

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR 24459 - Hydraulic System

Sample No: LH0220491

Oil Type: LIEBHERR HYDRAULIC HVI



#### SAMPLE INFORMATION

Sample Number	LH0220491	LH0220488	LH0220481	---
Sample Date	19 Jun 2023	28 Apr 2023	23 Mar 2023	---
Machine Hours	1526	936	464	---
Oil Hours	1526	936	464	---
Oil Changed	Not Changd	Not Changd	Not Changd	---
Sample Status	NORMAL	ATTENTION	ABNORMAL	---

**LIEBHERR MINING EQUIPMENT CO**  
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#### OIL CONDITION

Visc @ 40°C	cSt	● 44.9	● 45.5	46.2	---
Acid Number (AN)	mg KOH/g	● 1.27	● 1.29	● 1.37	---



#### CONTAMINATION

Particles >4µm		● 2472	● 26787	● 108798	---
Particles >6µm		● 643	● 2317	● 19714	---
Particles >14µm		● 56	● 53	● 99	---
ISO 4406:1999 (c)		18/17/13	22/18/13	24/21/14	---
Silicon	ppm	● 5	● 5	● 6	---
Sodium	ppm	● 3	● 3	● 1	---
Potassium	ppm	● 1	● 2	● 1	---



#### WEAR METALS

Iron	ppm	● 19	● 17	● 14	---
Copper	ppm	● 9	● 8	● 7	---
Lead	ppm	● 1	● 1	● <1	---
Tin	ppm	● <1	● 0	● 0	---
Aluminum	ppm	● <1	● 0	● 1	---
Chromium	ppm	● <1	● <1	● <1	---
Molybdenum	ppm	● 0	● 0	● <1	---
Nickel	ppm	● <1	● 0	● 0	---
Titanium	ppm	0	0	0	---
Silver	ppm	0	0	0	---
Manganese	ppm	● <1	● <1	● <1	---
Vanadium	ppm	0	0	0	---



#### ADDITIVES

Calcium	ppm	● 1363	● 1369	● 1373	---
Magnesium	ppm	● 2	● 4	● 5	---
Zinc	ppm	● 685	● 740	● 704	---
Phosphorus	ppm	● 599	● 620	● 601	---
Barium	ppm	● 0	● 0	● 0	---
Boron	ppm	● 0	● 0	● 0	---

#### Diagnosis

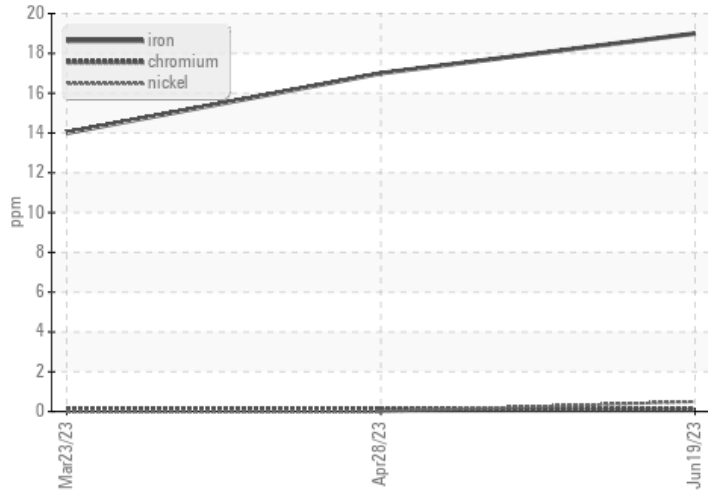
Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Depot: LIEGIL  
 Unique No: 10546660  
 Signed: Wes Davis  
 Report Date: 06 Jul 2023

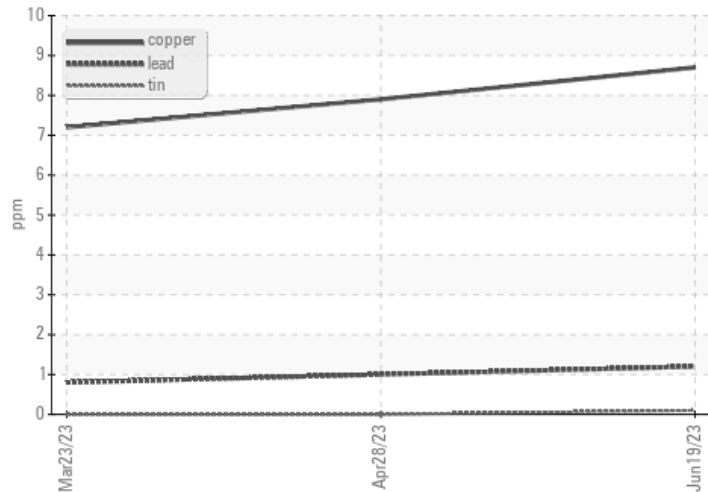


### GRAPHS

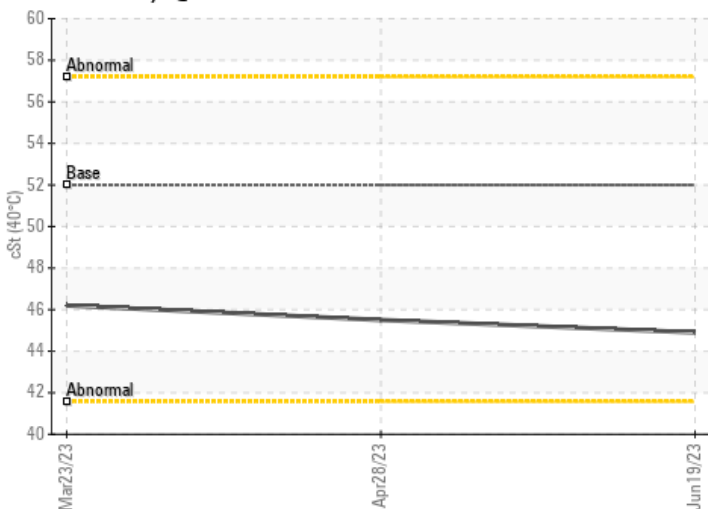
#### Ferrous Alloys



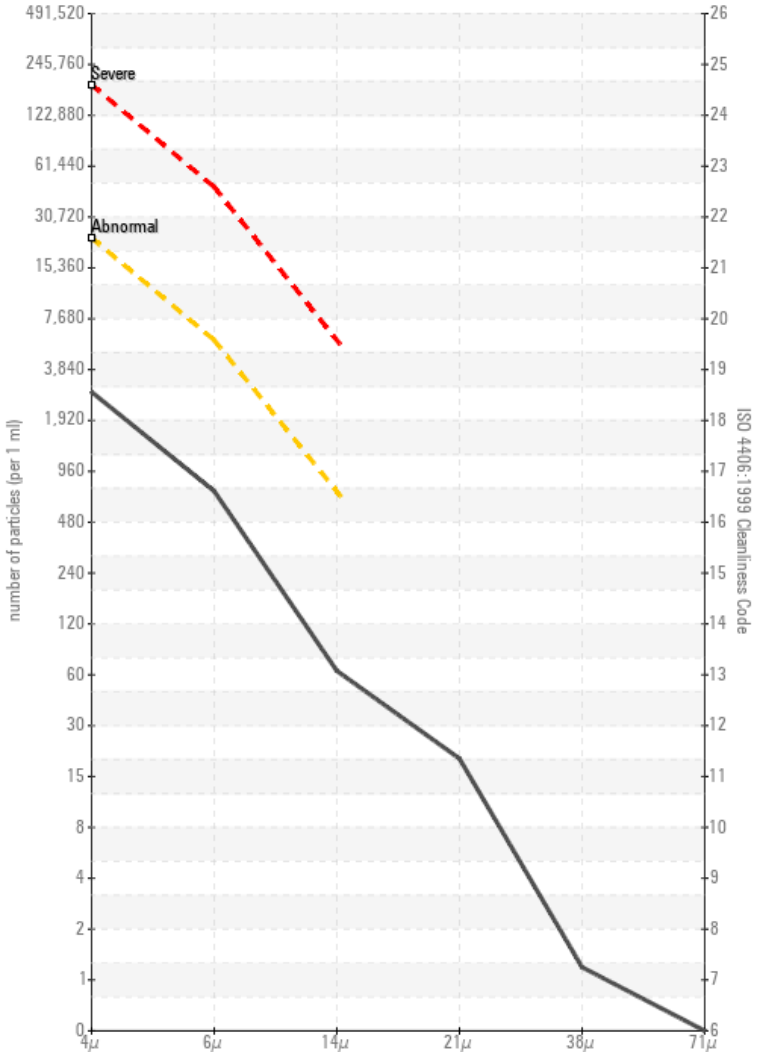
#### Non-ferrous Metals



#### Viscosity @ 40°C



#### Particle Count



#### Acid Number

