



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**LIEBHERR LH50 083207-1203**  
Component  
**Diesel Engine**  
Fluid  
**KLONDIKE HEAVY DUTY 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0270335</b>	LH0276189	LH0281214
Sample Date		Client Info		<b>09 May 2024</b>	17 Apr 2024	12 Mar 2024
Machine Age	hrs	Client Info		<b>20200</b>	20101	19953
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>66	<b>7</b>	6	15
Chromium	ppm	ASTM D5185(m)	>4	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185(m)	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>8	<b>4</b>	5	▲ 14
Lead	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>74	<b>&lt;1</b>	1	4
Tin	ppm	ASTM D5185(m)	>4	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>VLITE</b>	NONE	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

There is no indication of any contamination in the oil.

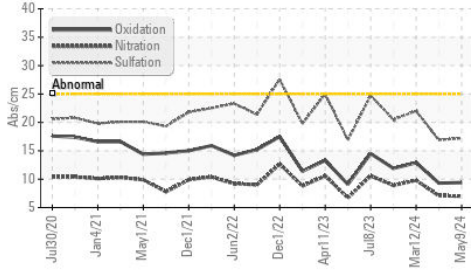
Silicon	ppm	ASTM D5185(m)	>15	<b>3</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	1	1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	ASTM D7844*	>3	<b>0.4</b>	0.4	1.1
Nitration	Abs/cm	ASTM D7624*	>20	<b>7.0</b>	7.1	9.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>17.2</b>	16.9	22.0
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	---
Debris	scalar	Visual*	NONE	<b>VLITE</b>	NONE	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

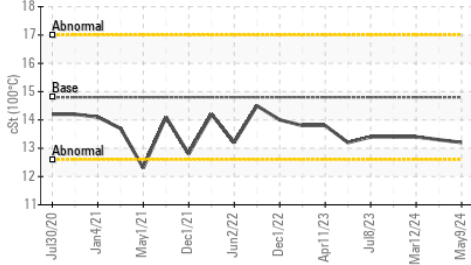
The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<b>1</b>	2	4
Boron	ppm	ASTM D5185(m)	70	<b>5</b>	5	4
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>2</b>	2	6
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	50	<b>35</b>	36	73
Calcium	ppm	ASTM D5185(m)	2000	<b>2187</b>	2157	2193
Phosphorus	ppm	ASTM D5185(m)	1000	<b>796</b>	829	846
Zinc	ppm	ASTM D5185(m)	1100	<b>954</b>	965	1015
Sulfur	ppm	ASTM D5185(m)	3400	<b>2787</b>	2824	2819
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>9.4</b>	9.3	12.9
Visc @ 100°C	cSt	ASTM D7279(m)	14.8	<b>13.2</b>	13.3	13.4

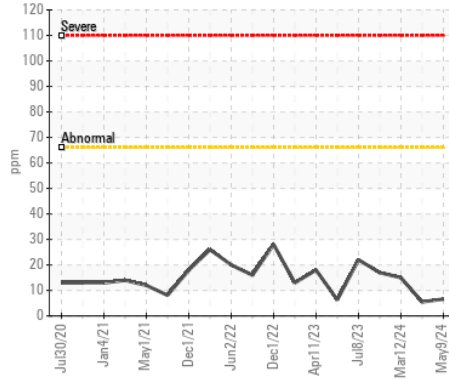
FT-IR (Direct Trend)



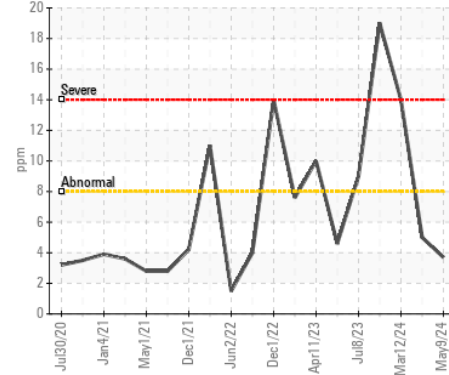
Viscosity @ 100°C



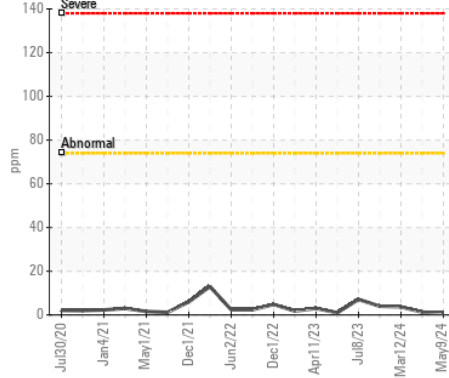
Iron (ppm)



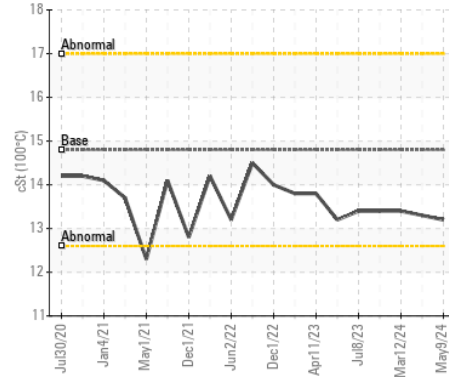
Aluminum (ppm)



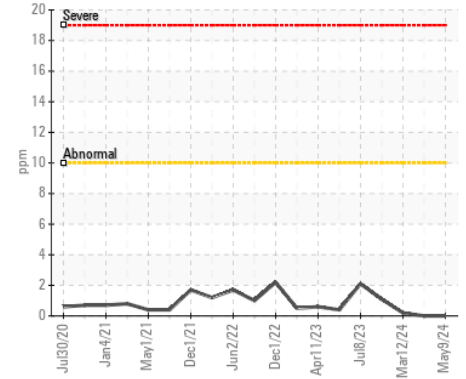
Copper (ppm)



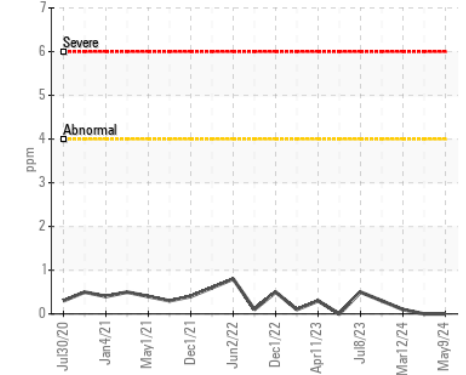
Viscosity @ 100°C



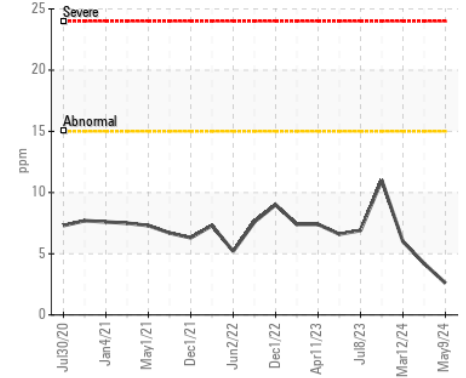
Lead (ppm)



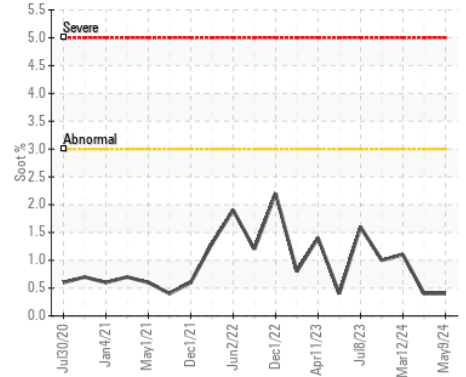
Chromium (ppm)



Silicon (ppm)



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
 Sample No. : LH0270335 Received : 10 May 2024  
 Lab Number : 02634467 Tested : 10 May 2024  
 Unique Number : 5775620 Diagnosed : 10 May 2024 - Kevin Marson  
 Test Package : MOB 1 ( Additional Tests: Visual )

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

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