

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR A944B 016166-744 - Diesel Engine

Sample No: LH0273208

Oil Type: CONOCO PHILLIPS GUARDOL ECT 15W40



#### SAMPLE INFORMATION

Sample Number	LH0273208	LH0273249	LH0244857	LH0244863
Sample Date	13 Mar 2024	11 Jan 2024	27 Nov 2023	03 Oct 2023
Machine Hours	49847	49427	49111	48753
Oil Hours	250	250	300	300
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ATTENTION	ATTENTION	ATTENTION	ATTENTION

NILES IRON & METAL CO. INC.

P.O. BOX 166

NILES, OH

US 44446

Contact: CRAIG STINSON

cstinson529@gmail.com;canastasio@wearcheckusa.com

T: (330)652-2262

F: (330)652-1240



#### OIL CONDITION

Visc @ 100°C	cSt	12.2	11.9	11.8	11.7
Base Number (BN)	mg KOH/g	8.0	8.4	8.6	7.6
Oxidation (PA)	%	54	51	53	48



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	1.1	0.8	1	1.2
Nitration (PA)	%	73	62	67	63
Sulfation (PA)	%	56	53	54	52
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	6	6	8
Sodium	ppm	2	2	1	1
Potassium	ppm	3	4	1	4



#### WEAR METALS

Iron	ppm	19	11	17	33
Copper	ppm	1	2	1	2
Lead	ppm	<1	1	<1	<1
Tin	ppm	<1	1	<1	<1
Aluminum	ppm	3	3	2	3
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	18	38	33	42
Nickel	ppm	<1	<1	<1	0
Titanium	ppm	4	7	8	4
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	0
Vanadium	ppm	0	<1	<1	0



#### ADDITIVES

Calcium	ppm	1465	1395	1618	1776
Magnesium	ppm	732	658	541	623
Zinc	ppm	1298	1226	1264	1359
Phosphorus	ppm	1184	1051	1069	1125
Barium	ppm	0	0	0	0
Boron	ppm	60	35	42	46

#### Diagnosis

Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: NILNIL

Unique No: 10930345

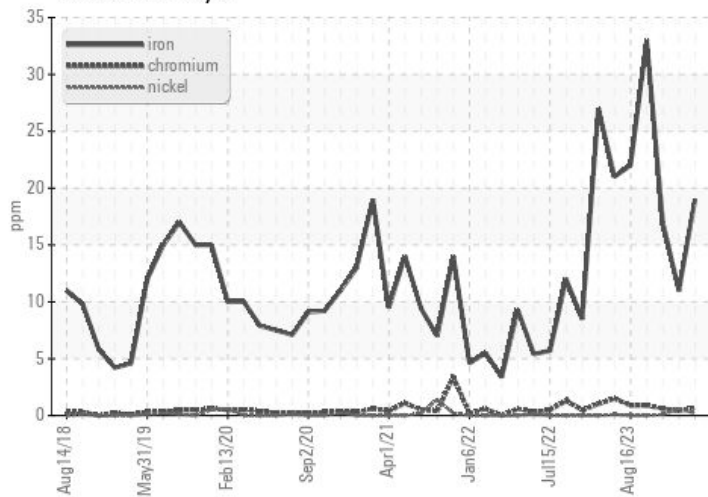
Signed: Jonathan Hester

Report Date: 19 Mar 2024

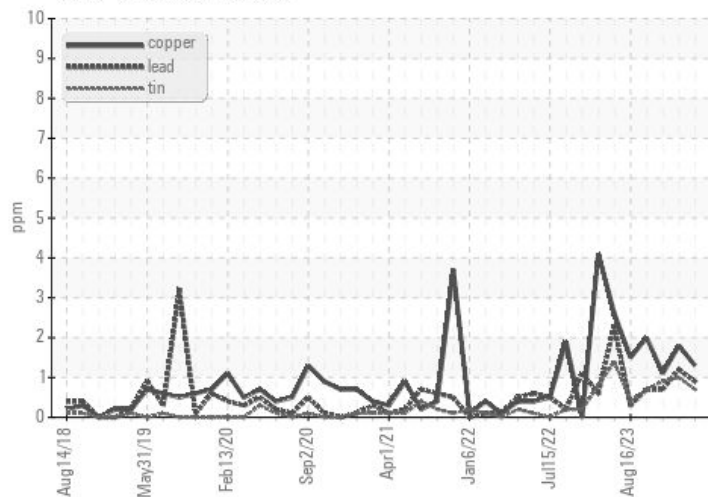


### GRAPHS

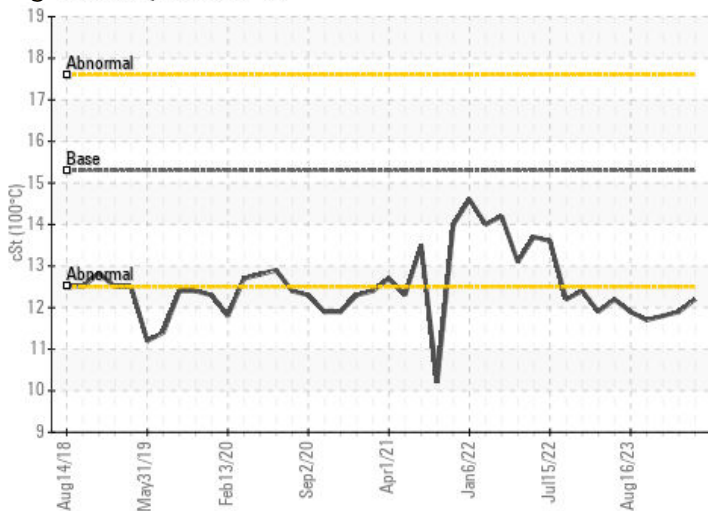
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

