



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
LIEBHERR LH50M 1203-88008
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 10W-40 (32 LTR)

RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0184654	LHMC154528	LHMC142562
Sample Date		Client Info		30 Sep 2021	20 Feb 2021	28 Jan 2020
Machine Age	hrs	Client Info		4500	3069	1957
Oil Age	hrs	Client Info		500	569	500
Filter Age	hrs	Client Info		500	569	500
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The lead level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	64	28	24
Chromium	ppm	ASTM D5185m	>4	2	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>8	5	5	7
Lead	ppm	ASTM D5185m	>10	▲ 34	2	2
Copper	ppm	ASTM D5185m	>74	6	5	11
Tin	ppm	ASTM D5185m	>4	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

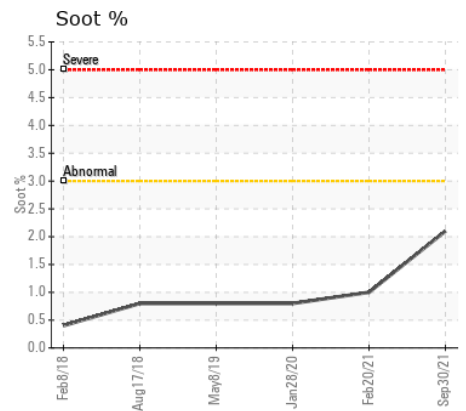
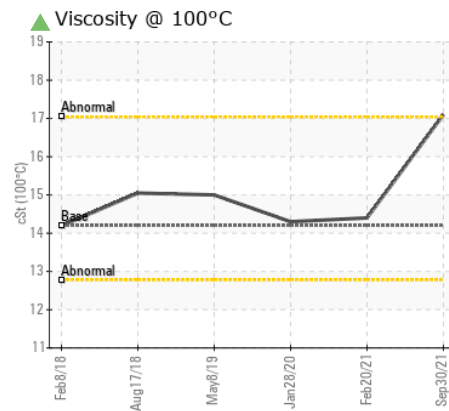
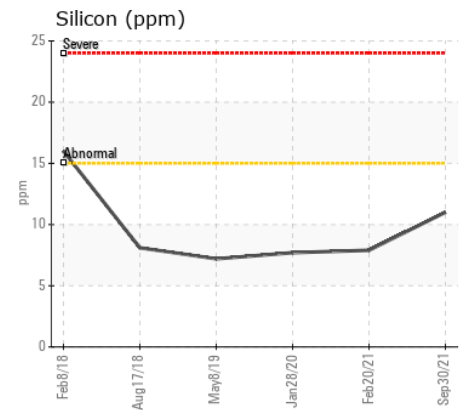
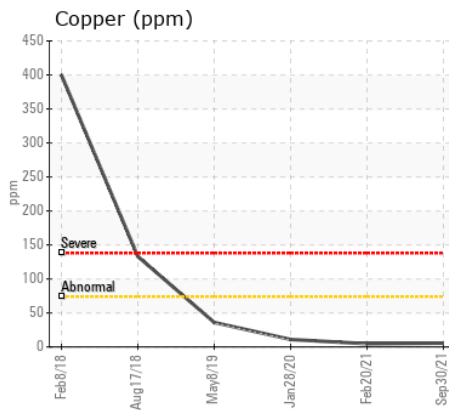
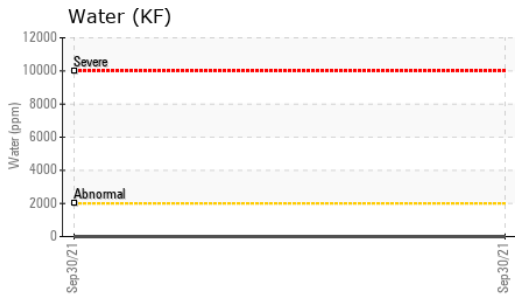
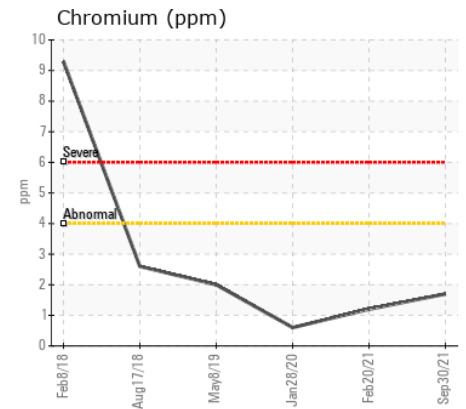
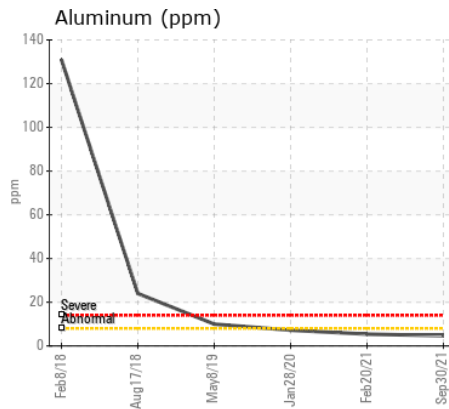
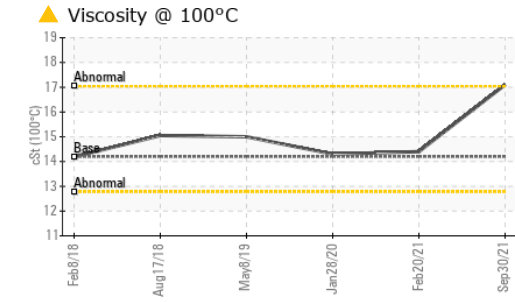
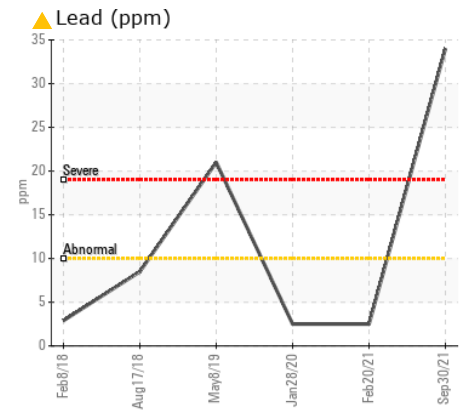
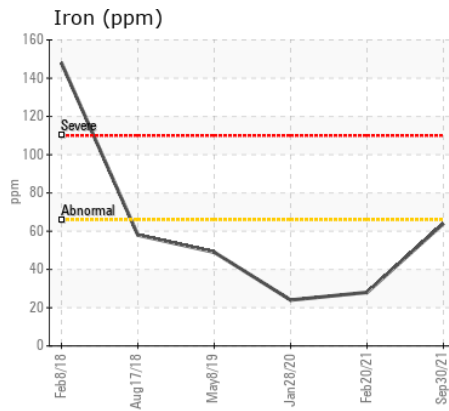
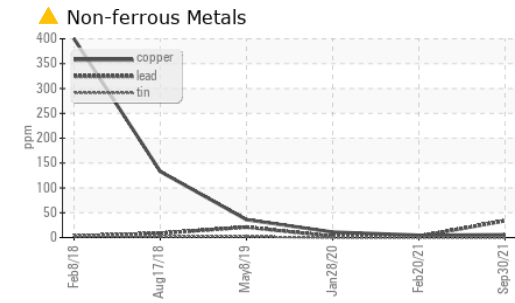
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	11	8	8
Potassium	ppm	ASTM D5185m	>20	9	2	3
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water	%	ASTM D6304	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.1	1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	18	13.2	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.4	24	23.5
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal.

Sodium	ppm	ASTM D5185m		4	16	4
Boron	ppm	ASTM D5185m	245	33	50	45
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	50	2	2
Manganese	ppm	ASTM D5185m	<1	<1	<1	<1
Magnesium	ppm	ASTM D5185m	36	1107	828	605
Calcium	ppm	ASTM D5185m	4401	1690	1570	1605
Phosphorus	ppm	ASTM D5185m	1067	794	754	694
Zinc	ppm	ASTM D5185m	1183	958	894	779
Sulfur	ppm	ASTM D5185m	2591	3965	2779	2404
Oxidation	Abs/.1mm	*ASTM D7414	>25	29.1	24.1	23
Visc @ 100°C	cSt	ASTM D445	14.2	▲ 17.1	14.4	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0184654 **Received** : 05 Oct 2021
Lab Number : 05365948 **Diagnosed** : 08 Oct 2021
Unique Number : 9685054 **Diagnostician** : Don Baldridge
Test Package : MOBCE (Additional Tests: KF)

JR VINAGRO
 2208 PLAINFIELD PIKE
 JOHNSTON, RI
 US 02919
 Contact: Service Manager

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)

T:
F: