

LIEBHERR

CONSTRUCTION EQUIPMENT



[[S20230806040203]] LIEBHERR TA230 4161 - Rear Axle

Sample No: LH06059592

Oil Type: GEAR OIL SAE 80W90



HEAVY MACHINES INC.
 3930 EAST RAINES RD
 MEMPHIS, TN
 US 38118
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SAMPLE INFORMATION

Sample Number	LH06059592	---	---	---
Sample Date	28 Dec 2023	---	---	---
Machine Hours	2804	---	---	---
Oil Hours	0	---	---	---
Oil Changed	N/A	---	---	---
Sample Status	ABNORMAL	---	---	---



OIL CONDITION

Visc @ 40°C	cSt	● 63.5	---	---	---
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CONTAMINATION

Water	%	NEG	---	---	---
Silicon	ppm	● 10	---	---	---
Sodium	ppm	● 13	---	---	---
Potassium	ppm	● 2	---	---	---



WEAR METALS

Iron	ppm	● 177	---	---	---
Copper	ppm	● 91	---	---	---
Lead	ppm	● 1	---	---	---
Tin	ppm	● 4	---	---	---
Aluminum	ppm	● 2	---	---	---
Chromium	ppm	● 2	---	---	---
Molybdenum	ppm	● <1	---	---	---
Nickel	ppm	● 9	---	---	---
Titanium	ppm	<1	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	● 29	---	---	---
Vanadium	ppm	0	---	---	---



ADDITIVES

Calcium	ppm	● 3590	---	---	---
Magnesium	ppm	● 10	---	---	---
Zinc	ppm	● 1516	---	---	---
Phosphorus	ppm	● 1246	---	---	---
Barium	ppm	● 4	---	---	---
Boron	ppm	● 126	---	---	---

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. The copper level is abnormal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. Additive levels indicate the addition of a different brand, or type of oil. Confirm oil type.

Depot: LEC0051
 Unique No: 10830974
 Signed: Jonathan Hester
 Report Date: 16 Jan 2024



GRAPHS

