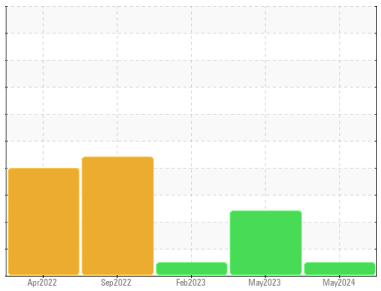
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
929125
Component
Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

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

Contamination
Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0117278**	GFL0077607	GFL0070714
Sample Date		Client Info		**22 May 2024**	24 May 2023	17 Feb 2023
Machine Age	kms	Client Info		**17718**	19989	22000
Oil Age	kms	Client Info		**535**	19989	600
Oil Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**NORMAL**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**83**	52	22
Chromium	ppm	ASTM D5185(m)	>20	**3**	3	1
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**12**	4	3
Lead	ppm	ASTM D5185(m)	>40	**0**	3	<1
Copper	ppm	ASTM D5185(m)	>330	**1**	<1	<1
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<1
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)	1	**2**	2	2
Barium	ppm	ASTM D5185(m)	1	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**60**	47	53
Manganese	ppm	ASTM D5185(m)	1	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**971**	749	854
Calcium	ppm	ASTM D5185(m)	1070	**1125**	886	1028
Phosphorus	ppm	ASTM D5185(m)	1150	**1020**	870	996
Zinc	ppm	ASTM D5185(m)	1270	**1211**	944	1085
Sulfur	ppm	ASTM D5185(m)	2060	**2510**	2044	2462
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	7	4
Sodium	ppm	ASTM D5185(m)		**6**	6	7
Potassium	ppm	ASTM D5185(m)	>20	**1**	<1	<1
Fuel	%	ASTM D7593*	>5	**0.0**	▲ 14.6	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**2.2**	1.8	0.7
Nitration	Abs/cm	ASTM D7624*	>20	**10.6**	13.1	8.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**23.4**	26.3	22.4

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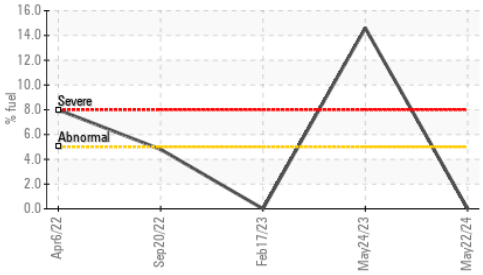
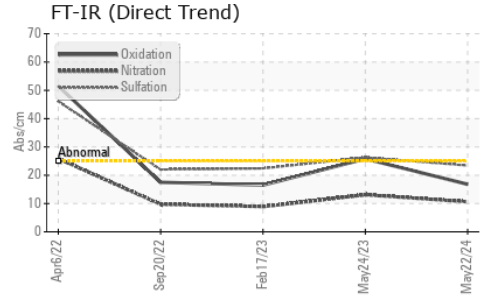
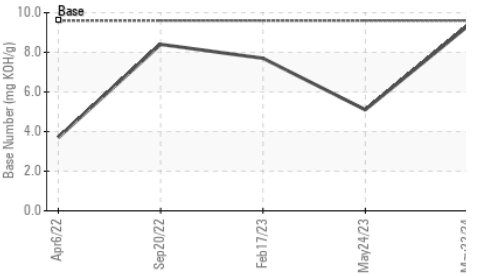
Fuel Dilution



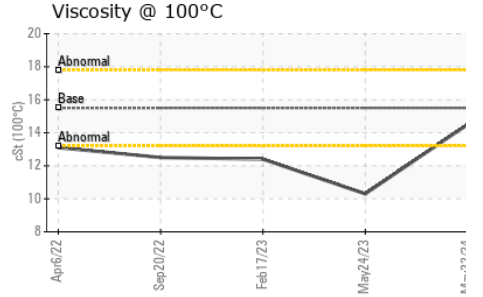
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



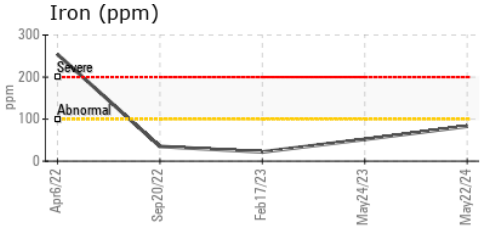
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**16.8**	25.8	16.5
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	**9.32**	5.10	7.70

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**VLITE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

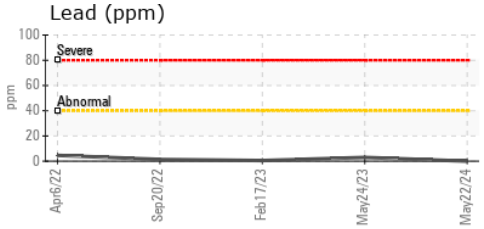
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	**14.5**	▲ 10.3	12.4

GRAPHS

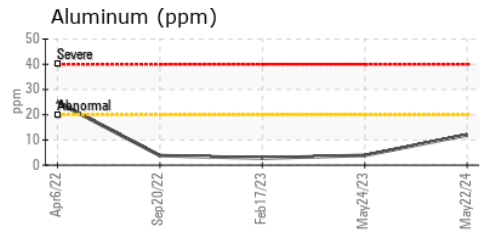
Iron (ppm)



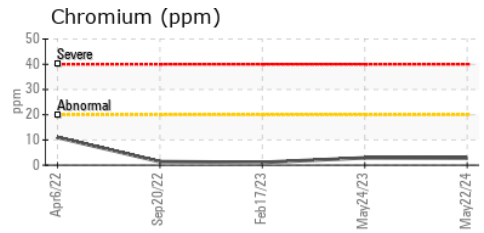
Lead (ppm)



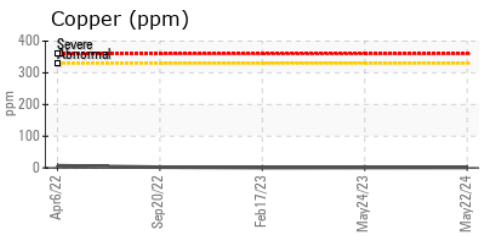
Aluminum (ppm)



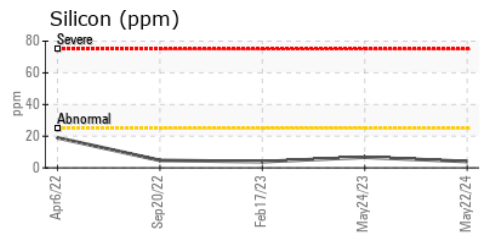
Chromium (ppm)



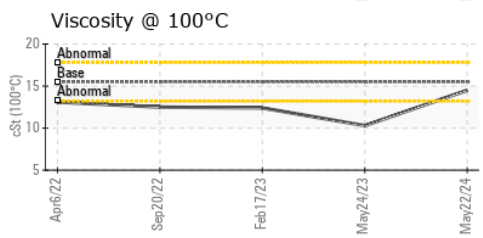
Copper (ppm)



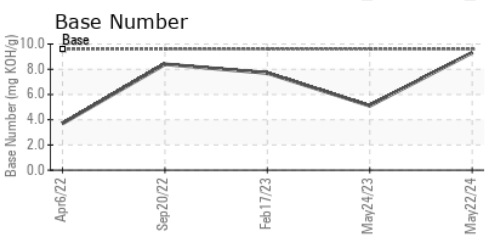
Silicon (ppm)



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0117278
Lab Number : 02637858
Unique Number : 5787020
Test Package : MOB 2 (Additional Tests: PercentFuel, Visual)

Received : 28 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - 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.

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Report Id: GFL550 [WCAMIS] 02637858 (Generated: 05/29/2024 11:52:01) Rev: 1

Submitted By: GFL Calgary