

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH60 1217-94976 - Hydraulic System

Sample No: LH0236316

Oil Type: CHEVRON RANDO HD 46



ALTER RECYCLINE - DUBUQUE
 PO BOX 390
 WEBSTER, NY
 US 14580
 Contact: SERVICE MANAGER



SAMPLE INFORMATION

Sample Number	LH0236316	LH0236439	LH0245056	LH0207510
Sample Date	27 Jan 2024	11 Jan 2024	30 Mar 2023	28 Mar 2022
Machine Hours	0	14146	13089	10899
Oil Hours	0	0	0	0
Oil Changed	Not Changd	Not Changd	N/A	Not Changd
Sample Status	ATTENTION	ATTENTION	ATTENTION	ABNORMAL



OIL CONDITION

Visc @ 40°C	cSt	60.8	60.6	65.0	61.5
Acid Number (AN)	mg KOH/g	0.42	0.36	0.37	0.42



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		1823	6402	5565	43356
Particles >6µm		299	455	497	13848
Particles >14µm		14	40	34	980
ISO 4406:1999 (c)		18/15/11	20/16/12	20/16/12	23/21/17
Silicon	ppm	<1	1	<1	<1
Sodium	ppm	1	0	1	0
Potassium	ppm	0	1	0	0



WEAR METALS

Iron	ppm	3	6	10	7
Copper	ppm	<1	2	2	3
Lead	ppm	0	<1	0	0
Tin	ppm	0	<1	0	0
Aluminum	ppm	<1	2	<1	<1
Chromium	ppm	3	3	4	3
Molybdenum	ppm	0	2	<1	<1
Nickel	ppm	<1	<1	0	0
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	0	<1
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	210	220	140	179
Magnesium	ppm	10	10	6	4
Zinc	ppm	481	455	420	436
Phosphorus	ppm	375	391	347	384
Barium	ppm	0	0	0	0
Boron	ppm	2	2	0	0

T:
F:

Diagnosis

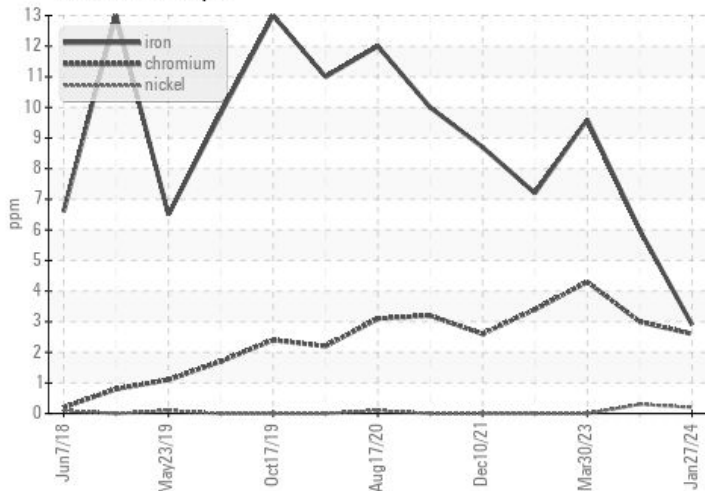
No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. Viscosity of sample indicates oil is within ISO 68 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.

Depot: ALTWEB
 Unique No: 10876152
 Signed: Jonathan Hester
 Report Date: 15 Feb 2024

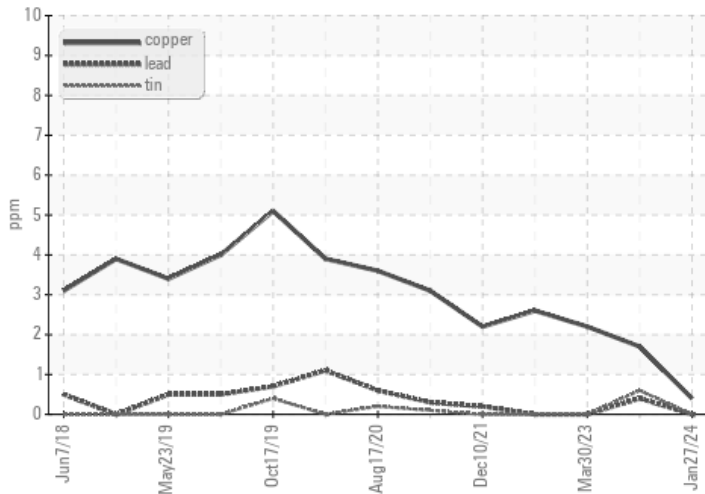


GRAPHS

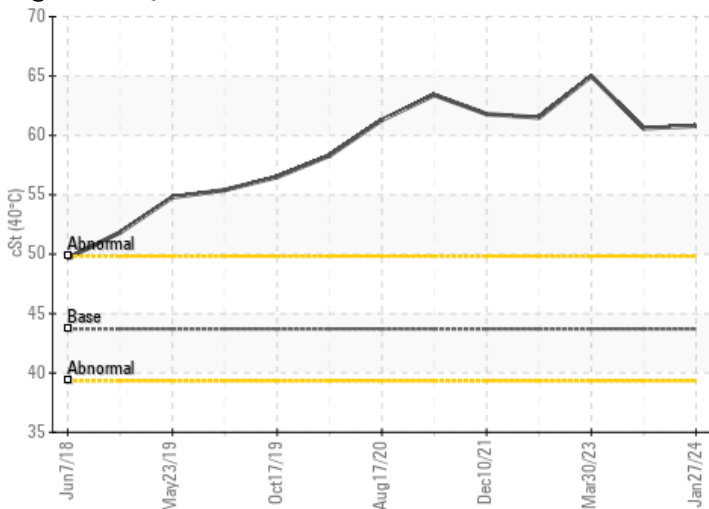
Ferrous Alloys



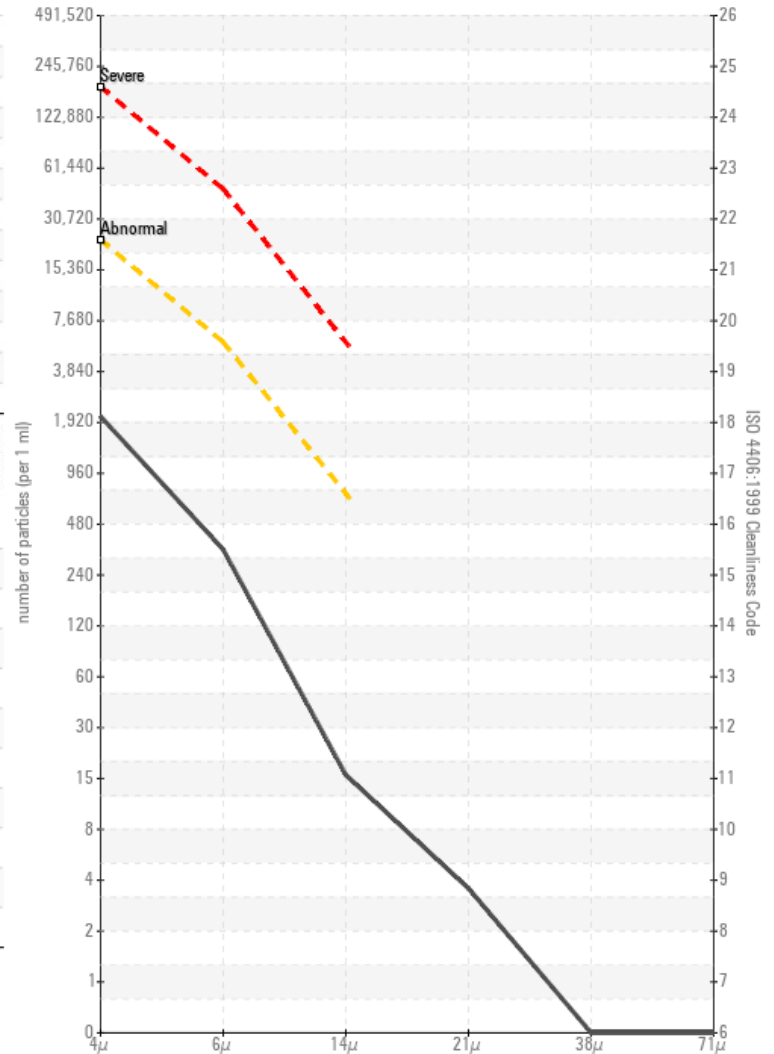
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number

