LIEBHERR

CONSTRUCTION EQUIPMENT

LIEBHERR LH50 111551-1216 - Swing Drive

Sample No: LHMC163207

Oil Type: HARTLAND 80W90 LS

ā							
SAME	PLE INFO	RMATION					
Sample Number		LHMC163207	LH0156606	LHMC163606	LHMC146013		
Sample Date		29 Aug 2023	25 Apr 2023	26 Jan 2023	06 May 2020		
Machine Hours		17705	15697	14047	4977		
Oil Hours		0	0	0	1720		
Oil Changed		Changed	Changed	Changed	N/A		
Sample Status		NORMAL	NORMAL	ABNORMAL	SEVERE		
OIL CONDITION							
Visc @ 40°C	cSt	78.0	148	149	172		
CONTAMINATION							
Water	%		0.193	0.282			
Silicon	ppm	2	3	6	3		
Sodium	ppm	1	O 0	3	O 5		
Potassium	ppm	○ <1	02	O 0	02		
WEA	R METAL	5					
Iron	ppm	40	994	O 1269	O 417		

Silicon	ppm	2	3	6	3			
Sodium	ppm	1	O 0	3	5			
Potassium	ppm	() <1	O 2	O 0	O 2			
WEAR METALS								
Iron	ppm	40	994	O 1269	O 417			
Copper	ppm	1	○ 319	676	<u>0</u> 561			
Lead	ppm	0	O 0	O 22	O 0			
Tin	ppm	0	16	4 3	5			
Aluminum	ppm	 <1	O 0	O <1	O <1			
Chromium	ppm	0	8	0 8	2			
Molybdenum	ppm	1	3	3	0			
Nickel	ppm	0	O 1	O 2	O <1			
Titanium	ppm	<1	<1	0	0			
Silver	ppm	0	0	0	0			
Manganese	ppm	<1	7	10	4			
Vanadium	ppm	<1	0	0	0			

Vanadium	ppm	<1	0	0	0
WII.					
ADI	DITIVES				
Calcium	ppm	55		118	40
Magnesium	ppm	3	1 9	41	2
Zinc	ppm	152	O 71	O 136	84
Phosphorus	ppm	784	O 1028	O 1520	1900
Barium	ppm	0	0	5	8
Boron	ppm	43	○ 23	O 110	37





BOISE WHITE PAPER

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Diagnosis

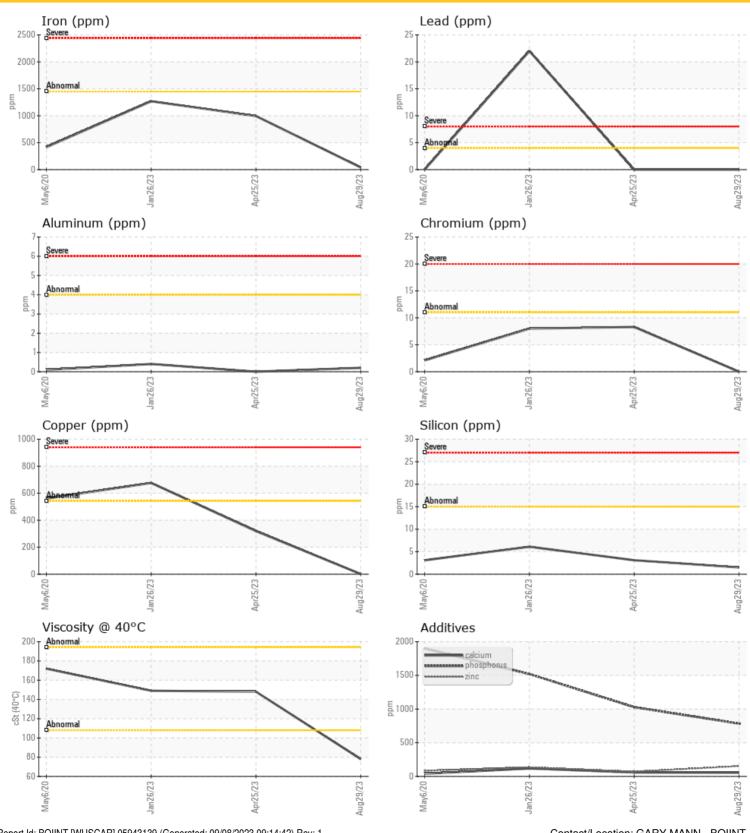
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot:BOIINTUnique No:10633751Signed:Doug BogartReport Date:08 Sep 2023





GRAPHS



Report Id: BOIINT [WUSCAR] 05943139 (Generated: 09/08/2023 09:14:42) Rev: 1

Contact/Location: GARY MANN - BOIINT