



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR A924 021802-957**  
Component  
**Diesel Engine**  
Fluid  
**CEMEX MAXTON 5W40 (23 LTR)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0244305</b>	LH0185159	LH,C154868
Sample Date		Client Info		<b>24 Jan 2024</b>	11 May 2021	17 Aug 2020
Machine Age	hrs	Client Info		<b>21840</b>	20637	20091
Oil Age	hrs	Client Info		<b>329</b>	394	239
Filter Age	hrs	Client Info		<b>329</b>	394	239
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>10</b>	8	6
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	1	2
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	1	<1
Copper	ppm	ASTM D5185m	>125	<b>1</b>	1	6
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

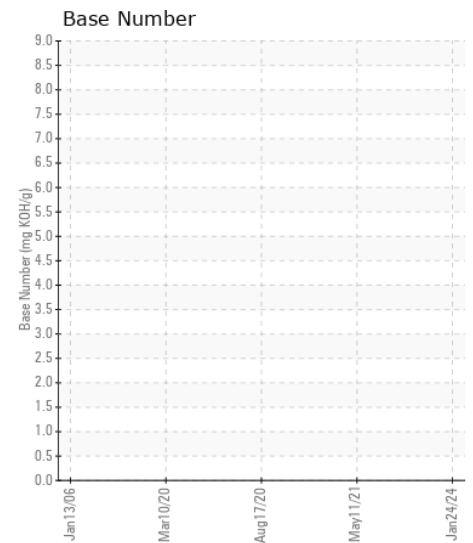
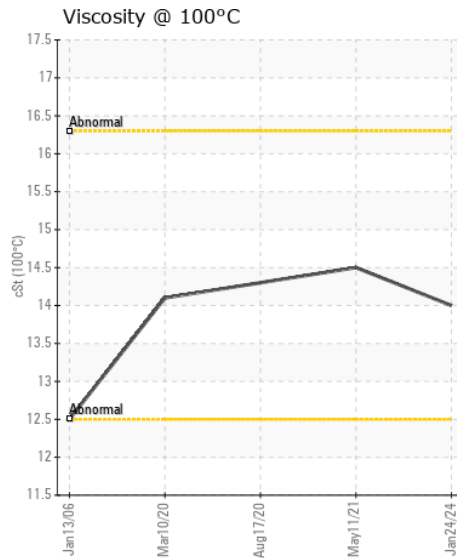
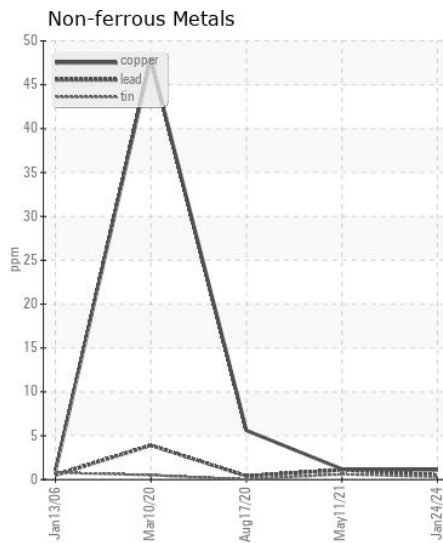
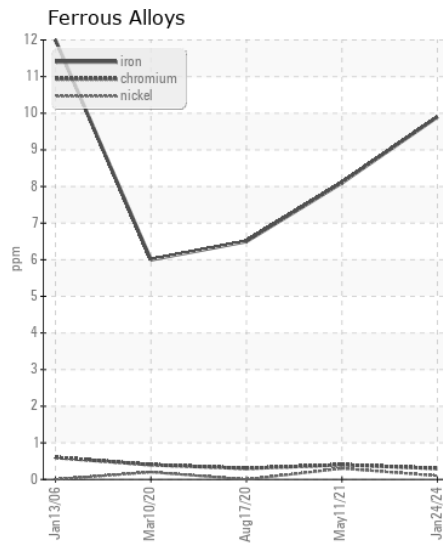
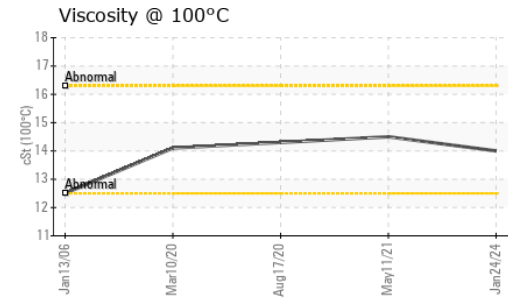
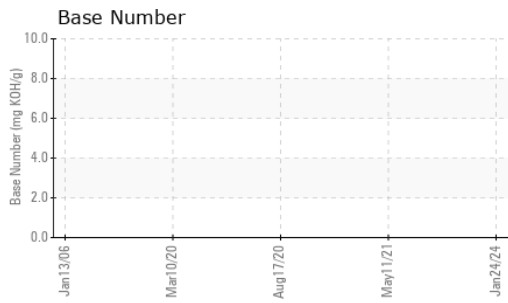
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>8</b>	6	8
Potassium	ppm	ASTM D5185m	>20	<b>24</b>	15	37
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>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.8</b>	10.7	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.0</b>	21.8	20.5
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>8</b>	7	14
Boron	ppm	ASTM D5185m		<b>65</b>	50	51
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>71</b>	65	66
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>1211</b>	1121	1207
Calcium	ppm	ASTM D5185m		<b>1000</b>	896	897
Phosphorus	ppm	ASTM D5185m		<b>1107</b>	1141	1097
Zinc	ppm	ASTM D5185m		<b>1433</b>	1280	1279
Sulfur	ppm	ASTM D5185m		<b>4181</b>	3112	3024
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.8</b>	21.3	18.1
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.7</b>	---	---
Visc @ 100°C	cSt	ASTM D445		<b>14.0</b>	14.5	14.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0244305 **Received** : 30 Jan 2024  
**Lab Number** : 06073792 **Diagnosed** : 31 Jan 2024  
**Unique Number** : 10855883 **Diagnostician** : Wes Davis  
**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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