

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH110 1227-155752 - Diesel Engine

Sample No: LH0280583

Oil Type: DIESEL ENGINE OIL SAE 15W40



**KINDER MORGAN**  
4301 IVERSON  
TRINITY, AL  
US 35601  
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#### 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.



#### SAMPLE INFORMATION

Sample Number	LH0280583	LH0280561	LH0280580	LH0280569
Sample Date	19 Mar 2024	05 Mar 2024	20 Feb 2024	30 Jan 2024
Machine Hours	1544	1323	1022	863
Oil Hours	0	0	0	0
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	12.4	12.7	12.4	12.5
Base Number (BN)	mg KOH/g	6.8	7.5	6.6	7.2
Oxidation (PA)	%	71	64	80	75



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	66	58	69	62
Sulfation (PA)	%	58	57	62	61
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	11	10	9	9
Sodium	ppm	0	0	2	0
Potassium	ppm	2	2	2	2



#### WEAR METALS

Iron	ppm	6	5	6	4
Copper	ppm	3	2	7	6
Lead	ppm	1	<1	<1	0
Tin	ppm	1	1	<1	0
Aluminum	ppm	2	3	3	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	89	87	81	83
Nickel	ppm	<1	<1	<1	0
Titanium	ppm	<1	<1	<1	0
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	0
Vanadium	ppm	<1	<1	<1	0



#### ADDITIVES

Calcium	ppm	1350	1437	1150	1235
Magnesium	ppm	404	421	436	478
Zinc	ppm	1126	1213	1063	1131
Phosphorus	ppm	999	1040	858	860
Barium	ppm	1	3	38	9
Boron	ppm	365	462	309	360

Depot: KINTRI  
Unique No: 10949836  
Signed: Jonathan Hester  
Report Date: 01 Apr 2024



### GRAPHS

