

LIEBHERR

CONSTRUCTION EQUIPMENT



[[CURTIS EXCAVATING]] LIEBHERR R922 003029-480 - Diese

Sample No: LH0244239

Oil Type: NAPA HIGH PERFORMANCE DIESEL 15W40



SAMPLE INFORMATION

Sample Number	LH0244239	LH0207660	LH0217652	LH0221011
Sample Date	08 Jul 2023	22 May 2023	12 Jan 2023	09 Aug 2022
Machine Hours	740	7652	7407	50
Oil Hours	228	232	260	50
Oil Changed	Changed	Changed	Changed	Not Changd
Sample Status	NORMAL	NORMAL	ATTENTION	ATTENTION

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	14.6	14.5	11.2	11.6
Base Number (BN)	mg KOH/g	6.2	8.9	7.5	10.7
Oxidation (PA)	%	69	80	71	53



CONTAMINATION

Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	82	84	94	73
Sulfation (PA)	%	60	59	56	52
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	1.4	0.3
Silicon	ppm	8	4	10	7
Sodium	ppm	2	4	11	8
Potassium	ppm	4	0	1	1

Diagnosis

Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. 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	20	9	21	7
Copper	ppm	2	2	4	2
Lead	ppm	3	<1	2	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	3	<1	2	1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	8	48	12	3
Nickel	ppm	<1	0	0	0
Titanium	ppm	0	<1	2	1
Silver	ppm	0	0	0	0
Manganese	ppm	1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

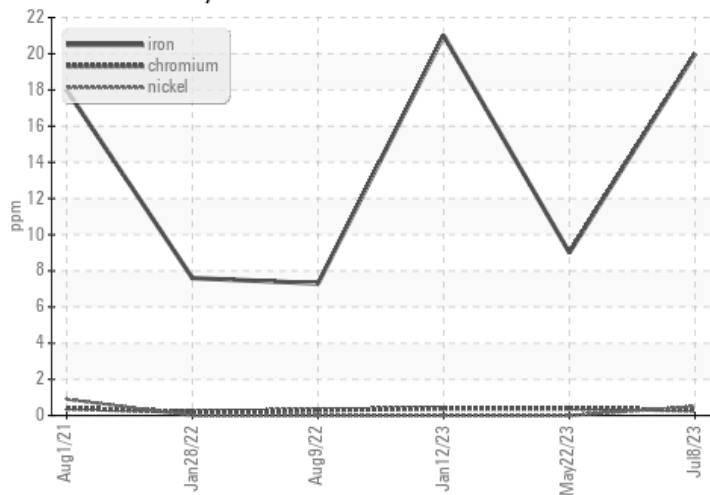
Calcium	ppm	2648	1844	1949	1651
Magnesium	ppm	70	586	665	597
Zinc	ppm	1209	1316	889	830
Phosphorus	ppm	1005	1041	768	704
Barium	ppm	6	0	10	0
Boron	ppm	3	30	103	114

Depot: LEC0008
 Unique No: 10607740
 Signed: Wes Davis
 Report Date: 18 Aug 2023

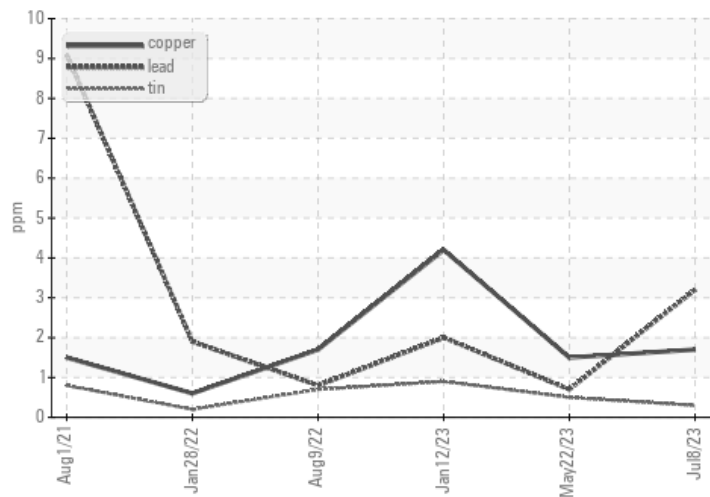


GRAPHS

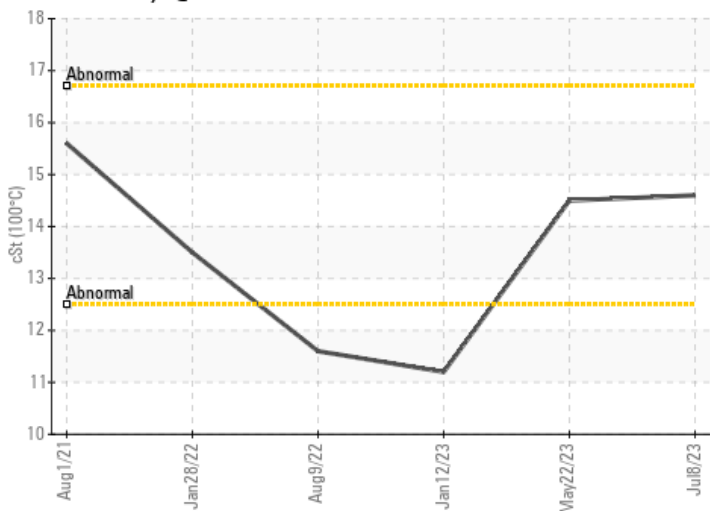
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

