CONST

LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Machine Id
LIEBHERR LH50M 1203-75955
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

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. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

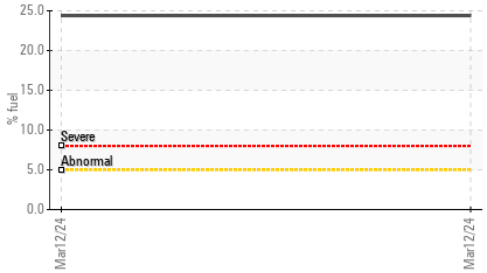
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

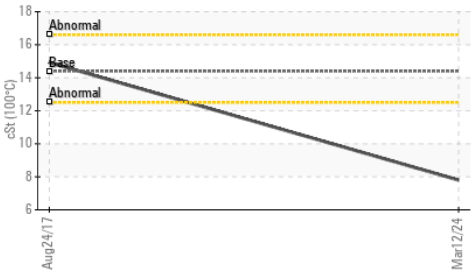
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**LH0258882**	LHMC115088	---
Sample Date		Client Info		**12 Mar 2024**	24 Aug 2017	---
Machine Age	hrs	Client Info		**1517**	1056	---
Oil Age	hrs	Client Info		**0**	565	---
Filter Age	hrs	Client Info		**0**	0	---
Oil Changed		Client Info		**Changed**	Changed	---
Filter Changed		Client Info		**Changed**	Changed	---
Sample Status				**SEVERE**	ABNORMAL	---
Iron	ppm	ASTM D5185m	>100	**40**	35	---
Chromium	ppm	ASTM D5185m	>5	**<1**	2	---
Nickel	ppm	ASTM D5185m	>5	**0**	<1	---
Titanium	ppm	ASTM D5185m		**7**	0	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>15	**4**	16	---
Lead	ppm	ASTM D5185m	>30	**2**	4	---
Copper	ppm	ASTM D5185m	>125	**10**	▲ 157	---
Tin	ppm	ASTM D5185m	>5	**1**	1	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Silicon	ppm	ASTM D5185m	>60	**7**	10	---
Potassium	ppm	ASTM D5185m	>20	**0**	2	---
Fuel	%	ASTM D3524	>5	▲ **24.4**	<1.0	---
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---
Soot %	%	*ASTM D7844	>3	**1**	0.6	---
Nitration	Abs/cm	*ASTM D7624	>20	**11.7**	10.	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.6**	19.	---
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	---
Sodium	ppm	ASTM D5185m	>158	**5**	3	---
Boron	ppm	ASTM D5185m	250	**12**	24	---
Barium	ppm	ASTM D5185m	10	**0**	3	---
Molybdenum	ppm	ASTM D5185m	100	**25**	0	---
Manganese	ppm	ASTM D5185m		**1**	<1	---
Magnesium	ppm	ASTM D5185m	450	**303**	767	---
Calcium	ppm	ASTM D5185m	3000	**1179**	1242	---
Phosphorus	ppm	ASTM D5185m	1150	**683**	836	---
Zinc	ppm	ASTM D5185m	1350	**832**	1086	---
Sulfur	ppm	ASTM D5185m	4250	**2302**	1288	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.8**	17.	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**4.4**	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **7.8**	14.92	---

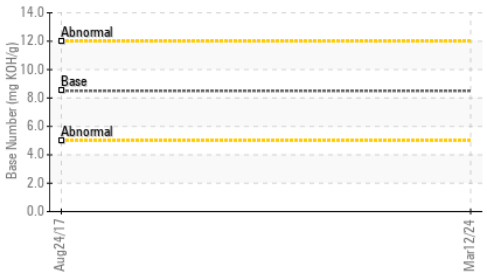
Fuel Dilution



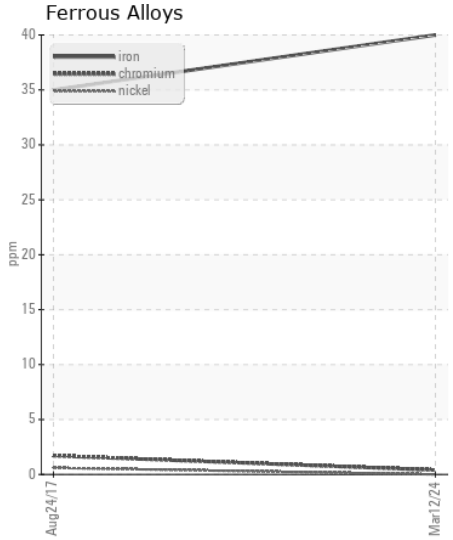
Viscosity @ 100°C



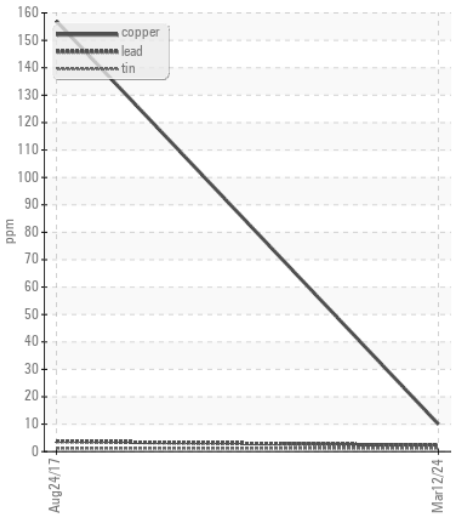
Base Number



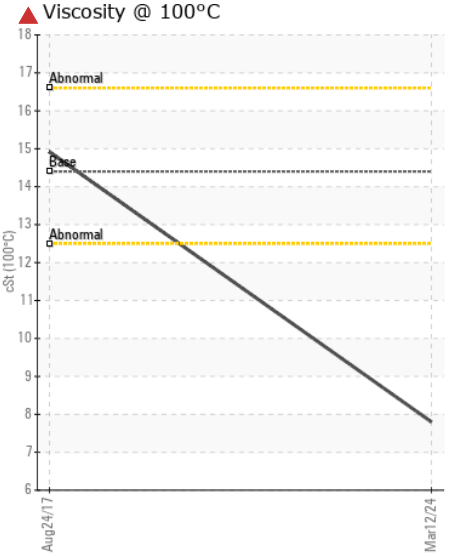
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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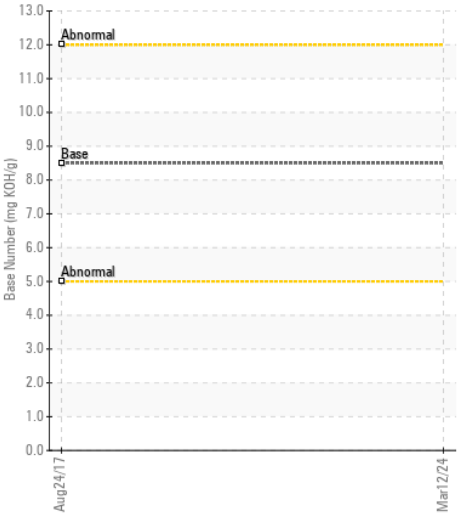

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0258882 **Received** : 21 Mar 2024
Lab Number : 06125560 **Tested** : 26 Mar 2024
Unique Number : 10939711 **Diagnosed** : 26 Mar 2024 - Wes Davis
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

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)

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