

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH110 155976-1227 - Diesel Engine

Sample No: LH0267259

Oil Type: DIESEL ENGINE OIL SAE 15W40



Sample Information

Sample Number	LH0267259	LH0267250	LH0267555	LH0267559
Sample Date	08 Jun 2024	29 May 2024	12 May 2024	26 Apr 2024
Machine Hours	2430	2217	1951	1769
Oil Hours	479	266	328	146
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	ATTENTION	ATTENTION	NORMAL	NORMAL

KINDER MORGAN

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TRINITY, AL

US 35601

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Oil Condition

Visc @ 100°C	cSt	10.2	10.0	12.1	13.0
Base Number (BN)	mg KOH/g	7.7	7.7	7.0	7.2
Oxidation (PA)	%	29	24	63	60



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0	0.1	0.1
Nitration (PA)	%	51	43	57	49
Sulfation (PA)	%	42	39	58	56
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	1.1	<1.0
Silicon	ppm	10	10	10	10
Sodium	ppm	<1	0	3	3
Potassium	ppm	2	2	3	3



Wear Metals

Iron	ppm	6	3	5	4
Copper	ppm	2	2	12	12
Lead	ppm	1	<1	<1	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	3	3	3	3
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	16	12	76	80
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	0	1	1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	0	<1	<1



Additives

Calcium	ppm	2743	2729	1343	1243
Magnesium	ppm	81	74	379	384
Zinc	ppm	1197	1168	1124	1067
Phosphorus	ppm	1015	1006	966	895
Barium	ppm	0	0	1	1
Boron	ppm	37	33	338	394

Diagnosis

Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: KINTRI

Unique No: 11088318

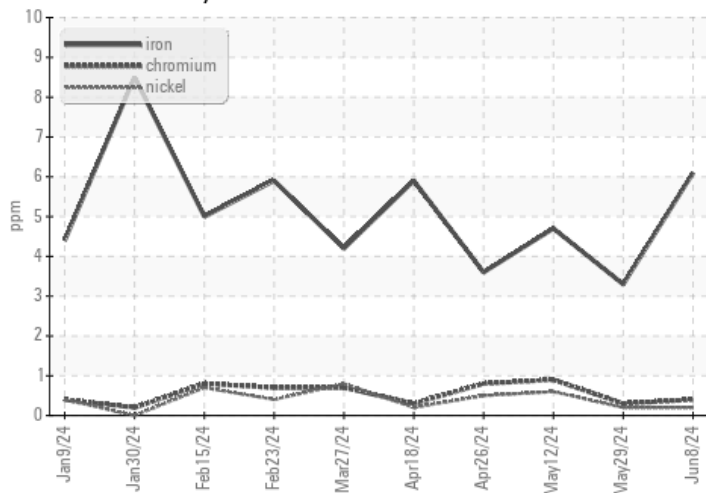
Signed: Don Baldrige

Report Date: 21 Jun 2024

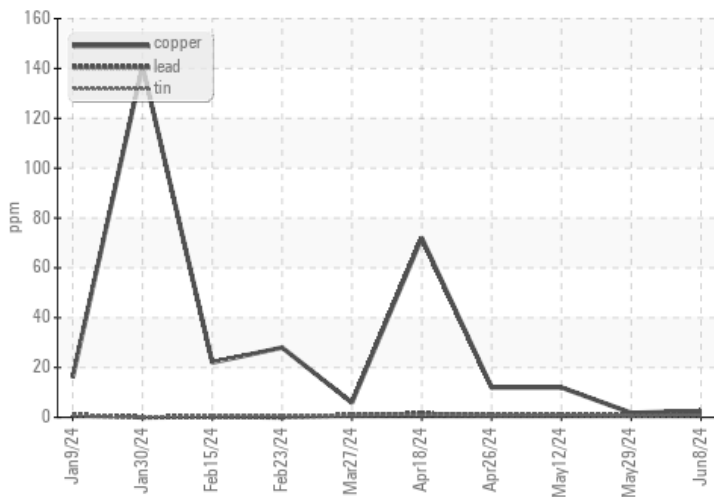


Graphs

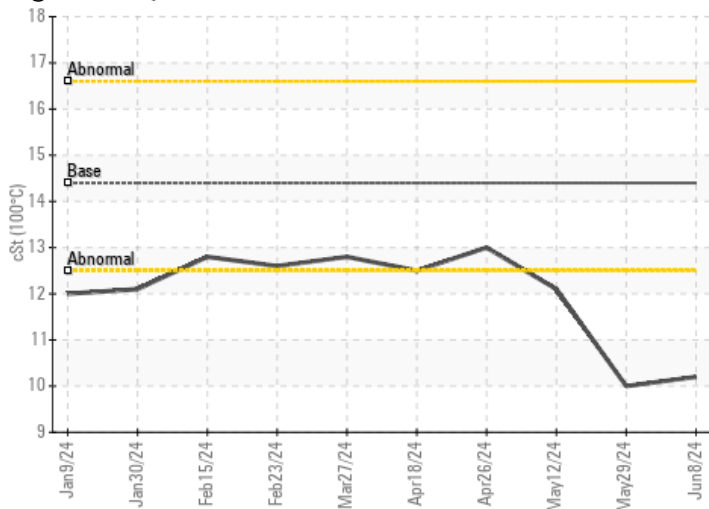
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

