

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A924C064060-1049 - Diesel Engine

Sample No: LH0229956

Oil Type: SHELL ROTELLA T 15W40



SAMPLE INFORMATION

Sample Number	LH0229956	LHMC158132	LH0157727	LH0157827
Sample Date	09 Jan 2024	01 Sep 2022	26 May 2021	09 Apr 2021
Machine Hours	23880	20945	18120	17815
Oil Hours	0	0	305	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

MIDWEST METALS CORP

40 WINDHURST WAY
SHELBYVILLE, KY
US 40065

Contact: JIMMY RENFROE
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OIL CONDITION

Visc @ 100°C	cSt	13.3	13.5	14.2	14.1
Base Number (BN)	mg KOH/g	5.7	9.3	---	---
Oxidation (PA)	%	84	67	72	82



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	2	0.9	0.6	0.7
Nitration (PA)	%	98	68	69	84
Sulfation (PA)	%	77	62	63	68
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	11	10	7	6
Sodium	ppm	<1	1	<1	1
Potassium	ppm	0	0	8	7



WEAR METALS

Iron	ppm	27	5	4	3
Copper	ppm	9	<1	<1	2
Lead	ppm	14	<1	<1	<1
Tin	ppm	<1	0	0	<1
Aluminum	ppm	3	1	0	<1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	76	54	3	<1
Nickel	ppm	0	0	0	0
Titanium	ppm	0	0	0	0
Silver	ppm	0	<1	0	0
Manganese	ppm	1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	2027	1771	2244	2313
Magnesium	ppm	143	372	23	20
Zinc	ppm	1207	1264	1178	1270
Phosphorus	ppm	1039	1019	1002	996
Barium	ppm	0	0	0	0
Boron	ppm	40	79	241	152

Diagnosis

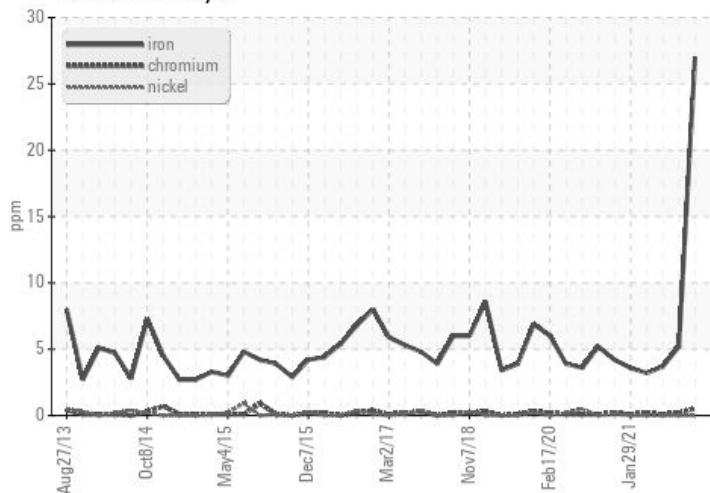
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Depot: MIDSHELH
Unique No: 10842770
Signed: Don Baldrige
Report Date: 23 Jan 2024

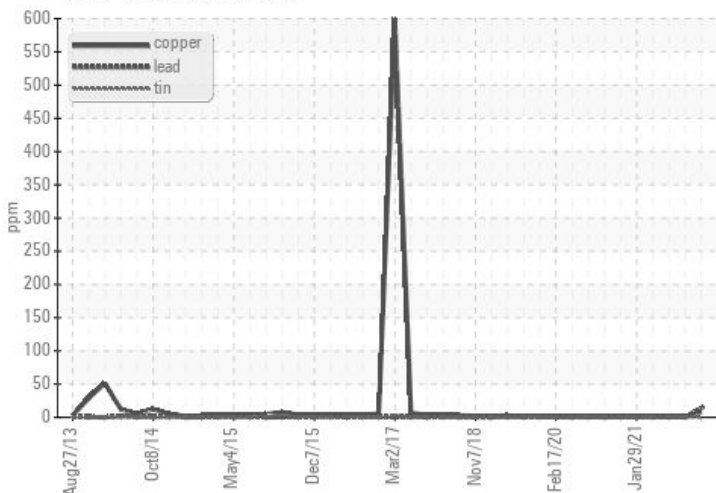


GRAPHS

Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

