

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50 142548-1216 - Diesel Engine

Sample No: LH0264768

Oil Type: DIESEL ENGINE OIL SAE 5W40



AMERICAN STATE EQUIPMENT CO.
 2400 NORTH 14TH AVENUE
 WAUSAU, WI
 US 54401
 Contact: CHRIS BARTNIK
 cbartnik@amstate.com
 T: (715)675-6900
 F: (715)675-9748



Sample Information

Sample Number	LH0264768	LH0258840	LH0272482	LH0263869
Sample Date	20 May 2024	15 Feb 2024	30 Oct 2023	20 Jul 2023
Machine Hours	3013	2537	1993	1493
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	ABNORMAL



Oil Condition

Visc @ 100°C	cSt	12.9	12.8	12.8	13.0
Base Number (BN)	mg KOH/g	7.1	7.2	6.9	7.3
Oxidation (PA)	%	56	59	57	56



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	72	72	72	72
Sulfation (PA)	%	52	54	54	52
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	9	7	9	7
Sodium	ppm	2	3	1	2
Potassium	ppm	2	0	2	2



Wear Metals

Iron	ppm	2	3	3	4
Copper	ppm	1	7	37	175
Lead	ppm	0	0	0	1
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	<1	1	2	1
Chromium	ppm	0	0	<1	0
Molybdenum	ppm	4	6	7	15
Nickel	ppm	0	0	<1	0
Titanium	ppm	88	84	81	69
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	0	1	1



Additives

Calcium	ppm	1331	1272	1338	1288
Magnesium	ppm	747	635	774	741
Zinc	ppm	1200	993	1326	1161
Phosphorus	ppm	1033	908	1061	941
Barium	ppm	0	0	0	0
Boron	ppm	146	106	87	74

Diagnosis

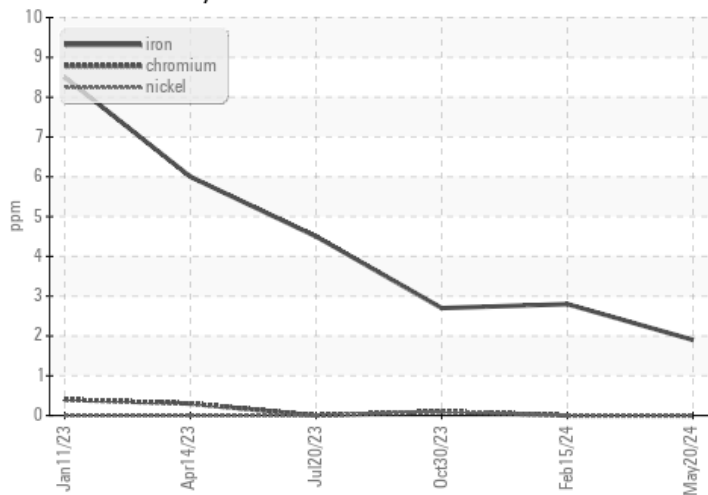
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates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

Depot: LEC0008
 Unique No: 11048367
 Signed: Angela Borella
 Report Date: 29 May 2024

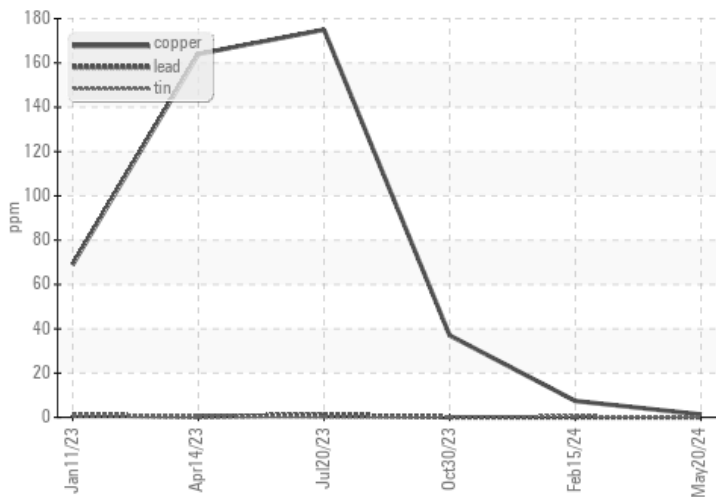


Graphs

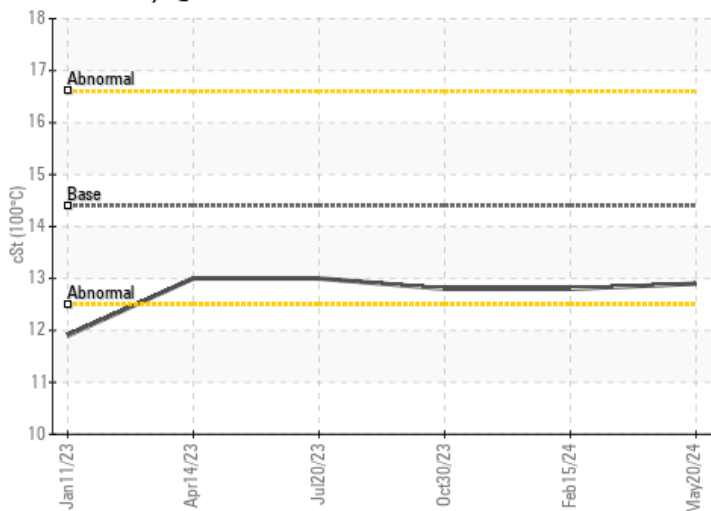
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

