



LIEBHERR

OIL ANALYSIS REPORT

WEAR

NORMAL

CONTAMINATION

SEVERE

FLUID CONDITION

SEVERE



Machine Id
LIEBHERR LH40C 1527-112204

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH06037210	LH05908147	LH0174580
Sample Date		Client Info		14 Dec 2023	07 Jul 2023	03 Sep 2020
Machine Age	hrs	Client Info		8000	7166	2003
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				SEVERE	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	8	12	16
Chromium	ppm	ASTM D5185m	>5	<1	1	1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>15	2	3	0
Lead	ppm	ASTM D5185m	>30	<1	0	2
Copper	ppm	ASTM D5185m	>125	2	2	56
Tin	ppm	ASTM D5185m	>5	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	---	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	---	NONE	NONE

CONTAMINATION

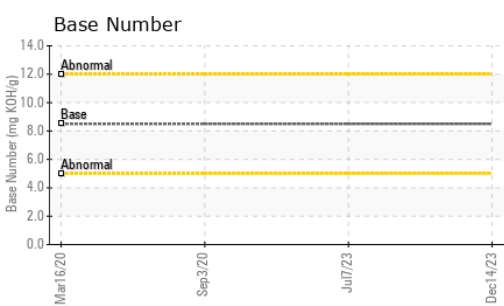
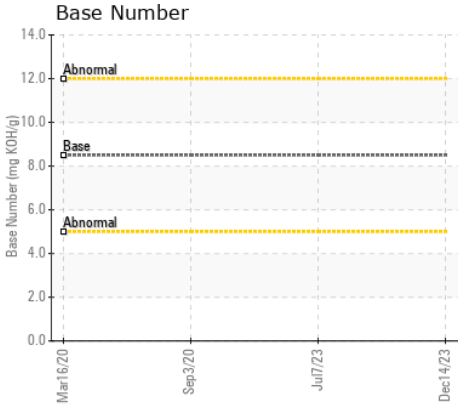
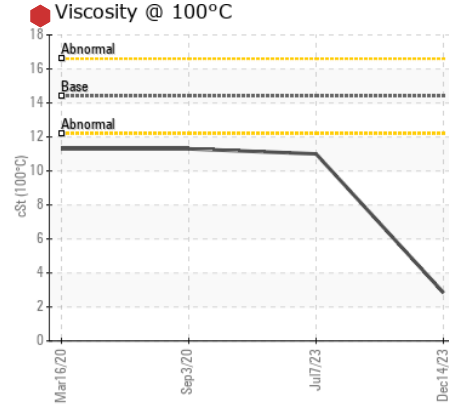
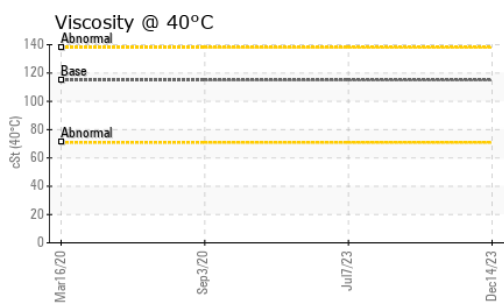
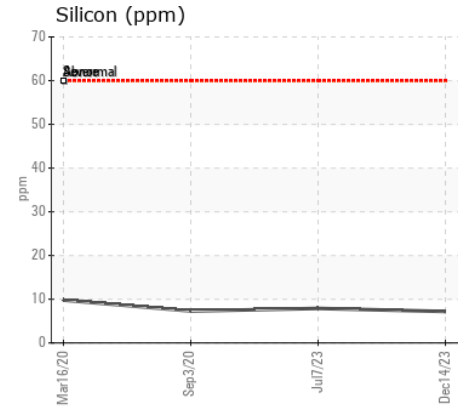
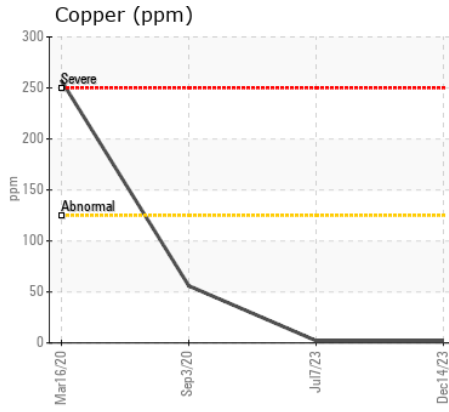
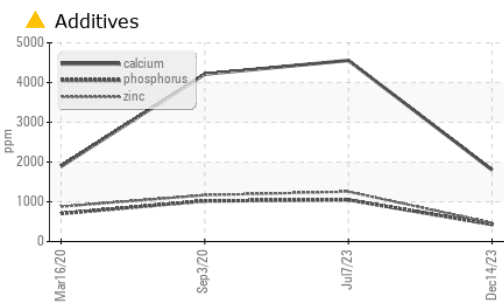
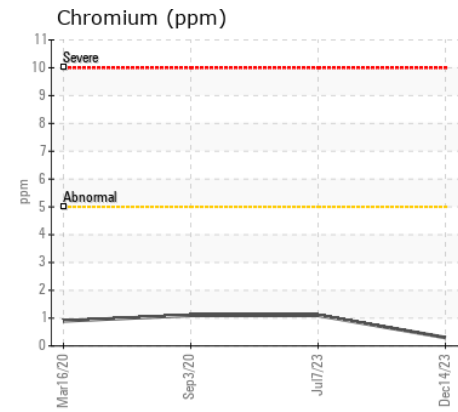
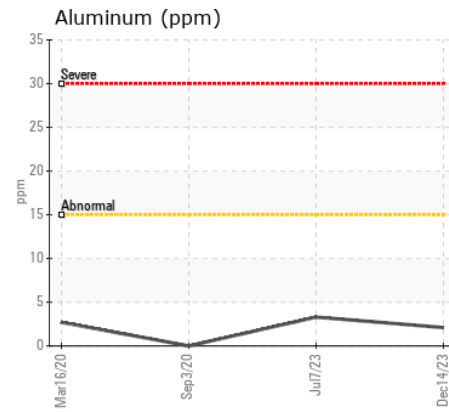
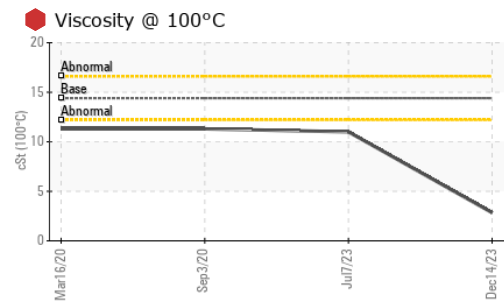
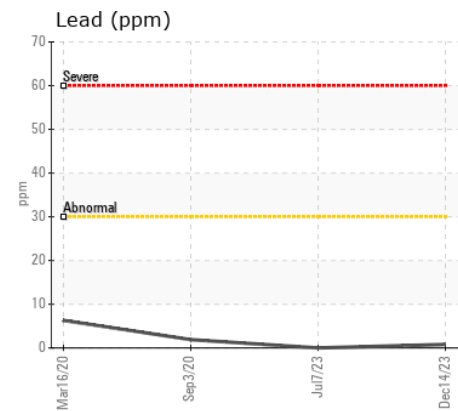
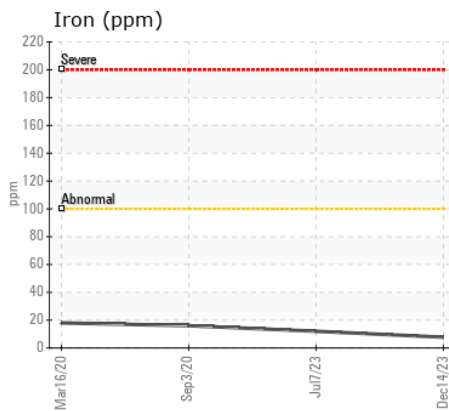
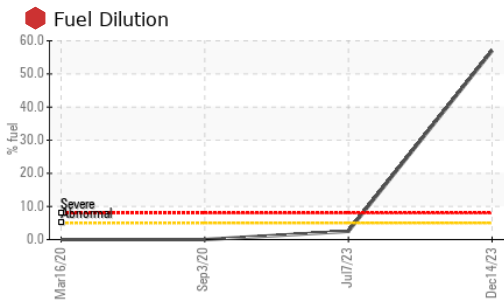
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>60	7	8	7
Potassium	ppm	ASTM D5185m	>20	1	<1	12
Fuel	%	ASTM D3524	>5	57.0	▲ 2.5	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.1	14.8	15
Sulfation	Abs/.1mm	*ASTM D7415	>30	12.8	17.6	20
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

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>158	<1	<1	4
Boron	ppm	ASTM D5185m	250	88	246	218
Barium	ppm	ASTM D5185m	10	0	0	7
Molybdenum	ppm	ASTM D5185m	100	0	<1	6
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	450	0	24	126
Calcium	ppm	ASTM D5185m	3000	1801	▲ 4557	4210
Phosphorus	ppm	ASTM D5185m	1150	▲ 429	1049	1021
Zinc	ppm	ASTM D5185m	1350	▲ 470	1256	1167
Sulfur	ppm	ASTM D5185m	4250	▲ 959	3419	2469
Oxidation	Abs/.1mm	*ASTM D7414	>25	7.3	13.9	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	---	12.4	---
Visc @ 40°C	cSt	ASTM D445	115	7.94	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	● 2.84	▲ 11.0	11.3
Viscosity Index (VI)	Scale	ASTM D2270	126	254	---	---



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH06037210 **Received** : 15 Dec 2023
Lab Number : 06037210 **Diagnosed** : 09 Jan 2024
Unique Number : 10792439 **Diagnostician** : Doug Bogart
Test Package : MOBCE (Additional Tests: FuelDilution, KV40, PercentFuel, TBN, VI)
 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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