LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR A944CHD 051846-194 - Hydraulic System

Sample No: LH0207979

Oil Type: AW HYDRAULIC OIL ISO 46

NILES IRON & METAL CO. INC.
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NILES, OH
US 44446
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SAMPLE INFORMATION

Sample Number		**LH0207979**	LH0207274	LH0171894	LH0171876
Sample Date		**19 Jun 2023**	15 Nov 2021	02 Apr 2021	09 Oct 2020
Machine Hours		**31579**	27641	25997	24810
Oil Hours		**0**	0	0	0
Oil Changed		**Not Changd**	Not Changd	Not Changd	Not Changd
Sample Status		**NORMAL**	ATTENTION	NORMAL	ABNORMAL

OIL CONDITION

Visc @ 40°C	cSt	**43.9**	44.1	43.6	44.8
Acid Number (AN)	mg KOH/g	**0.35**	0.540	0.469	0.472

CONTAMINATION

Particles >4µm		**6996**	39064	17107	40553
Particles >6µm		**448**	2050	710	1723
Particles >14µm		**11**	15	24	21
ISO 4406:1999 (c)		**20/16/11**	22/18/11	21/17/12	23/18/12
Silicon	ppm	**<1**	<1	<1	<1
Sodium	ppm	**1**	0	0	0
Potassium	ppm	**3**	<1	<1	<1

WEAR METALS

Iron	ppm	**6**	10	14	12
Copper	ppm	**<1**	<1	1	2
Lead	ppm	**0**	<1	<1	<1
Tin	ppm	**0**	0	<1	<1
Aluminum	ppm	**<1**	0	0	0
Chromium	ppm	**1**	5	11	9
Molybdenum	ppm	**<1**	2	2	<1
Nickel	ppm	**0**	0	0	0
Titanium	ppm	**<1**	<1	<1	<1
Silver	ppm	**0**	<1	<1	<1
Manganese	ppm	**0**	<1	<1	<1
Vanadium	ppm	**<1**	0	0	0

ADDITIVES

Calcium	ppm	**92**	168	145	142
Magnesium	ppm	**13**	25	29	33
Zinc	ppm	**460**	515	501	511
Phosphorus	ppm	**360**	407	403	427
Barium	ppm	**0**	0	0	0
Boron	ppm	**0**	9	8	8

Diagnosis

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Depot: NILNIL
Unique No: 10559339
Signed: Don Baldridge
Report Date: 17 Jul 2023

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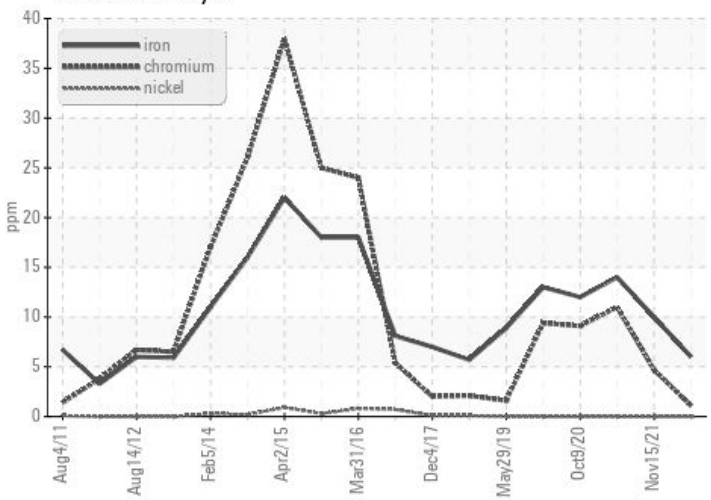
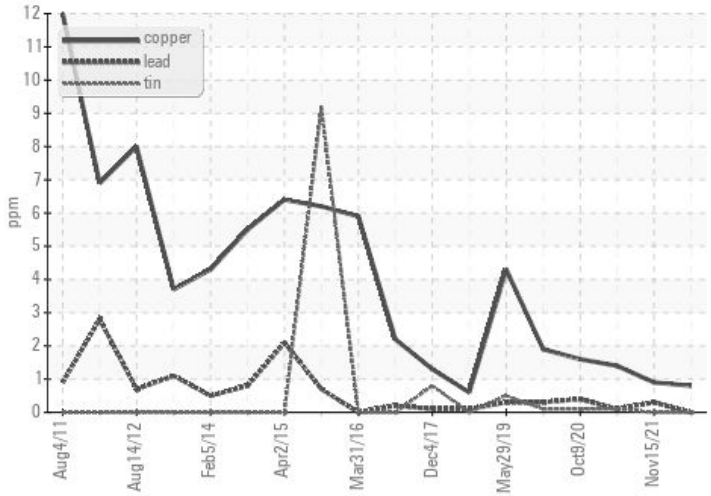
GRAPHS

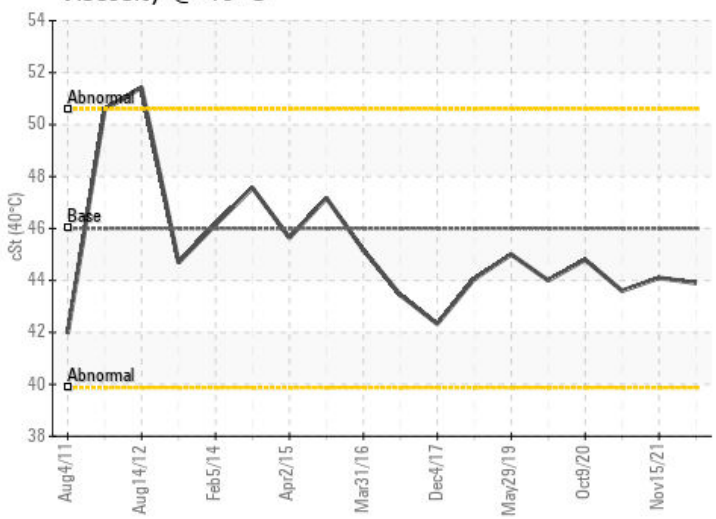
Ferrous Alloys



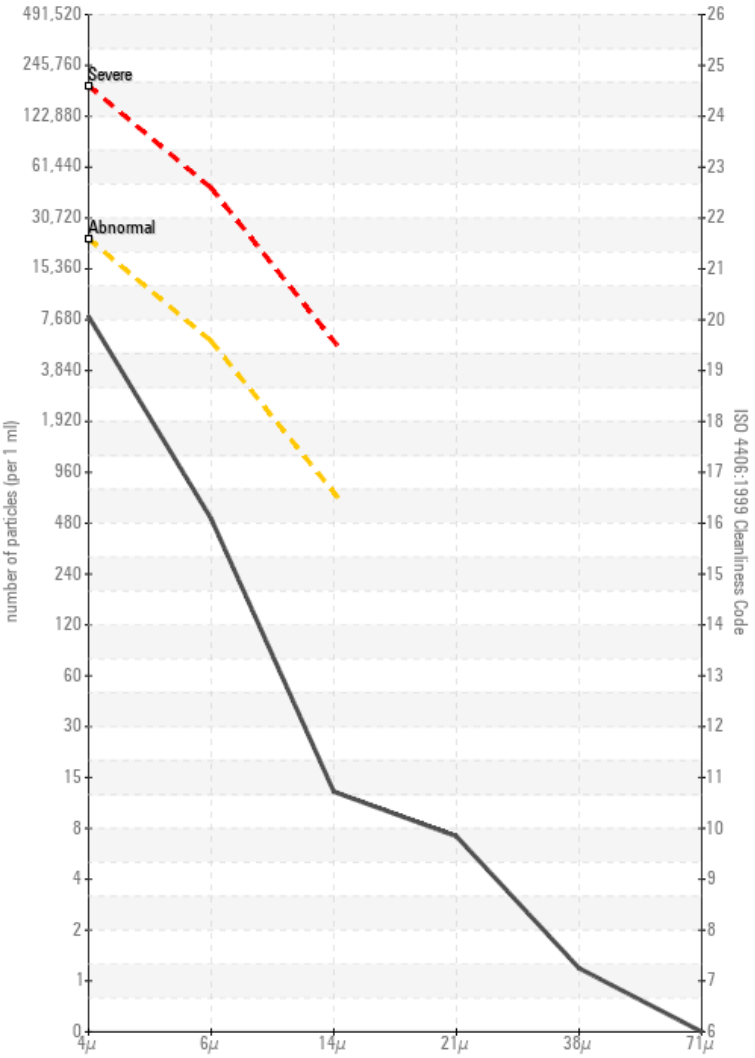
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number