

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A944CHD 051846-194 - Diesel Engine

Sample No: LH0273209

Oil Type: CONOCO PHILLIPS GUARDOL ECT 15W40



SAMPLE INFORMATION

Sample Number	LH0273209	LH0244849	LH0244859	LH0244858
Sample Date	06 Mar 2024	09 Jan 2024	28 Nov 2023	27 Nov 2023
Machine Hours	33244	32866	32577	17268
Oil Hours	250	250	300	300
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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	13.4	13.2	13.2	12.9
Base Number (BN)	mg KOH/g	6.5	7.3	7.2	8.8
Oxidation (PA)	%	53	50	51	47



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	2.9	2.3	2.4	0.1
Nitration (PA)	%	74	66	69	43
Sulfation (PA)	%	62	59	59	48
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	5	6	6	6
Sodium	ppm	1	2	<1	<1
Potassium	ppm	<1	4	2	2

Diagnosis

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



WEAR METALS

Iron	ppm	16	12	13	0
Copper	ppm	2	1	<1	0
Lead	ppm	0	<1	0	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	<1	2	1	1
Chromium	ppm	<1	<1	<1	0
Molybdenum	ppm	36	37	33	31
Nickel	ppm	0	<1	<1	<1
Titanium	ppm	10	7	8	8
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	<1	<1	<1



ADDITIVES

Calcium	ppm	1424	1380	1617	1476
Magnesium	ppm	596	647	551	526
Zinc	ppm	1156	1201	1298	1222
Phosphorus	ppm	978	1018	1088	1035
Barium	ppm	0	0	0	0
Boron	ppm	31	24	30	58

Depot: NILNIL

Unique No: 10928882

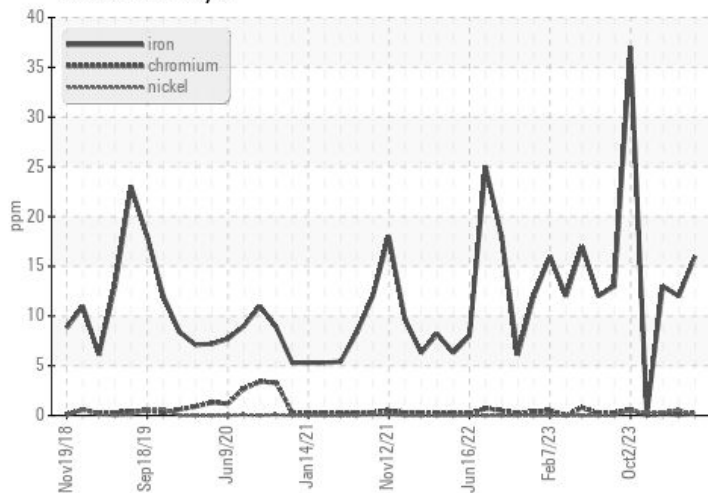
Signed: Wes Davis

Report Date: 19 Mar 2024

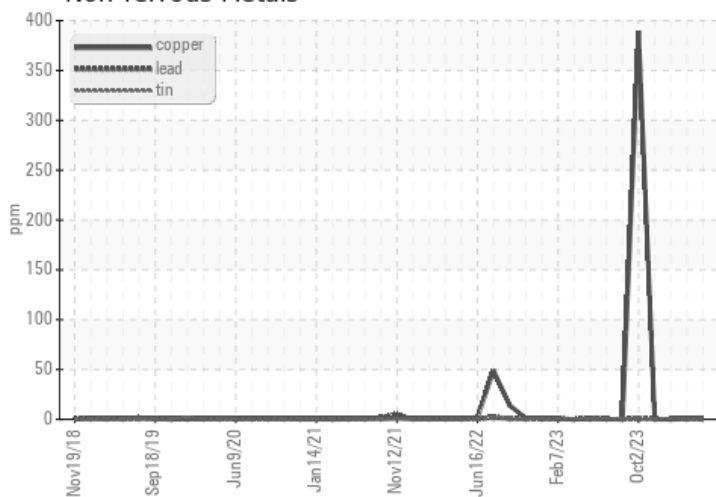


GRAPHS

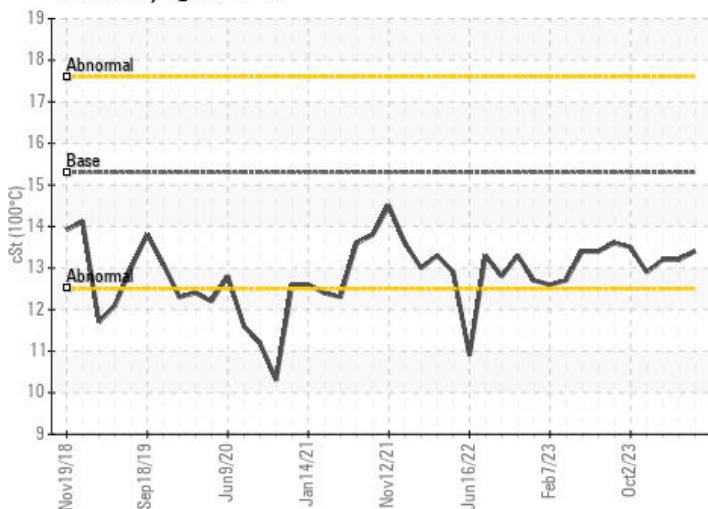
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

