

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 030061-1007 - Diesel Engine

Sample No: LH0244662

Oil Type: CONOCO PHILLIPS GUARDOL ECT 15W40



SAMPLE INFORMATION

Sample Number	LH0244662	LH0244654	LH0207972	LH0244525
Sample Date	16 Jun 2023	11 May 2023	21 Mar 2023	07 Feb 2023
Machine Hours	14552	31212	31341	31106
Oil Hours	300	250	300	200
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ATTENTION	NORMAL

NILES IRON & METAL CO. INC.

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OIL CONDITION

Visc @ 100°C	cSt	12.6	12.7	12.3	12.6
Base Number (BN)	mg KOH/g	6.7	7.1	7.5	8.1
Oxidation (PA)	%	49	45	43	46



CONTAMINATION

Soot %	%	0.2	1.2	0.7	0.7
Nitration (PA)	%	44	63	53	56
Sulfation (PA)	%	47	54	49	50
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	0.4	<1.0
Silicon	ppm	9	6	5	6
Sodium	ppm	0	2	<1	<1
Potassium	ppm	3	3	<1	2



WEAR METALS

Iron	ppm	4	10	5	7
Copper	ppm	<1	<1	0	<1
Lead	ppm	0	2	0	<1
Tin	ppm	0	<1	0	0
Aluminum	ppm	2	2	<1	<1
Chromium	ppm	0	1	0	<1
Molybdenum	ppm	31	13	25	33
Nickel	ppm	0	0	0	0
Titanium	ppm	22	10	2	4
Silver	ppm	0	<1	0	0
Manganese	ppm	<1	<1	<1	1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1998	1584	1452	1652
Magnesium	ppm	557	588	484	461
Zinc	ppm	1499	1256	1122	1171
Phosphorus	ppm	1290	1036	913	929
Barium	ppm	0	0	0	0
Boron	ppm	89	61	36	29

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.

Depot: NILNIL

Unique No: 10559325

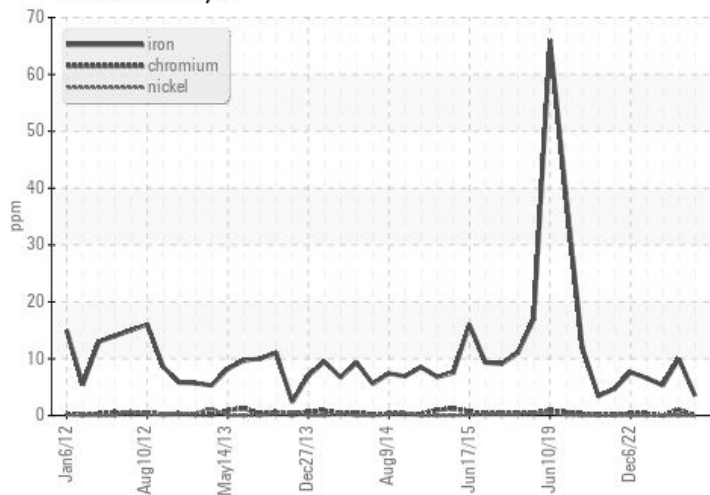
Signed: Jonathan Hester

Report Date: 17 Jul 2023

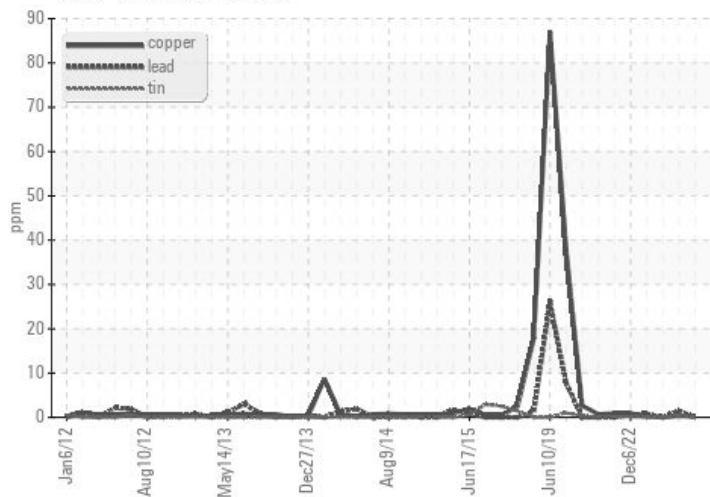


GRAPHS

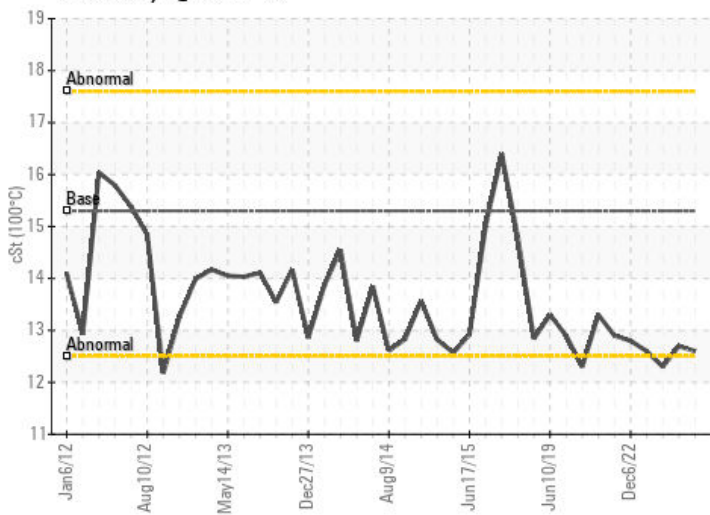
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

