

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH30 119194-1253 - Diesel Engine

Sample No: LH0243133

Oil Type: LIEBHERR MOTOROIL 5W-30 LOW ASH



SAMPLE INFORMATION

Sample Number	LH0243133	LH0243135	LH0229305	LH0190920
Sample Date	11 Jan 2024	09 Jun 2023	07 Nov 2022	12 Apr 2022
Machine Hours	7279	6258	5125	4163
Oil Hours	1021	1039	1052	1041
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	ABNORMAL

TIMBER PRODUCTS

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MUNISING, MI
US 49862
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OIL CONDITION

Visc @ 100°C	cSt	10.9	11.4	12.1	12.0
Base Number (BN)	mg KOH/g	5.3	4.7	9.0	8.8
Oxidation (PA)	%	77	85	71	95



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.6	0.1
Nitration (PA)	%	88	101	73	116
Sulfation (PA)	%	63	66	59	67
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	7	8	7	5
Sodium	ppm	4	4	1	0
Potassium	ppm	<1	<1	4	0



WEAR METALS

Iron	ppm	4	6	3	11
Copper	ppm	97	4	1	10
Lead	ppm	3	<1	<1	23
Tin	ppm	9	1	<1	1
Aluminum	ppm	<1	1	0	1
Chromium	ppm	0	0	<1	<1
Molybdenum	ppm	0	0	<1	<1
Nickel	ppm	0	0	0	0
Titanium	ppm	<1	<1	<1	0
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1197	1209	1434	2688
Magnesium	ppm	624	628	573	24
Zinc	ppm	649	669	817	851
Phosphorus	ppm	633	649	689	704
Barium	ppm	0	<1	0	0
Boron	ppm	31	35	81	15

Diagnosis

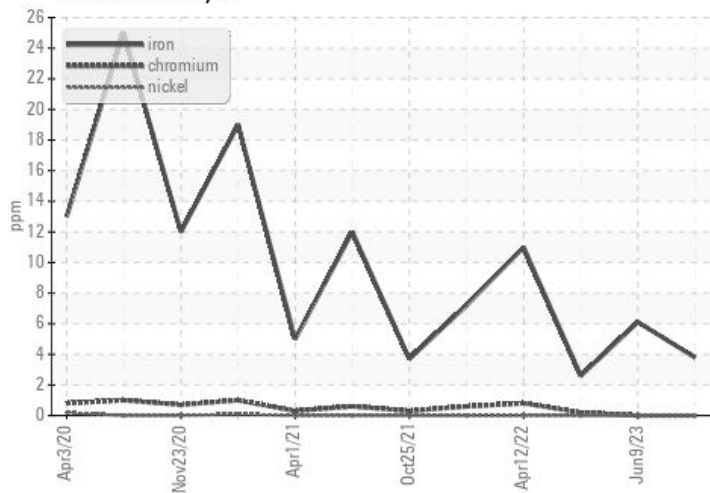
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. We recommend an early resample to monitor this condition. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Depot: TIMMUN
Unique No: 10896465
Signed: Don Baldrige
Report Date: 26 Feb 2024

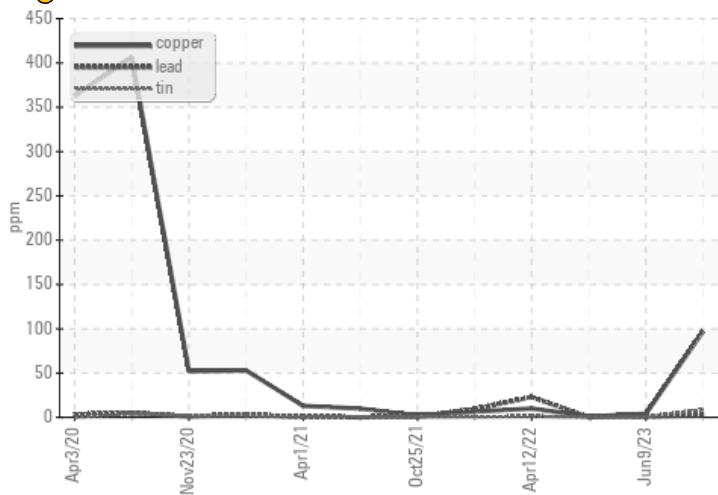


GRAPHS

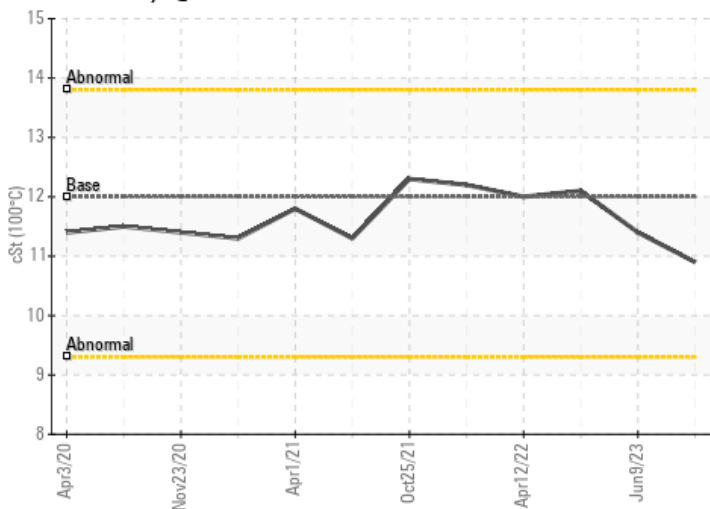
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

