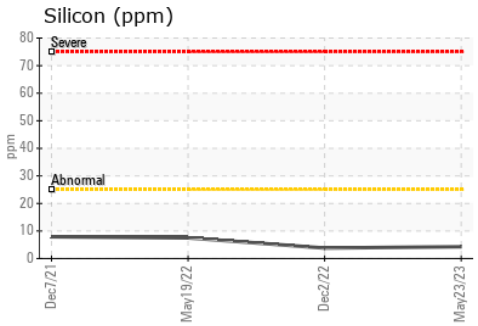


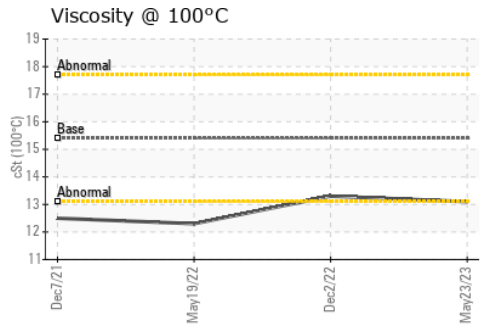


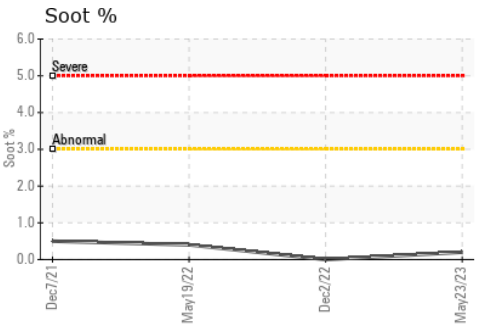












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0077884
Lab Number : 02559432
Unique Number : 5580472
Test Package : MOB 1

Received : 25 May 2023
Diagnosed : 25 May 2023
Diagnostician : Kevin Marson

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.

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Report Id: GFL207 [WCAMIS] 02559432 (Generated: 07/20/2023 07:31:21) Rev: 1

Submitted By: Shane Cater