

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50 1216-131051 - Diesel Engine

Sample No: LH0272172

Oil Type: DIESEL ENGINE OIL SAE 5W40



SAMPLE INFORMATION

Sample Number	LH0272172	LH0213092	LH0213022	LH0213106
Sample Date	18 Dec 2023	30 Aug 2023	25 Apr 2023	24 Jan 2023
Machine Hours	10742	9736	0	7995
Oil Hours	1000	0	0	0
Oil Changed	Changed	Changed	Not Changd	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

BOISE WHITE PAPER

3RD AVE AND HWY 11, 400 2ND ST
INTERNATIONAL FALLS, MN
US 56649
Contact: GARY MANN
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T:
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OIL CONDITION

Visc @ 100°C	cSt	13.7	13.5	13.5	13.5
Base Number (BN)	mg KOH/g	6.5	5.3	5.3	4.1
Oxidation (PA)	%	78	92	79	129



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.2
Nitration (PA)	%	83	95	80	119
Sulfation (PA)	%	63	65	58	70
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	6	8	5
Sodium	ppm	2	2	2	1
Potassium	ppm	3	2	3	0



WEAR METALS

Iron	ppm	4	10	6	14
Copper	ppm	3	6	2	4
Lead	ppm	0	0	0	<1
Tin	ppm	<1	<1	0	1
Aluminum	ppm	2	2	2	6
Chromium	ppm	<1	<1	<1	1
Molybdenum	ppm	18	18	6	10
Nickel	ppm	0	0	<1	0
Titanium	ppm	68	50	83	0
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	1	<1	<1	0



ADDITIVES

Calcium	ppm	1210	1321	1336	1188
Magnesium	ppm	759	860	754	866
Zinc	ppm	1192	1214	1229	947
Phosphorus	ppm	992	979	986	730
Barium	ppm	0	<1	0	<1
Boron	ppm	45	31	72	34

Diagnosis

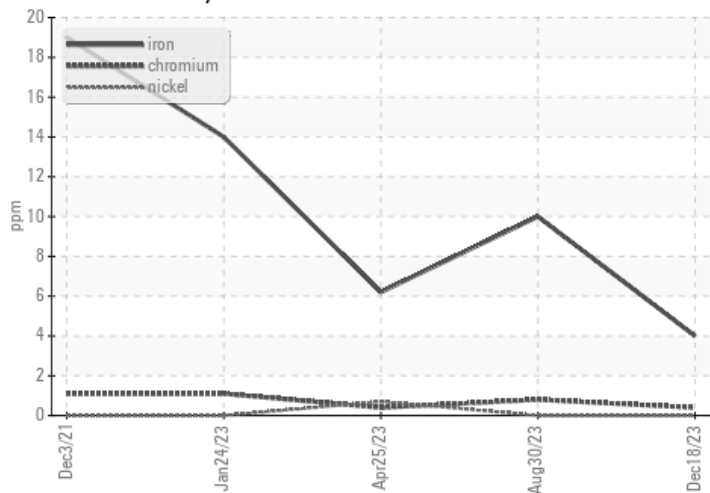
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: BOIINT
Unique No: 10844250
Signed: Wes Davis
Report Date: 23 Jan 2024

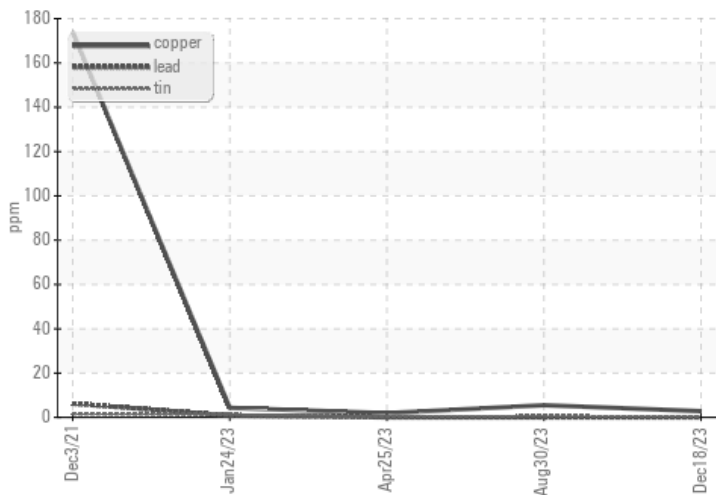


GRAPHS

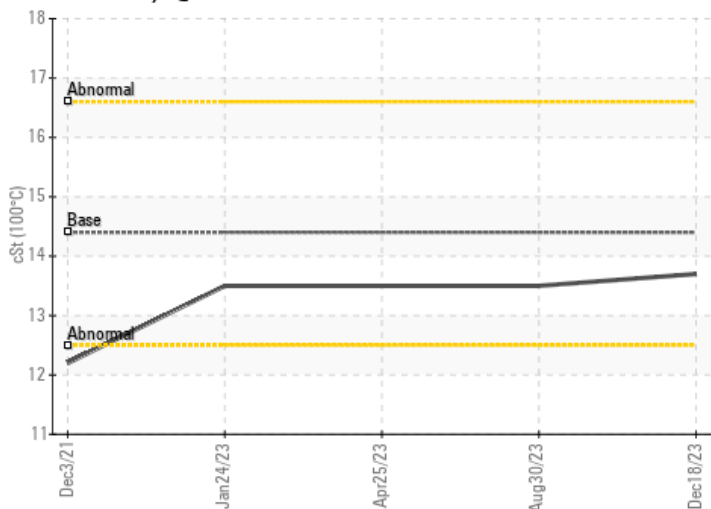
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

