

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L566 020852-460 - Diesel Engine

Sample No: LH0258845

Oil Type: DIESEL ENGINE OIL SAE 5W40



Sample Information

Sample Number	LH0258845	LHMC78755	LHMC89343	LHMC61497
Sample Date	01 Mar 2024	23 Nov 2015	18 Jul 2014	21 Aug 2012
Machine Hours	8880	4407	4014	3794
Oil Hours	500	0	250	223
Oil Changed	Changed	Changed	N/A	Changed
Sample Status	ATTENTION	NORMAL	NORMAL	NORMAL

MIDDLE RIVER MARINE
 1771 SOUTH TORRENCE AVE
 CHICAGO, IL
 US 60617
 Contact: Scott Molitor
 scottmolitor@gomiddleriver.com
 T:
 F:



Oil Condition

Visc @ 100°C	cSt	11.3	13.56	13.12	13.44
Base Number (BN)	mg KOH/g	9.4	---	---	---
Oxidation (PA)	%	77	44	40	40



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.3	0.6	0.3	0.8
Nitration (PA)	%	61	58	42	42
Sulfation (PA)	%	58	47	47	47
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	0.3	<1.0	<1.0	<1.0
Silicon	ppm	6	10	17	20
Sodium	ppm	2	12	2	2
Potassium	ppm	<1	2	6	0



Wear Metals

Iron	ppm	6	24	11	12
Copper	ppm	1	7	6	3
Lead	ppm	<1	1	0	<1
Tin	ppm	<1	0	0	0
Aluminum	ppm	2	<1	2	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	46	<1	4	5
Nickel	ppm	0	<1	0	0
Titanium	ppm	2	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



Additives

Calcium	ppm	1694	1435	2558	3316
Magnesium	ppm	582	698	6	0
Zinc	ppm	978	1161	1163	1345
Phosphorus	ppm	828	880	979	1219
Barium	ppm	0	0	0	0
Boron	ppm	57	3	22	15

Diagnosis

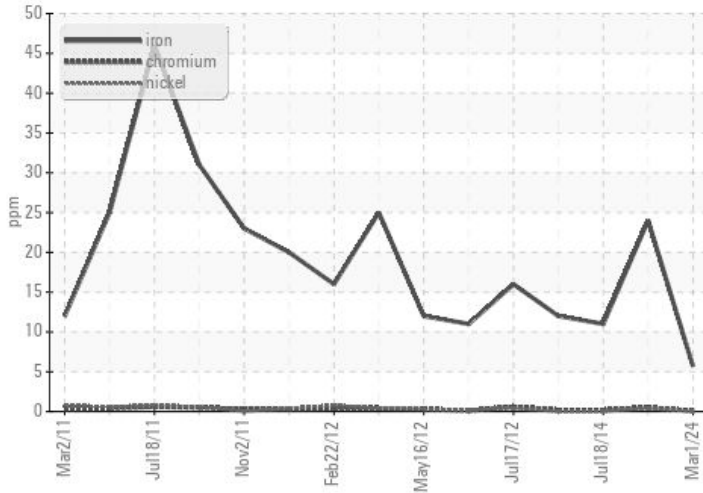
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: MIDCHIL
Unique No: 11003132
Signed: Sean Felton
Report Date: 01 May 2024

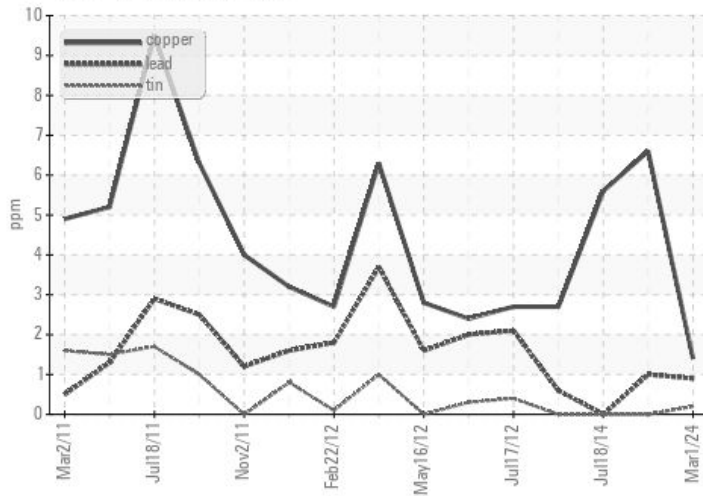


Graphs

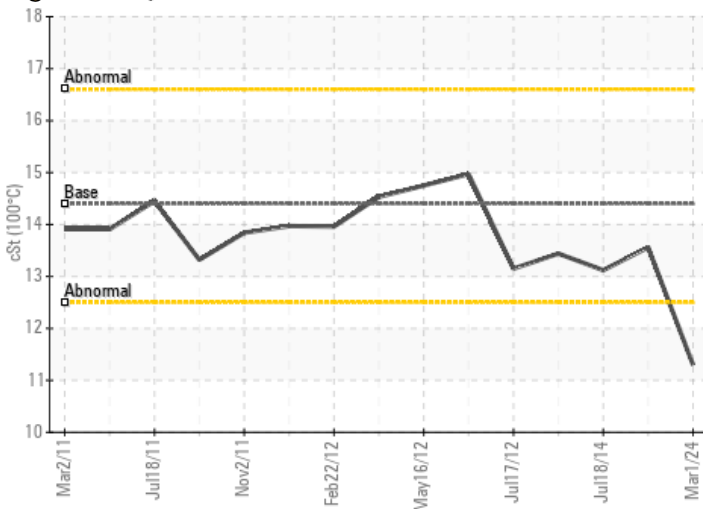
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

