



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH80M 155277-1218**  
Component  
**Diesel Engine**  
Fluid  
**LIEBHERR MOTOROIL 5W-30 LOW ASH (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0243735</b>	LH0243734	LH0191254
Sample Date		Client Info		<b>18 Jun 2024</b>	18 May 2024	24 Apr 2024
Machine Age	hrs	Client Info		<b>1862</b>	1520	1298
Oil Age	hrs	Client Info		<b>342</b>	222	248
Filter Age	hrs	Client Info		<b>342</b>	222	248
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	5	6
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>3</b>	2	2
Lead	ppm	ASTM D5185m	>30	<b>0</b>	<1	2
Copper	ppm	ASTM D5185m	>125	<b>1</b>	<1	3
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

There is no indication of any contamination in the oil.

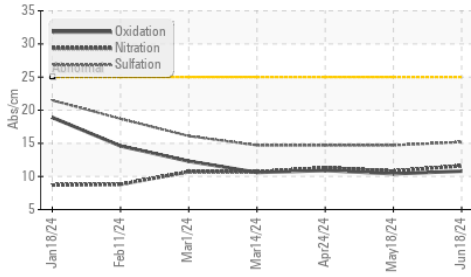
Silicon	ppm	ASTM D5185m	>60	<b>8</b>	7	7
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.6</b>	10.8	11.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.2</b>	14.7	14.7
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

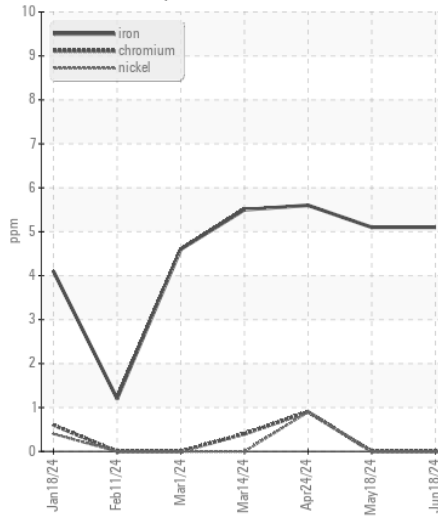
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	3	3
Boron	ppm	ASTM D5185m	2	<b>218</b>	308	240
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<1	<b>&lt;1</b>	2	2
Manganese	ppm	ASTM D5185m	<1	<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m	12	<b>92</b>	63	40
Calcium	ppm	ASTM D5185m	2224	<b>4374</b>	4386	4535
Phosphorus	ppm	ASTM D5185m	635	<b>1072</b>	1091	1143
Zinc	ppm	ASTM D5185m	718	<b>1244</b>	1233	1268
Sulfur	ppm	ASTM D5185m	1694	<b>3436</b>	3416	3671
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.8</b>	10.4	10.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.76	<b>15.0</b>	15.7	15.6
Visc @ 100°C	cSt	ASTM D445	12.0	<b>11.7</b>	12.0	11.9

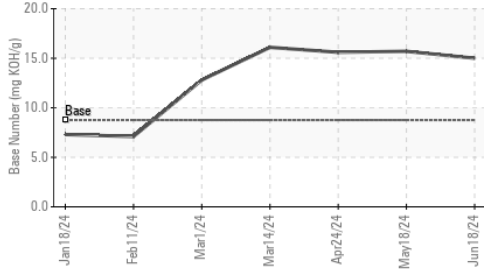
**FT-IR (Direct Trend)**



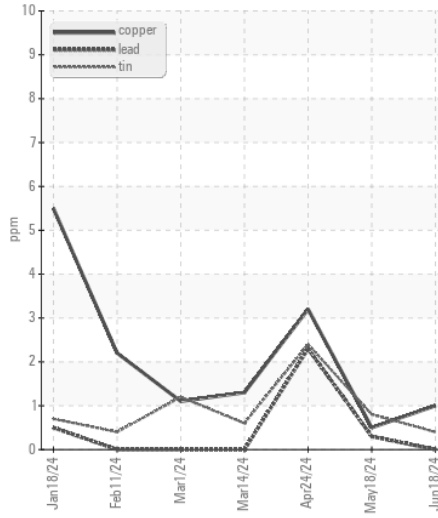
**Ferrous Alloys**



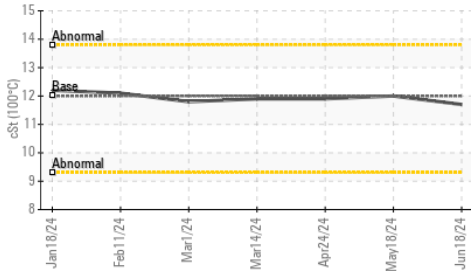
**Base Number**



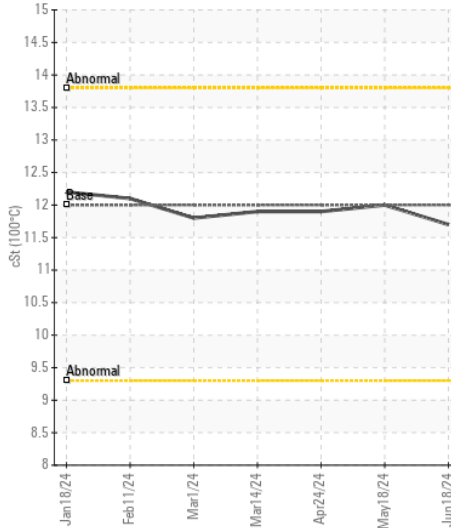
**Non-ferrous Metals**



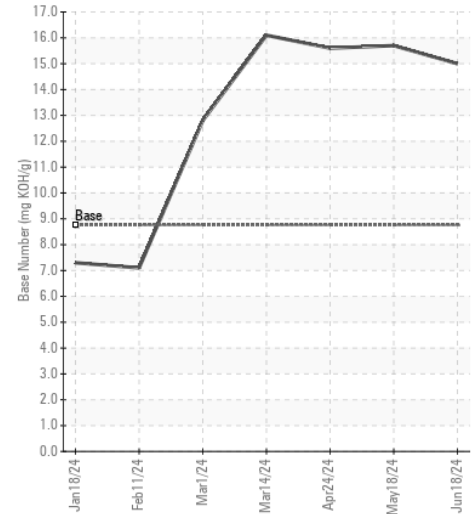
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0243735 **Received** : 25 Jun 2024  
**Lab Number** : 06220488 **Tested** : 26 Jun 2024  
**Unique Number** : 11098685 **Diagnosed** : 27 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

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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