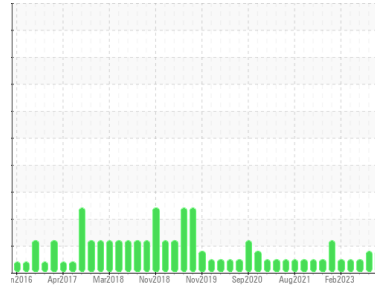




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
2423 MACK GU713

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (48 QTS)

DIAGNOSIS

Recommendation

The oil 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

Valve wear is indicated. 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 acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0103200	GFL0103259	GFL0089367
Sample Date	Client Info	15 Feb 2024	01 Dec 2023	15 Aug 2023
Machine Age	hrs	29663	29391	28766
Oil Age	hrs	0	0	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<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 >120	6	6	3
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	▲ 6	▲ 8	1
Titanium	ppm ASTM D5185m >2	0	0	<1
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >20	2	2	1
Lead	ppm ASTM D5185m >40	0	0	1
Copper	ppm ASTM D5185m >330	<1	<1	<1
Tin	ppm ASTM D5185m >15	0	0	<1
Vanadium	ppm ASTM D5185m	<1	<1	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	2	<1	<1
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	60	57	58
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	1025	924	985
Calcium	ppm ASTM D5185m 1070	1096	1047	1134
Phosphorus	ppm ASTM D5185m 1150	1137	1035	1042
Zinc	ppm ASTM D5185m 1270	1331	1218	1286
Sulfur	ppm ASTM D5185m 2060	3326	2979	3772

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	4	3	3
Sodium	ppm ASTM D5185m	2	3	3
Potassium	ppm ASTM D5185m >20	0	0	4

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.2	0.2	0.2
Nitration	Abs/cm *ASTM D7624 >20	7.1	9.1	6.8
Sulfation	Abs/.1mm *ASTM D7415 >30	17.9	19.0	17.6

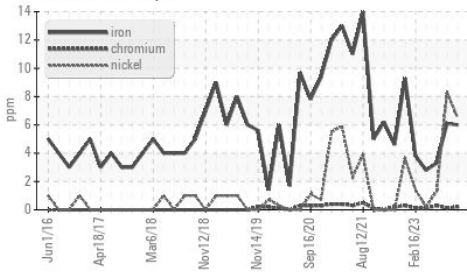
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	14.5	15.8	14.1
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.3	6.4	7.9

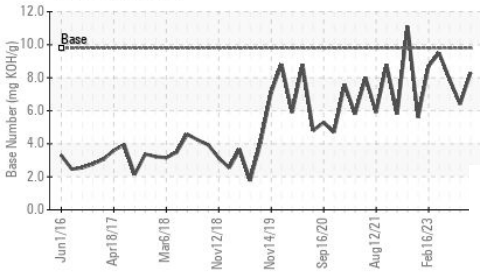


OIL ANALYSIS REPORT

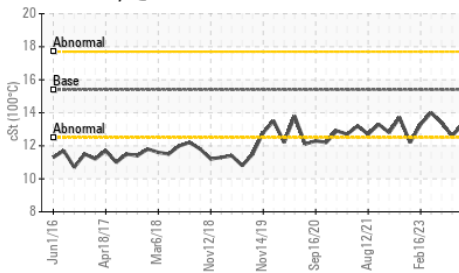
▲ Ferrous Alloys



Base Number



Viscosity @ 100°C

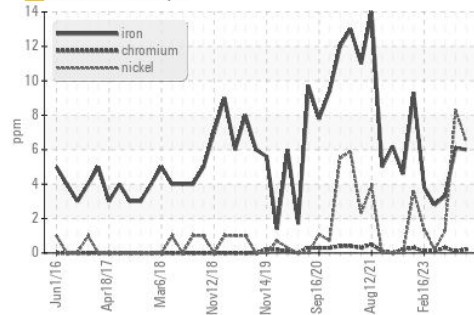


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

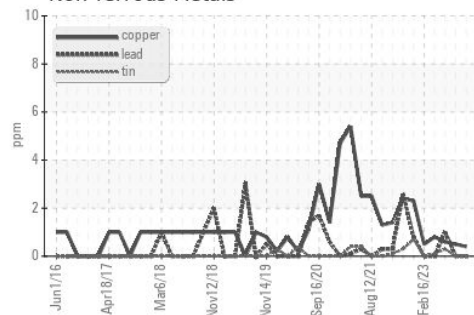
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	12.6

GRAPHS

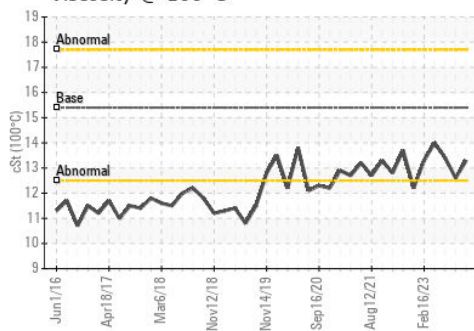
▲ Ferrous Alloys



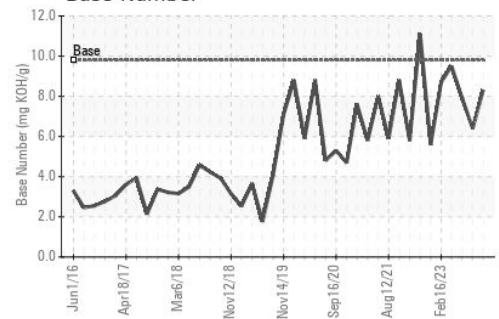
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103200
Lab Number : 06092680
Unique Number : 10885533
Test Package : FLEET

Received : 19 Feb 2024
Tested : 20 Feb 2024
Diagnosed : 20 Feb 2024 - Don Baldrige

GFL Environmental - 001 - Raleigh(CNG)
 3741 Conquest Drive
 Garner, NC
 US 27529

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)

Contact: Craig Johnson
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