

LIEBHERR

CONSTRUCTION EQUIPMENT



054454-194 - Diesel Engine

Sample No: LHMC123424

Oil Type: DIESEL ENGINE OIL SAE 10W30



SAMPLE INFORMATION

Sample Number	LHMC123424	LHMC96881	LHMC72743	LHMC73536
Sample Date	08 Jan 2020	26 Apr 2018	08 Feb 2017	16 May 2016
Machine Hours	3409	2587	1682	986
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	SEVERE	NORMAL	NORMAL	NORMAL

UNITED STATES GYPSUM

301 RILEY RD
EAST CHICAGO, IN
US 43612
Contact: Service Manager



OIL CONDITION

Visc @ 100°C	cSt	33.6	14.65	15.04	14.6
Oxidation (PA)	%	73	60	28	40

T:
F:



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	5.7	2.6	0.9	1
Nitration (PA)	%	153	67	33	50
Sulfation (PA)	%	82	69	44	47
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	5	8	8
Sodium	ppm	3	3	2	2
Potassium	ppm	3	2	2	1

Diagnosis

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Cylinder, crank, or cam shaft wear is indicated. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The oil is no longer serviceable due to the presence of contaminants.



WEAR METALS

Iron	ppm	116	50	36	27
Copper	ppm	5	15	17	3
Lead	ppm	4	6	2	<1
Tin	ppm	1	0	1	<1
Aluminum	ppm	3	2	2	2
Chromium	ppm	2	<1	<1	<1
Molybdenum	ppm	12	78	87	40
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	<1	0	0	0
Silver	ppm	<1	0	0	0
Manganese	ppm	1	1	1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	4366	1480	1487	1667
Magnesium	ppm	151	436	419	324
Zinc	ppm	1195	1062	1106	978
Phosphorus	ppm	1053	798	978	916
Barium	ppm	0	0	<1	1
Boron	ppm	177	49	137	103

Depot: UNIEASLH
Unique No: 8883622
Signed: Don Baldrige
Report Date: 16 Jan 2020



GRAPHS

