

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R934 025778-918 - Diesel Engine

Sample No: LH0273812

Oil Type: DIESEL ENGINE OIL SAE 5W40



Sample Information

Sample Number	LH0273812	LH0174631	LH0190477	LHMC33958
Sample Date	12 Apr 2024	03 May 2021	09 Apr 2021	02 Sep 2011
Machine Hours	4594	3827	3853	572
Oil Hours	0	5	0	250
Oil Changed	Changed	Not Changd	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

AMERICAN STATE EQUIPMENT CO.
 2400 NORTH 14TH AVENUE
 WAUSAU, WI
 US 54401
 Contact: CHRIS BARTNIK
 cbartnik@amstate.com
 T: (715)675-6900
 F: (715)675-9748



Oil Condition

Visc @ 100°C	cSt	14.5	14.5	13.8	13.26
Base Number (BN)	mg KOH/g	5.0	---	---	---
Oxidation (PA)	%	69	57	70	40



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	2.8	0.3	0.8	0.6
Nitration (PA)	%	96	55	65	50
Sulfation (PA)	%	75	55	64	42
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	8	9	2	6
Sodium	ppm	15	12	26	16
Potassium	ppm	8	4	6	10

Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



Wear Metals

Iron	ppm	42	8	10	20
Copper	ppm	8	1	2	6
Lead	ppm	4	<1	<1	4
Tin	ppm	1	<1	<1	0
Aluminum	ppm	2	0	<1	1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	5	11	2	38
Nickel	ppm	0	<1	0	<1
Titanium	ppm	16	17	1	<1
Silver	ppm	0	<1	1	0
Manganese	ppm	1	<1	<1	<1
Vanadium	ppm	<1	<1	0	0



Additives

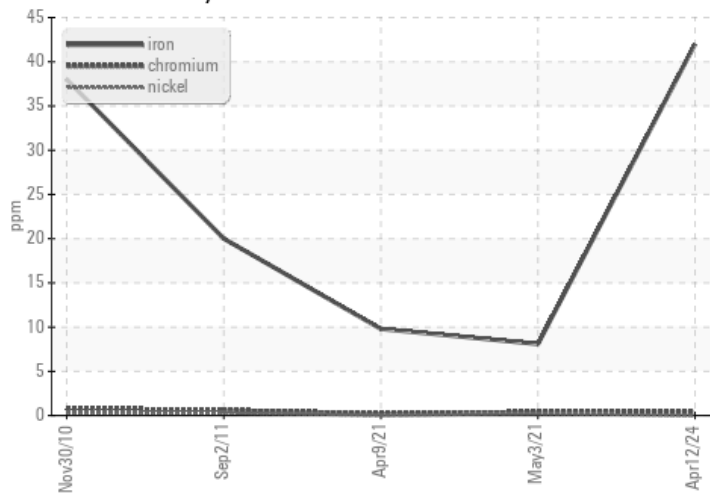
Calcium	ppm	1763	1743	2167	2039
Magnesium	ppm	420	427	49	774
Zinc	ppm	1055	930	1109	1299
Phosphorus	ppm	910	875	940	1167
Barium	ppm	0	0	0	3
Boron	ppm	50	125	162	32

Depot: LEC0008
 Unique No: 10983766
 Signed: Wes Davis
 Report Date: 19 Apr 2024

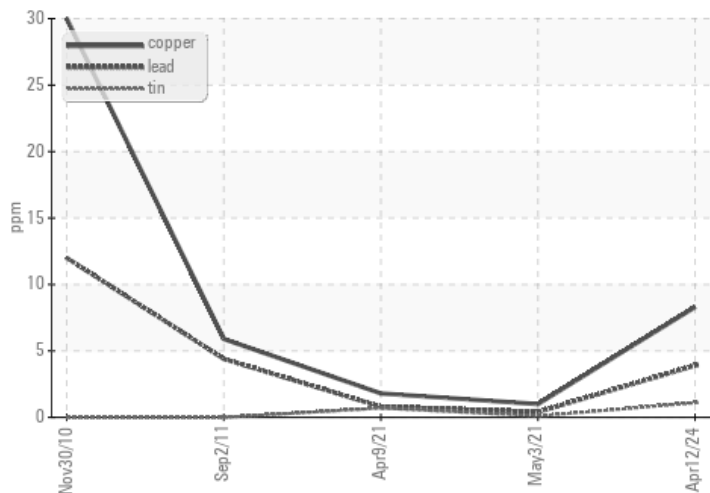


Graphs

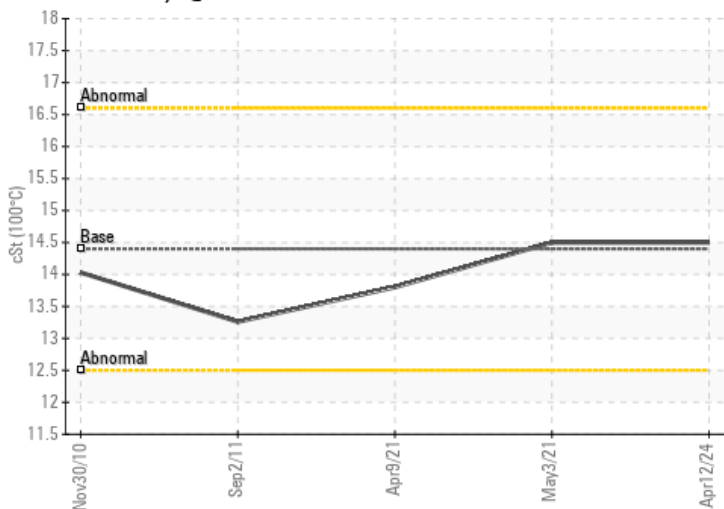
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

