

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50 1216-130391 - Diesel Engine

Sample No: LH0272168

Oil Type: CHEVRON DELO LE 5W40



**VERSO CORP**  
7100 COUNTY 426 M.5 RD  
ESCANABA, MI  
US 49837  
Contact: Service Manager



#### SAMPLE INFORMATION

Sample Number	LH0272168	LH0264357	LH0207791	LH0220810
Sample Date	07 Feb 2024	25 Jul 2023	01 Mar 2023	31 Aug 2022
Machine Hours	4773	3023	2059	1273
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	MARGINAL	NORMAL	NORMAL	NORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	12.4	13.2	13.0	13.3
Base Number (BN)	mg KOH/g	5.9	6.7	7.0	7.9
Oxidation (PA)	%	86	65	63	71



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	90	78	78	83
Sulfation (PA)	%	66	56	57	61
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	2.4	<1.0	<1.0	<1.0
Silicon	ppm	11	9	9	8
Sodium	ppm	0	1	3	<1
Potassium	ppm	4	3	2	0



#### WEAR METALS

Iron	ppm	10	7	9	6
Copper	ppm	6	3	3	3
Lead	ppm	1	<1	<1	<1
Tin	ppm	1	<1	1	<1
Aluminum	ppm	1	3	2	1
Chromium	ppm	1	<1	<1	<1
Molybdenum	ppm	18	22	6	11
Nickel	ppm	<1	0	0	<1
Titanium	ppm	69	59	95	78
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	1	<1	1	<1



#### ADDITIVES

Calcium	ppm	1387	1221	1598	1308
Magnesium	ppm	638	731	768	612
Zinc	ppm	1074	1154	1337	1082
Phosphorus	ppm	962	956	1097	881
Barium	ppm	0	0	<1	4
Boron	ppm	46	44	132	127

T:  
F:

#### Diagnosis

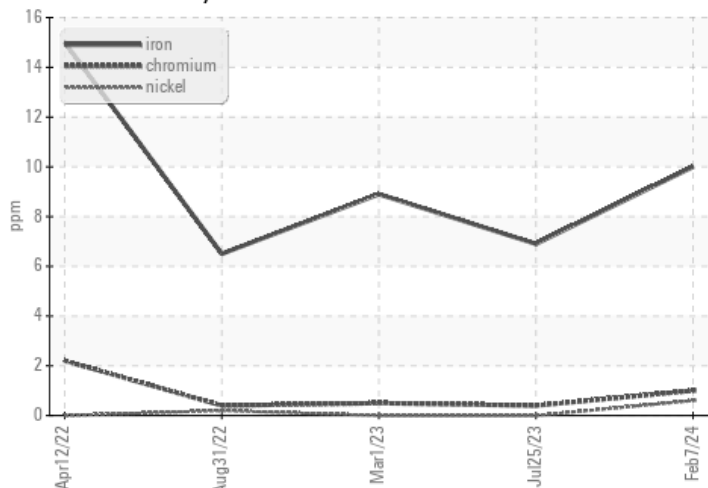
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: VERESC  
Unique No: 10883723  
Signed: Wes Davis  
Report Date: 19 Feb 2024

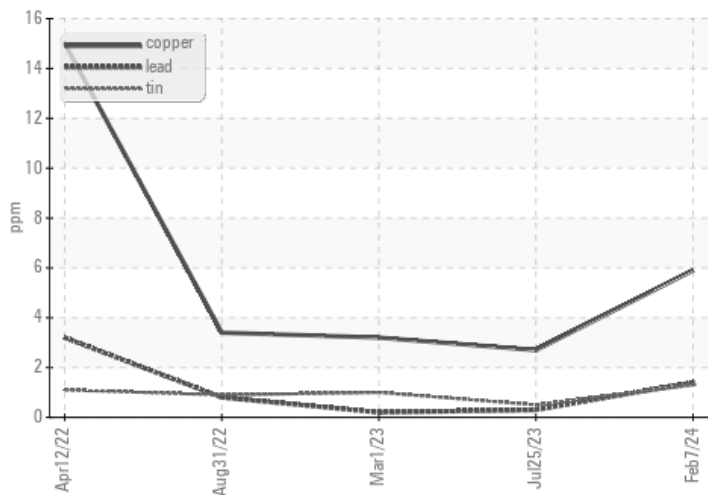


### GRAPHS

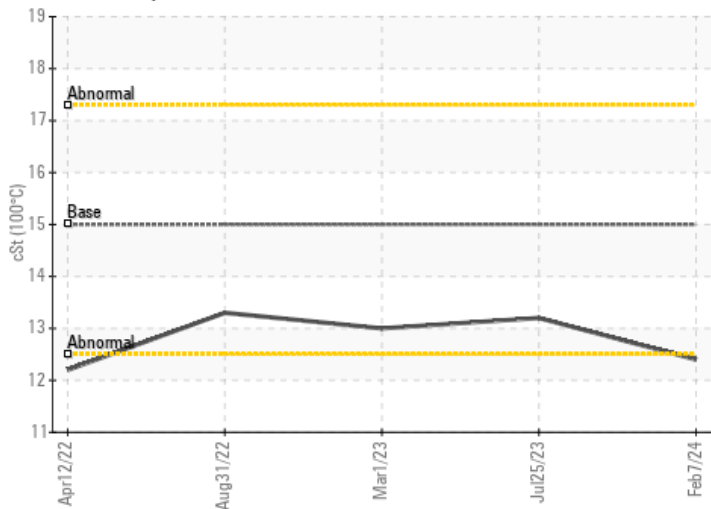
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

