

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR TA230 40305 (S/N 149809-1513) - Diesel Engine

Sample No: LH0264570

Oil Type: LIEBHERR MOTOROIL 10W-40 LOW ASH



LIEBHERR EQUIPMENT SOURCE
 8200 FAYETTEVILLE ROAD
 RALEIGH, NC
 US 27603
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Sample Information

Sample Number	LH0264570	---	---	---
Sample Date	01 Apr 2024	---	---	---
Machine Hours	650	---	---	---
Oil Hours	650	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	ABNORMAL	---	---	---



Oil Condition

Visc @ 100°C	cSt	11.52	---	---	---
Base Number (BN)	mg KOH/g	5.2	---	---	---
Oxidation (PA)	%	173	---	---	---



Contamination

Water	%	NEG	---	---	---
Soot %	%	0.1	---	---	---
Nitration (PA)	%	91	---	---	---
Sulfation (PA)	%	96	---	---	---
Glycol	%	NEG	---	---	---
Fuel	%	0.9	---	---	---
Silicon	ppm	17	---	---	---
Sodium	ppm	6	---	---	---
Potassium	ppm	2	---	---	---



Wear Metals

Iron	ppm	11	---	---	---
Copper	ppm	392	---	---	---
Lead	ppm	0	---	---	---
Tin	ppm	3	---	---	---
Aluminum	ppm	6	---	---	---
Chromium	ppm	0	---	---	---
Molybdenum	ppm	33	---	---	---
Nickel	ppm	0	---	---	---
Titanium	ppm	<1	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	3	---	---	---
Vanadium	ppm	0	---	---	---



Additives

Calcium	ppm	1302	---	---	---
Magnesium	ppm	853	---	---	---
Zinc	ppm	865	---	---	---
Phosphorus	ppm	750	---	---	---
Barium	ppm	28	---	---	---
Boron	ppm	109	---	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in. Fuel content negligible. 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.

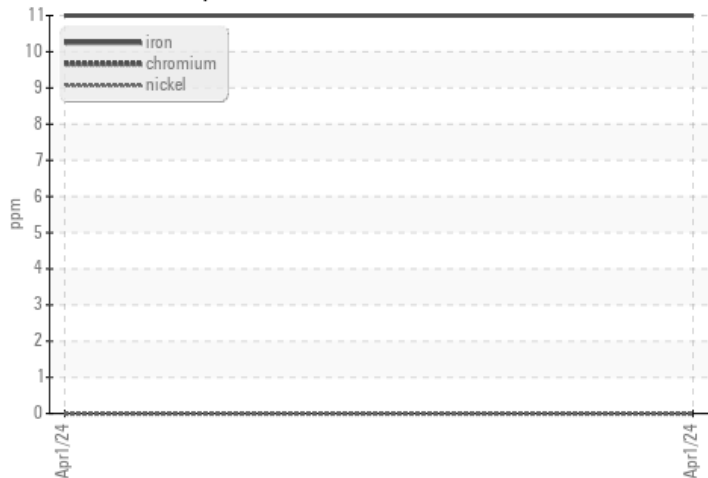
Depot: LIEBHERRNC
 Unique No: 10956525
 Signed: Jonathan Hester
 Report Date: 11 Apr 2024

Submitted By: TAYLOR BLALOCK

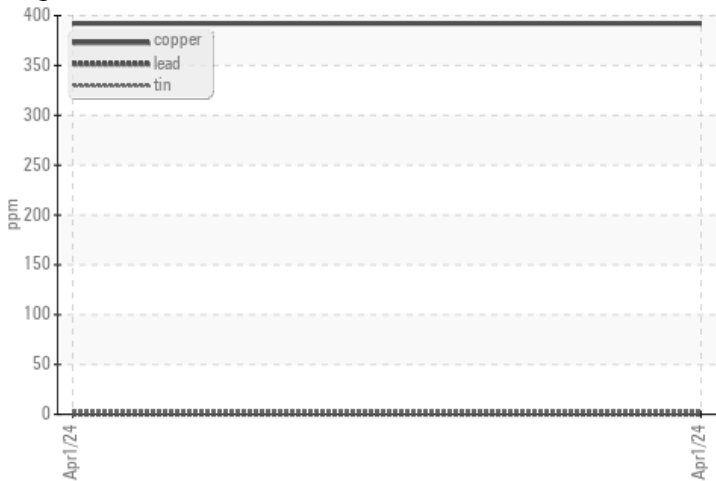


Graphs

Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

