



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH80M 1218-157090**  
Component  
**Hydraulic System**  
Fluid  
**TDH (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0267279</b>	LH0282873	LH0282884
Sample Date		Client Info		<b>10 Jun 2024</b>	18 May 2024	19 Apr 2024
Machine Age	hrs	Client Info		<b>2008</b>	1559	997
Oil Age	hrs	Client Info		<b>2008</b>	0	0
Filter Age	hrs	Client Info		<b>1035</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Filter Changed		Client Info		<b>Changed</b>	Not Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>60	<b>2</b>	4	9
Chromium	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	3
Tin	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
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

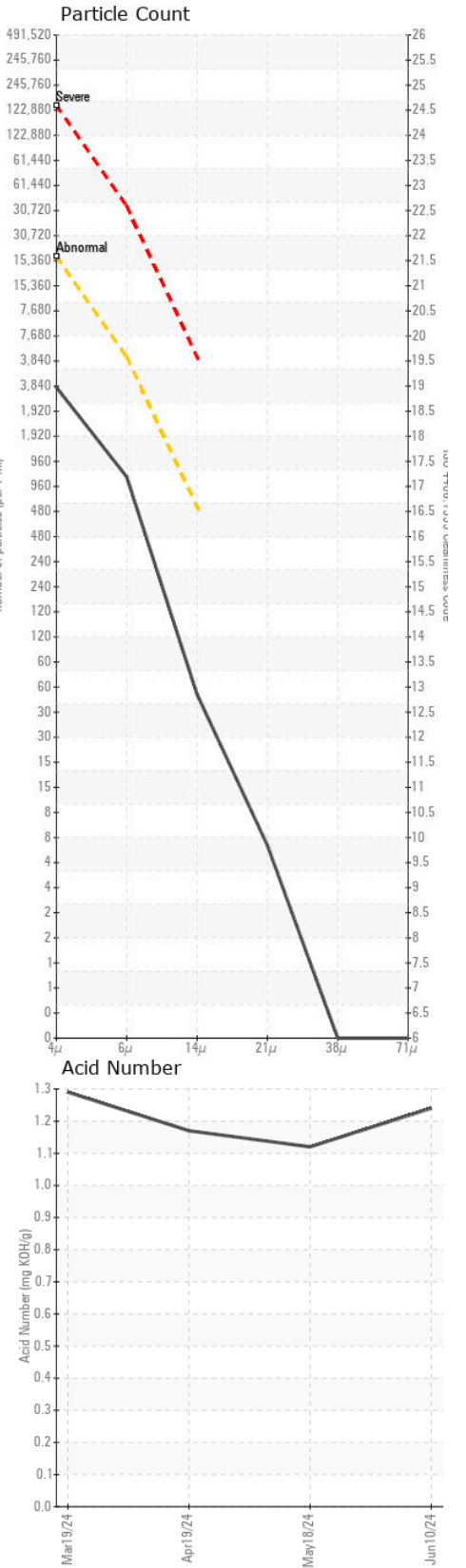
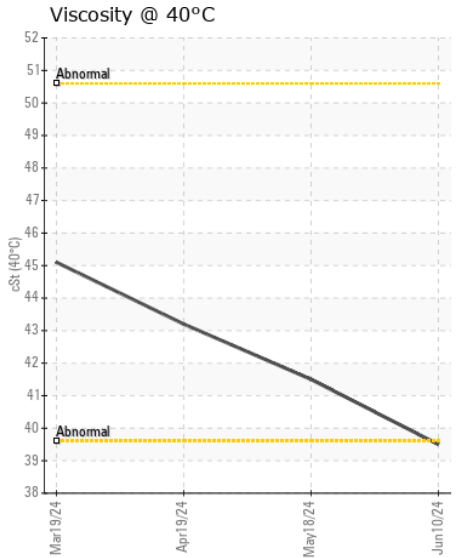
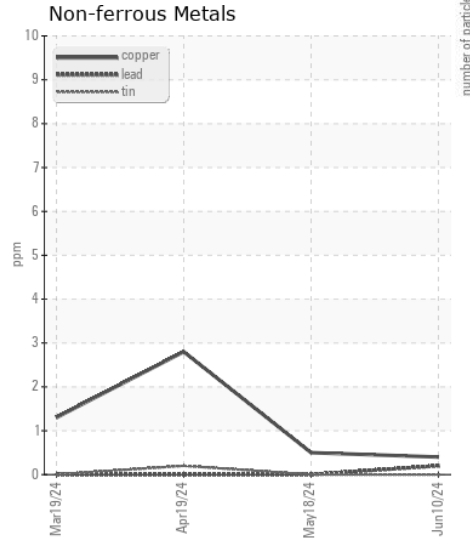
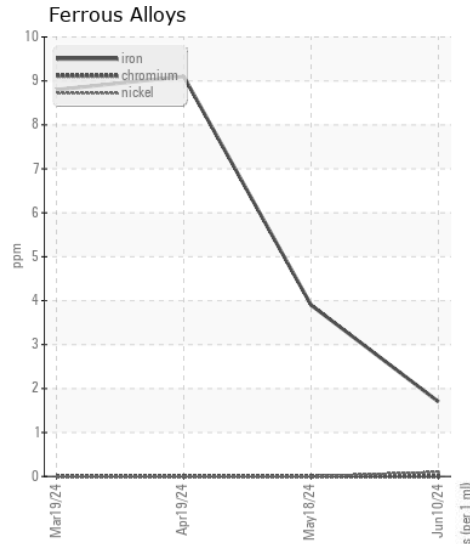
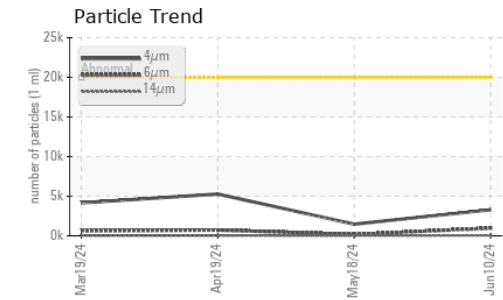
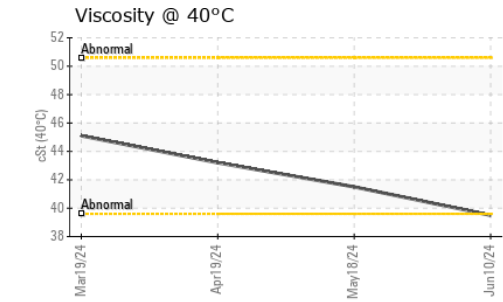
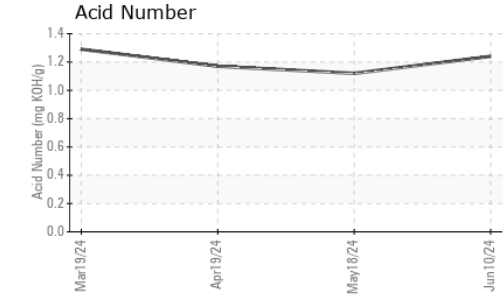
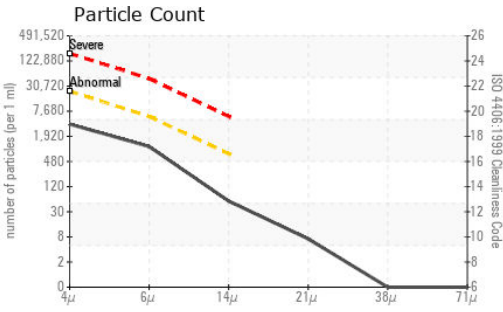
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>15	<b>6</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	<1	1
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>20000	<b>3291</b>	1469	5272
Particles >6µm		ASTM D7647	>5000	<b>958</b>	172	732
Particles >14µm		ASTM D7647	>640	<b>48</b>	8	33
Particles >21µm		ASTM D7647	>160	<b>6</b>	3	10
Particles >38µm		ASTM D7647	>40	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>19/17/13</b>	18/15/10	20/17/12
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	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>3</b>	<1	2
Boron	ppm	ASTM D5185m		<b>9</b>	8	3
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>3</b>	3	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>35</b>	29	20
Calcium	ppm	ASTM D5185m		<b>2079</b>	1840	1598
Phosphorus	ppm	ASTM D5185m		<b>805</b>	737	702
Zinc	ppm	ASTM D5185m		<b>939</b>	838	765
Sulfur	ppm	ASTM D5185m		<b>3828</b>	3902	4818
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>1.24</b>	1.12	1.17
Visc @ 40°C	cSt	ASTM D445		<b>39.5</b>	41.5	43.2



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0267279  
**Lab Number** : 06215754  
**Unique Number** : 11088618  
**Test Package** : CONST

**Received** : 20 Jun 2024  
**Tested** : 21 Jun 2024  
**Diagnosed** : 21 Jun 2024 - Wes Davis

**KINDER MORGAN**  
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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)