

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R936 035770-1148 - Diesel Engine

Sample No: LH0243946

Oil Type: LIEBHERR MOTOROIL 10W-40 LOW ASH



SAMPLE INFORMATION

Sample Number	LH0243946	LH0207411	LH0185461	LH0185434
Sample Date	17 Mar 2023	15 Jul 2022	10 Feb 2022	24 Feb 2021
Machine Hours	9047	8359	7859	6388
Oil Hours	688	500	1040	429
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

ACECO
10119 RESIDENCY ROAD
MANASSAS, VA
US 20110
Contact: RON BROCK



OIL CONDITION

Visc @ 100°C	cSt	14.3	14.6	14.7	13.5
Base Number (BN)	mg KOH/g	9.3	8.7	9.2	---
Oxidation (PA)	%	71	87	94	86

T: (703)392-0111
F: (703)331-5604



CONTAMINATION

Soot %	%	1.2	1.7	1.8	1.1
Nitration (PA)	%	88	107	110	103
Sulfation (PA)	%	54	66	68	66
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	14	8	11	6
Sodium	ppm	3	2	3	1
Potassium	ppm	3	3	<1	3

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	18	24	39	22
Copper	ppm	2	2	4	2
Lead	ppm	<1	<1	1	1
Tin	ppm	<1	<1	2	<1
Aluminum	ppm	7	12	19	9
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	2	4	12	15
Nickel	ppm	0	0	0	0
Titanium	ppm	<1	0	<1	0
Silver	ppm	<1	<1	<1	<1
Manganese	ppm	1	<1	<1	<1
Vanadium	ppm	<1	<1	<1	0



ADDITIVES

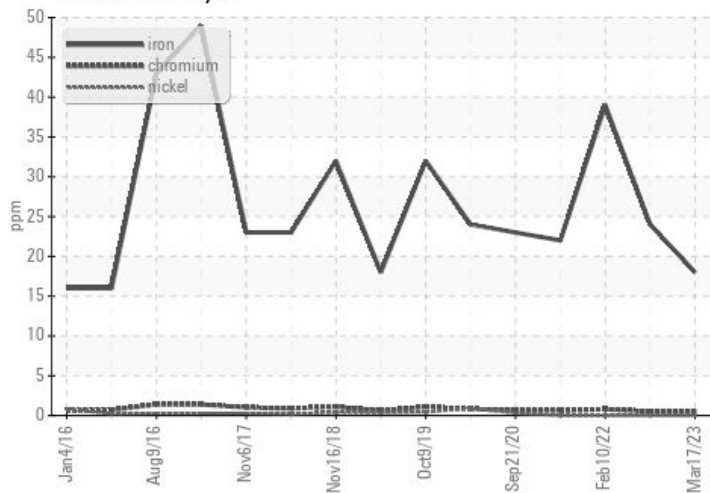
Calcium	ppm	1862	1275	1586	2105
Magnesium	ppm	781	714	962	357
Zinc	ppm	988	838	943	842
Phosphorus	ppm	837	708	863	722
Barium	ppm	0	0	0	0
Boron	ppm	146	49	63	44

Depot: ACEMAN
Unique No: 10608532
Signed: Wes Davis
Report Date: 21 Aug 2023

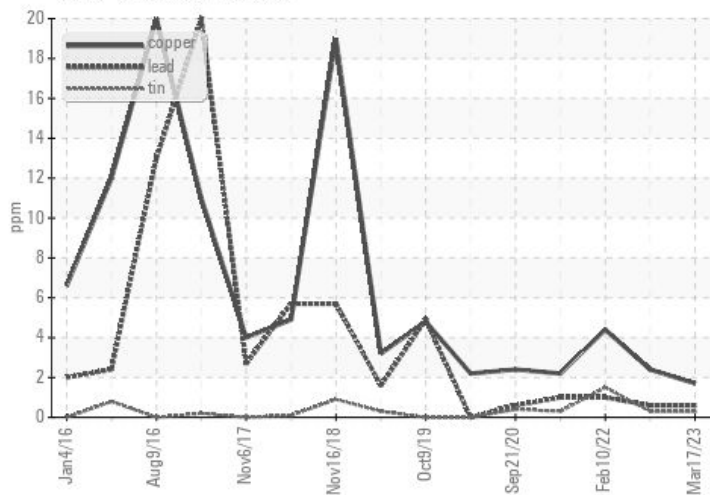


GRAPHS

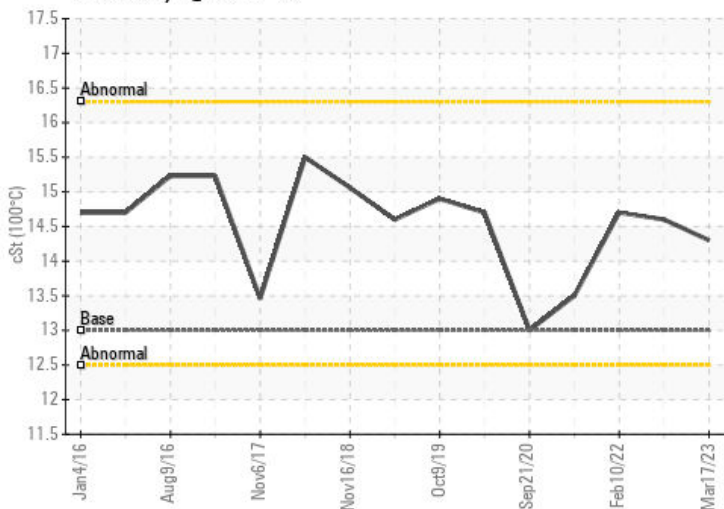
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

