

LIEBHERR

CONSTRUCTION EQUIPMENT



042990-1491 - Hydraulic System

Sample No: LH0281399

Oil Type: TOTAL BIOHYDRAN SE 46



SAMPLE INFORMATION

Sample Number	LH0281399	LH0202820	LH0277803	LH0247050
Sample Date	16 Jan 2024	12 Jan 2024	27 Nov 2023	16 Feb 2023
Machine Hours	7078	7070	6947	6512
Oil Hours	0	0	0	0
Oil Changed	Not Changd	Not Changd	Not Changd	Not Changd
Sample Status	NORMAL	ABNORMAL	ABNORMAL	SEVERE

Delsan - American Iron and Metal
 2187 Montee Masson
 Laval, QC
 CA H7B 0A6
 Contact: MANNY MARQUES
 mmarques@delsan-aim.com
 T:
 F:



OIL CONDITION

Visc @ 40°C	cSt	43.8	45.4	45.5	45.5



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		8640	1492	11311	136946
Particles >6µm		3135	153	1636	44611
Particles >14µm		69	11	82	154
ISO 4406:1999 (c)		20/19/13	18/14/11	21/18/14	24/23/14
Silicon	ppm	<1	1	1	2
Sodium	ppm	<1	<1	1	1
Potassium	ppm	2	<1	<1	<1



WEAR METALS

PQ		---	0	0	1
Iron	ppm	28	78	68	68
Copper	ppm	2	4	3	4
Lead	ppm	0	<1	<1	<1
Tin	ppm	<1	1	<1	2
Aluminum	ppm	<1	1	<1	<1
Chromium	ppm	<1	3	2	3
Molybdenum	ppm	0	0	0	0
Nickel	ppm	0	<1	<1	<1
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	<1	0
Manganese	ppm	0	<1	0	1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	6	7	5	14
Magnesium	ppm	<1	<1	<1	1
Zinc	ppm	17	38	36	44
Phosphorus	ppm	367	367	353	399
Barium	ppm	0	0	0	0
Boron	ppm	<1	1	<1	<1

Diagnosis

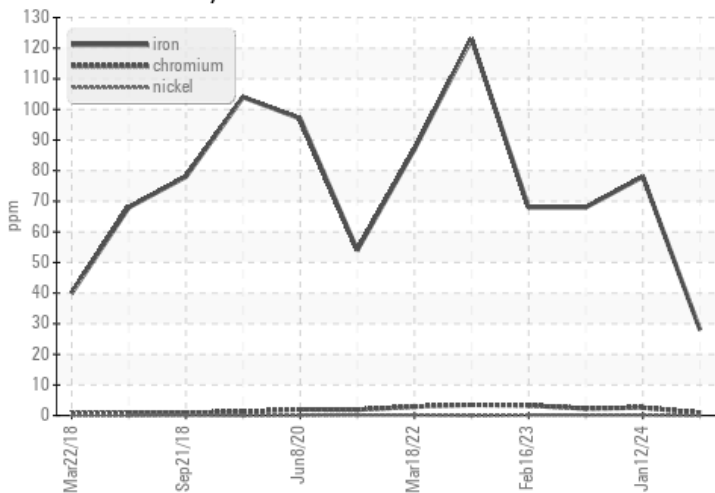
Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

Depot: DEL782MON
Unique No: 5710504
Signed: Kevin Marson
Report Date: 19 Jan 2024

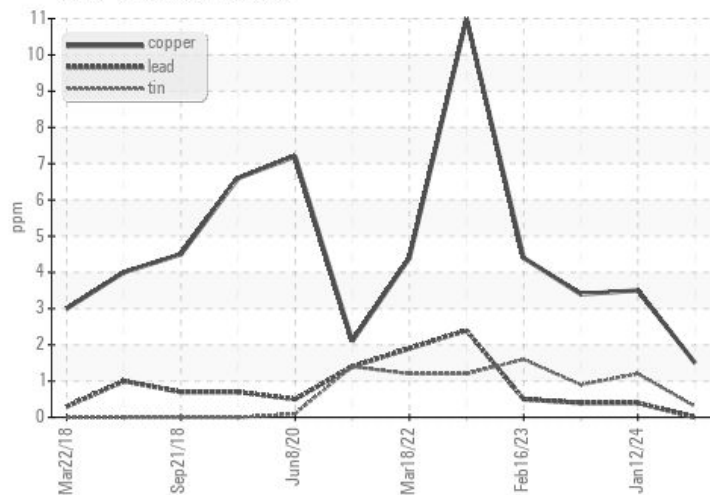


GRAPHS

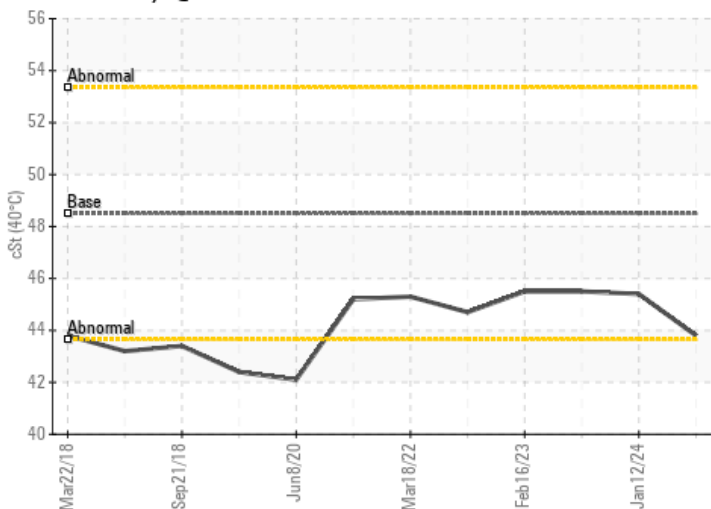
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Particle Count

