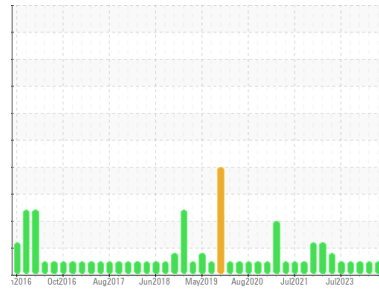




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

2446 MACK GRANITE

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (48 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	GFL0117436	GFL0103263	GFL0089311
Sample Date	Client Info	06 May 2024	06 Dec 2023	03 Oct 2023
Machine Age	hrs	38445	37365	36851
Oil Age	hrs	0	0	0
Oil Changed	Client Info	Changed	N/A	Changed
Sample Status		NORMAL	NORMAL	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	14	30	35
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	0	0	0
Titanium	ppm ASTM D5185m >2	<1	0	0
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >20	2	1	<1
Lead	ppm ASTM D5185m >40	1	<1	2
Copper	ppm ASTM D5185m >330	6	8	9
Tin	ppm ASTM D5185m >15	1	0	1
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	<1	0	<1

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	0	3	0
Barium	ppm ASTM D5185m 0	0	3	0
Molybdenum	ppm ASTM D5185m 60	60	59	61
Manganese	ppm ASTM D5185m 0	0	0	<1
Magnesium	ppm ASTM D5185m 1010	929	850	1007
Calcium	ppm ASTM D5185m 1070	1049	995	1148
Phosphorus	ppm ASTM D5185m 1150	1074	914	1017
Zinc	ppm ASTM D5185m 1270	1226	1113	1297
Sulfur	ppm ASTM D5185m 2060	3225	3058	2860

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	3	3	3
Sodium	ppm ASTM D5185m	<1	0	2
Potassium	ppm ASTM D5185m >20	2	<1	2

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.6	0.9	0.9
Nitration	Abs/cm *ASTM D7624 >20	5.7	6.4	7.0
Sulfation	Abs/.1mm *ASTM D7415 >30	18.5	19.2	19.7

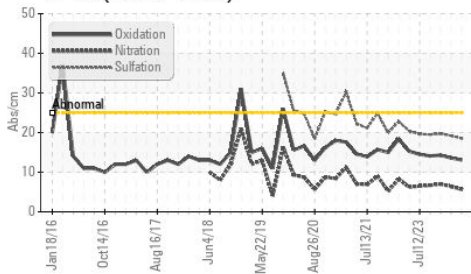
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.1	13.6	14.3
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.8	9.1	8.5

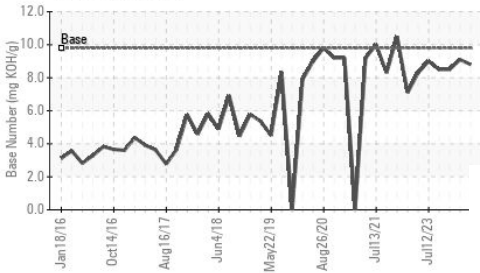


OIL ANALYSIS REPORT

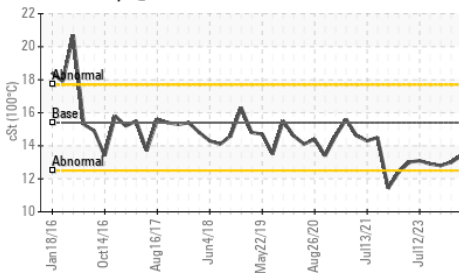
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



VISUAL

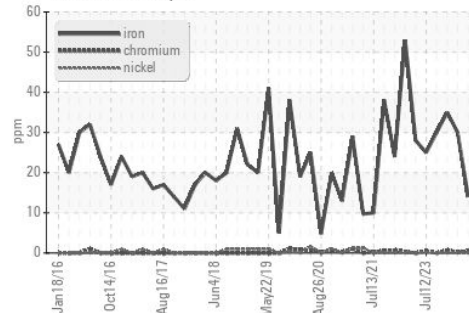
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

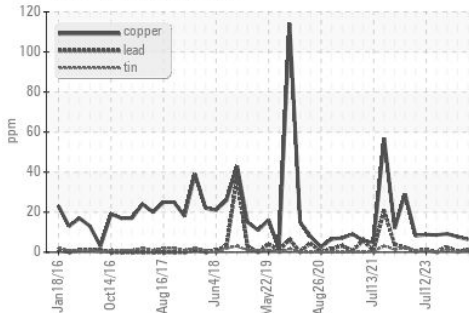
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.0

GRAPHS

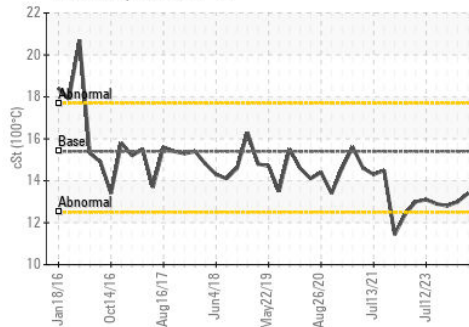
Ferrous Alloys



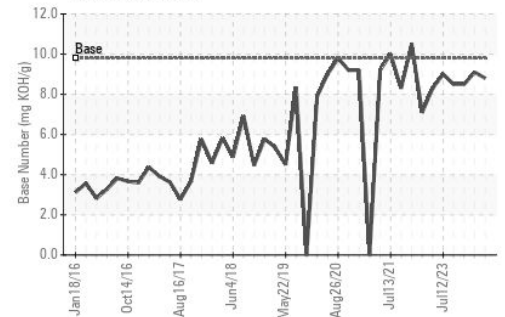
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0117436
Lab Number : 06174968
Unique Number : 11021021
Test Package : FLEET

Received : 09 May 2024
Tested : 10 May 2024
Diagnosed : 10 May 2024 - Wes Davis

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

Contact: Craig Johnson
 craig.johnson@gflenv.com

T: (919)662-7100
 F: (919)662-7130

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)