LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR LH50 1216-116574 - Front Right Wheel Hub

Sample No: LH0171124

Oil Type: MOBIL MOBILUBE SHC 75W140

BOISE WHITE PAPER
3RD AVE AND HWY 11, 400 2ND ST
INTERNATIONAL FALLS, MN
US 56649
Contact: GARY MANN
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F: (218)285-5860

SAMPLE INFORMATION

Sample Number		**LH0171124**	LH0171115	LH0171110	LH0171180
Sample Date		**29 Aug 2023**	27 Apr 2023	27 Jan 2023	03 Dec 2021
Machine Hours		**17910**	16762	14930	8820
Oil Hours		**0**	0	0	0
Oil Changed		**Changed**	Changed	Changed	Changed
Sample Status		**SEVERE**	ABNORMAL	ABNORMAL	ABNORMAL

OIL CONDITION

Visc @ 40°C	cSt	**186**	148	152	163

CONTAMINATION

Silicon	ppm	**63**	25	14	4
Sodium	ppm	**9**	7	5	3
Potassium	ppm	**4**	3	<1	<1

WEAR METALS

Iron	ppm	**1546**	698	805	152
Copper	ppm	**123**	52	57	116
Lead	ppm	**1**	0	2	<1
Tin	ppm	**0**	0	<1	<1
Aluminum	ppm	**14**	8	3	4
Chromium	ppm	**4**	4	5	<1
Molybdenum	ppm	**<1**	<1	<1	<1
Nickel	ppm	**1**	<1	1	<1
Titanium	ppm	**<1**	0	<1	0
Silver	ppm	**0**	0	0	<1
Manganese	ppm	**17**	9	8	5
Vanadium	ppm	**<1**	<1	<1	0

ADDITIVES

Calcium	ppm	**10**	14	11	11
Magnesium	ppm	**<1**	<1	2	3
Zinc	ppm	**101**	73	67	86
Phosphorus	ppm	**397**	1829	1554	1693
Barium	ppm	**0**	0	0	0
Boron	ppm	**1**	87	121	259

Diagnosis

The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.Bearing and/or gear wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Depot: BOIINT
Unique No: 10633772
Signed: Jonathan Hester
Report Date: 08 Sep 2023

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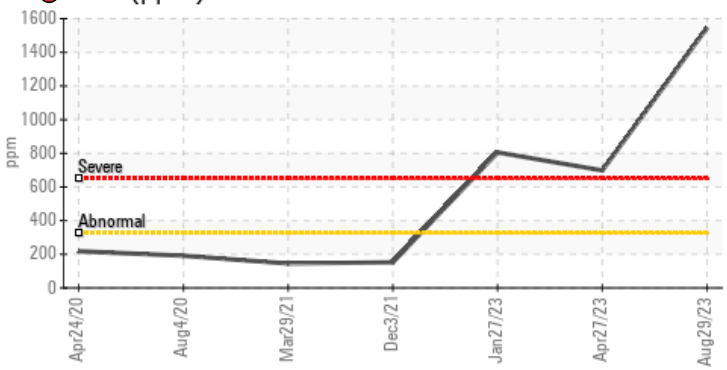
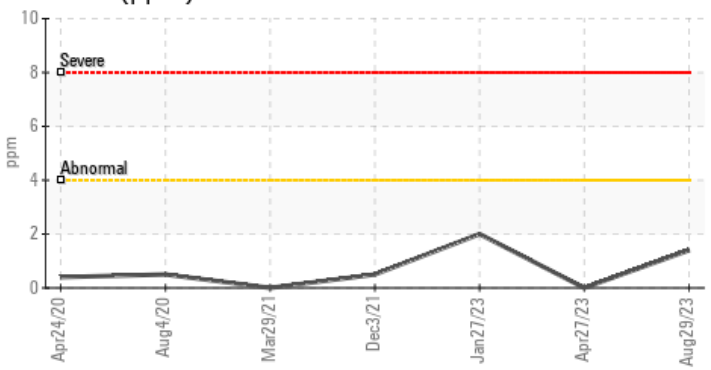
GRAPHS

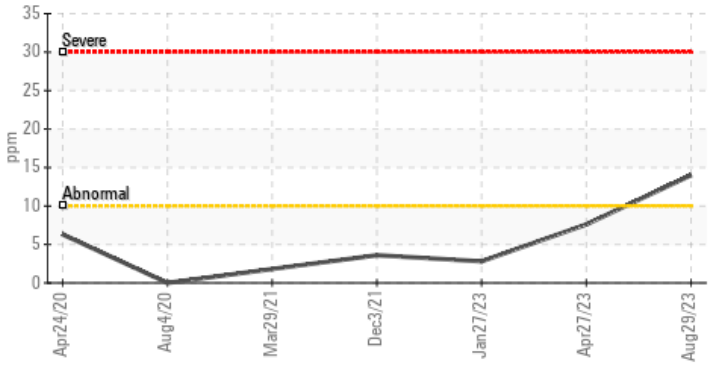
Iron (ppm)



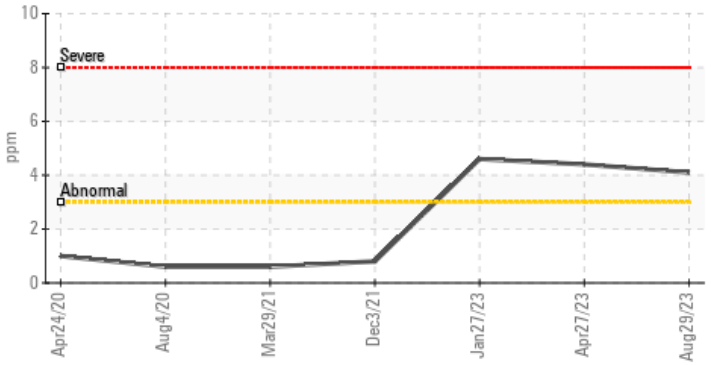
Lead (ppm)



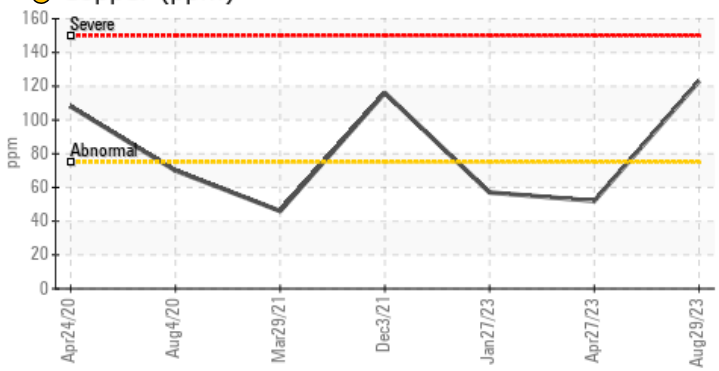
Aluminum (ppm)



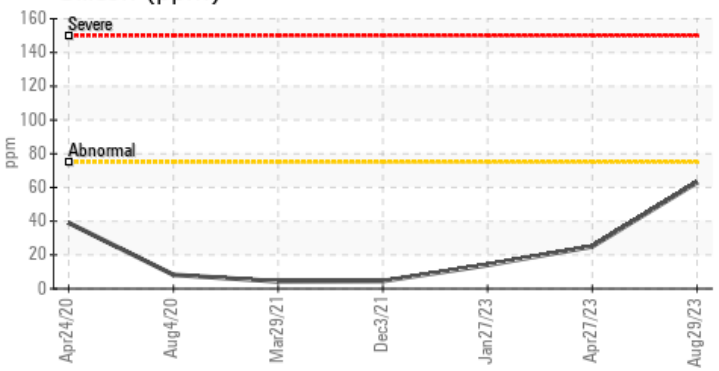
Chromium (ppm)



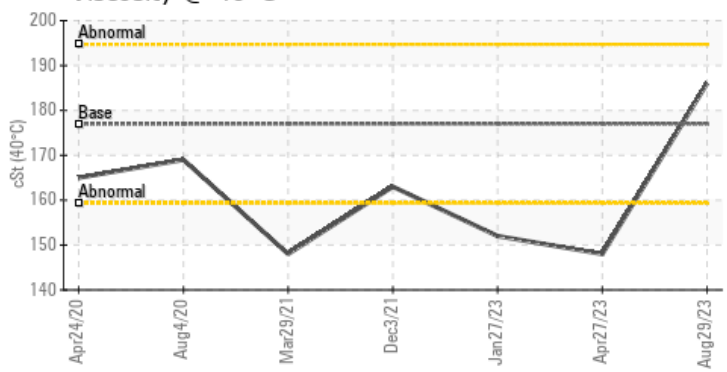
Copper (ppm)



Silicon (ppm)



Viscosity @ 40°C



Additives