LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR R920 050017-1705 - Hydraulic System

Sample No: LH0258276

Oil Type: LIEBHERR HYDRAULIC HVI

POTOMAC METALS
42702 DULLES TRADE CT
STERLING, VA
US 20166
Contact: JEREMY WONG
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T: (703)430-3667
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SAMPLE INFORMATION

Sample Number		**LH0258276**	LH0229828	LH0243924	LH0229864
Sample Date		**24 Aug 2023**	04 Apr 2023	24 Jan 2023	26 Oct 2022
Machine Hours		**3122**	2127	1614	1042
Oil Hours		**3122**	2127	1614	0
Oil Changed		**Not Changd**	Not Changd	Not Changd	Not Changd
Sample Status		**ABNORMAL**	ABNORMAL	NORMAL	NORMAL

OIL CONDITION

Visc @ 40°C	cSt	**42.4**	42.5	42.3	43.6
Acid Number (AN)	mg KOH/g	**0.88**	0.62	0.971	0.97

CONTAMINATION

Particles >4µm		**48246**	52416	5613	8988
Particles >6µm		**7783**	10846	1101	1489
Particles >14µm		**111**	222	36	21
ISO 4406:1999 (c)		**23/20/14**	23/21/15	20/17/12	20/18/12
Silicon	ppm	**9**	7	7	8
Sodium	ppm	**6**	2	2	4
Potassium	ppm	**2**	<1	0	0

WEAR METALS

Iron	ppm	**55**	27	16	11
Copper	ppm	**10**	6	6	6
Lead	ppm	**1**	0	0	<1
Tin	ppm	**<1**	0	0	0
Aluminum	ppm	**1**	<1	<1	1
Chromium	ppm	**<1**	<1	0	<1
Molybdenum	ppm	**0**	0	<1	<1
Nickel	ppm	**0**	0	0	0
Titanium	ppm	**0**	0	0	0
Silver	ppm	**0**	0	0	0
Manganese	ppm	**1**	<1	<1	<1
Vanadium	ppm	**0**	0	0	0

ADDITIVES

Calcium	ppm	**1104**	1230	1244	1121
Magnesium	ppm	**12**	12	12	7
Zinc	ppm	**625**	617	623	527
Phosphorus	ppm	**510**	496	503	447
Barium	ppm	**0**	0	0	0
Boron	ppm	**0**	0	0	0

Diagnosis

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.The iron level is abnormal. All other component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Depot: POTSTE
Unique No: 10702782
Signed: Don Baldridge
Report Date: 24 Oct 2023

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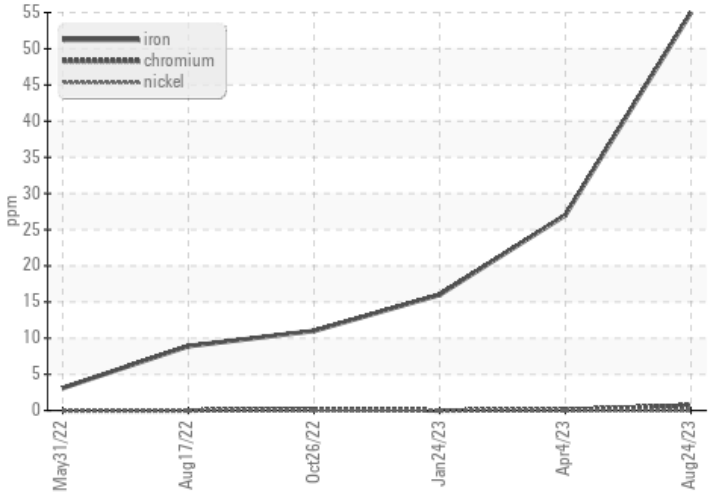
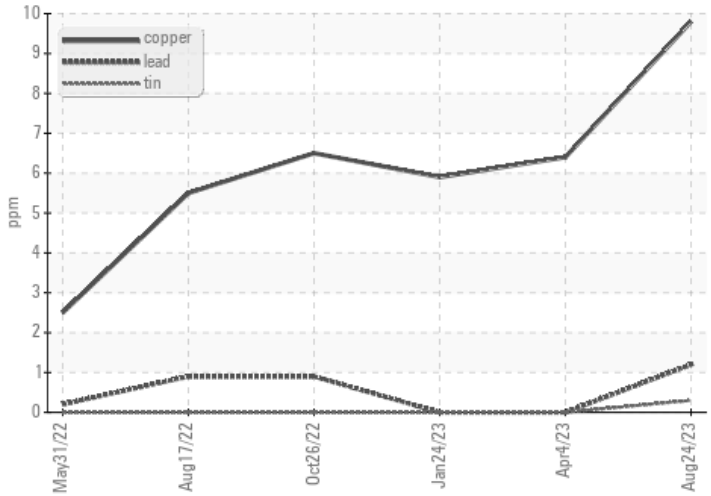
GRAPHS

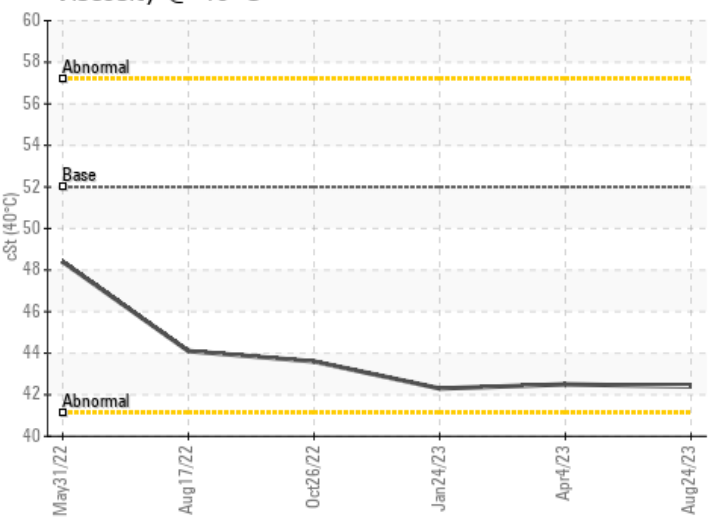
Ferrous Alloys



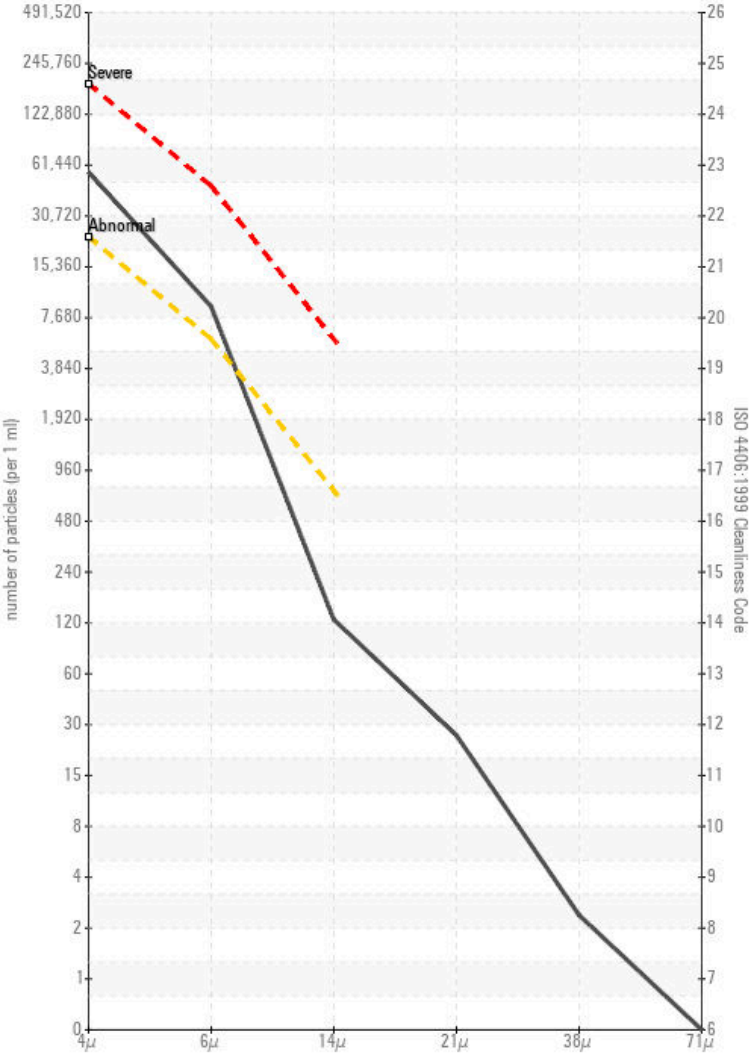
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number