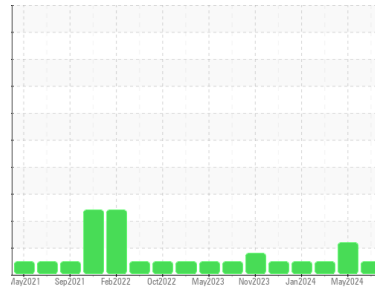




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

4668M

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All 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		GFL0117572	GFL0117550	GFL0117658
Sample Date	Client Info		09 May 2024	07 May 2024	09 Apr 2024
Machine Age	hrs	Client Info	17773	4691	17626
Oil Age	hrs	Client Info	17626	1771	17169
Oil Changed	Client Info		Changed	Changed	Not Changed
Sample Status			NORMAL	ABNORMAL	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 >80	12	66	28
Chromium	ppm	ASTM D5185m >5	<1	2	<1
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >30	2	5	4
Lead	ppm	ASTM D5185m >30	0	4	0
Copper	ppm	ASTM D5185m >150	4	3	2
Tin	ppm	ASTM D5185m >5	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	2	2	3
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	60	70	57
Manganese	ppm	ASTM D5185m 0	1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	982	968	915
Calcium	ppm	ASTM D5185m 1070	1094	1146	1053
Phosphorus	ppm	ASTM D5185m 1150	1015	1016	1067
Zinc	ppm	ASTM D5185m 1270	1282	1281	1262
Sulfur	ppm	ASTM D5185m 2060	3187	3067	3455

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	4	9	5
Sodium	ppm	ASTM D5185m	4	▲ 176	7
Potassium	ppm	ASTM D5185m >20	0	5	2

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.7	1.4	0.8
Nitration	Abs/cm	*ASTM D7624 >20	7.9	13.8	11.8
Sulfation	Abs/.1mm	*ASTM D7415 >30	20.1	26.5	21.8

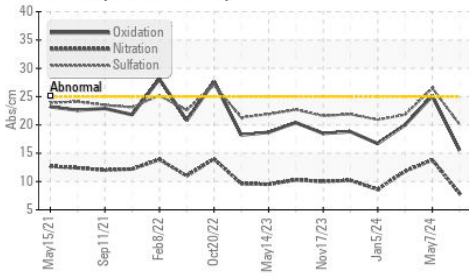
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	15.5	25.1	20.0
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	7.5	5.8	7.3

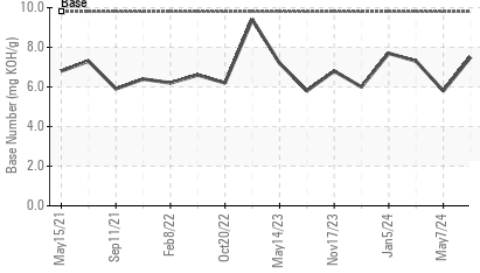


OIL ANALYSIS REPORT

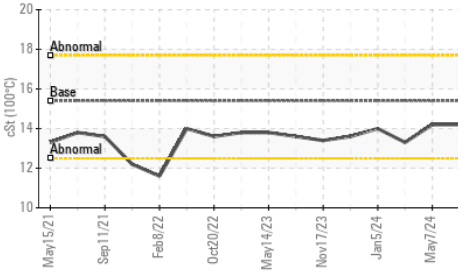
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

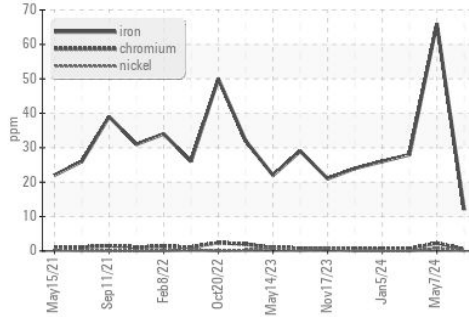


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

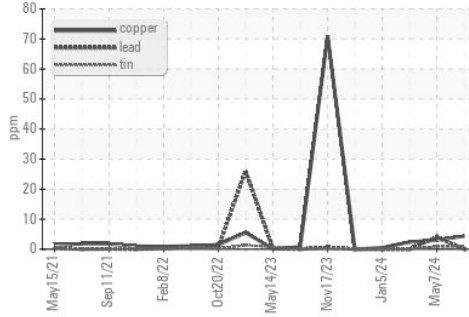
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	13.3

GRAPHS

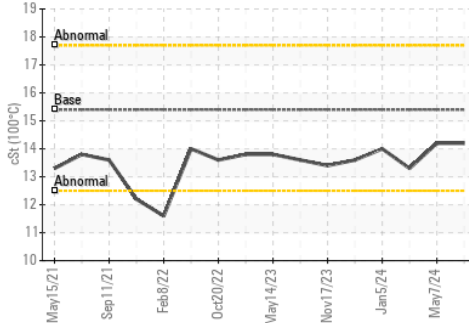
Ferrous Alloys



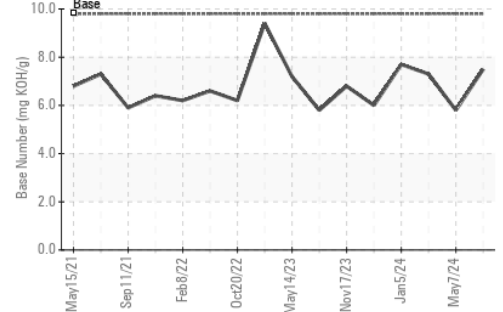
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0117572
 Lab Number : 06176774
 Unique Number : 11022827
 Test Package : FLEET

Received : 13 May 2024
 Tested : 14 May 2024
 Diagnosed : 14 May 2024 - Wes Davis

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
 fwolak@gflenv.com
 T: (586)825-9514
 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)