



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH80M 1218-157090**  
Component  
**Rear Differential**  
Fluid  
**GEAR OIL SAE 80W90 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0282871</b>	LH0282882	LH0282893
Sample Date		Client Info		<b>18 May 2024</b>	19 Apr 2024	19 Mar 2024
Machine Age	hrs	Client Info		<b>1559</b>	997	545
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Changed	Not Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	None
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>150	<b>29</b>	41	33
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>5	<b>1</b>	<1	<1
Lead	ppm	ASTM D5185m	>5	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>125	<b>14</b>	15	11
Tin	ppm	ASTM D5185m	>5	<b>0</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	MODER
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

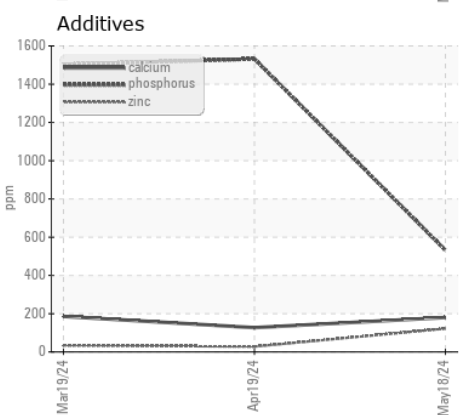
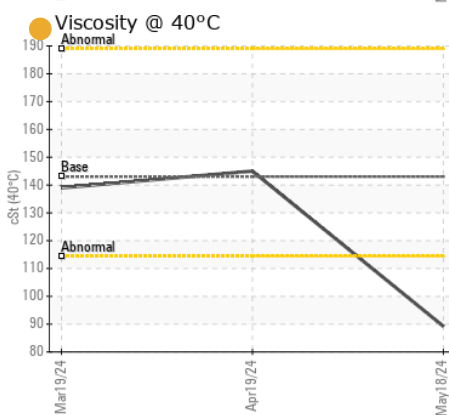
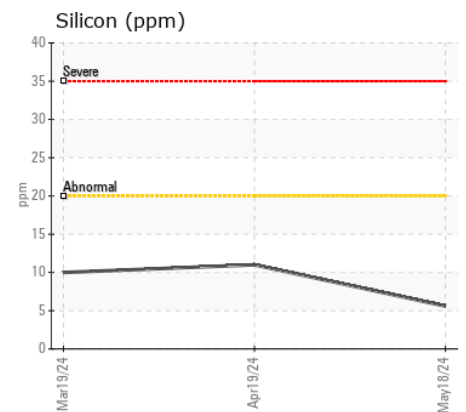
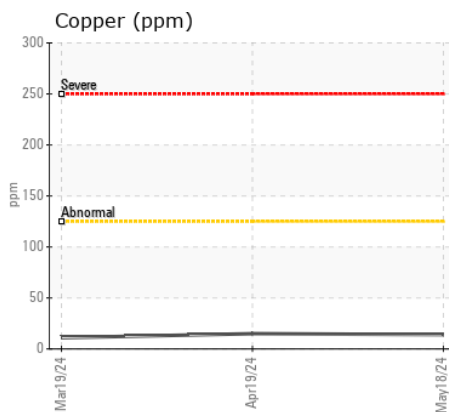
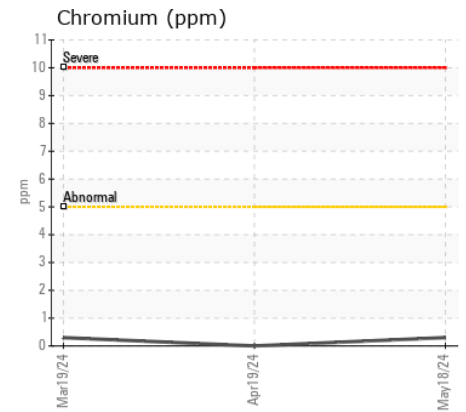
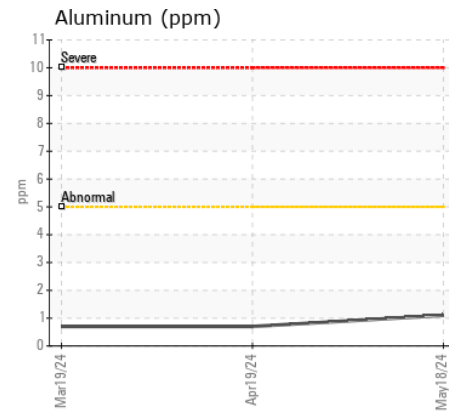
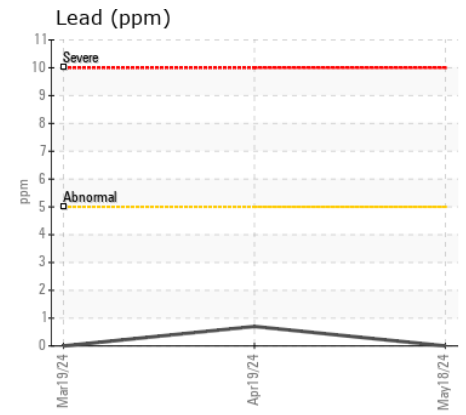
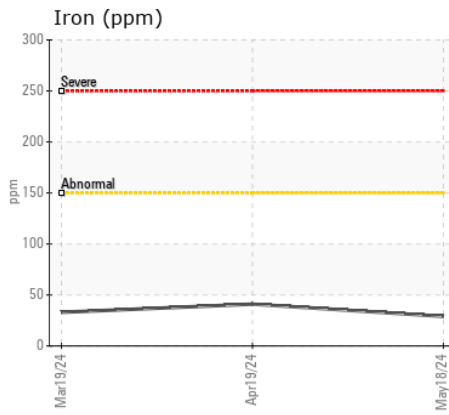
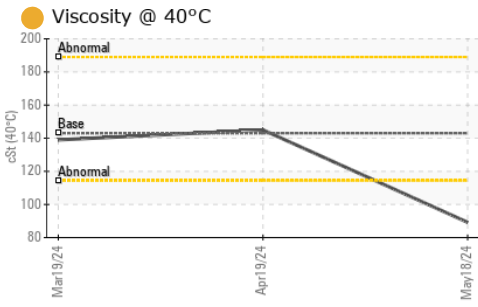
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>6</b>	11	10
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	3	<1
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The oil viscosity is lower than normal. Confirm oil type.

Sodium	ppm	ASTM D5185m	>170	<b>2</b>	2	4
Boron	ppm	ASTM D5185m	400	<b>6</b>	5	6
Barium	ppm	ASTM D5185m	200	<b>0</b>	1	0
Molybdenum	ppm	ASTM D5185m	12	<b>4</b>	0	1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	2	1
Magnesium	ppm	ASTM D5185m	12	<b>30</b>	5	<1
Calcium	ppm	ASTM D5185m	150	<b>180</b>	127	186
Phosphorus	ppm	ASTM D5185m	1650	<b>532</b>	1532	1503
Zinc	ppm	ASTM D5185m	125	<b>122</b>	28	34
Sulfur	ppm	ASTM D5185m	22500	<b>13993</b>	23817	24203
Visc @ 40°C	cSt	ASTM D445	143	<b>89.2</b>	145	139



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0282871 **Received** : 28 May 2024  
**Lab Number** : 06192609 **Tested** : 29 May 2024  
**Unique Number** : 11049361 **Diagnosed** : 30 May 2024 - Don Baldrige  
**Test Package** : MOBCE

**KINDER MORGAN**  
 4301 IVERSON  
 TRINITY, AL  
 US 35601

Contact: RICKY JOHNSON  
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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)

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