

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR PR776 021879-1860 - Hydraulic System

Sample No: LH0172173

Oil Type: LIEBHERR HYDRAULIC HVI



LIEBHERR MINING EQUIPMENT CO
 5800 S DOUGLAS HWY
 GILLETTE, WY
 US 82718
 Contact: TED PILZ
 ted.pilz@liebherr.com
 T: (775)388-0663
 F:



Sample Information

Sample Number	LH0172173	LH0174050	LHMC129579	LH05725781
Sample Date	24 May 2024	10 Oct 2023	01 Feb 2023	26 Dec 2022
Machine Hours	4337	2436	1470	1000
Oil Hours	0	0	0	0
Oil Changed	N/A	Not Changd	N/A	N/A
Sample Status	NORMAL	ATTENTION	ABNORMAL	ATTENTION



Oil Condition

Visc @ 40°C	cSt	44.0	48.8	44.4	44.6
Acid Number (AN)	mg KOH/g	1.14	1.50	1.18	1.30



Contamination

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		11346	36357	---	31317
Particles >6µm		863	3772	---	2436
Particles >14µm		18	60	---	110
ISO 4406:1999 (c)		21/17/11	22/19/13	---	22/18/14
Silicon	ppm	4	6	5	4
Sodium	ppm	9	10	5	3
Potassium	ppm	1	3	<1	0



Wear Metals

Iron	ppm	12	20	31	20
Copper	ppm	11	9	9	8
Lead	ppm	<1	1	2	2
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	2	3	1	1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	<1	0	<1	<1
Nickel	ppm	0	<1	<1	0
Titanium	ppm	<1	<1	0	0
Silver	ppm	0	<1	<1	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	0	0



Additives

Calcium	ppm	1935	2602	1860	1646
Magnesium	ppm	6	14	7	7
Zinc	ppm	851	1194	849	762
Phosphorus	ppm	749	989	686	673
Barium	ppm	0	0	0	0
Boron	ppm	0	1	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.

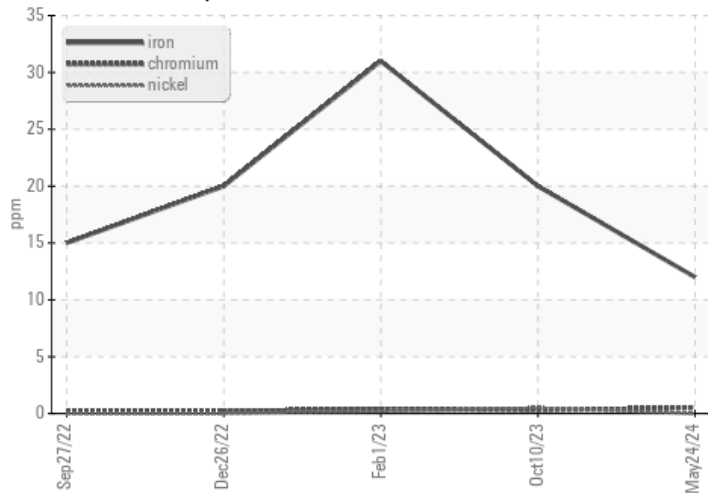
Depot: LIEGIL
 Unique No: 11072785
 Signed: Wes Davis
 Report Date: 12 Jun 2024

Contact/Location: TED PILZ - LIEGIL

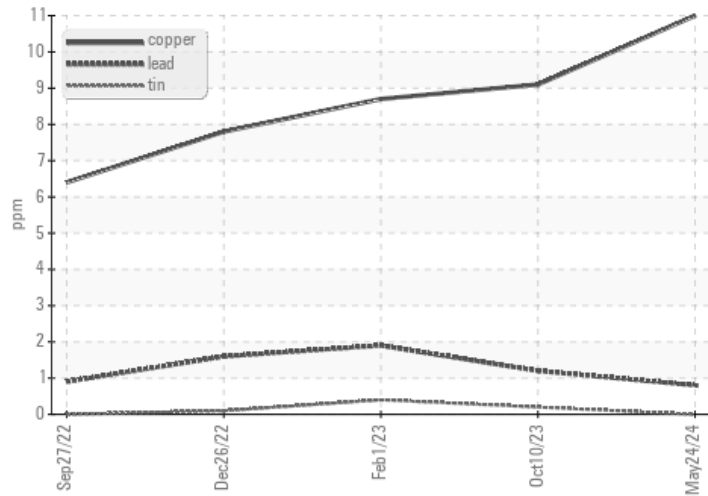


Graphs

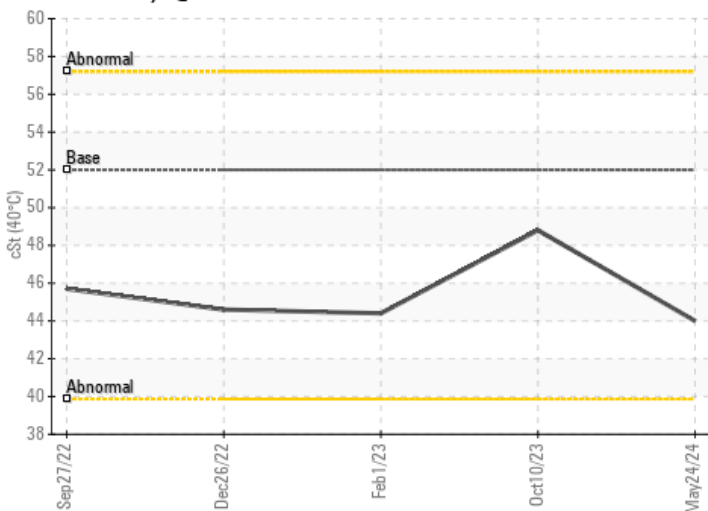
Ferrous Alloys



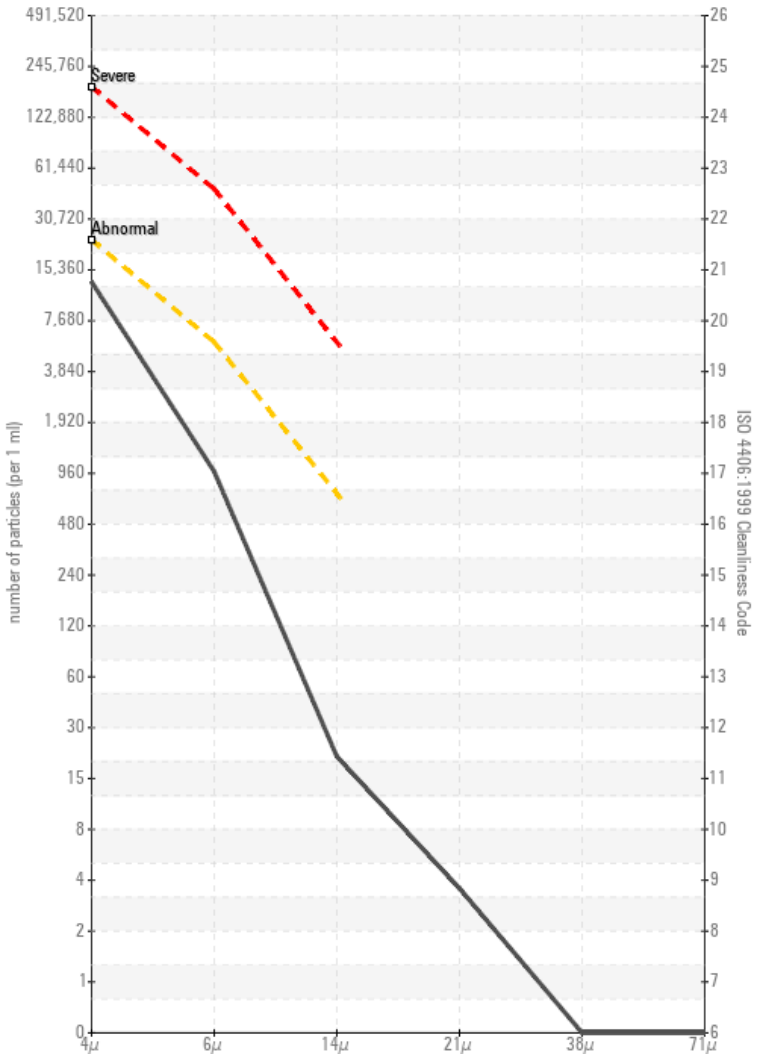
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number

