

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L538 1559-59801 - Diesel Engine

Sample No: LH0209826

Oil Type: MOBIL



SAMPLE INFORMATION

Sample Number	LH0209826	LH05841154	LH05774376	LH0209828
Sample Date	11 Aug 2023	07 May 2023	21 Feb 2023	15 Nov 2022
Machine Hours	2501	2250	0	1766
Oil Hours	0	0	0	0
Oil Changed	Changed	Not Changd	N/A	Not Changd
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	NORMAL

DIEHL AND NUEMAIER

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OIL CONDITION

Visc @ 100°C	cSt	10.8	11.0	11.1	12.3
Base Number (BN)	mg KOH/g	7.9	8.0	6.6	10.8
Oxidation (PA)	%	62	57	58	63



CONTAMINATION

Soot %	%	0.3	0.1	0.3	0.4
Nitration (PA)	%	65	49	78	58
Sulfation (PA)	%	52	47	53	58
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	3.4	2.0	4.7	<1.0
Silicon	ppm	4	3	6	6
Sodium	ppm	0	2	3	2
Potassium	ppm	2	3	4	4



WEAR METALS

Iron	ppm	27	19	57	8
Copper	ppm	2	1	5	12
Lead	ppm	<1	0	<1	1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	5	3	6	3
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	49	51	8	55
Nickel	ppm	2	1	3	2
Titanium	ppm	4	4	67	0
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	<1	0



ADDITIVES

Calcium	ppm	1614	1724	1266	1228
Magnesium	ppm	439	508	628	795
Zinc	ppm	1150	1264	1030	1228
Phosphorus	ppm	984	1043	856	1027
Barium	ppm	0	0	0	0
Boron	ppm	121	129	119	15

Diagnosis

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

Depot: DIEDEF
Unique No: 10606523
Signed: Wes Davis
Report Date: 17 Aug 2023



GRAPHS

