

LIEBHERR

CONSTRUCTION EQUIPMENT



[(340370)] LIEBHERR R945 050696-1866 - Diesel Engine

Sample No: LH0278846

Oil Type: PETRO CANADA 10W40



SAMPLE INFORMATION

Sample Number	LH0278846	LH0274810	LH0247010	LH0178575
Sample Date	17 Jan 2024	10 Oct 2023	27 Jun 2023	18 Jul 2022
Machine Hours	4963	4465	4010	2482
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ABNORMAL	NORMAL

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OIL CONDITION

Visc @ 100°C	cSt	13.7	13.4	11.4	13.8
Oxidation (PA)	%	59	61	72	62



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0	0	0	0
Nitration (PA)	%	58	59	79	60
Sulfation (PA)	%	51	51	57	53
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	2.2	<1.0
Silicon	ppm	6	6	20	7
Sodium	ppm	<1	2	4	2
Potassium	ppm	<1	0	<1	<1

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 condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	2	2	3	4
Copper	ppm	1	1	1	2
Lead	ppm	<1	<1	0	<1
Tin	ppm	<1	0	<1	<1
Aluminum	ppm	1	<1	1	<1
Chromium	ppm	0	0	<1	0
Molybdenum	ppm	58	59	58	55
Nickel	ppm	0	0	0	0
Titanium	ppm	0	0	0	<1
Silver	ppm	0	<1	0	0
Manganese	ppm	0	0	0	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1067	1010	843	1115
Magnesium	ppm	969	987	1108	939
Zinc	ppm	1184	1196	1206	1171
Phosphorus	ppm	1018	999	1067	987
Barium	ppm	0	<1	0	0
Boron	ppm	1	4	29	1

Depot: CLOPEM
 Unique No: 5711608
 Signed: Kevin Marson
 Report Date: 23 Jan 2024



GRAPHS

