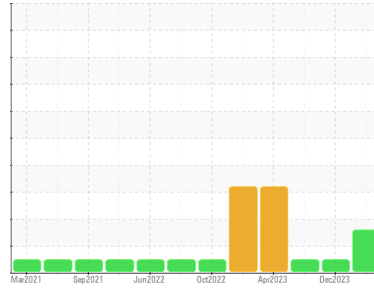




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
527029-734

Component
Diesel Engine

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

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

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal.

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	GFL0103047	GFL0102806	GFL0090456
Sample Date	Client Info	17 Jan 2024	01 Dec 2023	05 Sep 2023
Machine Age	hrs	14521	14252	14116
Oil Age	hrs	575	14116	160
Oil Changed	Client Info	Changed	Not Changd	Not Changed
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	25	11	33
Chromium	ppm ASTM D5185m >20	3	<1	4
Nickel	ppm ASTM D5185m >4	0	<1	0
Titanium	ppm ASTM D5185m	0	0	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	3	3	3
Lead	ppm ASTM D5185m >40	3	3	7
Copper	ppm ASTM D5185m >330	3	1	0
Tin	ppm ASTM D5185m >15	3	2	<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	6	9	5
Barium	ppm ASTM D5185m 0	2	3	0
Molybdenum	ppm ASTM D5185m 60	59	60	62
Manganese	ppm ASTM D5185m 0	3	2	<1
Magnesium	ppm ASTM D5185m 1010	883	940	965
Calcium	ppm ASTM D5185m 1070	1046	1105	1122
Phosphorus	ppm ASTM D5185m 1150	930	1117	1034
Zinc	ppm ASTM D5185m 1270	1232	1350	1241
Sulfur	ppm ASTM D5185m 2060	2818	3383	3485

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 29	22	25
Sodium	ppm ASTM D5185m	4	3	5
Potassium	ppm ASTM D5185m >20	0	1	1

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.7	0.2	0.2
Nitration	Abs/cm *ASTM D7624 >20	9.7	5.6	9.9
Sulfation	Abs/.1mm *ASTM D7415 >30	20.1	17.5	21.2

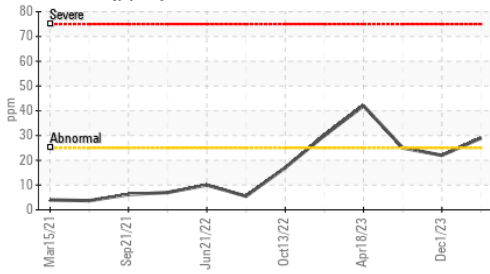
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.0	13.1	18.8
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.5	9.0	7.6

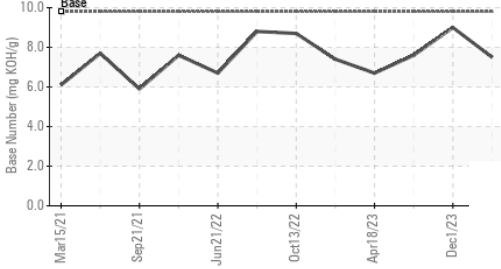


OIL ANALYSIS REPORT

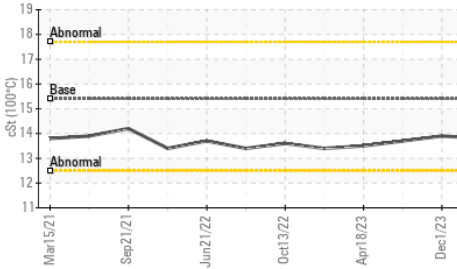
▲ Silicon (ppm)



Base Number



Viscosity @ 100°C

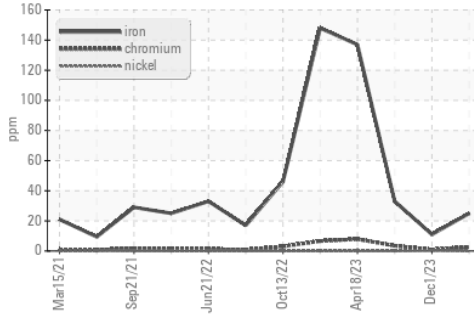


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

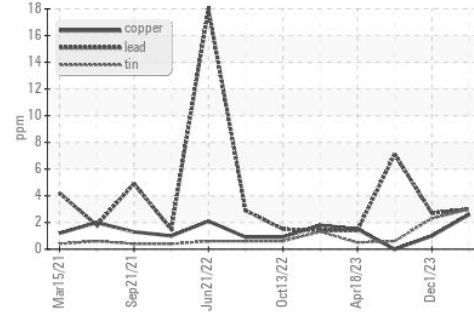
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9

GRAPHS

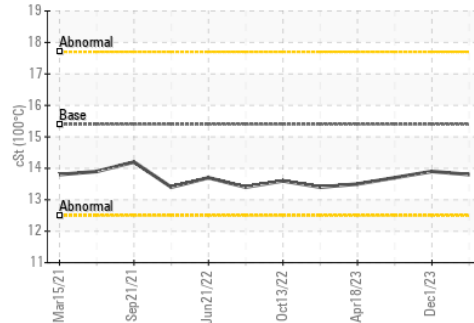
Ferrous Alloys



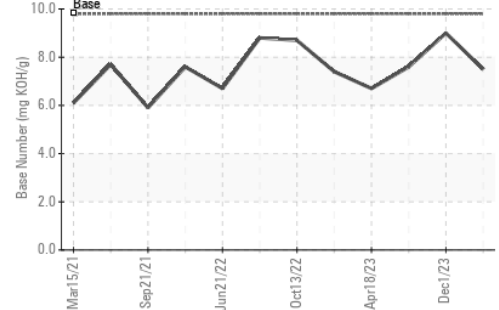
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0103047 Recieved : 22 Jan 2024
 Lab Number : 06067410 Diagnosed : 24 Jan 2024
 Unique Number : 10844087 Diagnostician : Don Baldrige
 Test Package : FLEET

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

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)

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