

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH110 155976-1227 - Diesel Engine

Sample No: LH0267250

Oil Type: DIESEL ENGINE OIL SAE 15W40



KINDER MORGAN
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Sample Information

Sample Number	LH0267250	LH0267555	LH0267559	LH0267531
Sample Date	29 May 2024	12 May 2024	26 Apr 2024	18 Apr 2024
Machine Hours	2217	1951	1769	1623
Oil Hours	266	328	146	628
Oil Changed	Not Changd	Changed	Not Changd	Changed
Sample Status	ATTENTION	NORMAL	NORMAL	NORMAL



Oil Condition

Visc @ 100°C	cSt	10.0	12.1	13.0	12.5
Base Number (BN)	mg KOH/g	7.7	7.0	7.2	6.6
Oxidation (PA)	%	24	63	60	71



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0	0.1	0.1	0.2
Nitration (PA)	%	43	57	49	70
Sulfation (PA)	%	39	58	56	59
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	1.1	<1.0	<1.0
Silicon	ppm	10	10	10	10
Sodium	ppm	0	3	3	<1
Potassium	ppm	2	3	3	3



Wear Metals

Iron	ppm	3	5	4	6
Copper	ppm	2	12	12	72
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	12	76	80	86
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	1	1	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	<1	<1	<1



Additives

Calcium	ppm	2729	1343	1243	1348
Magnesium	ppm	74	379	384	403
Zinc	ppm	1168	1124	1067	1179
Phosphorus	ppm	1006	966	895	1080
Barium	ppm	0	1	1	1
Boron	ppm	33	338	394	391

Diagnosis

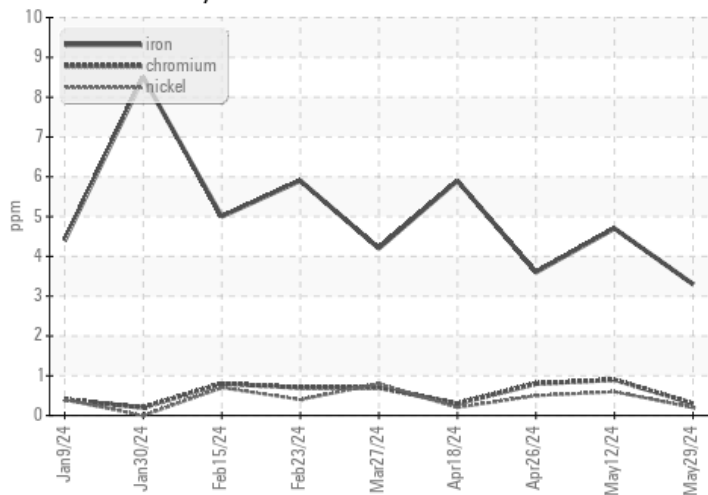
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: KINTRI
 Unique No: 11088319
 Signed: Don Baldrige
 Report Date: 21 Jun 2024

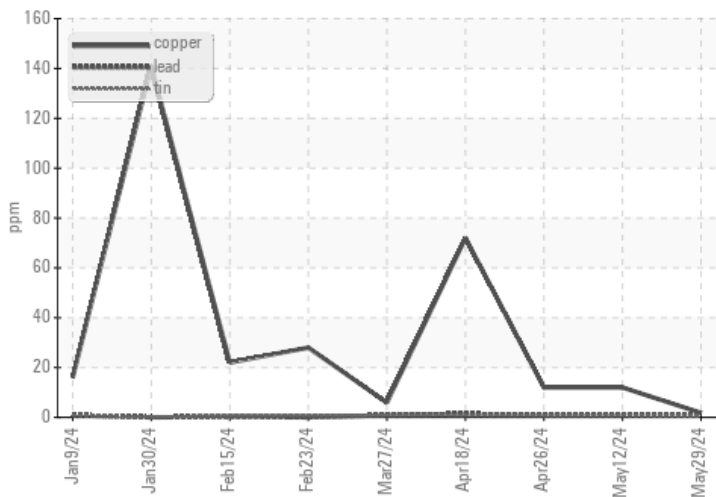


Graphs

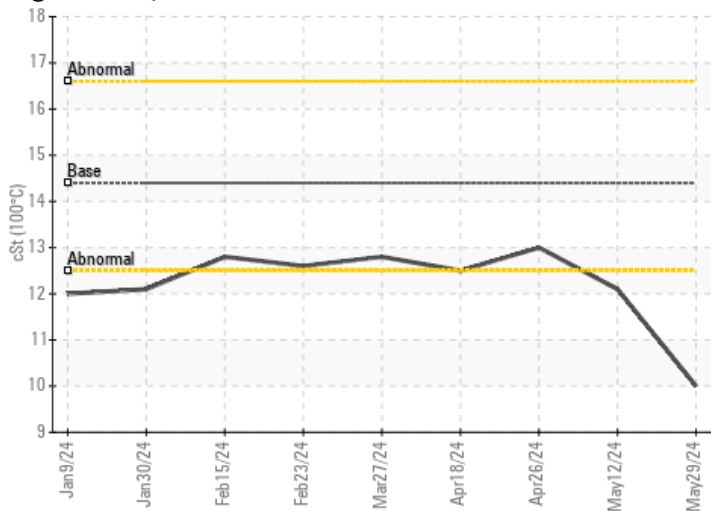
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

