

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH80M 1218-157090 - Diesel Engine

Sample No: LH0267538

Oil Type: DIESEL ENGINE OIL SAE 15W40



KINDER MORGAN

4301 IVERSON

TRINITY, AL

US 35601

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Sample Information

Sample Number	LH0267538	LH0282872	LH0282891	LH0282883
Sample Date	29 May 2024	18 May 2024	03 May 2024	19 Apr 2024
Machine Hours	1734	1559	1198	997
Oil Hours	214	0	0	0
Oil Changed	Not Changd	Changed	Not Changd	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



Oil Condition

Visc @ 100°C	cSt	13.2	12.3	12.7	12.4
Base Number (BN)	mg KOH/g	7.3	6.7	7.4	6.0
Oxidation (PA)	%	58	70	63	86



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0	0.1	0.1	0.1
Nitration (PA)	%	59	68	53	70
Sulfation (PA)	%	53	59	58	65
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	10	13	9	9
Sodium	ppm	1	4	3	<1
Potassium	ppm	3	4	3	<1



Wear Metals

Iron	ppm	6	7	4	5
Copper	ppm	2	14	9	54
Lead	ppm	<1	1	<1	2
Tin	ppm	<1	1	<1	0
Aluminum	ppm	3	5	3	2
Chromium	ppm	<1	1	<1	0
Molybdenum	ppm	97	106	80	79
Nickel	ppm	<1	<1	<1	0
Titanium	ppm	2	<1	<1	0
Silver	ppm	0	1	1	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	<1	0



Additives

Calcium	ppm	1997	1695	1273	1492
Magnesium	ppm	281	553	405	524
Zinc	ppm	1349	1518	1121	1263
Phosphorus	ppm	1164	1295	961	1059
Barium	ppm	<1	3	2	5
Boron	ppm	298	420	403	301

Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. 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.

Depot: KINTRI

Unique No: 11088317

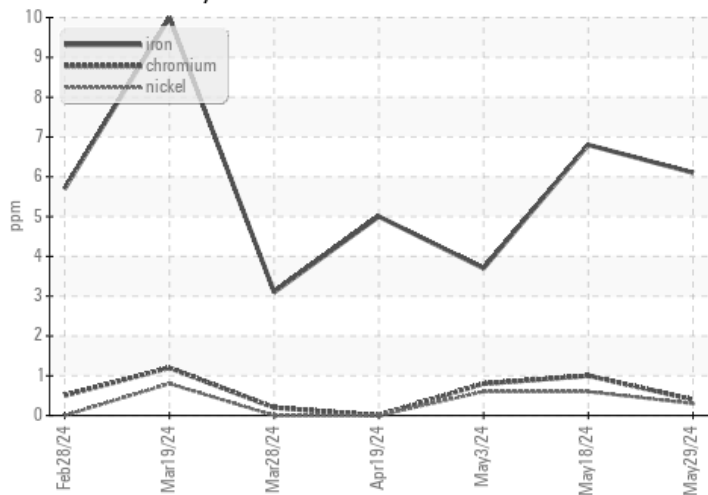
Signed: Wes Davis

Report Date: 21 Jun 2024

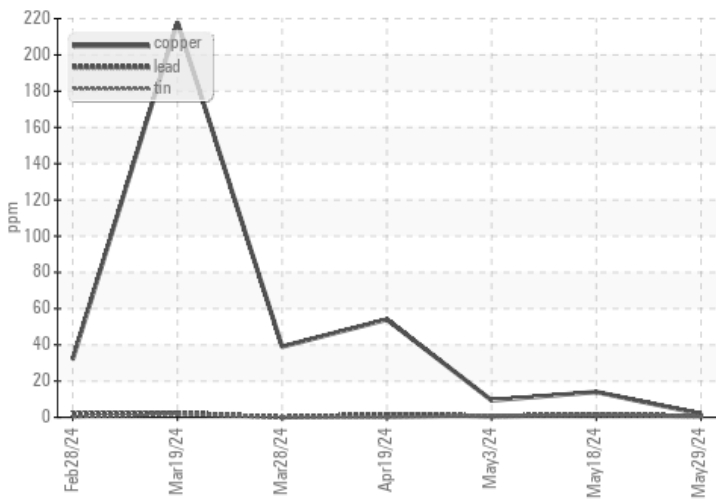


Graphs

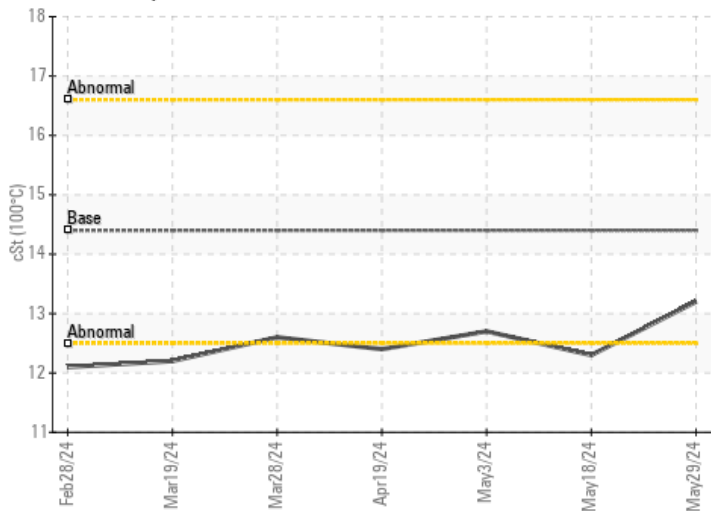
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

