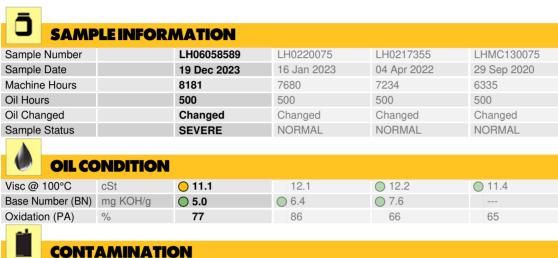
LIEBHERR

CONSTRUCTION EQUIPMENT

LIEBHERR L542 039769-1269 - Diesel Engine

Sample No: LH06058589

Oil Type: DIESEL ENGINE OIL SAE 5W40



CONTAMINATION					
Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.5	0.4	0.4	0.1
Nitration (PA)	%	80	80	88	55
Sulfation (PA)	%	60	60	57	54
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	10.5	<1.0	<1.0	<1.0
Silicon	ppm	4	4	4	4
Sodium	ppm	○ <1	O 2	O 2	3
Potassium	ppm	4	O 1	6	O <1

(O) WEA						
WEA	R META	LS				
Iron	ppm	12	9	1 0	4	
Copper	ppm	1	O <1	O <1	O <1	
Lead	ppm	1	O <1	O <1	O <1	
Tin	ppm	○ <1	O <1	O 0	O <1	
Aluminum	ppm	2	O 2	2	O	
Chromium	ppm	○ <1	O <1	O <1	O <1	
Molybdenum	ppm	8	○ 39	26	46	
Nickel	ppm	○ <1	O 0	O 0	O <1	
Titanium	ppm	() <1	<1	<1	20	
Silver	ppm	0	O 0	<1	<1	
Manganese	ppm	() <1	<1	<1	O <1	
Vanadium	ppm	0	0	0	<1	

ADDITIVES								
Calcium	ppm	1126	O 1035	1156	O 1330			
Magnesium	ppm	530	O 718	656	450			
Zinc	ppm	743	O 1036	○ 850	O 823			
Phosphorus	ppm	665	O 821	O 712	O 702			
Barium	ppm	0	O 0	O 0	O 0			
Boron	ppm	56	○ 86	O 76	5 9			



OZINGA MATERIALS
11701 S TORRENCE AVE
CHICAGO, IL
US 60617
Contact: RYAN DEWINDT

ryandewindt@ozinga.com T: (708)243-6910 F: (773)375-7226

Diagnosis

We advise that you check the fuel injection system. 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. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. 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 oil is no longer serviceable due to the presence of contaminants.

Depot:CHICHILHUnique No:10829971Signed:Wes DavisReport Date:15 Jan 2024

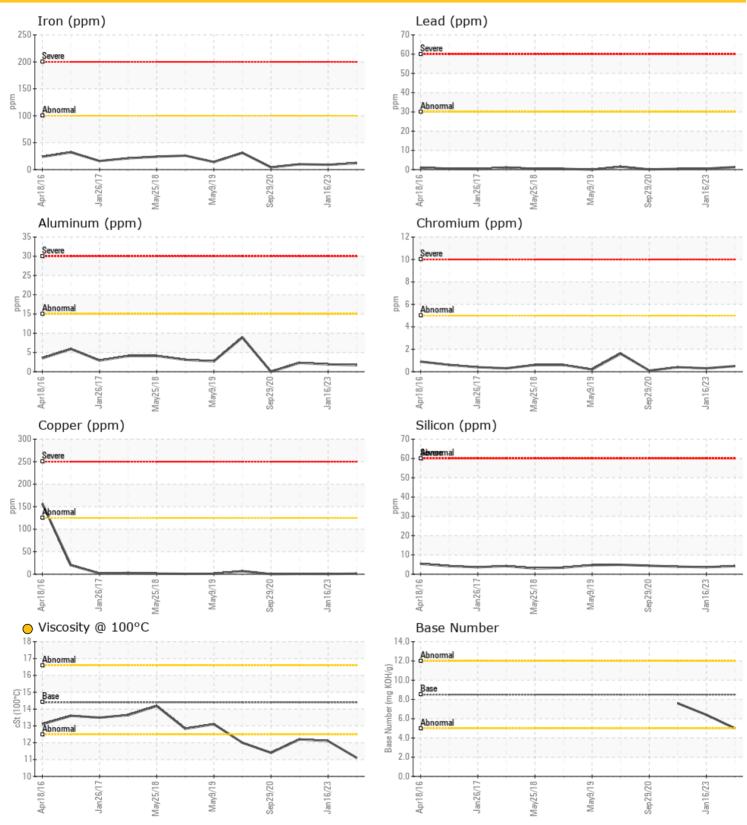
LIEBHERR

CONSTRUCTION EQUIPMENT





GRAPHS



Report Id: CHICHILH [WUSCAR] 06058589 (Generated: 01/15/2024 10:03:27) Rev: 1

Contact/Location: RYAN DEWINDT - CHICHILH