

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR A934 044096 - Diesel Engine

Sample No: LH0260488

Oil Type: PETRO CANADA 10W40



**Rypac Aluminum Recycling**  
 11849 Tannery Road  
 Surrey, BC  
 CA V3V 3W8  
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#### SAMPLE INFORMATION

Sample Number	LH0260488	LH0226693	LH0173120	LH0140288
Sample Date	20 Jun 2023	26 Apr 2022	24 Jun 2020	07 May 2019
Machine Hours	28300	26071	22582	20668
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	SEVERE	ABNORMAL	SEVERE	NORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	15.9	16.0	28.4	15.3
Oxidation (PA)	%	82	94	100	68



#### CONTAMINATION

Soot %	%	5	3.9	6.4	2.4
Nitration (PA)	%	118	119	134	92
Sulfation (PA)	%	98	94	139	71
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	0.7	0.4	<1.0	<1.0
Silicon	ppm	6	7	8	7
Sodium	ppm	2	3	2	2
Potassium	ppm	<1	0	1	<1



#### WEAR METALS

Iron	ppm	40	27	43	23
Copper	ppm	5	3	6	2
Lead	ppm	6	2	16	5
Tin	ppm	<1	<1	<1	0
Aluminum	ppm	2	2	2	1
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	79	79	71	49
Nickel	ppm	0	<1	<1	<1
Titanium	ppm	0	0	<1	0
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	<1	0



#### ADDITIVES

Calcium	ppm	1791	1709	1471	1411
Magnesium	ppm	498	616	984	825
Zinc	ppm	1247	1310	1382	1297
Phosphorus	ppm	1112	1123	1134	1047
Barium	ppm	<1	0	<1	0
Boron	ppm	17	16	7	10

#### Diagnosis

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Fuel content negligible. There is an abnormal amount of solids and carbon present in the oil. The oil is no longer serviceable due to the presence of contaminants.

Depot: RYPSUR  
 Unique No: 5604755  
 Signed: Wes Davis  
 Report Date: 05 Jul 2023



### GRAPHS

