

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R934C 030095 - Diesel Engine

Sample No: LH0178218

Oil Type: KENDALL 10W30



SAMPLE INFORMATION

Sample Number	LH0178218	LH0247340	LH0195425	LH0214168
Sample Date	28 Sep 2023	05 Apr 2023	27 Oct 2022	17 Aug 2022
Machine Hours	18600	18000	17569	17100
Oil Hours	500	500	500	493
Oil Changed	Changed	Changed	Changed	Not Changd
Sample Status	ABNORMAL	NORMAL	NORMAL	ABNORMAL



OIL CONDITION

Visc @ 40°C	cSt	---	---	---	137
Visc @ 100°C	cSt	13.7	12.8	13.0	39.5
Viscosity Index (VI)	Scale	---	---	---	327
Oxidation (PA)	%	59	59	51	72



CONTAMINATION

Soot %	%	4	2.9	2.2	4.6
Nitration (PA)	%	85	76	59	100
Sulfation (PA)	%	74	68	62	83
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	0.8	<1.0	<1.0	0.6
Silicon	ppm	7	10	6	5
Sodium	ppm	6	1	2	2
Potassium	ppm	0	<1	<1	<1



WEAR METALS

Iron	ppm	23	15	9	31
Copper	ppm	2	2	4	2
Lead	ppm	<1	0	2	4
Tin	ppm	0	<1	0	<1
Aluminum	ppm	1	1	1	<1
Chromium	ppm	<1	<1	0	4
Molybdenum	ppm	63	68	60	37
Nickel	ppm	0	0	<1	<1
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	<1	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1794	1803	1442	1144
Magnesium	ppm	482	432	357	309
Zinc	ppm	1221	1159	919	913
Phosphorus	ppm	1022	1062	925	762
Barium	ppm	<1	0	0	0
Boron	ppm	49	54	60	16

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Diagnosis

The oil change at the time of sampling has been noted. All component wear rates are normal. Fuel content negligible. Light concentration of carbon/soot present in the oil. The oil is no longer serviceable due to the presence of contaminants.

Depot: DOMBUR
Unique No: 5681892
Signed: Wes Davis
Report Date: 17 Nov 2023



GRAPHS

