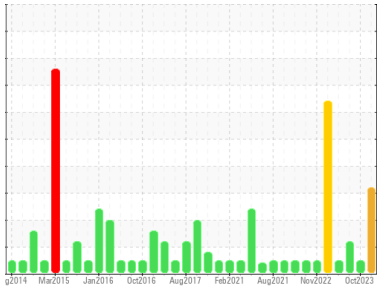
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
(YA115055)
Machine Id
10443
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (8 GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is an abnormal amount of solids and carbon present in the oil. There is a moderate amount of fuel present in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0099832**	GFL0080520	GFL0074444
Sample Date		Client Info		**10 Feb 2024**	17 Oct 2023	29 Sep 2023
Machine Age	hrs	Client Info		**10130**	57347	57347
Oil Age	hrs	Client Info		**600**	57347	57347
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	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
Iron	ppm	ASTM D5185m	>75	**47**	4	15
Chromium	ppm	ASTM D5185m	>5	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m	>2	**0**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>15	**3**	2	4
Lead	ppm	ASTM D5185m	>25	**0**	0	0
Copper	ppm	ASTM D5185m	>100	**<1**	0	<1
Tin	ppm	ASTM D5185m	>4	**0**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**2**	9	44
Barium	ppm	ASTM D5185m	0	**8**	<1	0
Molybdenum	ppm	ASTM D5185m	60	**58**	56	36
Manganese	ppm	ASTM D5185m	0	**0**	0	<1
Magnesium	ppm	ASTM D5185m	1010	**833**	912	550
Calcium	ppm	ASTM D5185m	1070	**946**	1060	1470
Phosphorus	ppm	ASTM D5185m	1150	**808**	1051	1016
Zinc	ppm	ASTM D5185m	1270	**1092**	1255	1231
Sulfur	ppm	ASTM D5185m	2060	**2619**	3130	3356

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	3	5
Sodium	ppm	ASTM D5185m		**1**	1	8
Potassium	ppm	ASTM D5185m	>20	**6**	0	▲ 74
Fuel	%	ASTM D3524	>3.0	▲ **4.9**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	▲ **5.8**	1.1	1.4
Nitration	Abs/cm	*ASTM D7624	>20	**16.3**	6.2	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**32.4**	18.2	20.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.5**	12.4	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	8.9	6.6

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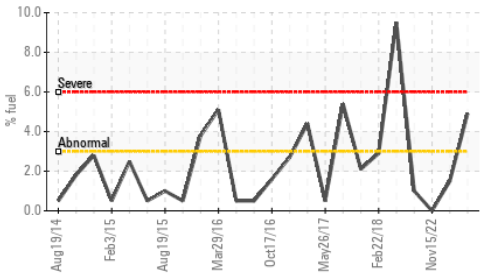
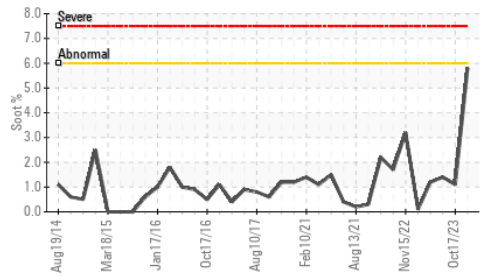
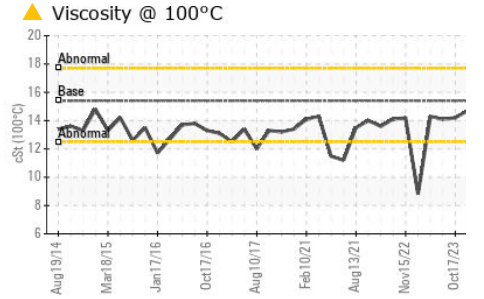
Fuel Dilution



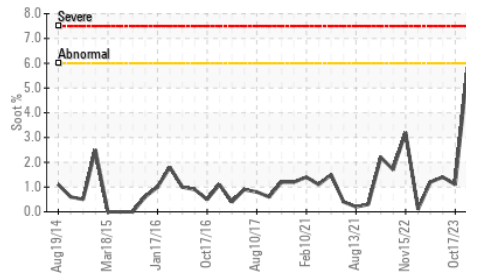
Soot %



Viscosity @ 100°C



Soot %

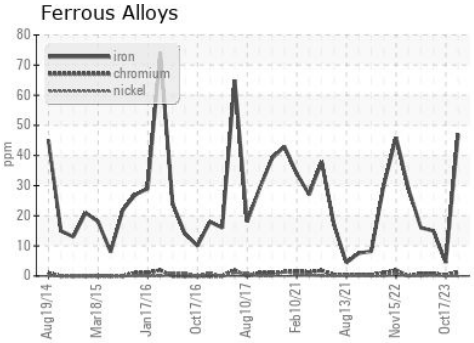


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	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

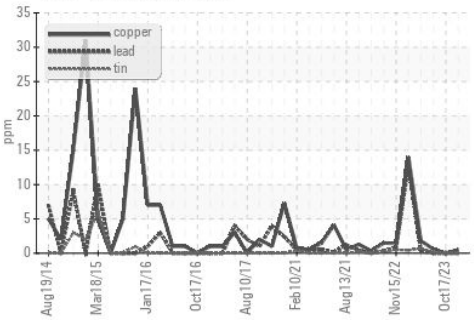
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **14.7**	14.2	14.1

GRAPHS

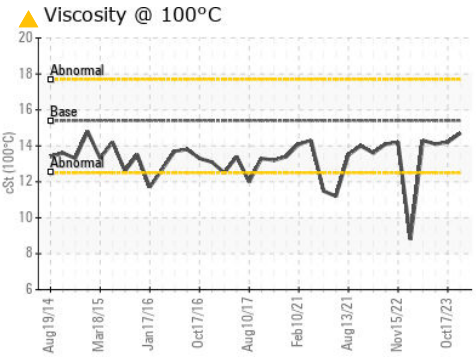
Ferrous Alloys



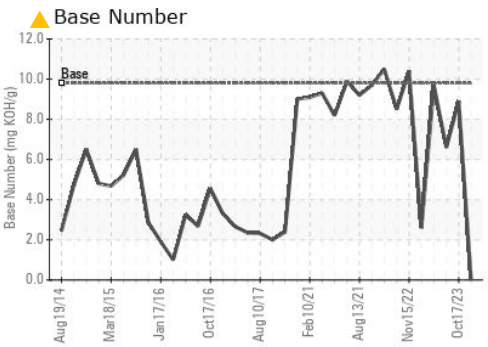
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0099832
Lab Number : 06088541
Unique Number : 10875986
Test Package : FLEET (Additional Tests: FUELDILUTION, PercentFuel)

Received : 14 Feb 2024
Tested : 19 Feb 2024
Diagnosed : 19 Feb 2024 - Jonathan Hester

GFL Environmental - 018 - Fayetteville
4621 Marracco Drive
Hope Mills, NC
US 28348
Contact: Robert Carter
robert.carter@gflenv.com
T: (910)596-1170
F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)