



# OIL ANALYSIS REPORT

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

Machine Id  
**LIEBHERR LTM1060 AT8851 (S/N 58851)**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL 10W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>HPL0004508</b>	HPL0002946	HPL0001555
Sample Date		Client Info		<b>14 Mar 2024</b>	03 Jul 2023	31 Oct 2022
Machine Age	hrs	Client Info		<b>3377</b>	2573	1472
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>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	7	10
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	3	2
Lead	ppm	ASTM D5185m	>30	<b>0</b>	1	2
Copper	ppm	ASTM D5185m	>125	<b>23</b>	30	48
Tin	ppm	ASTM D5185m	>5	<b>0</b>	<1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

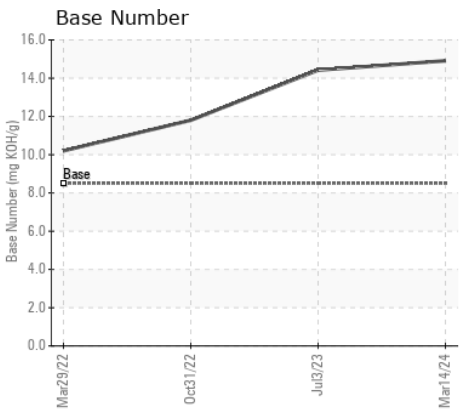
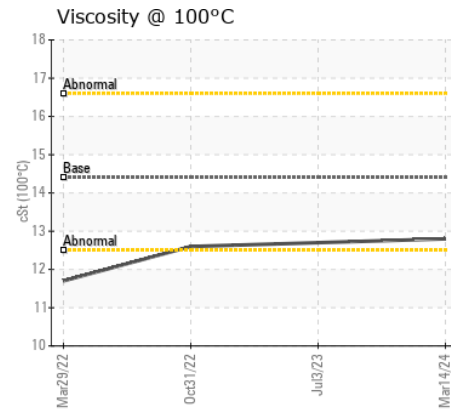
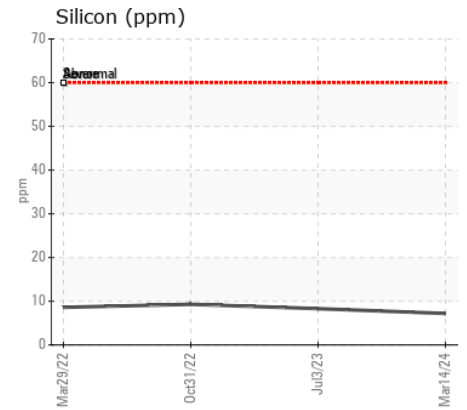
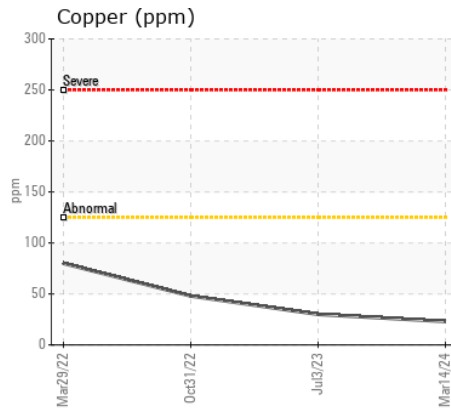
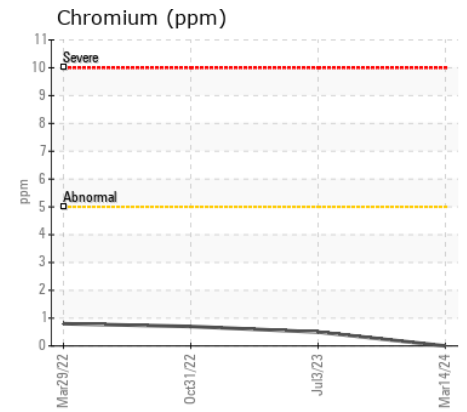
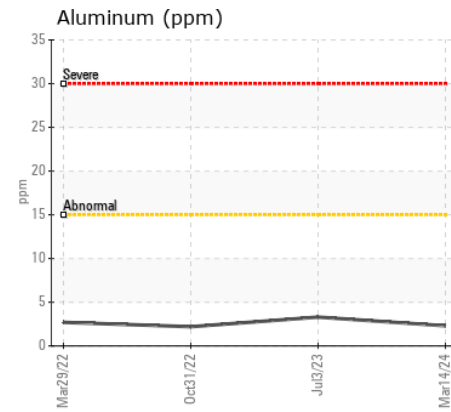
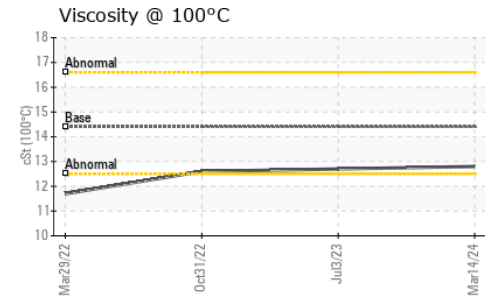
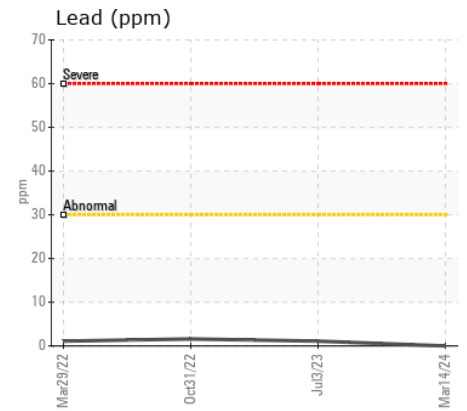
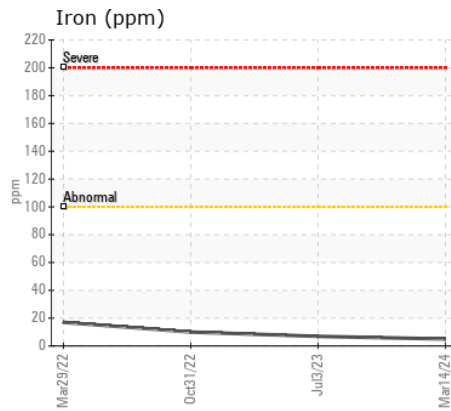
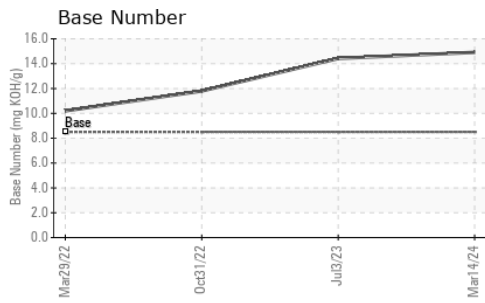
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>7</b>	8	9
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	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>0.2</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.8</b>	11.8	13
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>37.4</b>	38.3	41.7
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>&lt;1</b>	2	1
Boron	ppm	ASTM D5185m	250	<b>2</b>	1	11
Barium	ppm	ASTM D5185m	10	<b>0</b>	5	6
Molybdenum	ppm	ASTM D5185m	100	<b>530</b>	581	529
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1035</b>	964	951
Calcium	ppm	ASTM D5185m	3000	<b>2492</b>	2667	2553
Phosphorus	ppm	ASTM D5185m	1150	<b>969</b>	1064	1028
Zinc	ppm	ASTM D5185m	1350	<b>1204</b>	1303	1230
Sulfur	ppm	ASTM D5185m	4250	<b>8777</b>	8774	10327
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>41.1</b>	41.2	45.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>14.91</b>	14.42	11.8
Visc @ 100°C	cSt	ASTM D445	14.4	<b>12.8</b>	12.7	12.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HPL0004508 **Received** : 19 Mar 2024  
**Lab Number** : 06122607 **Tested** : 20 Mar 2024  
**Unique Number** : 10936758 **Diagnosed** : 21 Mar 2024 - Don Baldrige  
**Test Package** : MOB 2

**STEVENS ON CRANE**  
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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)