



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>ATTENTION</b>



Area  
**(BD70517) {UNASSIGNED}**  
Machine Id  
**814037 MACK LR64R**  
Component  
**Diesel Engine**  
Fluid  
**TIER ONE 15W40 (--- GAL)**

**RECOMMENDATION**

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0102220</b>	GFL0061436	---
Sample Date		Client Info		<b>21 Feb 2024</b>	14 Nov 2023	---
Machine Age	hrs	Client Info		<b>914</b>	285	---
Oil Age	hrs	Client Info		<b>334</b>	281	---
Filter Age	hrs	Client Info		<b>334</b>	281	---
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	---
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	---
Sample Status				<b>ABNORMAL</b>	ABNORMAL	---

**WEAR**

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>120	<b>19</b>	27	---
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m	>5	<b>6</b>	9	---
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	5	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	---
Copper	ppm	ASTM D5185m	>330	<b>70</b>	31	---
Tin	ppm	ASTM D5185m	>15	<b>1</b>	1	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

**CONTAMINATION**

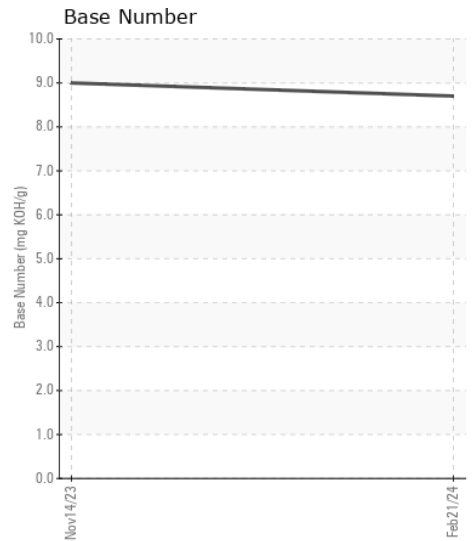
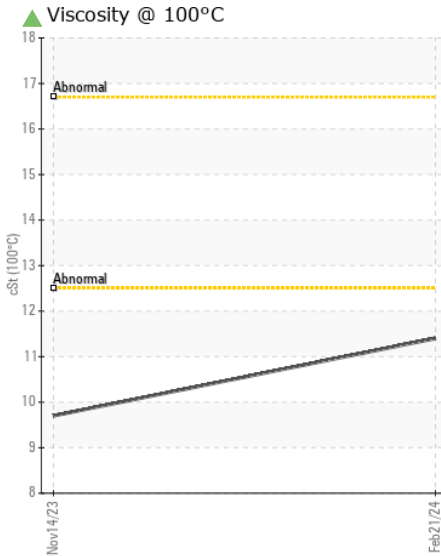
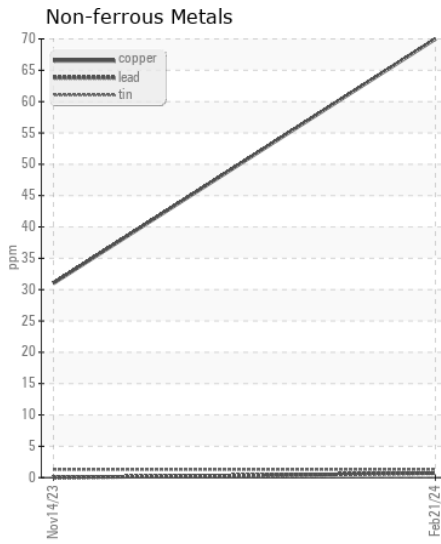
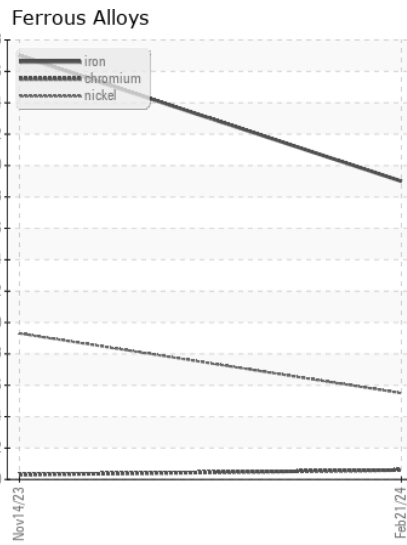
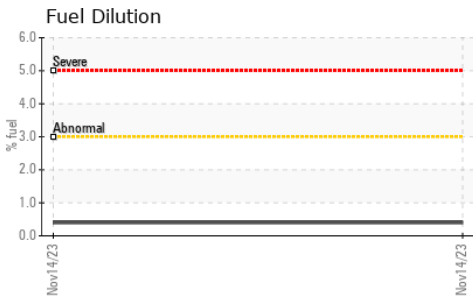
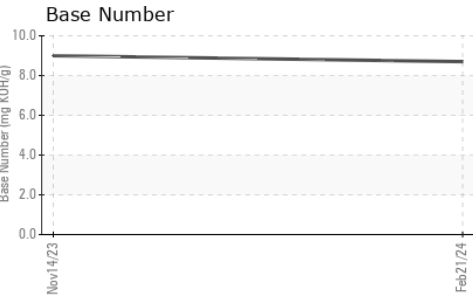
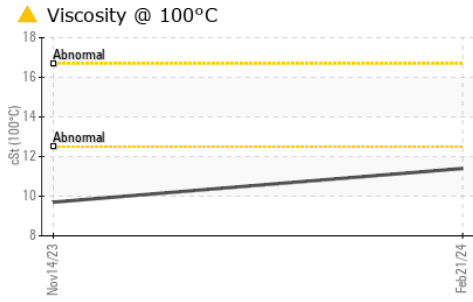
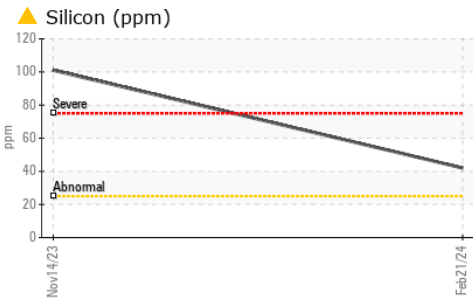
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 42</b>	▲ 101	---
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	6	---
Fuel	%	ASTM D3524	>3.0	<b>&lt;1.0</b>	0.4	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>4	<b>0.3</b>	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.3</b>	7.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.5</b>	25.6	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

**FLUID CONDITION**

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>3</b>	<1	---
Boron	ppm	ASTM D5185m		<b>150</b>	344	---
Barium	ppm	ASTM D5185m		<b>0</b>	1	---
Molybdenum	ppm	ASTM D5185m		<b>81</b>	117	---
Manganese	ppm	ASTM D5185m		<b>2</b>	3	---
Magnesium	ppm	ASTM D5185m		<b>811</b>	636	---
Calcium	ppm	ASTM D5185m		<b>1273</b>	1364	---
Phosphorus	ppm	ASTM D5185m		<b>798</b>	651	---
Zinc	ppm	ASTM D5185m		<b>994</b>	810	---
Sulfur	ppm	ASTM D5185m		<b>2686</b>	2528	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.0</b>	20.8	---
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.7</b>	9.0	---
Visc @ 100°C	cSt	ASTM D445		<b>▲ 11.4</b>	▲ 9.7	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0102220

Lab Number : 06098981

Unique Number : 10897211

Test Package : FLEET ( Additional Tests: FuelDilution )

Received : 23 Feb 2024

Tested : 26 Feb 2024

Diagnosed : 26 Feb 2024 - Don Baldrige

GFL Environmental - 642- Grand Rapids Hauling

5826 Alden Nash Ave SE

Lowell, MI

US 49331

Contact: Chad Crosby

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T: (616)299-8425

F:

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)