



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR L550 021798-456
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (31 LTR)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0273341	LHMC60783	---
Sample Date		Client Info		20 Mar 2024	14 Aug 2012	---
Machine Age	hrs	Client Info		9820	475	---
Oil Age	hrs	Client Info		500	215	---
Filter Age	hrs	Client Info		0	215	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	11	10	---
Chromium	ppm	ASTM D5185m	>5	1	2	---
Nickel	ppm	ASTM D5185m	>5	1	<1	---
Titanium	ppm	ASTM D5185m		<1	0	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>15	2	1	---
Lead	ppm	ASTM D5185m	>30	23	2	---
Copper	ppm	ASTM D5185m	>125	13	6	---
Tin	ppm	ASTM D5185m	>5	<1	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

Sodium and/or potassium levels are high.

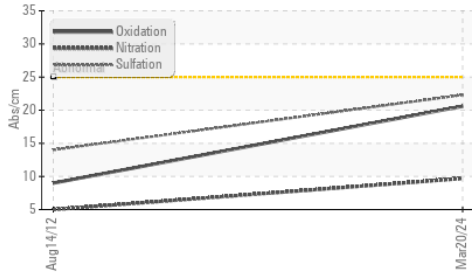
Silicon	ppm	ASTM D5185m	>60	11	5	---
Potassium	ppm	ASTM D5185m	>20	▲ 60	1	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol	%	*ASTM D2982		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.6	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	9.7	5.	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	14.	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

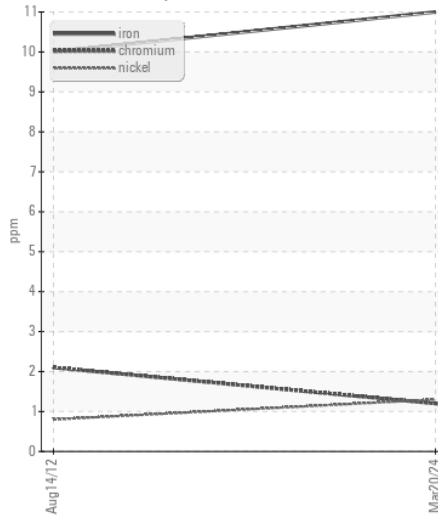
The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>44	▲ 201	7	---
Boron	ppm	ASTM D5185m	250	20	16	---
Barium	ppm	ASTM D5185m	10	<1	1	---
Molybdenum	ppm	ASTM D5185m	100	38	35	---
Manganese	ppm	ASTM D5185m		1	<1	---
Magnesium	ppm	ASTM D5185m	450	509	950	---
Calcium	ppm	ASTM D5185m	3000	1577	1165	---
Phosphorus	ppm	ASTM D5185m	1150	756	1101	---
Zinc	ppm	ASTM D5185m	1350	936	1170	---
Sulfur	ppm	ASTM D5185m	4250	2714	3105	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.6	9.	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.8	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	13.56	---

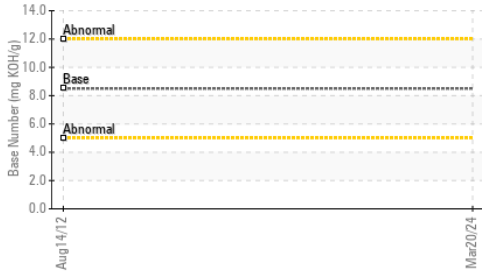
FT-IR (Direct Trend)



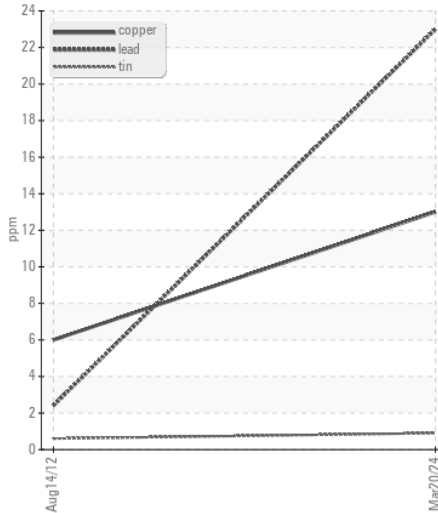
Ferrous Alloys



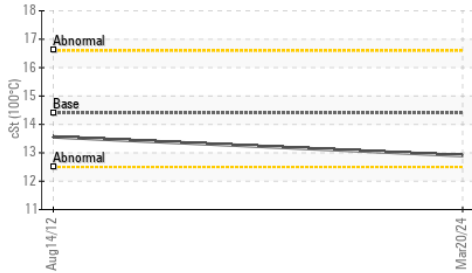
Base Number



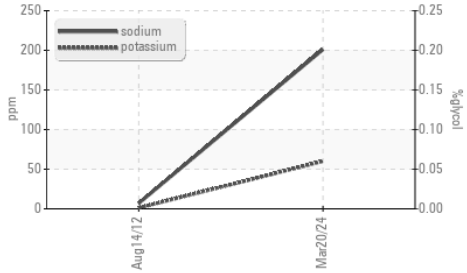
Non-ferrous Metals



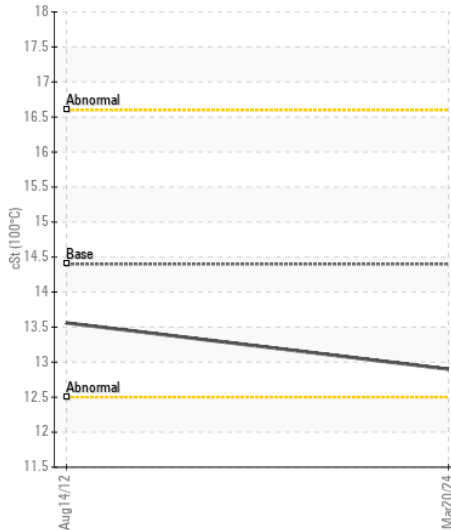
Viscosity @ 100°C



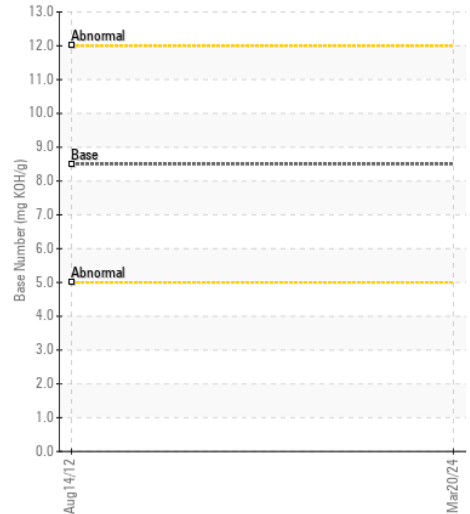
Glycol Contamination



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0273341 **Received** : 22 Apr 2024
Lab Number : 06156612 **Tested** : 24 Apr 2024
Unique Number : 10992035 **Diagnosed** : 24 Apr 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

ECO BLOCK
 2650 W 5TH AVE
 GARY, IN
 US 46408
 Contact: JAMES CROOK
 jcrook@ecoblockmfg.com
 T: (219)886-3000
 F: (219)886-3001

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)