

LIEBHERR

CONSTRUCTION EQUIPMENT



TRONAIR 06-5041-3610 6331160801 - Hydraulic System

Sample No: LH0221449

Oil Type: SKYDROL LD-4



SAMPLE INFORMATION

Sample Number	LH0221449	LH0221448	LH0221447	LH0221446
Sample Date	27 Jun 2023	27 Feb 2023	01 Nov 2022	04 Oct 2022
Machine Hours	0	0	0	0
Oil Hours	0	0	0	0
Oil Changed	Not Changd	Not Changd	Not Changd	N/A
Sample Status	ABNORMAL	NORMAL	ABNORMAL	NORMAL

Liebherr Canada Ltee - div a ronautique et ferroviaire
4250 Autoroute Chomedey 13
Laval, QC
CA H7R 6E9
Contact: Jan Radtke
jan.radtke@liebherr.com
T: (450)767-2141
F: (450)963-9176



OIL CONDITION

Visc @ 40�C	cSt	10.0	10.3	10.5	10.5
Acid Number (AN)	mg KOH/g	0.01	0.04	0.05	0.01



CONTAMINATION

Water	%	0.350	0.248	0.461	0.498
Particles 5-15�m	count	10273	4560	10300	1446
Particles 15-25�m	count	580	340	436	127
Particles 25-50�m	count	393	220	98	60
Particles 50-100�m	count	67	20	12	0
Particles >100�m	count	0	0	126	0
NAS 1638	Class	6	5	9	3
ISO 4406:1999 (c)		--/--/--	--/--/--	--/--/--	--/--/--
Silicon	ppm	<1	<1	1	<1
Sodium	ppm	2	3	3	3
Potassium	ppm	17	17	18	19

Diagnosis

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The water content is negligible. The system cleanliness is above the acceptable limit for the target SAE AS4059 (replaces NAS 1638) cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



WEAR METALS

Iron	ppm	0	<1	<1	<1
Copper	ppm	<1	0	0	0
Lead	ppm	0	0	<1	0
Tin	ppm	0	<1	0	0
Aluminum	ppm	0	0	0	<1
Chromium	ppm	0	0	0	0
Molybdenum	ppm	0	0	0	0
Nickel	ppm	0	<1	0	0
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	0	0	0	0
Vanadium	ppm	0	0	0	0



ADDITIVES

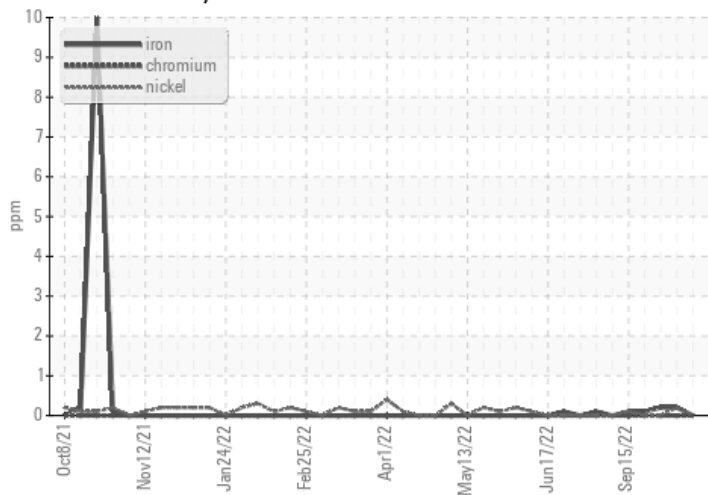
Calcium	ppm	<1	0	<1	<1
Magnesium	ppm	0	0	<1	0
Zinc	ppm	1	<1	<1	<1
Phosphorus	ppm	31584	31132	27830	28774
Barium	ppm	0	0	0	0
Boron	ppm	<1	3	6	6

Depot: LIESTLDAF
Unique No: 5604492
Signed: Kevin Marson
Report Date: 30 Jun 2023

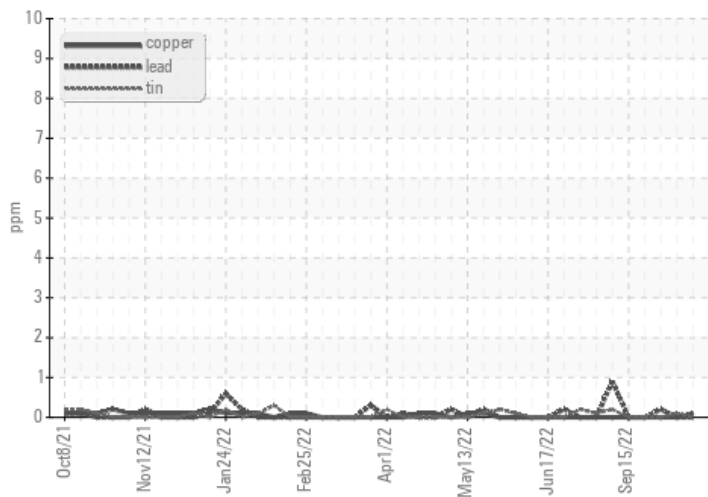


GRAPHS

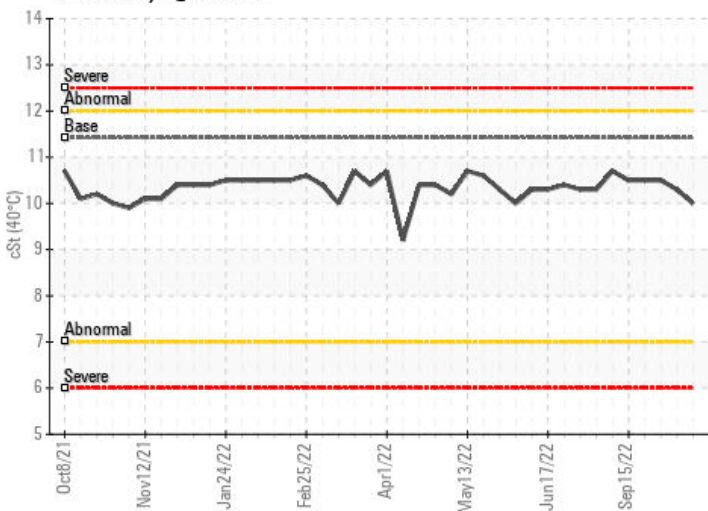
Ferrous Alloys



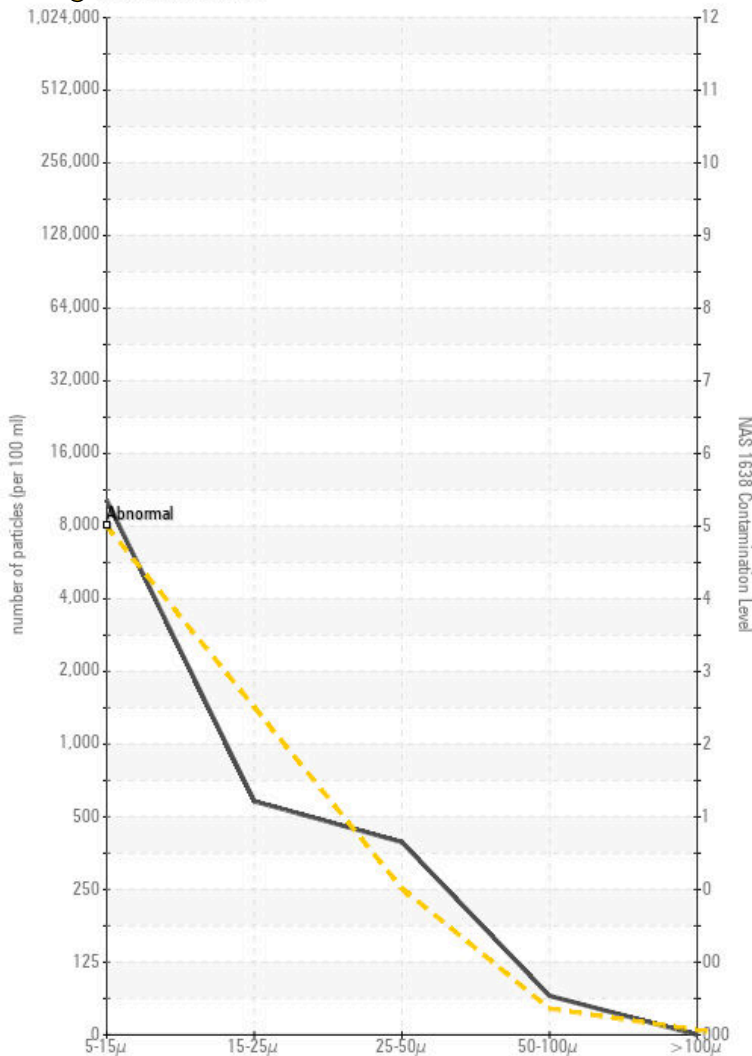
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number

