

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### MS18 - Diesel Engine

Sample No: LHMC99037

Oil Type: DIESEL ENGINE OIL SAE 40



#### SAMPLE INFORMATION

Sample Number	LHMC99037	LHMC131456	LHMC119686	---
Sample Date	01 Dec 2023	03 Aug 2023	13 May 2023	---
Machine Hours	5393	4388	3734	---
Oil Hours	0	0	0	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

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#### OIL CONDITION

Visc @ 100°C	cSt	13.4	13.5	13.6	---
Base Number (BN)	mg KOH/g	4.4	7.8	5.8	---
Oxidation (PA)	%	71	62	84	---



#### CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	0.5	0.4	0.6	---
Nitration (PA)	%	80	71	94	---
Sulfation (PA)	%	58	54	66	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	4	3	6	---
Sodium	ppm	1	1	3	---
Potassium	ppm	2	2	2	---



#### WEAR METALS

Iron	ppm	25	16	30	---
Copper	ppm	2	2	4	---
Lead	ppm	0	<1	<1	---
Tin	ppm	<1	0	<1	---
Aluminum	ppm	<1	<1	0	---
Chromium	ppm	<1	<1	<1	---
Molybdenum	ppm	59	59	64	---
Nickel	ppm	<1	0	<1	---
Titanium	ppm	<1	0	<1	---
Silver	ppm	0	0	0	---
Manganese	ppm	<1	<1	<1	---
Vanadium	ppm	0	0	0	---



#### ADDITIVES

Calcium	ppm	1188	1308	1904	---
Magnesium	ppm	927	971	550	---
Zinc	ppm	1286	1360	1382	---
Phosphorus	ppm	994	1033	1008	---
Barium	ppm	3	0	0	---
Boron	ppm	8	9	41	---

#### Diagnosis

Resample at the next service interval to monitor. Please specify the component make and model with 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: OSCLAF

Unique No: 10780915

Signed: Wes Davis

Report Date: 12 Dec 2023



### GRAPHS

