

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR R936LC 047283-1490 - Diesel Engine

Sample No: LH0272868

Oil Type: LIEBHERR MOTOROIL 10W-40



#### SAMPLE INFORMATION

Sample Number	LH0272868	LH0268286	LH0229637	LH0207407
Sample Date	11 Feb 2024	13 Oct 2023	09 Dec 2022	06 Sep 2022
Machine Hours	3939	3494	1807	1277
Oil Hours	0	0	1807	0
Oil Changed	Not Chngd	Not Chngd	Changed	N/A
Sample Status	NORMAL	NORMAL	NORMAL	ABNORMAL

**M&F CONCRETE PRODUCTS CO**  
4002 CATLETT RD  
CATLETT, VA  
US 20119  
Contact: Service Manager



#### OIL CONDITION

Visc @ 100°C	cSt	11.6	11.4	11.4	11.1
Base Number (BN)	mg KOH/g	15.7	10.0	14.1	12.9
Oxidation (PA)	%	45	65	59	63

T:  
F:



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	101	119	101	64
Sulfation (PA)	%	43	55	49	59
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	16	21	10	9
Sodium	ppm	0	0	3	0
Potassium	ppm	3	3	2	0

#### 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	9	17	17	24
Copper	ppm	5	21	10	7
Lead	ppm	<1	2	2	<1
Tin	ppm	<1	0	2	1
Aluminum	ppm	3	1	3	26
Chromium	ppm	<1	<1	1	2
Molybdenum	ppm	4	11	6	14
Nickel	ppm	<1	0	0	1
Titanium	ppm	<1	<1	<1	1
Silver	ppm	<1	0	0	0
Manganese	ppm	<1	0	<1	<1
Vanadium	ppm	<1	0	<1	0



#### ADDITIVES

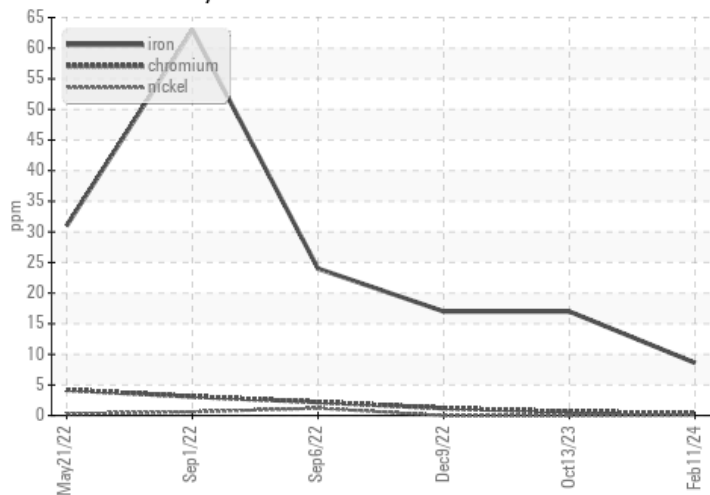
Calcium	ppm	4628	3521	4055	2430
Magnesium	ppm	65	206	121	250
Zinc	ppm	1245	1147	1167	1010
Phosphorus	ppm	1018	983	958	818
Barium	ppm	2	7	33	0
Boron	ppm	256	161	256	132

Depot: MECCAT  
Unique No: 10939521  
Signed: Wes Davis  
Report Date: 24 Mar 2024

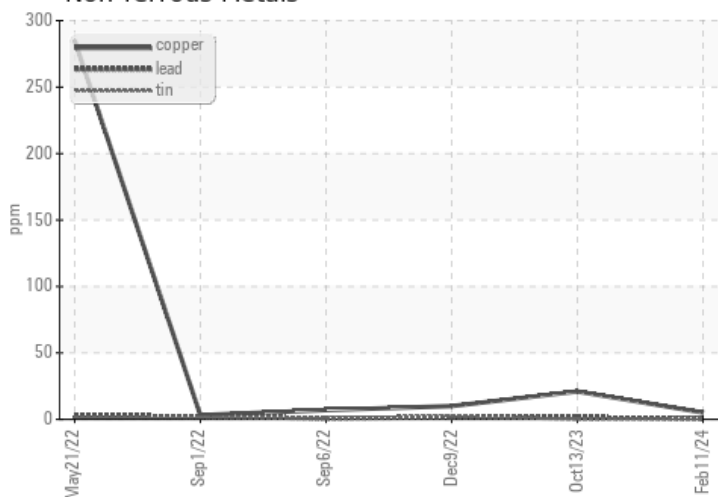


### GRAPHS

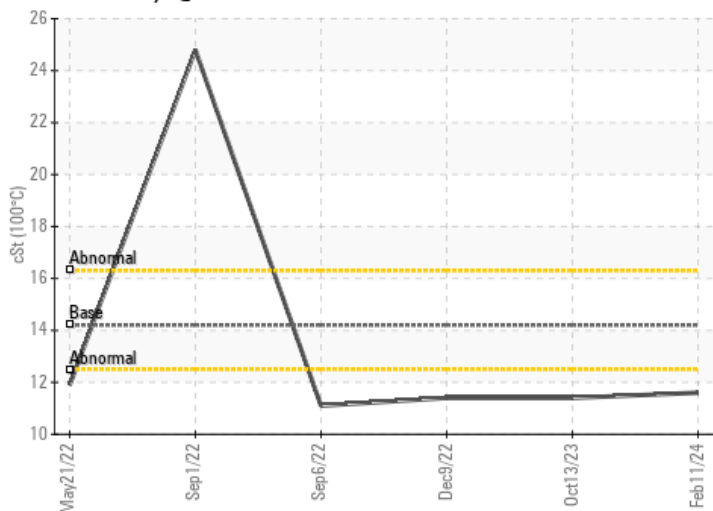
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

