

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH80M 155277-1218 - Diesel Engine

Sample No: LH0243734

Oil Type: LIEBHERR MOTOROIL 5W-30 LOW ASH



Sample Information

Sample Number	LH0243734	LH0191254	LH0243738	LH0191253
Sample Date	18 May 2024	24 Apr 2024	14 Mar 2024	01 Mar 2024
Machine Hours	1520	1298	1050	850
Oil Hours	222	248	200	250
Oil Changed	N/A	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

NUCOR STEEL
 2911 E NUCOR RD
 NORFOLK, NE
 US 68702
 Contact: NICOLE IRISH
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 T: (402)500-9035
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Oil Condition

Visc @ 100°C	cSt	12.0	11.9	11.9	11.8
Base Number (BN)	mg KOH/g	15.7	15.6	16.1	12.8
Oxidation (PA)	%	42	44	43	49

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.



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	90	94	89	89
Sulfation (PA)	%	41	41	41	45
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	7	7	8	7
Sodium	ppm	3	3	0	2
Potassium	ppm	2	2	3	0



Wear Metals

Iron	ppm	5	6	6	5
Copper	ppm	<1	3	1	1
Lead	ppm	<1	2	0	0
Tin	ppm	<1	2	<1	1
Aluminum	ppm	2	2	3	1
Chromium	ppm	0	<1	<1	0
Molybdenum	ppm	2	2	3	1
Nickel	ppm	0	<1	0	0
Titanium	ppm	<1	<1	<1	0
Silver	ppm	0	<1	<1	0
Manganese	ppm	<1	1	<1	0
Vanadium	ppm	0	0	<1	0



Additives

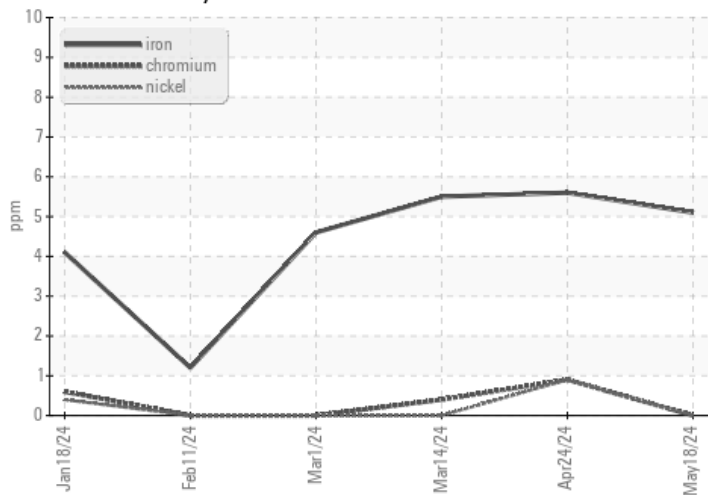
Calcium	ppm	4386	4535	4448	3388
Magnesium	ppm	63	40	73	288
Zinc	ppm	1233	1268	1182	1094
Phosphorus	ppm	1091	1143	990	950
Barium	ppm	0	0	2	0
Boron	ppm	308	240	269	186

Depot: NUCOR
Unique No: 11050130
Signed: Sean Felton
Report Date: 30 May 2024

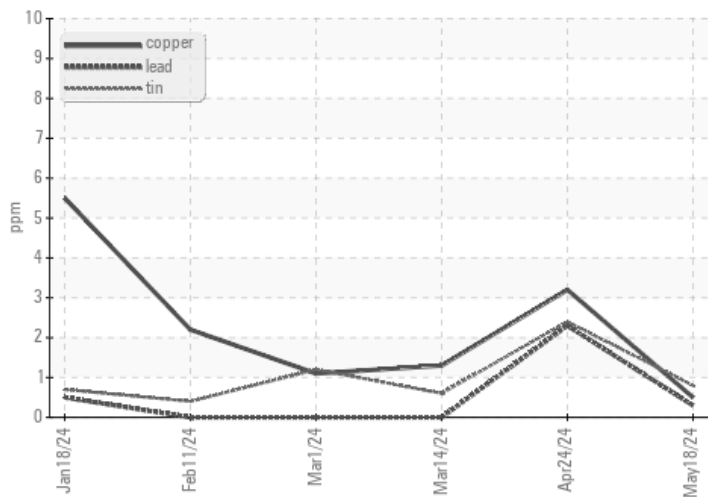


Graphs

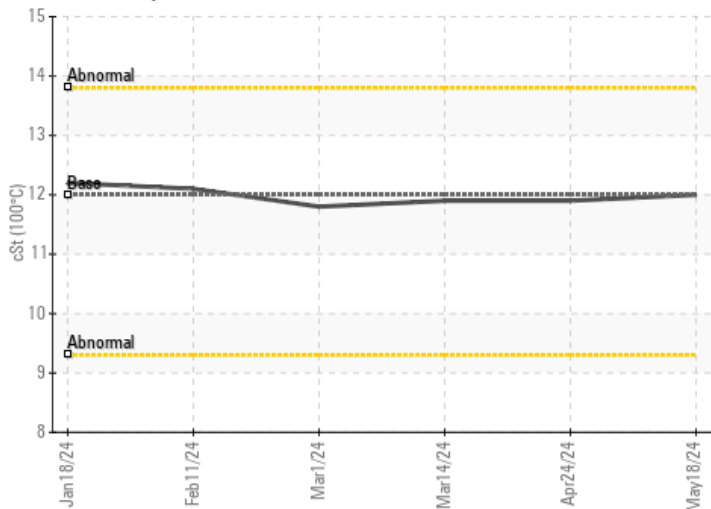
Ferrous Alloys



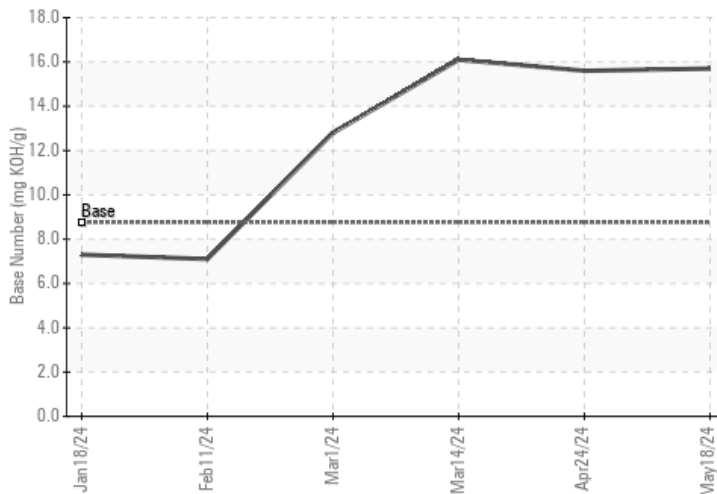
Non-ferrous Metals



Viscosity @ 100°C



Base Number



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH80M 155277-1218 - Swing Drive

Sample No: LH0243740

Oil Type: GL-5 80W90



SAMPLE INFORMATION

Sample Number	LH0243740	---	---	---
Sample Date	17 Feb 2024	---	---	---
Machine Hours	701	---	---	---
Oil Hours	701	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	NORMAL	---	---	---

NUCOR STEEL

2911 E NUCOR RD
NORFOLK, NE
US 68702

Contact: MARK EICHBERGER
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T: (402)750-5100
F: (402)644-0389



OIL CONDITION

Visc @ 40°C	cSt	● 179	---	---	---
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CONTAMINATION

Water	%	NEG	---	---	---
Silicon	ppm	● 2	---	---	---
Sodium	ppm	● 4	---	---	---
Potassium	ppm	● 1	---	---	---

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 condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	● 158	---	---	---
Copper	ppm	● 44	---	---	---
Lead	ppm	● 2	---	---	---
Tin	ppm	● 2	---	---	---
Aluminum	ppm	● 0	---	---	---
Chromium	ppm	● 0	---	---	---
Molybdenum	ppm	0	---	---	---
Nickel	ppm	● 0	---	---	---
Titanium	ppm	0	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	1	---	---	---
Vanadium	ppm	0	---	---	---



ADDITIVES

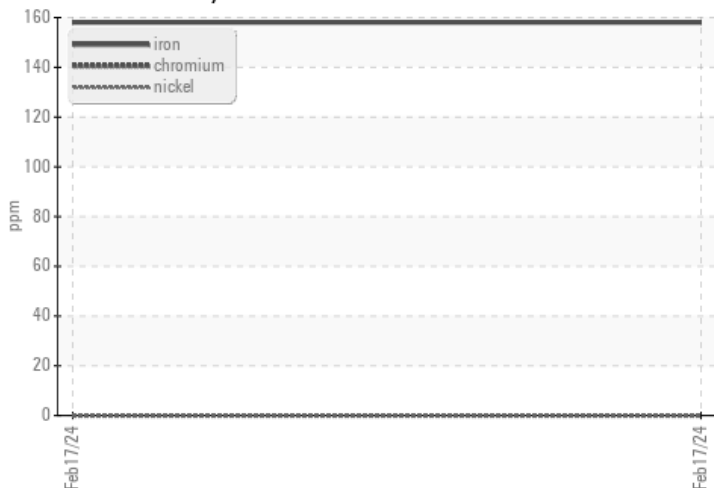
Calcium	ppm	104	---	---	---
Magnesium	ppm	0	---	---	---
Zinc	ppm	47	---	---	---
Phosphorus	ppm	2185	---	---	---
Barium	ppm	1	---	---	---
Boron	ppm	4	---	---	---

Depot: NUCNOR
Unique No: 10900840
Signed: Don Baldrige
Report Date: 29 Feb 2024

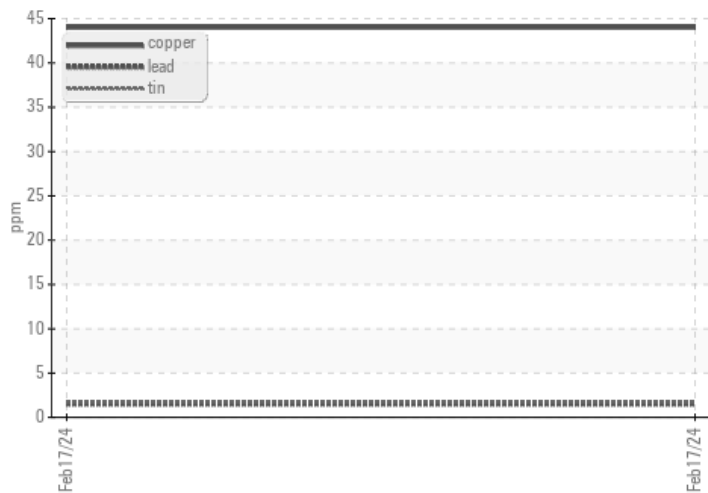


GRAPHS

Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C

