



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**141701**  
Component  
**3 Slewing Gearbox**  
Fluid  
**LIEBHERR GEAR HYPOID 90 EP (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LM0000285</b>	LM0000379	---
Sample Date		Client Info		<b>19 Mar 2024</b>	17 Oct 2023	---
Machine Age	hrs	Client Info		<b>12015</b>	0	---
Oil Age	hrs	Client Info		<b>1000</b>	0	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Changed</b>	N/A	---
Filter Changed		Client Info		<b>N/A</b>	N/A	---
Sample Status				<b>NORMAL</b>	NORMAL	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>500	<b>22</b>	4	---
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	---
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m		<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m		<b>1</b>	0	---
Lead	ppm	ASTM D5185m	>5	<b>0</b>	0	---
Copper	ppm	ASTM D5185m	>35	<b>&lt;1</b>	2	---
Tin	ppm	ASTM D5185m	>5	<b>0</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

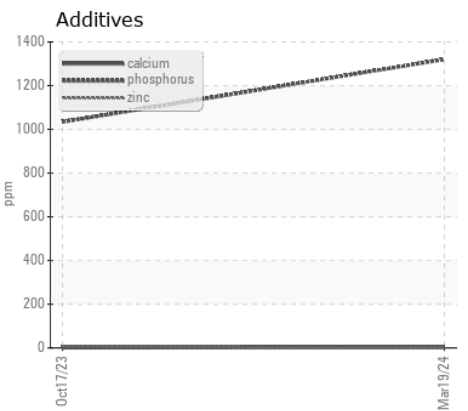
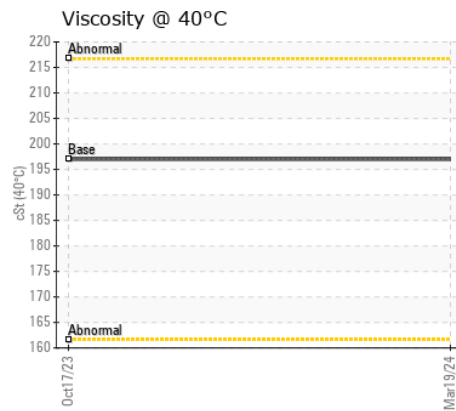
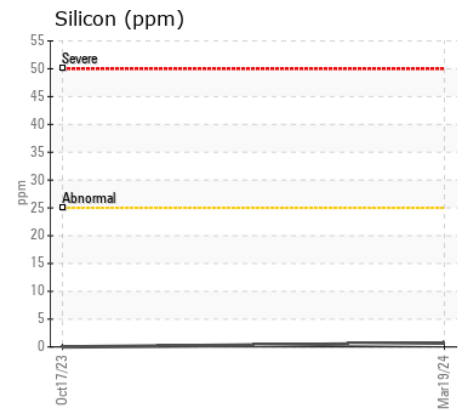
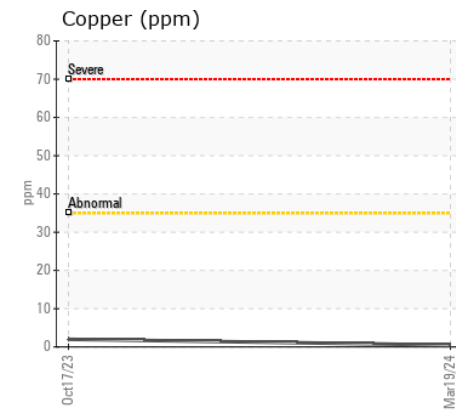
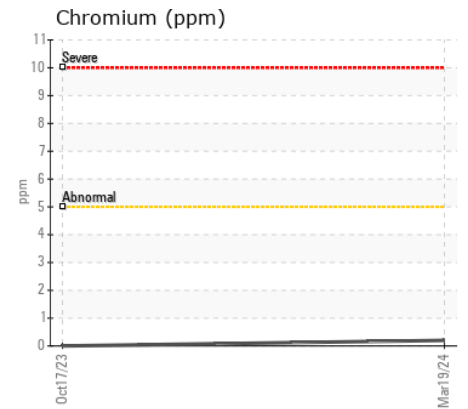
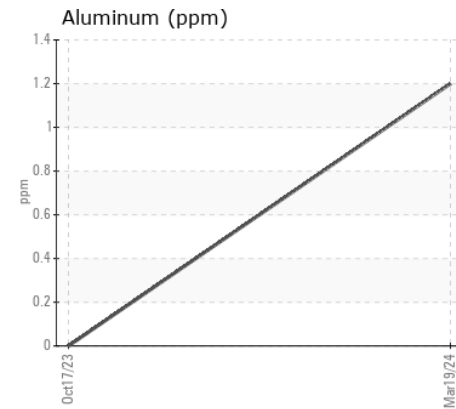
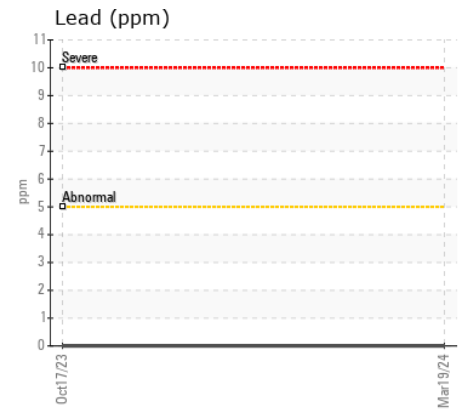
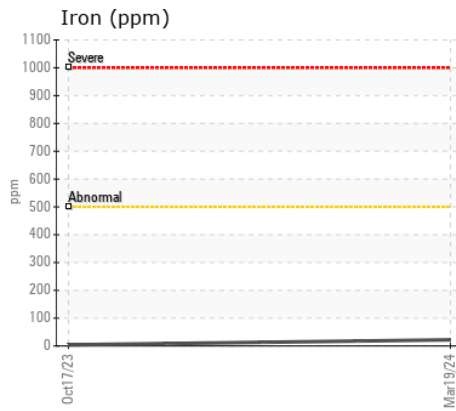
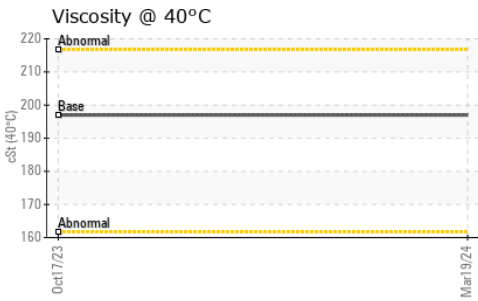
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>&lt;1</b>	0	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

### FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>0</b>	2	---
Boron	ppm	ASTM D5185m		<b>0</b>	0	---
Barium	ppm	ASTM D5185m		<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	---
Manganese	ppm	ASTM D5185m		<b>0</b>	0	---
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Calcium	ppm	ASTM D5185m		<b>4</b>	1	---
Phosphorus	ppm	ASTM D5185m		<b>1320</b>	1034	---
Zinc	ppm	ASTM D5185m		<b>0</b>	7	---
Sulfur	ppm	ASTM D5185m		<b>28475</b>	24611	---
Visc @ 40°C	cSt	ASTM D445	197	<b>197</b>	197	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LM0000285  
**Lab Number** : 06151363  
**Unique Number** : 10981441  
**Test Package** : MOBCE

**Received** : 16 Apr 2024  
**Tested** : 18 Apr 2024  
**Diagnosed** : 19 Apr 2024 - Sean Felton

**LIEBHERR USA CO - Maritime Cranes**  
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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)