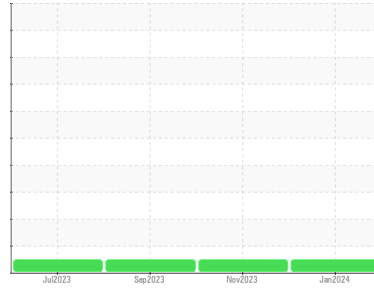




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**141701 - CLOSING**

Component  
**Distribution Gear**

Fluid  
**LIEBHERR GEAR HYPOID 90 EP (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>LM0000447</b>	LM0000376	LM05962537
Sample Date	Client Info			<b>03 Jan 2024</b>	06 Nov 2023	19 Sep 2023
Machine Age	hrs	Client Info		<b>10943</b>	0	9916
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.2	<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>300	<b>6</b>	5	7
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>5	<b>2</b>	0	0
Lead	ppm	ASTM D5185m	>60	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>35	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

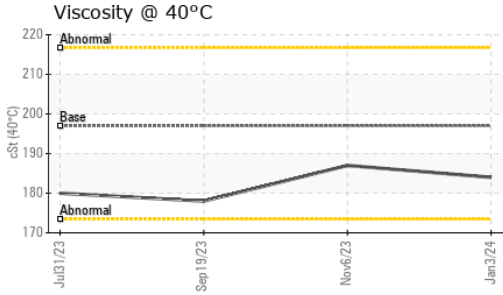
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Manganese	ppm	ASTM D5185m		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>2</b>	6	<1
Calcium	ppm	ASTM D5185m		<b>27</b>	16	8
Phosphorus	ppm	ASTM D5185m		<b>1124</b>	1027	1134
Zinc	ppm	ASTM D5185m		<b>2</b>	20	18
Sulfur	ppm	ASTM D5185m		<b>27099</b>	24529	27913

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>&lt;1</b>	0	<1
Sodium	ppm	ASTM D5185m		<b>0</b>	2	0
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0	<1

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG



# OIL ANALYSIS REPORT

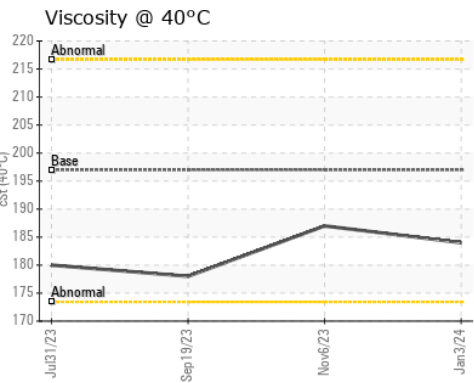
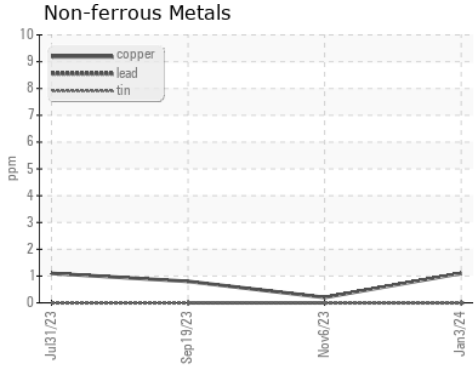
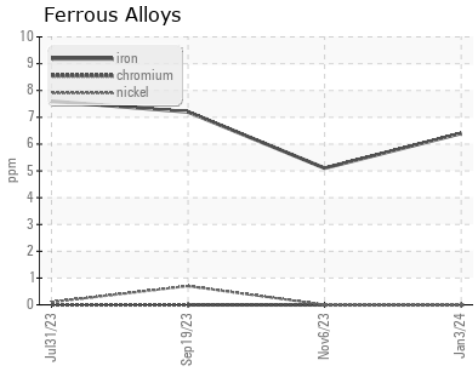


FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	197	<b>184</b>	187	178

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color				no image	no image	no image
Bottom				no image	no image	no image

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LM0000447  
**Lab Number** : 06057485  
**Unique Number** : 10823434  
**Test Package** : CONST

**Recieved** : 10 Jan 2024  
**Diagnosed** : 11 Jan 2024  
**Diagnostician** : Angela Borella

**LIEBHERR USA CO - Maritime Cranes**  
 15101 NW 112TH AVE  
 HIALEAH GARDENS, FL  
 US 33018  
 Contact: RONNY FUNK  
 ronny.funk@liebherr.com  
 T: (305)817-7566  
 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)