## LIEBHERR

### **CONSTRUCTION EQUIPMENT**

### **LIEBHERR LH50 1216-116574 - Swing Drive**

Sample No: LH0171149

Oil Type: GEAR OIL SAE 80W90

<b>5</b>					
U SAM	PLE INFOR	MATION			
Sample Number		LH0171149	LH0171121	LH0171107	LH0171093
Sample Date		29 Aug 2023	27 Apr 2023	27 Jan 2023	04 Aug 2020
Machine Hours		17910	16726	14930	2000
Oil Hours		0	0	0	0
Oil Changed		Changed	Changed	Changed	Not Changd
Sample Status		NORMAL	NORMAL	ABNORMAL	NORMAL
À .					
OIL	ONDITION				
Visc @ 40°C	cSt	<b>175</b>	O 175	O 149	<b>180</b>
-4-				_	
CON	TAMINATION	ON			
Silicon	ppm	<b>5</b>	O 2	<b>8</b>	O 2
Sodium	ppm	<b>3</b>	O 2	<b>4</b>	O 4
Potassium	ppm	<b>0</b>	O 2	0	O 1
- Marie					
<b>◎</b> WEA	R METALS				
Iron	ppm	<b>1117</b>	<b>457</b>	O 1029	<b>199</b>
Copper	ppm	<b>428</b>	O 177	0 812	O 220
Land.		<b>4</b>	0	<b>2</b> 6	O <1
Lead	ppm	<b>U T</b>			
Tin	ppm	<b>25</b>	O 15	<b>6</b> 7	O 11
				<ul><li>67</li><li>&lt;1</li></ul>	<ul><li>11</li><li>0</li></ul>
Tin	ppm	<b>25</b>	_	_	0
Tin Aluminum	ppm ppm	<ul><li>○ 25</li><li>○ 2</li></ul>	O <1		0
Tin Aluminum Chromium	ppm ppm ppm	<ul><li>○ 25</li><li>○ 2</li><li>○ 3</li></ul>	○ <1 ○ <1	○ <1 ○ 4	○ 0 ○ <1
Tin Aluminum Chromium Molybdenum	ppm ppm ppm	② 25 ② 2 ③ 3 ③ <1	○ <1 ○ <1 ○ 0	<1 4 <1	0 0 0 <1 0 <1
Tin Aluminum Chromium Molybdenum Nickel	ppm ppm ppm ppm	25 2 3 < <1 <1	<1 <1 <1 <0 0	<1 4 <1 1	0 0 <1 <1 <>1 <<1 <<1 <<1 <<1 <<1 <<1 <<1 <
Tin Aluminum Chromium Molybdenum Nickel Titanium	ppm ppm ppm ppm ppm ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1	○ <1 ○ <1 ○ 0 ○ 0 ○ 0	<1 4 <1 1 <1 <1	0 0 <1 0 <1 0 <1 <1 <1
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver	ppm ppm ppm ppm ppm ppm ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 <1 0	○ <1 ○ <1 ○ 0 ○ 0 ○ 0 ○ 0	<1 4 <1 1 <1 0	0 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 <1 0 ○ 8	○ <1 ○ <1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0	<1 4 <1 1 <1 0 8	0 0 <1 0 <1 <1 <1 <1 <2 0 2 0
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 <1 0 ○ 8	0 <1 0 <1 0 0 0 0 0 0 0 0 0 0	<1 4 <1 1 <1 0 8	0 0 <1
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 ○ 1 ○ 0 ○ 8 <1	○ <1 ○ <1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0		0 0 <1 0 <1 <1 <1 <1 <2 0 2 0
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium  Calcium	ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 ○ 1 ○ 0 ○ 8 <1	0 <1 0 <1 0 0 0 0 0 0 0 0 0 0	<pre>0 &lt;1 0 4 &lt;1 0 1 &lt;1 0 8 0</pre>	0 0 <1
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium  Calcium Magnesium	ppm	○ 25 ○ 2 ○ 3 ○ <1 ○ <1 <1 0 ○ 8 <1	0 <1 0 <1 0 0 0 0 0 0 0 3 0 0	0 <1 0 4 <1 0 1 <1 0 8 0	0 0 <1 <1 <1 <2 0 2 0 0
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium  Calcium Magnesium Zinc	ppm	25 2 3   21   3   <1   <1   <0	○ <1 ○ <1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 3 ○ 0 ○ 16 ○ 10 ○ 27	0 <1 0 4 <1 0 1 <1 0 8 0	0 0 <1





#### **BOISE WHITE PAPER**

3RD AVE AND HWY 11, 400 2ND ST INTERNATIONAL FALLS, MN US 56649

Contact: GARY MANN garymann@packagingcorp.com

T:

F: (218)285-5860

#### Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot:BOIINTUnique No:10633778Signed:Sean FeltonReport Date:08 Sep 2023

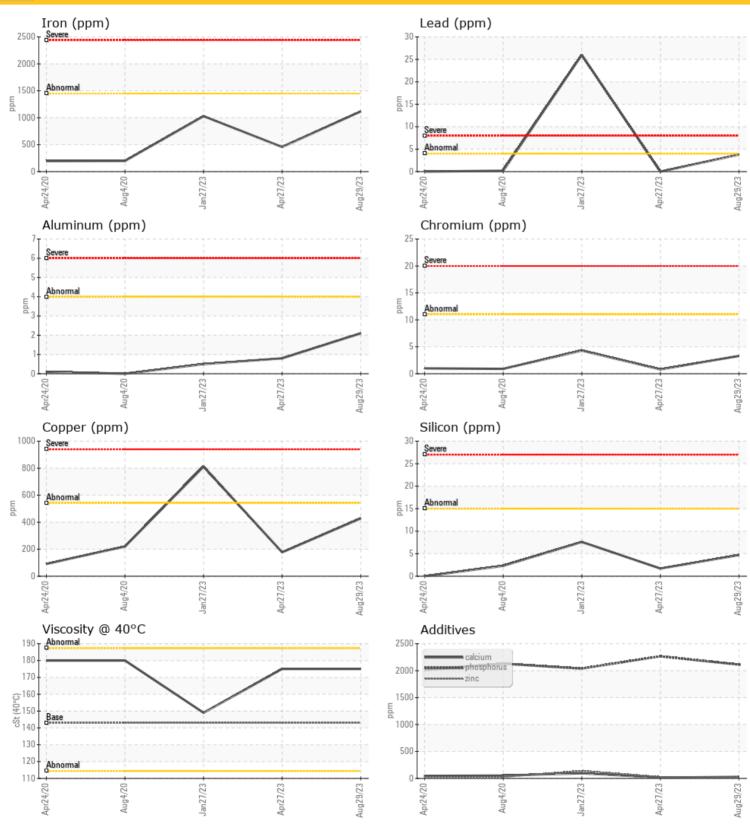
# LIEBHERR

CONSTRUCTION EQUIPMENT





#### **GRAPHS**



Report Id: BOIINT [WUSCAR] 05943166 (Generated: 09/08/2023 13:29:29) Rev: 1

Submitted By: ?