

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 061188-1419 - Diesel Engine

Sample No: LH0263923

Oil Type: DIESEL ENGINE OIL SAE 5W40



NORTHERN METAL RECYCLING
 2800 PACIFIC ST N
 MINNEAPOLIS, MN
 US 55411
 Contact: CHRIS GILMER
 chris.gilmer@emrgroup.com
 T: (612)305-7338
 F:



SAMPLE INFORMATION

Sample Number	LH0263923	LH0253888	LH0253911	LH0253946
Sample Date	10 Nov 2023	21 Sep 2023	13 Jul 2023	05 Jun 2023
Machine Hours	27562	27222	26744	26455
Oil Hours	500	0	500	250
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



OIL CONDITION

Visc @ 100°C	cSt	14.7	14.9	15.2	14.9
Base Number (BN)	mg KOH/g	7.8	7.8	7.3	6.6
Oxidation (PA)	%	52	51	78	57



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	1.2	1.3	1.8	1.2
Nitration (PA)	%	74	73	92	68
Sulfation (PA)	%	54	55	66	55
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	9	8	8
Sodium	ppm	2	<1	3	2
Potassium	ppm	3	5	4	3



WEAR METALS

Iron	ppm	5	7	16	7
Copper	ppm	4	<1	6	1
Lead	ppm	<1	0	0	<1
Tin	ppm	0	0	<1	0
Aluminum	ppm	2	2	2	0
Chromium	ppm	<1	<1	<1	0
Molybdenum	ppm	2	3	5	5
Nickel	ppm	0	0	<1	<1
Titanium	ppm	87	99	98	97
Silver	ppm	0	0	0	0
Manganese	ppm	0	0	<1	<1
Vanadium	ppm	2	<1	2	<1



ADDITIVES

Calcium	ppm	1266	1326	1422	1325
Magnesium	ppm	708	706	752	674
Zinc	ppm	1173	1205	1217	1190
Phosphorus	ppm	1000	925	1000	988
Barium	ppm	0	0	0	2
Boron	ppm	98	119	94	108

Diagnosis

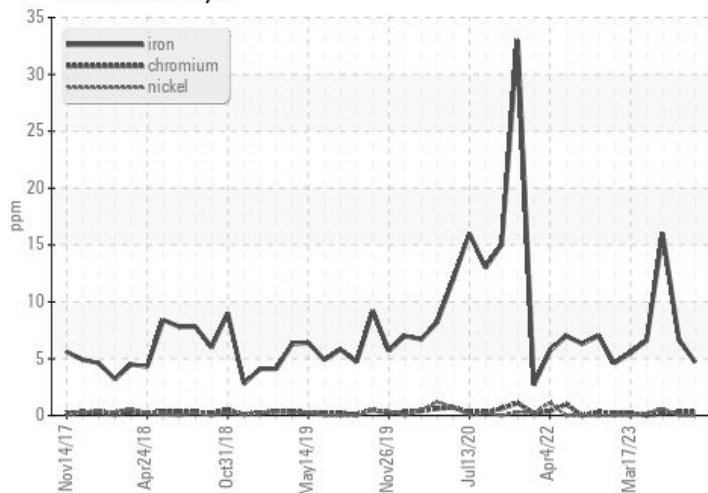
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: NORMINLH
 Unique No: 10844242
 Signed: Wes Davis
 Report Date: 23 Jan 2024

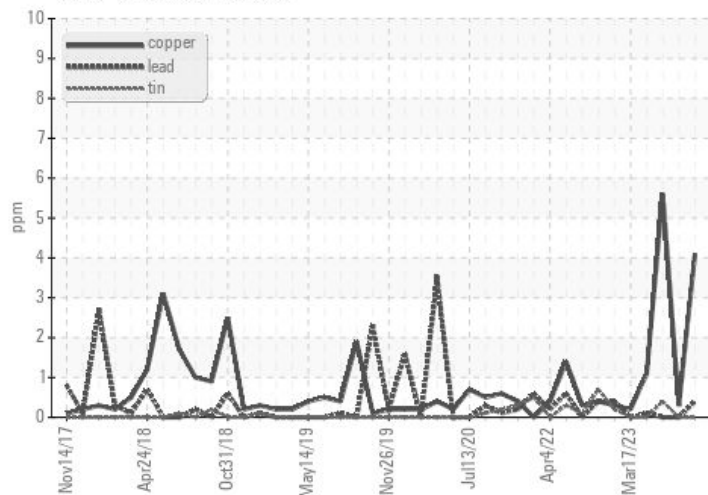


GRAPHS

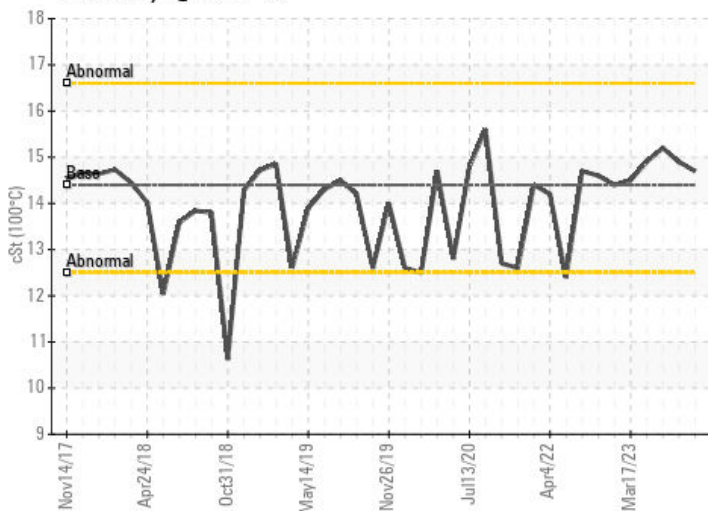
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

