

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 061188-1419 - Diesel Engine

Sample No: LH0272399

Oil Type: DIESEL ENGINE OIL SAE 5W40



Sample Information

Sample Number	LH0272399	LH0263923	LH0253888	LH0253911
Sample Date	30 Jan 2024	10 Nov 2023	21 Sep 2023	13 Jul 2023
Machine Hours	28174	27562	27222	26744
Oil Hours	1000	500	0	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

NORTHERN METAL RECYCLING
 2800 PACIFIC ST N
 MINNEAPOLIS, MN
 US 55411
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 T: (612)305-7338
 F:



Oil Condition

Visc @ 100°C	cSt	14.1	14.7	14.9	15.2
Base Number (BN)	mg KOH/g	8.4	7.8	7.8	7.3
Oxidation (PA)	%	71	52	51	78

Diagnosis

No corrective action is recommended at this time. 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. Elemental level of silicon (Si) above normal indicating ingress of seal material. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.6	1.2	1.3	1.8
Nitration (PA)	%	74	74	73	92
Sulfation (PA)	%	54	54	55	66
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	18	8	9	8
Sodium	ppm	1	2	<1	3
Potassium	ppm	1	3	5	4



Wear Metals

Iron	ppm	4	5	7	16
Copper	ppm	<1	4	<1	6
Lead	ppm	0	<1	0	0
Tin	ppm	0	0	0	<1
Aluminum	ppm	1	2	2	2
Chromium	ppm	0	<1	<1	<1
Molybdenum	ppm	3	2	3	5
Nickel	ppm	0	0	0	<1
Titanium	ppm	11	87	99	98
Silver	ppm	0	0	0	0
Manganese	ppm	<1	0	0	<1
Vanadium	ppm	0	2	<1	2



Additives

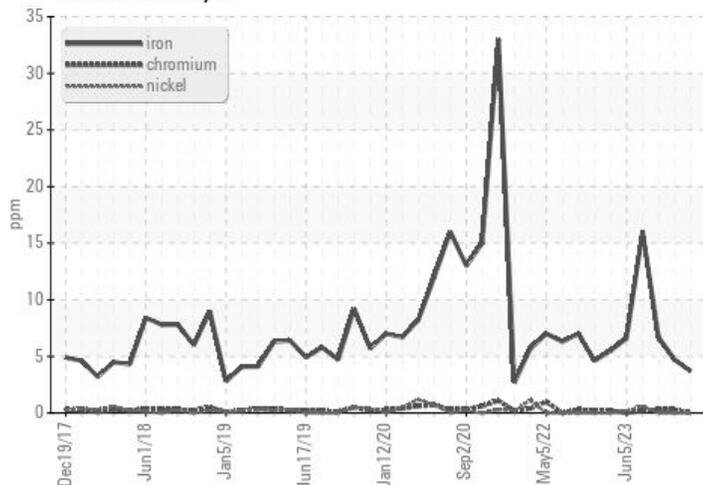
Calcium	ppm	1448	1266	1326	1422
Magnesium	ppm	883	708	706	752
Zinc	ppm	1073	1173	1205	1217
Phosphorus	ppm	930	1000	925	1000
Barium	ppm	0	0	0	0
Boron	ppm	154	98	119	94

Depot: NORMINLH
 Unique No: 10995169
 Signed: Sean Felton
 Report Date: 26 Apr 2024

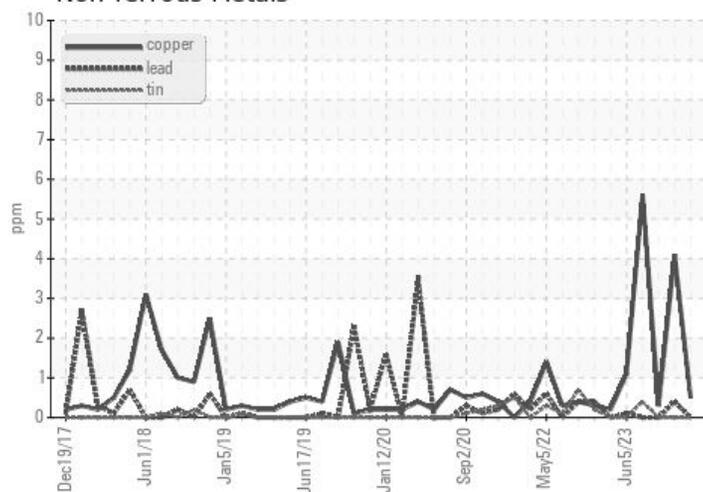


Graphs

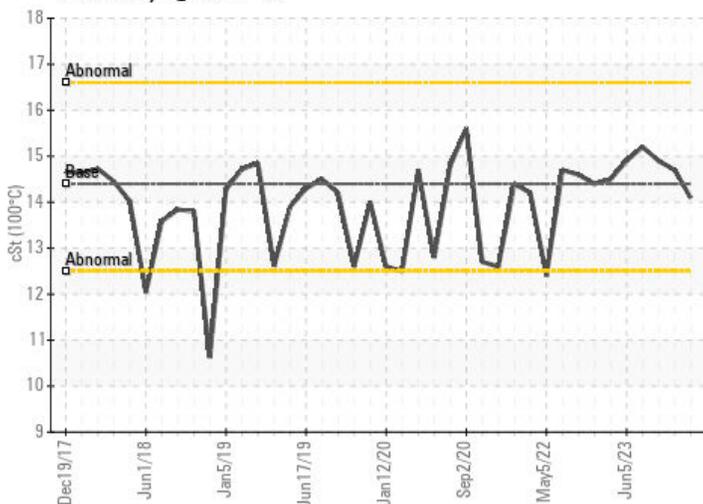
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

