



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
2460 MACK GRANITE
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (48 QTS)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0103221	GFL0103243	GFL0089363
Sample Date		Client Info		18 Jan 2024	21 Dec 2023	02 Sep 2023
Machine Age	hrs	Client Info		36568	36417	35922
Oil Age	hrs	Client Info		0	0	350
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	11	8	5
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	<1
Lead	ppm	ASTM D5185m	>40	2	2	2
Copper	ppm	ASTM D5185m	>330	2	2	1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

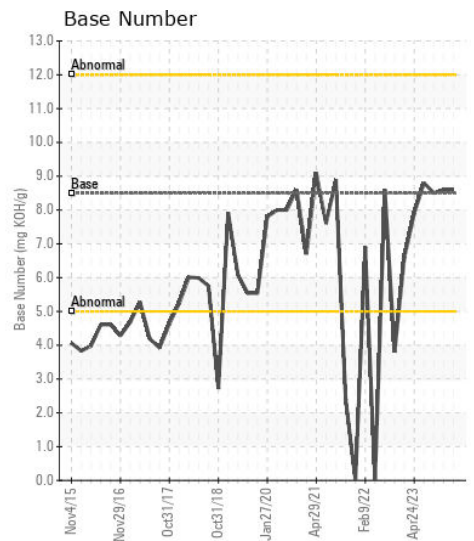
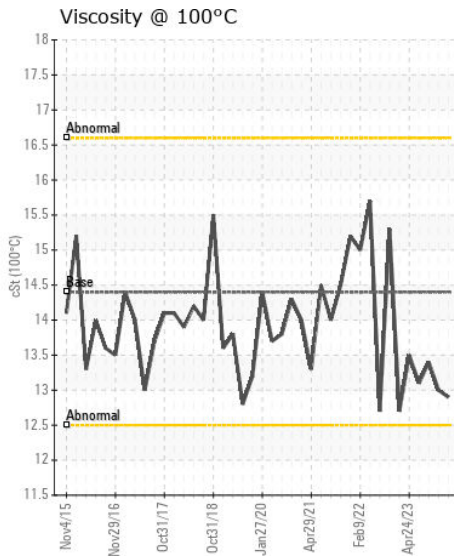
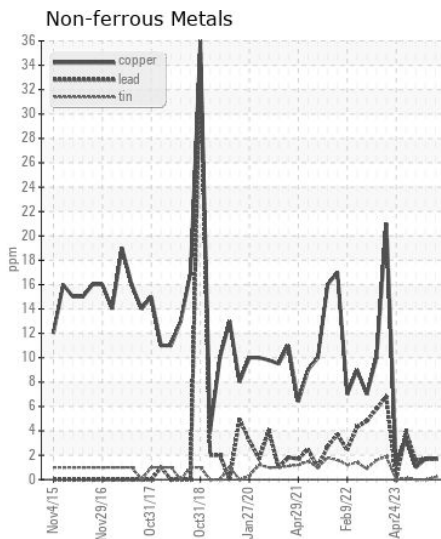
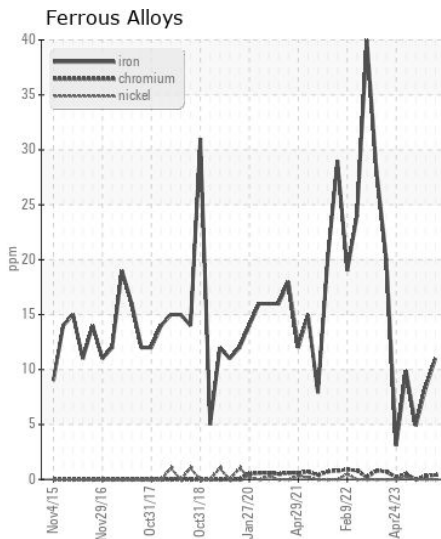
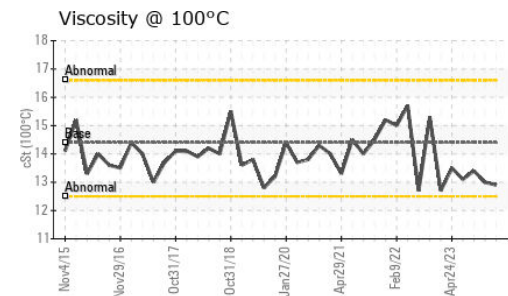
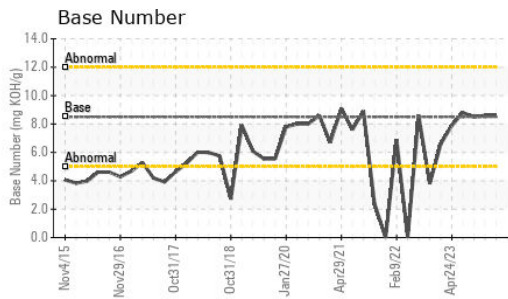
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	4	2
Potassium	ppm	ASTM D5185m	>20	<1	14	0
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
Soot %	%	*ASTM D7844	>4	1.5	1.1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	7.2	6.5	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	19.5	18.7
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

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.

Sodium	ppm	ASTM D5185m	>216	2	4	1
Boron	ppm	ASTM D5185m	250	2	1	<1
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	60	54	59
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m	450	1002	935	957
Calcium	ppm	ASTM D5185m	3000	1048	1000	1126
Phosphorus	ppm	ASTM D5185m	1150	1077	1021	984
Zinc	ppm	ASTM D5185m	1350	1269	1214	1221
Sulfur	ppm	ASTM D5185m	4250	3047	2959	3526
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	13.5	13.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.6	8.6	8.5
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	13.0	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103221 **Received** : 19 Jan 2024
Lab Number : 06065319 **Diagnosed** : 20 Jan 2024
Unique Number : 10836701 **Diagnostician** : Wes Davis
Test Package : FLEET

GFL Environmental - 001 - Raleigh(CNG)
 3741 Conquest Drive
 Garner, NC
 US 27529
 Contact: Craig Johnson
 craig.johnson@gflenv.com
 T: (919)662-7100
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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)