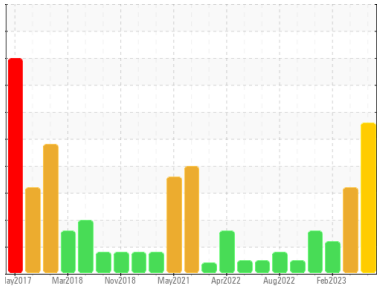
OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
1153
Component
Front Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (22 LTR)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Aluminum and iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Piston wear is indicated.

Contamination

There is a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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		**GFL0099618**	GFL0084307	GFL0070734
Sample Date		Client Info		**30 Jan 2024**	03 Aug 2023	28 Feb 2023
Machine Age	hrs	Client Info		**16550**	16054	15543
Oil Age	hrs	Client Info		**0**	500	176
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**3**	0	---
Iron	ppm	ASTM D5185(m)	>100	▲ **174**	▲ 140	31
Chromium	ppm	ASTM D5185(m)	>20	**4**	3	<1
Nickel	ppm	ASTM D5185(m)	>4	**1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	▲ **23**	▲ 20	9
Lead	ppm	ASTM D5185(m)	>40	**6**	5	<1
Copper	ppm	ASTM D5185(m)	>330	**2**	2	<1
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	<1	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

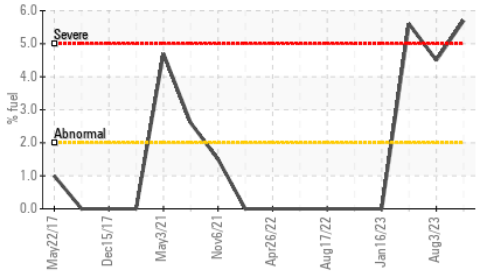
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	1	**2**	2	2
Barium	ppm	ASTM D5185(m)	1	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**52**	55	53
Manganese	ppm	ASTM D5185(m)	1	**<1**	1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**803**	868	857
Calcium	ppm	ASTM D5185(m)	1070	**975**	954	1068
Phosphorus	ppm	ASTM D5185(m)	1150	**852**	947	1005
Zinc	ppm	ASTM D5185(m)	1270	**1003**	1083	1097
Sulfur	ppm	ASTM D5185(m)	2060	**2255**	2287	2493
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**9**	4	6
Sodium	ppm	ASTM D5185(m)		**2**	2	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	0
Fuel	%	ASTM D7593*	>2.0	● **5.7**	▲ 4.5	▲ 5.6

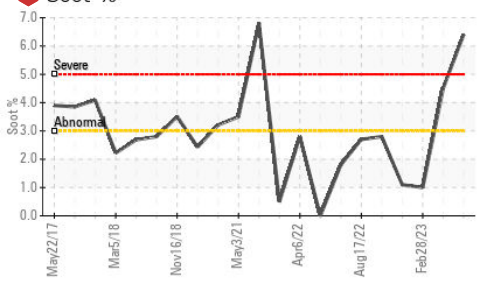
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	● **6.4**	▲ 4.5	1
Nitration	Abs/cm	ASTM D7624*	>20	**21.4**	15.6	8.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**40.7**	33.2	23.1

OIL ANALYSIS REPORT

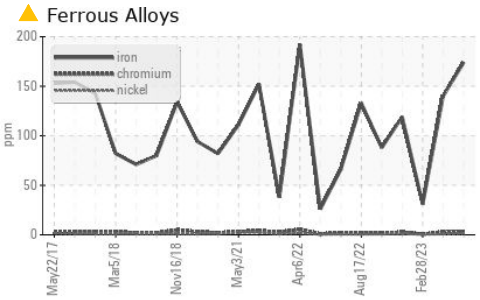
Fuel Dilution



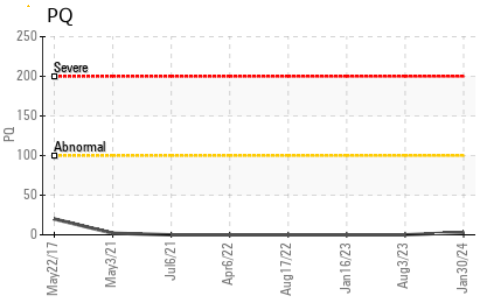
Soot %



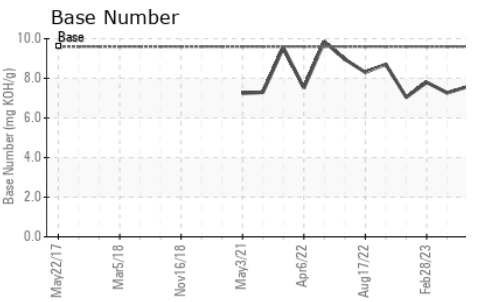
Ferrous Alloys



PQ



Base Number



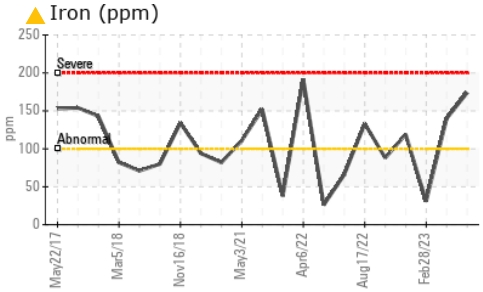
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**36.5**	23.5	15.3
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	**7.58**	7.26	7.80

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

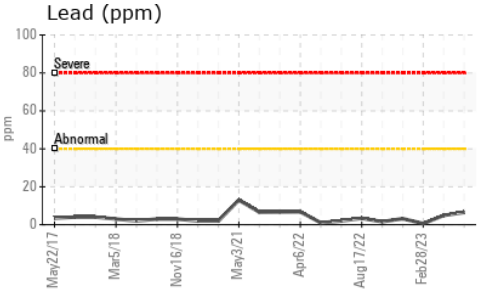
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	**16.2**	15.2	▲ 12.9

GRAPHS

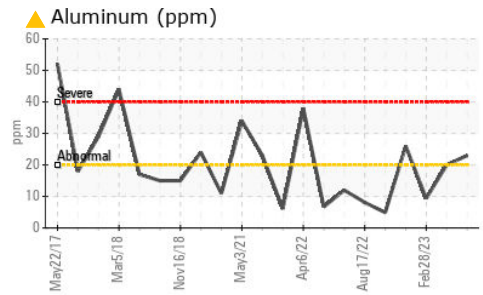
Iron (ppm)



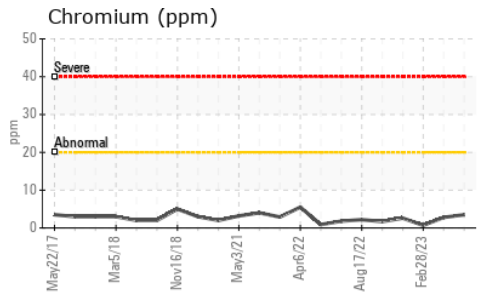
Lead (ppm)



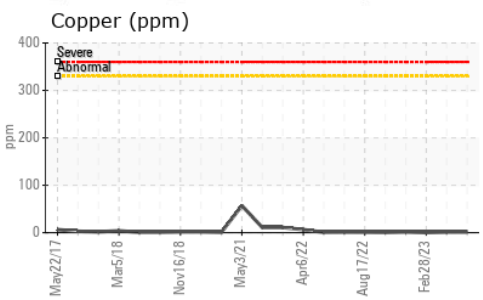
Aluminum (ppm)



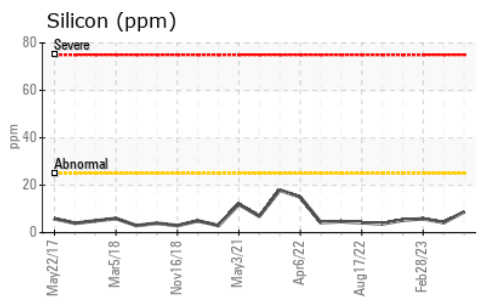
Chromium (ppm)



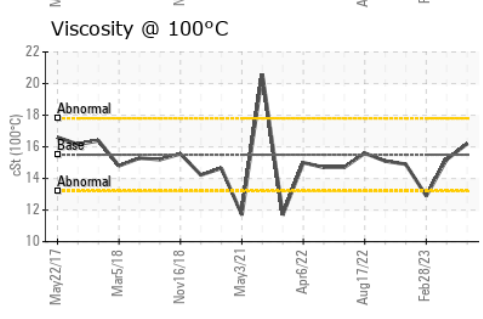
Copper (ppm)



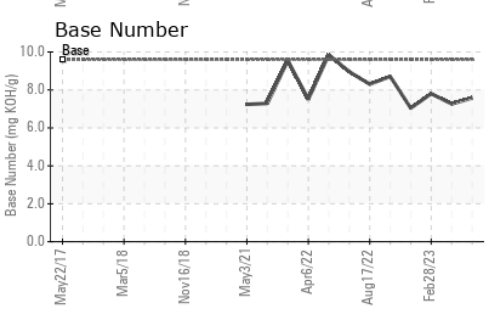
Silicon (ppm)



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0099618
Lab Number : 02614200
Unique Number : 5723295
Test Package : MOB 2 (Additional Tests: PercentFuel, PQ)

Received : 08 Feb 2024
Tested : 13 Feb 2024
Diagnosed : 13 Feb 2024 - 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.

GFL Environmental - 550 - Rocky View County
220 Carmek Blvd
Rocky View County, AB
CA T1X 1X1
Contact: GFL Calgary
calgarymaintenance@gflenv.com
T:
F: (403)369-6163

Report Id: GFL550 [WCAMIS] 02614200 (Generated: 02/13/2024 09:46:05) Rev: 1

Submitted By: GFL Calgary