

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L586 035543-461 - Diesel Engine

Sample No: LH0268793

Oil Type: DIESEL ENGINE OIL SAE 5W40



SAMPLE INFORMATION

Sample Number	LH0268793	LHMC84763	LHMC78225	LHMC84775
Sample Date	30 Jan 2024	30 Jun 2017	11 Jan 2017	05 Dec 2016
Machine Hours	17019	4001	2876	2626
Oil Hours	0	594	250	500
Oil Changed	Changed	Changed	Not Changd	Changed
Sample Status	NORMAL	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	13.3	12.36	12.39	12.24
Base Number (BN)	mg KOH/g	6.7	---	---	---
Oxidation (PA)	%	63	44	48	44



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.7	0.2	0	0.3
Nitration (PA)	%	76	50	50	50
Sulfation (PA)	%	56	44	44	44
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	7	6	8	7
Sodium	ppm	0	18	14	16
Potassium	ppm	4	0	<1	<1



WEAR METALS

Iron	ppm	13	10	4	8
Copper	ppm	2	0	<1	0
Lead	ppm	2	0	1	0
Tin	ppm	<1	7	0	0
Aluminum	ppm	1	<1	1	1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	22	38	36	44
Nickel	ppm	<1	0	<1	0
Titanium	ppm	1	21	19	24
Silver	ppm	<1	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	1293	1369	1220	1390
Magnesium	ppm	659	671	609	776
Zinc	ppm	870	1170	1038	1217
Phosphorus	ppm	796	877	997	1042
Barium	ppm	0	<1	0	0
Boron	ppm	52	3	4	13

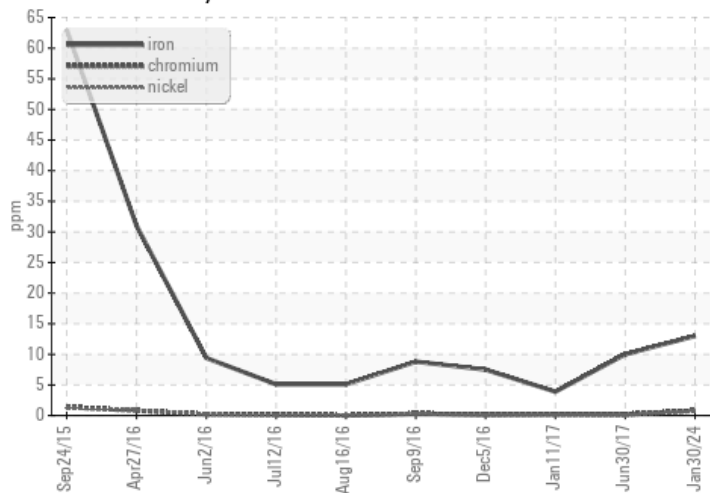
Diagnosis
 Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in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

Depot: MIDCHIL
Unique No: 10883729
Signed: Wes Davis
Report Date: 19 Feb 2024

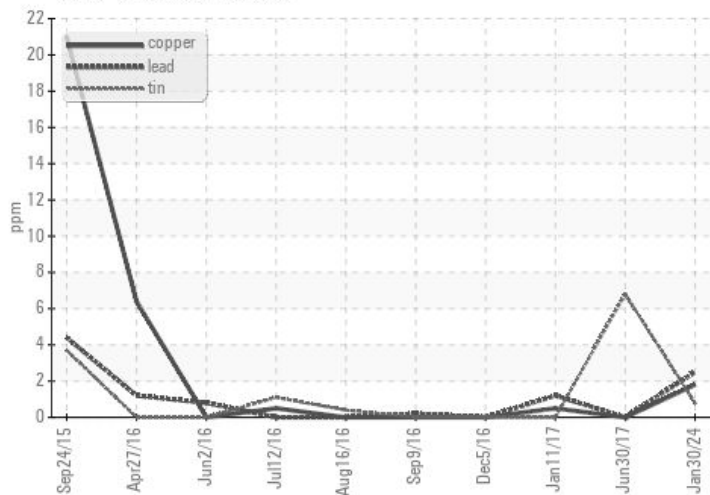


GRAPHS

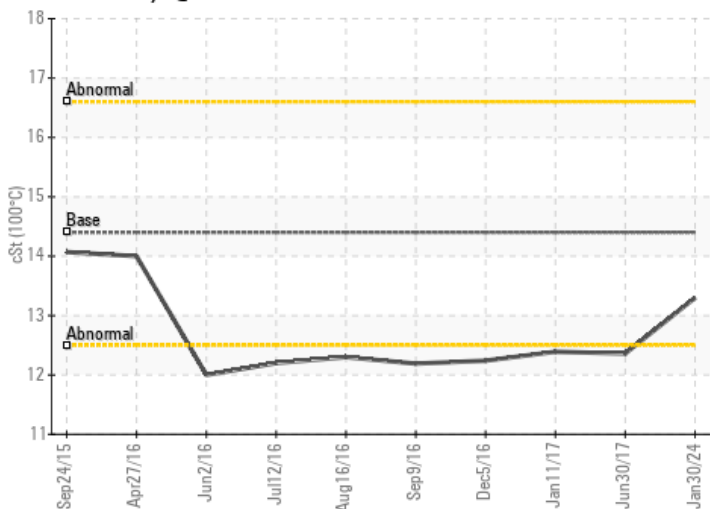
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

