

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R945 053481-1866 - Diesel Engine

Sample No: LH0273816

Oil Type: DIESEL ENGINE OIL SAE 5W30



SAMPLE INFORMATION

Sample Number	LH0273816	LH0220715	---	---
Sample Date	02 Feb 2024	29 Sep 2022	---	---
Machine Hours	574	425	---	---
Oil Hours	0	0	---	---
Oil Changed	Not Chngd	N/A	---	---
Sample Status	NORMAL	ABNORMAL	---	---

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	13.4	12.1	---	---
Base Number (BN)	mg KOH/g	7.6	5.5	---	---
Oxidation (PA)	%	60	210	---	---

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.



CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	0.1	0.1	---	---
Nitration (PA)	%	67	114	---	---
Sulfation (PA)	%	53	114	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	1.2	---	---
Silicon	ppm	11	10	---	---
Sodium	ppm	0	0	---	---
Potassium	ppm	5	8	---	---



WEAR METALS

Iron	ppm	4	14	---	---
Copper	ppm	41	177	---	---
Lead	ppm	1	2	---	---
Tin	ppm	<1	2	---	---
Aluminum	ppm	1	4	---	---
Chromium	ppm	<1	1	---	---
Molybdenum	ppm	7	42	---	---
Nickel	ppm	<1	0	---	---
Titanium	ppm	92	<1	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	<1	2	---	---
Vanadium	ppm	1	0	---	---



ADDITIVES

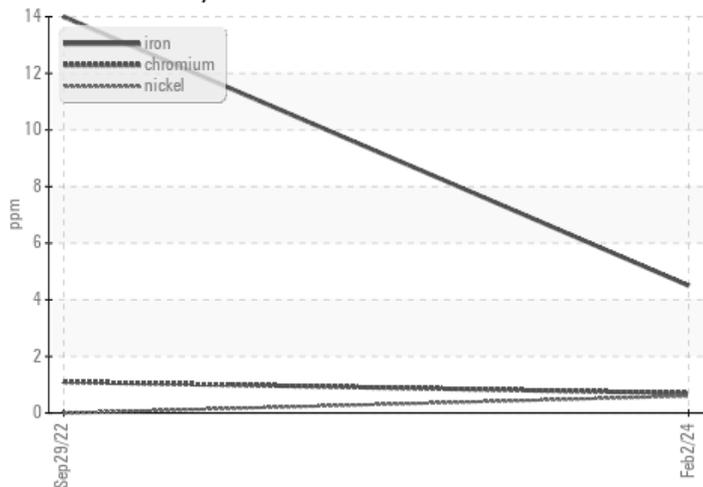
Calcium	ppm	1326	1431	---	---
Magnesium	ppm	647	828	---	---
Zinc	ppm	1096	873	---	---
Phosphorus	ppm	1002	678	---	---
Barium	ppm	1	18	---	---
Boron	ppm	157	90	---	---

Depot: LEC0008
 Unique No: 10883724
 Signed: Don Baldrige
 Report Date: 19 Feb 2024

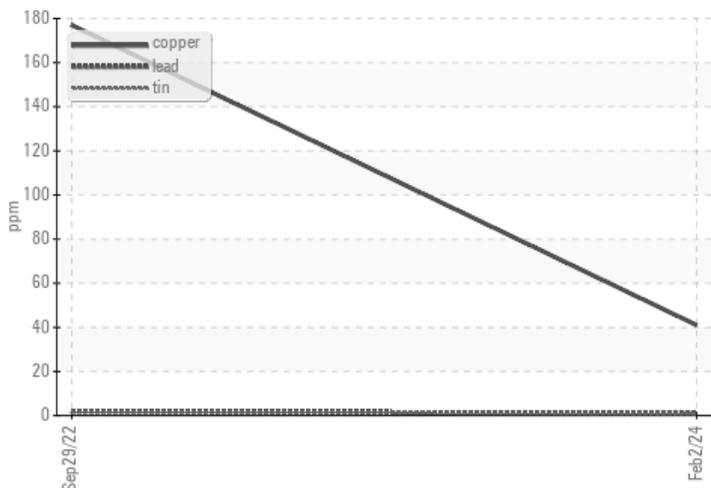


GRAPHS

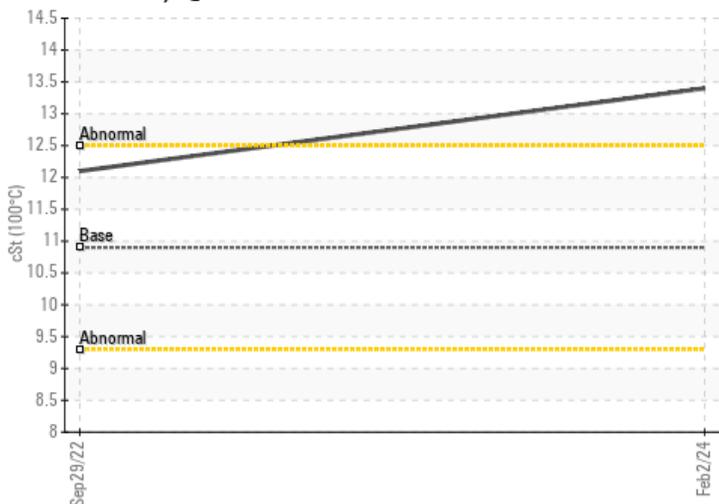
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

