

LIEBHERR

CONSTRUCTION EQUIPMENT



2010.04.6319 - Diesel Engine

Sample No: LH0285107
 Oil Type: DIESEL ENGINE OIL SAE 10W30



SAMPLE INFORMATION

Sample Number	LH0285107	LH0276194	LH0276193	---
Sample Date	28 Mar 2024	20 Mar 2024	19 Mar 2024	---
Machine Hours	26202	5	1	---
Oil Hours	0	0	0	---
Oil Changed	N/A	N/A	N/A	---
Sample Status	ATTENTION	SEVERE	SEVERE	---

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OIL CONDITION

Visc @ 100°C	cSt	14.2	14.0	15.8	---
Base Number (BN)	mg KOH/g	9.3	---	---	---
Oxidation (PA)	%	59	53	99	---



CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	0.1	0	0.7	---
Nitration (PA)	%	60	43	74	---
Sulfation (PA)	%	53	49	45	---
Glycol	%	NEG	0.192	>.70	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	6	10	20	---
Sodium	ppm	14	28	43	---
Potassium	ppm	1	106	169	---

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. No evidence of coolant present in the oil. There is no indication of any contamination in the oil. The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



WEAR METALS

Iron	ppm	5	11	74	---
Copper	ppm	23	4	5	---
Lead	ppm	<1	2	1	---
Tin	ppm	0	0	0	---
Aluminum	ppm	2	<1	1	---
Chromium	ppm	0	0	<1	---
Molybdenum	ppm	11	16	17	---
Nickel	ppm	<1	0	0	---
Titanium	ppm	66	51	51	---
Silver	ppm	0	0	0	---
Manganese	ppm	<1	0	2	---
Vanadium	ppm	<1	0	0	---



ADDITIVES

Calcium	ppm	1811	1245	1357	---
Magnesium	ppm	521	310	402	---
Zinc	ppm	1247	1086	1089	---
Phosphorus	ppm	1100	768	774	---
Barium	ppm	17	54	64	---
Boron	ppm	115	22	46	---

Depot: REMAN
 Unique No: 10952351
 Signed: Jonathan Hester
 Report Date: 03 Apr 2024



GRAPHS

