LIEBHERR
CONSTRUCTION EQUIPMENT

[[RO606420]] LIEBHERR LH30 124150 - Hydraulic System

Sample No: LH0174470

Oil Type: LIEBHERR HYDRAULIC HVI

ORION EQUIPMENT
3909 NW FRUIT VALLEY RD
VANCOUVER, WA
US 98660
Contact: KEITH OKAMOTO
kokamoto@orion-equip.com
T: (360)694-7157
F:

Sample Information

Sample Number		**LH0174470**	LH0174471	LH0229808	LH0208116
Sample Date		**29 Mar 2024**	29 Mar 2024	05 Aug 2022	28 Mar 2022
Machine Hours		**6460**	6460	3000	2500
Oil Hours		**0**	0	3000	2500
Oil Changed		**N/A**	N/A	Not Changd	Not Changd
Sample Status		**ABNORMAL**	ABNORMAL	NORMAL	ABNORMAL

Oil Condition

Visc @ 40°C	cSt	**44.5**	44.0	43.4	43.0
Acid Number (AN)	mg KOH/g	**0.46**	0.47	1.11	0.75

Contamination

Water	%	**NEG**	NEG	NEG	NEG
Particles >4µm		**6253**	9665	12150	2387
Particles >6µm		**600**	399	1569	492
Particles >14µm		**4**	8	73	31
ISO 4406:1999 (c)		**20/16/9**	20/16/10	21/18/13	18/16/12
Silicon	ppm	**1**	1	1	2
Sodium	ppm	**2**	<1	0	2
Potassium	ppm	**2**	1	0	1

Wear Metals

Iron	ppm	**78**	80	31	58
Copper	ppm	**4**	5	3	4
Lead	ppm	**1**	2	<1	1
Tin	ppm	**<1**	1	0	1
Aluminum	ppm	**<1**	1	<1	1
Chromium	ppm	**<1**	1	1	<1
Molybdenum	ppm	**0**	1	0	<1
Nickel	ppm	**<1**	<1	0	1
Titanium	ppm	**0**	<1	0	<1
Silver	ppm	**0**	<1	<1	<1
Manganese	ppm	**2**	2	<1	<1
Vanadium	ppm	**0**	<1	0	<1

Additives

Calcium	ppm	**335**	323	1329	770
Magnesium	ppm	**14**	11	3	11
Zinc	ppm	**376**	359	640	497
Phosphorus	ppm	**330**	353	566	415
Barium	ppm	**0**	<1	0	0
Boron	ppm	**0**	0	0	1

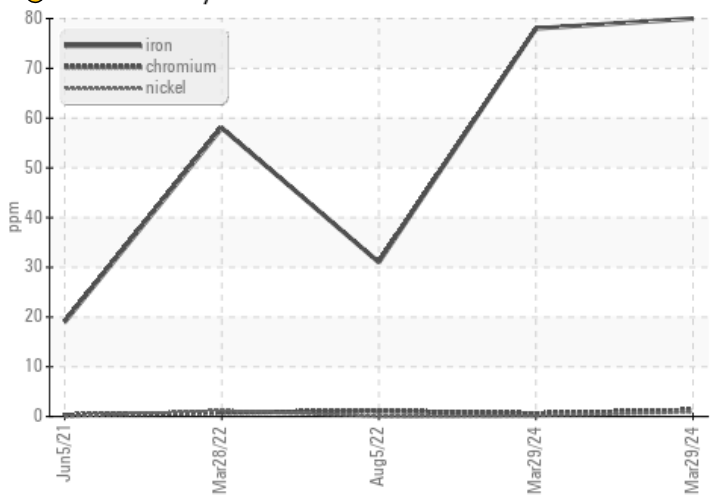
Diagnosis

No corrective action is recommended at this time. We recommend an early resample to monitor this condition. NOTE: one of two samples received with same ID and sampling date.The iron level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

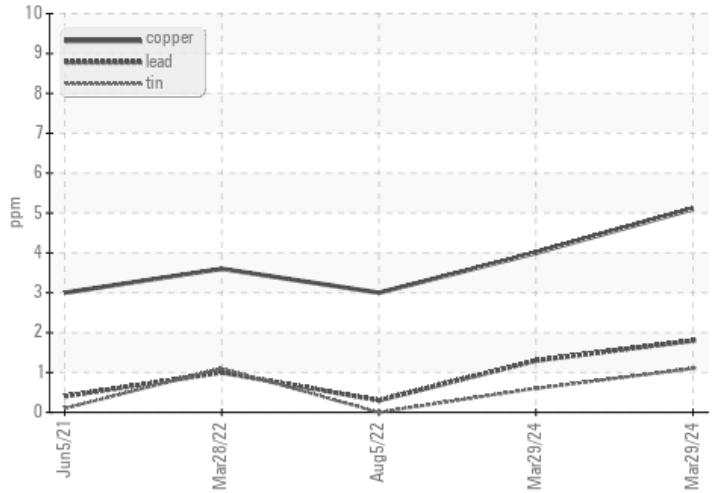
Depot: ORIVAN
Unique No: 11016507
Signed: Don Baldridge
Report Date: 08 May 2024

Graphs

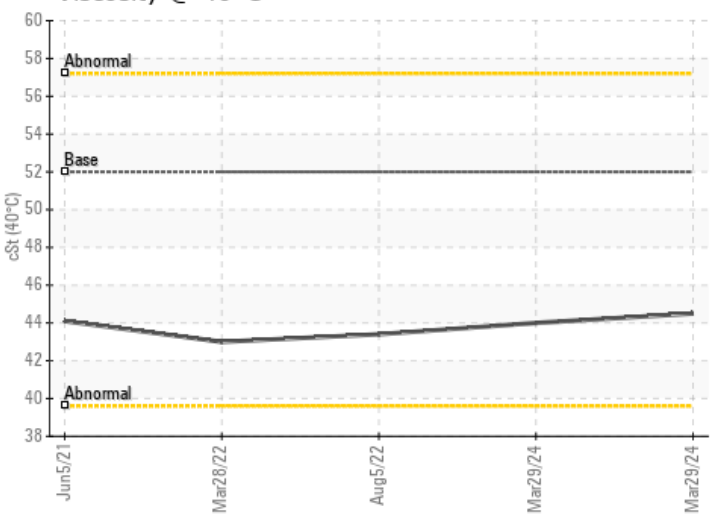
Ferrous Alloys



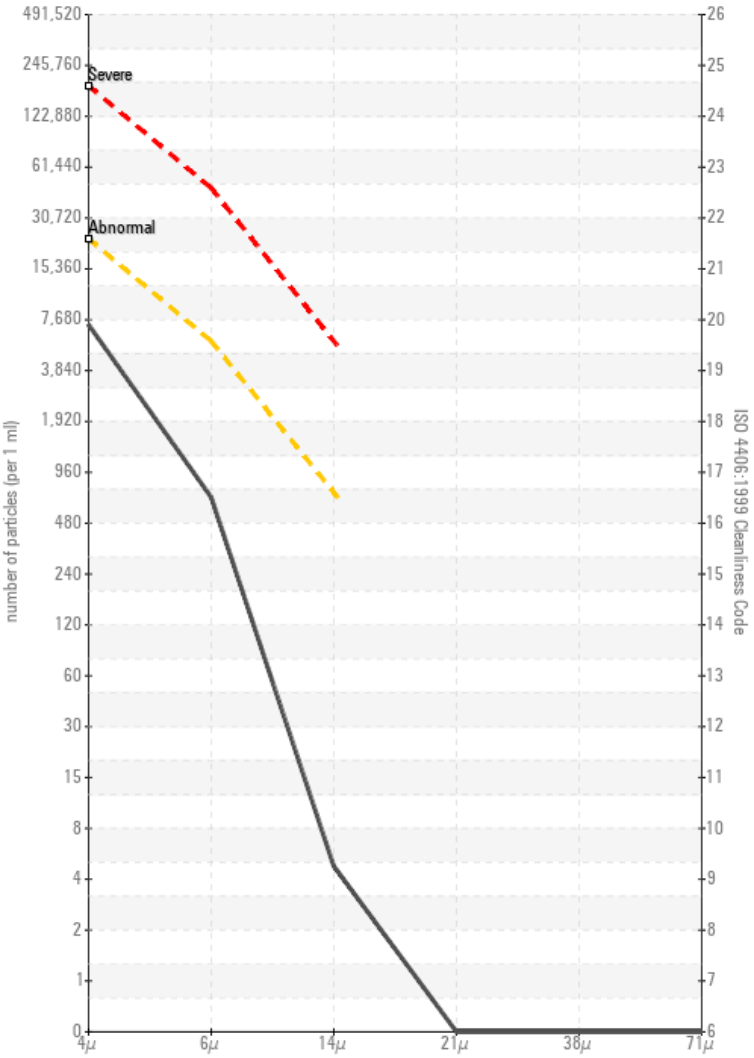
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number