



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**SOUTH HOLLAND**  
Machine Id  
**LIEBHERR LTM1060-3.1 AT8106 (S/N 058106)**  
Component  
**Lower 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>HPL0002525</b>	HPL0002909	HPL008259
Sample Date		Client Info		<b>23 Feb 2024</b>	01 May 2023	27 Sep 2022
Machine Age	hrs	Client Info		<b>11237</b>	10466	9737
Oil Age	hrs	Client Info		<b>0</b>	726	750
Filter Age	hrs	Client Info		<b>0</b>	726	750
Oil Changed		Client Info		<b>N/A</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>4</b>	4	4
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</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>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>7</b>	2	2
Lead	ppm	ASTM D5185m	>30	<b>1</b>	<1	2
Copper	ppm	ASTM D5185m	>125	<b>1</b>	1	2
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

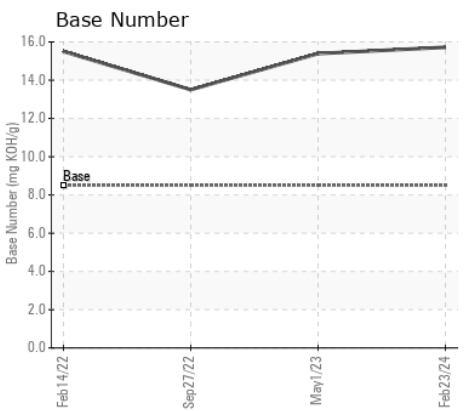
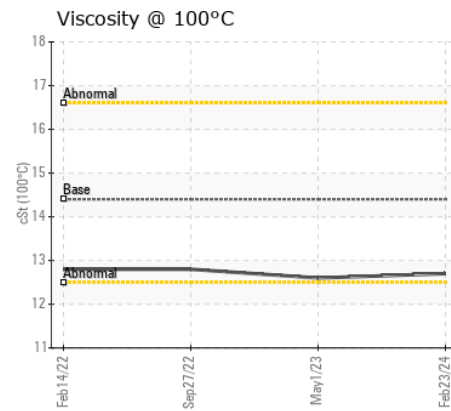
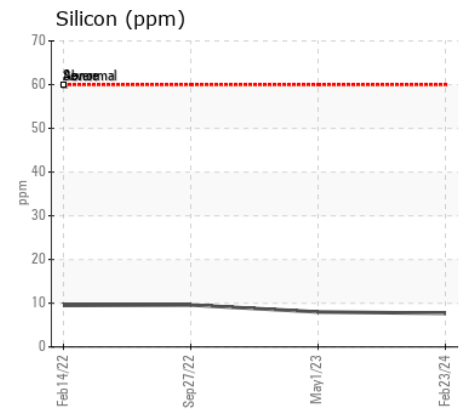
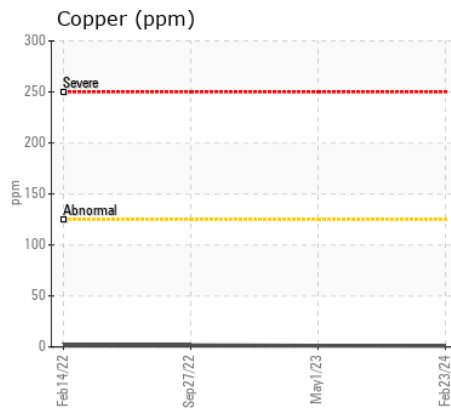
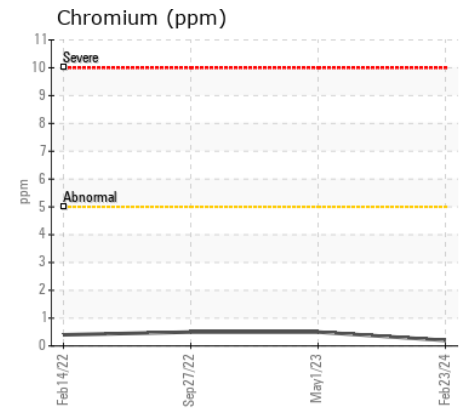
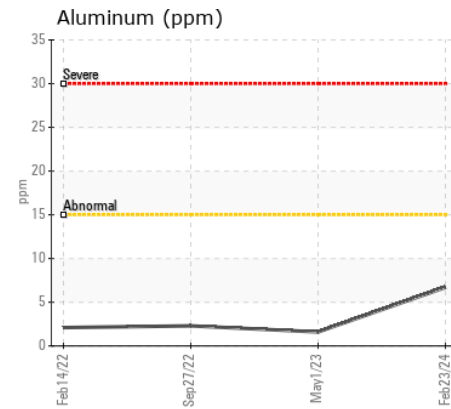
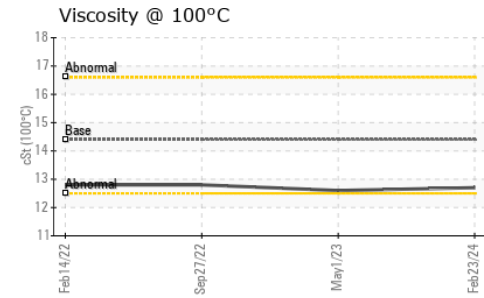
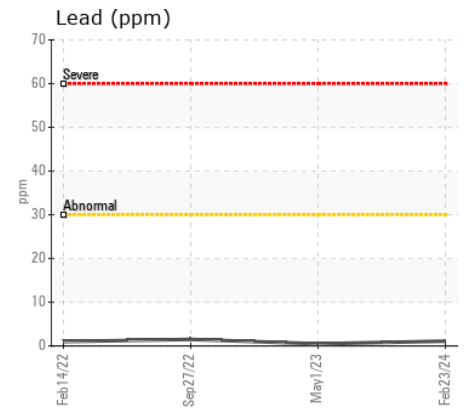
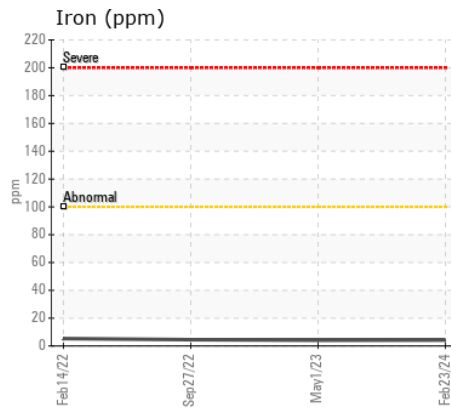
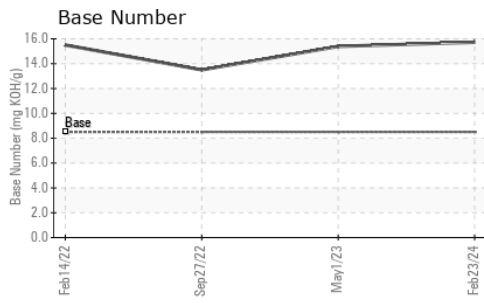
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>8</b>	8	10
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
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>11.1</b>	11.0	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>36.8</b>	37.3	38.2
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>1</b>	1	1
Boron	ppm	ASTM D5185m	250	<b>19</b>	1	36
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>582</b>	571	621
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>985</b>	958	1039
Calcium	ppm	ASTM D5185m	3000	<b>2484</b>	2587	3070
Phosphorus	ppm	ASTM D5185m	1150	<b>1136</b>	1055	1159
Zinc	ppm	ASTM D5185m	1350	<b>1295</b>	1264	1395
Sulfur	ppm	ASTM D5185m	4250	<b>7883</b>	8271	11709
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>39.9</b>	40.1	39.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>15.72</b>	15.39	13.5
Visc @ 100°C	cSt	ASTM D445	14.4	<b>12.7</b>	12.6	12.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HPL0002525  
**Lab Number** : 06101904  
**Unique Number** : 10900134  
**Test Package** : MOB 2

**Received** : 27 Feb 2024  
**Tested** : 28 Feb 2024  
**Diagnosed** : 29 Feb 2024 - Sean Felton

**STEVENS ON CRANE**  
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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)