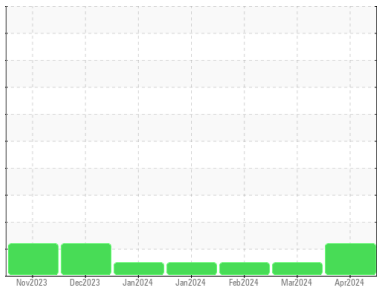
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
834094
Component
Diesel Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- QTS)

DIAGNOSIS

Recommendation
The oil is near the end of it`s useful service life, recommend schedule an oil change. We recommend an early resample to monitor this condition.

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

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 BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0118758**	GFL0114110	GFL0108045
Sample Date		Client Info		**15 Apr 2024**	18 Mar 2024	23 Feb 2024
Machine Age	hrs	Client Info		**998**	860	716
Oil Age	hrs	Client Info		**998**	716	593
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
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	>100	**64**	53	58
Chromium	ppm	ASTM D5185m	>20	**3**	2	1
Nickel	ppm	ASTM D5185m	>4	**3**	2	2
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**32**	27	25
Lead	ppm	ASTM D5185m	>40	**2**	2	<1
Copper	ppm	ASTM D5185m	>330	**19**	15	16
Tin	ppm	ASTM D5185m	>15	**2**	2	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**7**	10	9
Barium	ppm	ASTM D5185m	5	**3**	2	3
Molybdenum	ppm	ASTM D5185m	50	**65**	58	60
Manganese	ppm	ASTM D5185m	0	**14**	12	14
Magnesium	ppm	ASTM D5185m	560	**746**	720	871
Calcium	ppm	ASTM D5185m	1510	**1292**	1286	1369
Phosphorus	ppm	ASTM D5185m	780	**820**	706	803
Zinc	ppm	ASTM D5185m	870	**970**	885	1025
Sulfur	ppm	ASTM D5185m	2040	**2651**	2553	2627

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**27**	24	29
Sodium	ppm	ASTM D5185m		**5**	8	6
Potassium	ppm	ASTM D5185m	>20	**115**	113	92

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**12.5**	12.4	12.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**25.8**	24.7	24.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**23.2**	21.9	21.9
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	**1.9**	3.5	3.2

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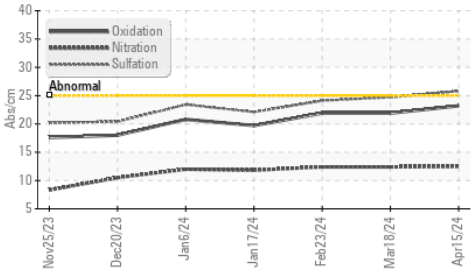
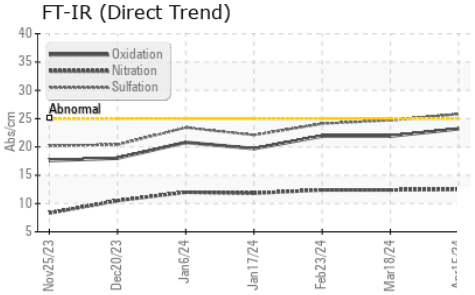
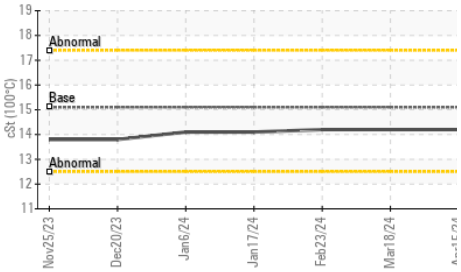
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Viscosity @ 100°C

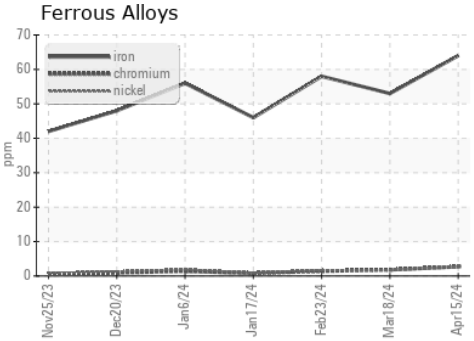


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

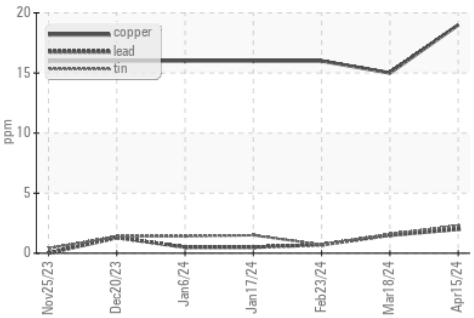
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	**14.2**	14.2	14.2

GRAPHS

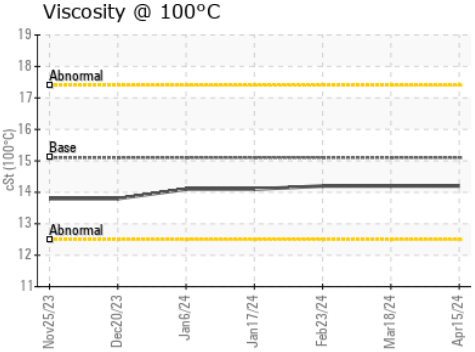
Ferrous Alloys



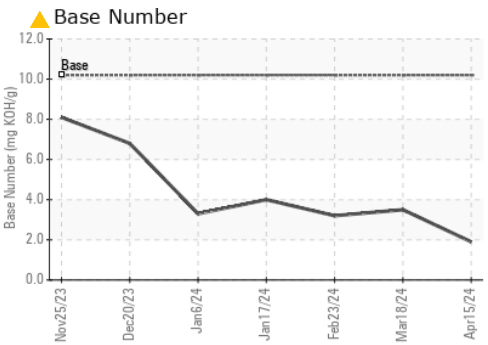
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0118758
Lab Number : 06156771
Unique Number : 10992194
Test Package : FLEET

Received : 22 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 24 Apr 2024 - Sean Felton

GFL Environmental - 837 - Harrison TS
22820 S State Route 291
Harrisonville, MO
US 64701
Contact: SARA PATRICK
spatrick@gflenv.com
T:
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)