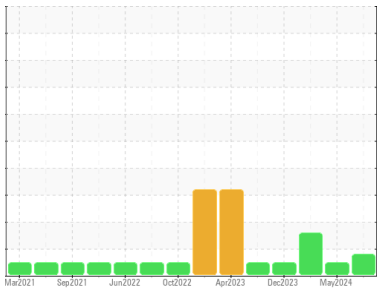
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
527029-734
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (48 QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
The lead level is abnormal. All other component wear rates are normal.

Contamination
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		**GFL0120903**	GFL0120859	GFL0103047
Sample Date		Client Info		**02 Jul 2024**	30 May 2024	17 Jan 2024
Machine Age	hrs	Client Info		**15376**	15117	14521
Oil Age	hrs	Client Info		**655**	450	575
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

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	**51**	31	25
Chromium	ppm	ASTM D5185m	>20	**4**	3	3
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**3**	2	3
Lead	ppm	ASTM D5185m	>40	▲ **93**	10	3
Copper	ppm	ASTM D5185m	>330	**3**	2	3
Tin	ppm	ASTM D5185m	>15	**4**	2	3
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**	0	6
Barium	ppm	ASTM D5185m	0	**<1**	<1	2
Molybdenum	ppm	ASTM D5185m	60	**63**	62	59
Manganese	ppm	ASTM D5185m	0	**1**	<1	3
Magnesium	ppm	ASTM D5185m	1010	**1022**	964	883
Calcium	ppm	ASTM D5185m	1070	**1215**	1176	1046
Phosphorus	ppm	ASTM D5185m	1150	**1116**	1074	930
Zinc	ppm	ASTM D5185m	1270	**1349**	1282	1232
Sulfur	ppm	ASTM D5185m	2060	**3142**	3278	2818

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**16**	8	▲ 29
Sodium	ppm	ASTM D5185m		**7**	6	4
Potassium	ppm	ASTM D5185m	>20	**1**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.3**	0.7	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**12.5**	9.5	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.0**	22.9	20.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.6**	18.3	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**5.3**	7.5	7.5

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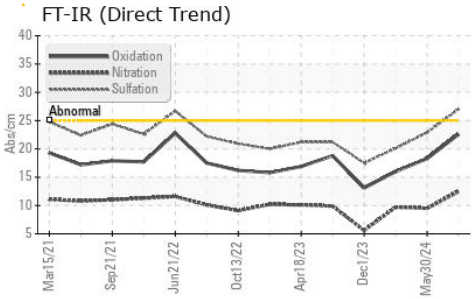
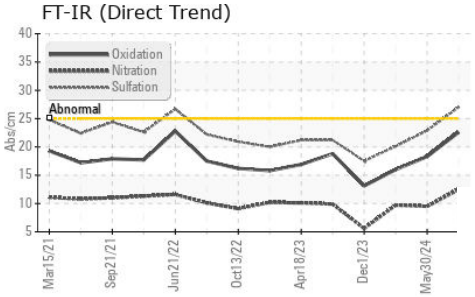
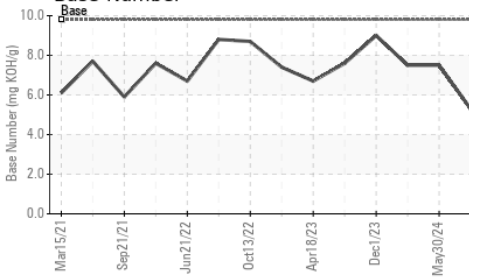
FT-IR (Direct Trend)



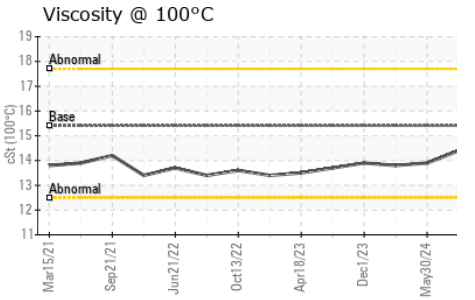
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

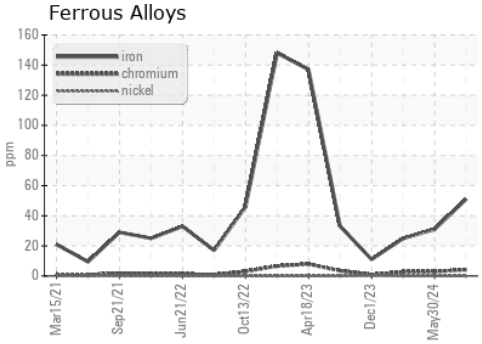


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

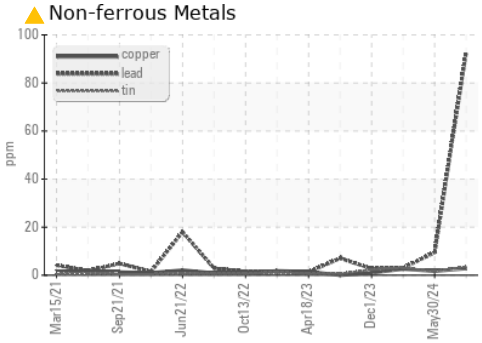
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.4**	13.9	13.8

GRAPHS

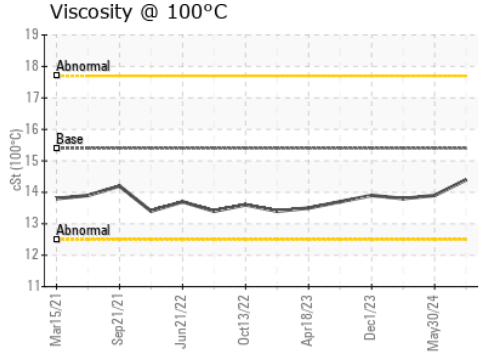
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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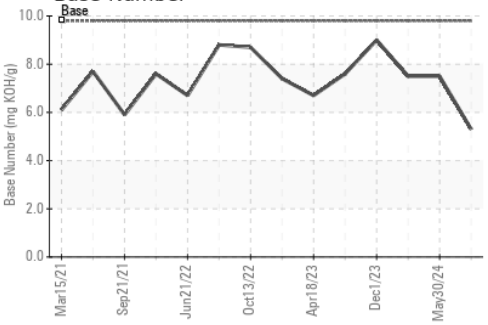

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0120903
Lab Number : 06229542
Unique Number : 11113035
Test Package : FLEET

Received : 05 Jul 2024
Tested : 09 Jul 2024
Diagnosed : 09 Jul 2024 - Don Baldridge

GFL Environmental - 622 - Traverse City Hauling
160 Hughes Dr
Traverse City, MI
US 49686
Contact: GARY BREWER
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)