

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50M 1216-98638 - Diesel Engine

Sample No: LH0268267

Oil Type: DIESEL ENGINE OIL SAE 5W40



**AMERICAN STATE EQUIPMENT CO.**  
 2055 SOUTH 108TH STREET  
 MILWAUKEE, WI  
 US 53227  
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#### SAMPLE INFORMATION

Sample Number	LH0268267	LH0263932	LH0244986	LH0220730
Sample Date	25 Jan 2024	17 Aug 2023	29 Mar 2023	29 Sep 2022
Machine Hours	13406	12191	11277	10101
Oil Hours	500	0	0	0
Oil Changed	Changed	Changed	N/A	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	12.3	12.1	12.0	10.4
Base Number (BN)	mg KOH/g	6.1	4.7	4.8	5.0
Oxidation (PA)	%	73	88	99	94



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.2	0.2	0.2
Nitration (PA)	%	85	103	107	108
Sulfation (PA)	%	63	69	76	75
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	8	10	9
Sodium	ppm	3	2	2	3
Potassium	ppm	3	2	2	2



#### WEAR METALS

Iron	ppm	3	7	9	12
Copper	ppm	0	3	1	3
Lead	ppm	<1	0	<1	3
Tin	ppm	<1	0	0	<1
Aluminum	ppm	2	1	1	3
Chromium	ppm	0	<1	0	<1
Molybdenum	ppm	2	17	5	14
Nickel	ppm	<1	0	0	0
Titanium	ppm	87	63	76	1
Silver	ppm	<1	<1	0	1
Manganese	ppm	<1	<1	<1	1
Vanadium	ppm	<1	<1	0	1



#### ADDITIVES

Calcium	ppm	1241	1237	1330	1403
Magnesium	ppm	711	781	631	540
Zinc	ppm	1166	1184	1128	904
Phosphorus	ppm	943	948	860	772
Barium	ppm	0	0	0	0
Boron	ppm	58	12	38	10

#### Diagnosis

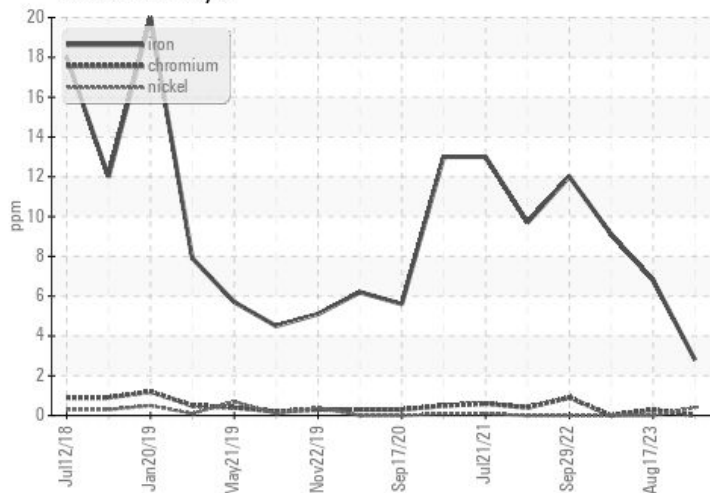
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: LEC0007  
 Unique No: 10856400  
 Signed: Sean Felton  
 Report Date: 31 Jan 2024

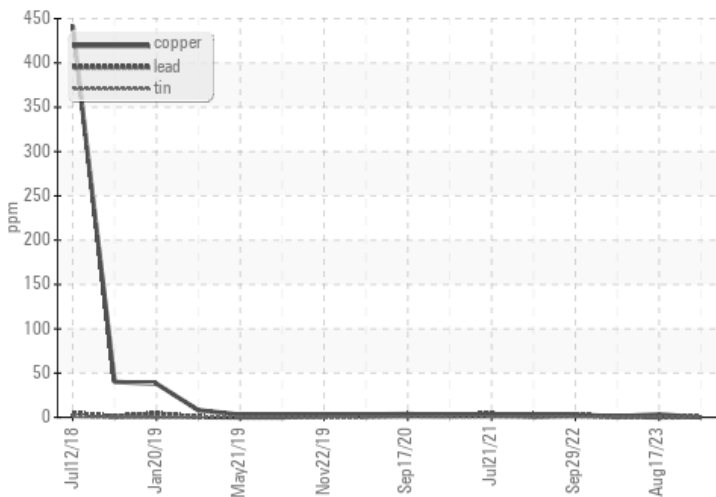


### GRAPHS

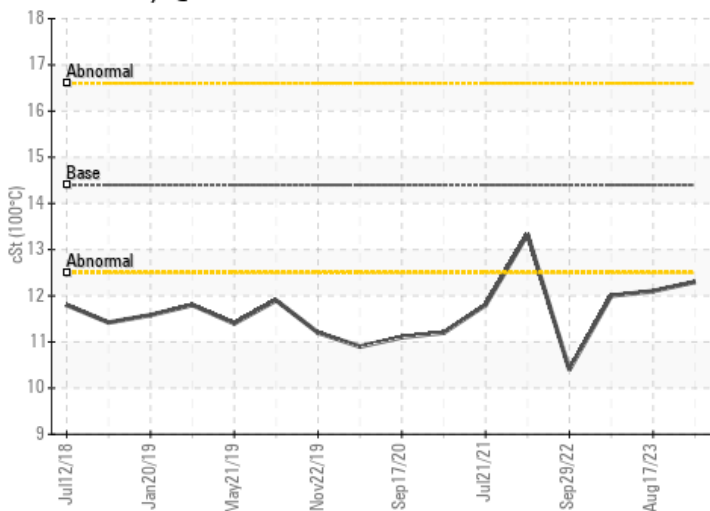
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

