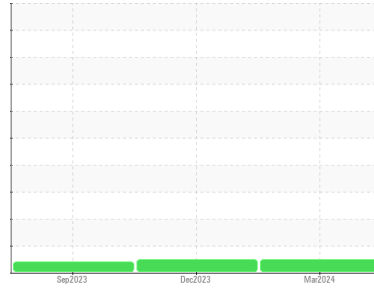




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
414051 MACK GR64BR
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (48 QTS)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

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		GFL0103191	GFL0094641	GFL0089290
Sample Date	Client Info		04 Mar 2024	05 Dec 2023	08 Sep 2023
Machine Age	hrs	Client Info	1801	1193	585
Oil Age	hrs	Client Info	608	608	585
Oil Changed		Client Info	Not Chngd	Changed	Changed
Sample Status			NORMAL	NORMAL	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	13	14	22
Chromium	ppm	ASTM D5185m >5	<1	<1	1
Nickel	ppm	ASTM D5185m >4	<1	<1	1
Titanium	ppm	ASTM D5185m >5	0	<1	<1
Silver	ppm	ASTM D5185m >3	0	<1	1
Aluminum	ppm	ASTM D5185m >25	4	7	11
Lead	ppm	ASTM D5185m >40	3	2	<1
Copper	ppm	ASTM D5185m >150	41	237	215
Tin	ppm	ASTM D5185m >4	<1	<1	3
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	1	5	160
Barium	ppm	ASTM D5185m 5	0	0	0
Molybdenum	ppm	ASTM D5185m 50	58	62	111
Manganese	ppm	ASTM D5185m 0	<1	<1	4
Magnesium	ppm	ASTM D5185m 560	1011	994	803
Calcium	ppm	ASTM D5185m 1510	1076	1114	1474
Phosphorus	ppm	ASTM D5185m 780	1011	1030	754
Zinc	ppm	ASTM D5185m 870	1254	1271	948
Sulfur	ppm	ASTM D5185m 2040	2799	2616	3076

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	10	61
Sodium	ppm	ASTM D5185m	1	2	3
Potassium	ppm	ASTM D5185m >20	7	17	23

INFRA-RED

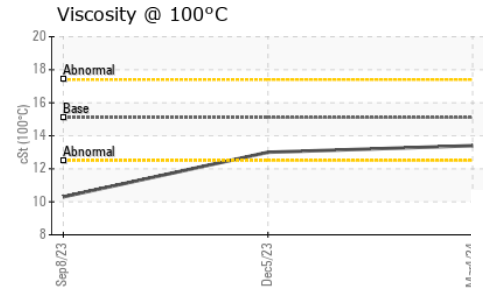
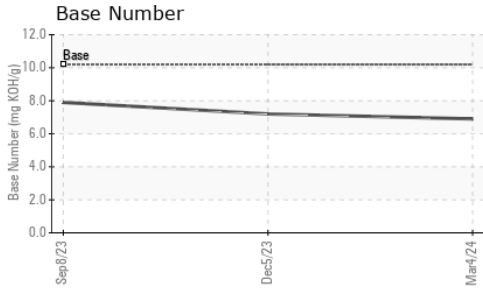
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.3	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	8.5	8.1	8.8
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.9	19.8	23.2

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.6	16.3	21.1
Base Number (BN)	mg KOH/g	ASTM D2896 10.2	6.9	7.2	7.9



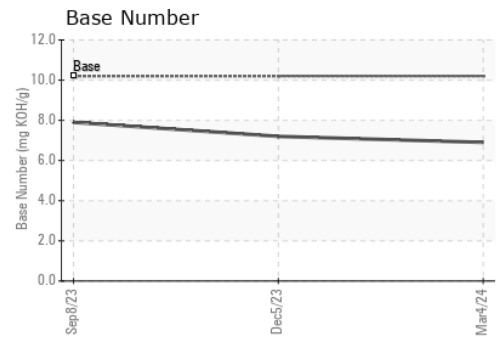
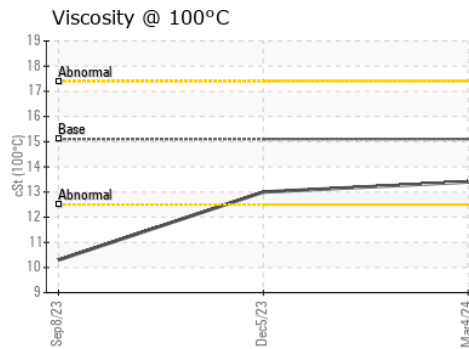
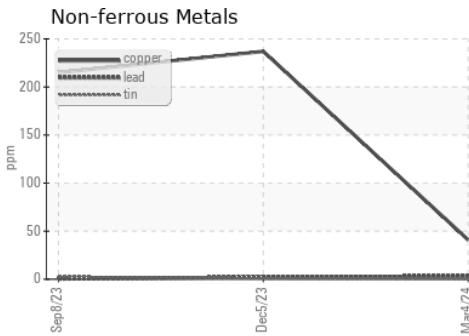
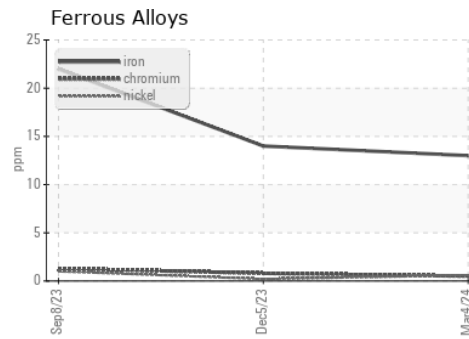
OIL ANALYSIS REPORT



PARAMETER	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	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	13.4	13.0

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0103191
 Lab Number : 06108536
 Unique Number : 10912033
 Test Package : FLEET

Received : 05 Mar 2024
 Tested : 06 Mar 2024
 Diagnosed : 06 Mar 2024 - Angela Borella

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)