



LIEBHERR

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ABNORMAL

NORMAL

NORMAL



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

RECOMMENDATION

The oil 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		LH0281214	LH0213843	LH0260586
Sample Date		Client Info		12 Mar 2024	22 Dec 2023	08 Jul 2023
Machine Age	hrs	Client Info		19953	19392	18266
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Aluminum ppm levels are abnormal. Piston wear is indicated.

Iron	ppm	ASTM D5185(m)	>66	15	17	22
Chromium	ppm	ASTM D5185(m)	>4	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	<1	<1
Titanium	ppm	ASTM D5185(m)		<1	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>8	▲ 14	▲ 19	▲ 9
Lead	ppm	ASTM D5185(m)	>10	<1	1	2
Copper	ppm	ASTM D5185(m)	>74	4	4	7
Tin	ppm	ASTM D5185(m)	>4	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

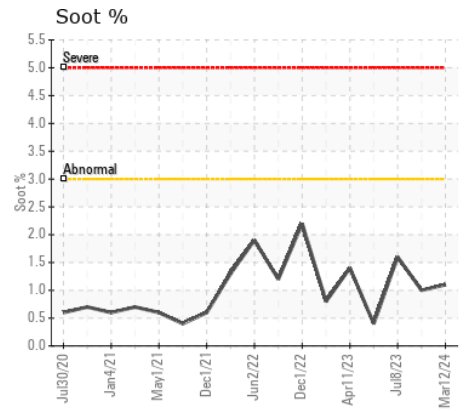
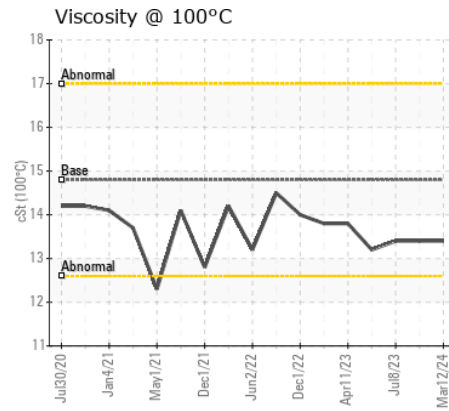
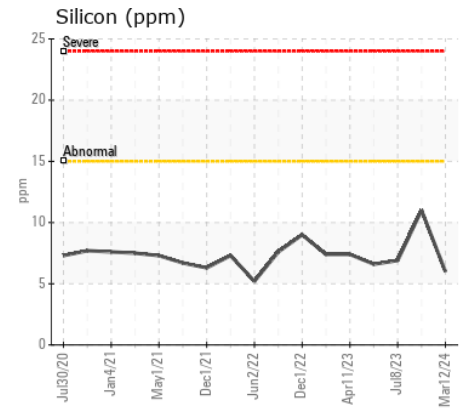
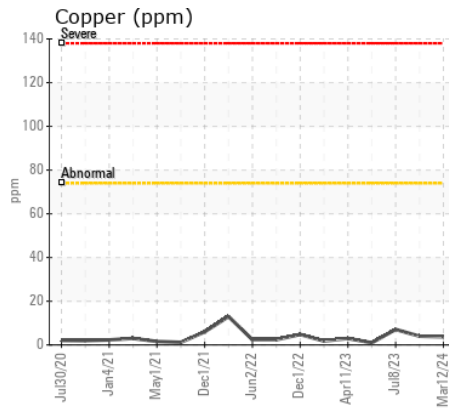
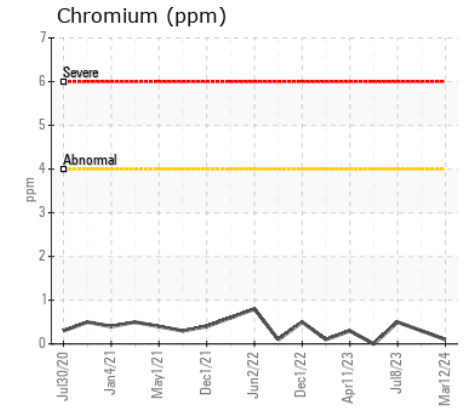
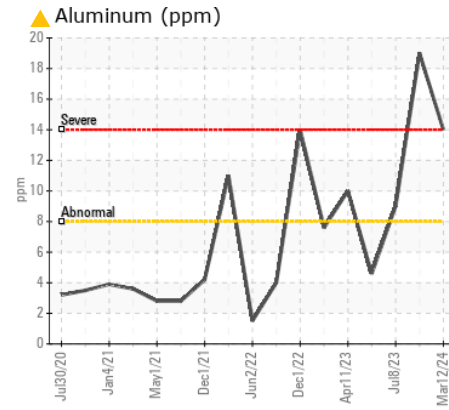
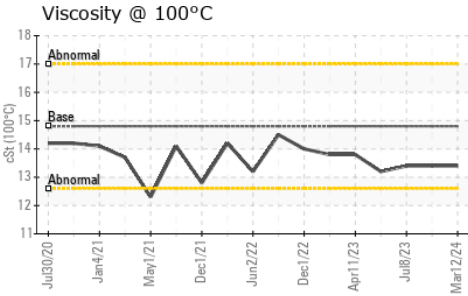
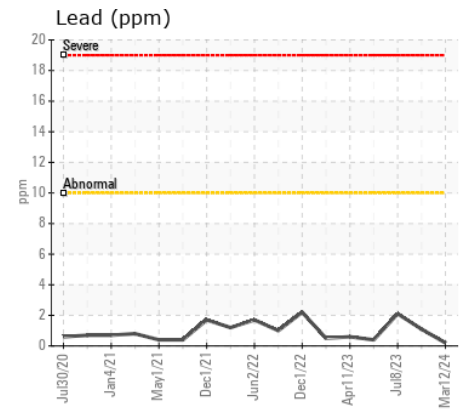
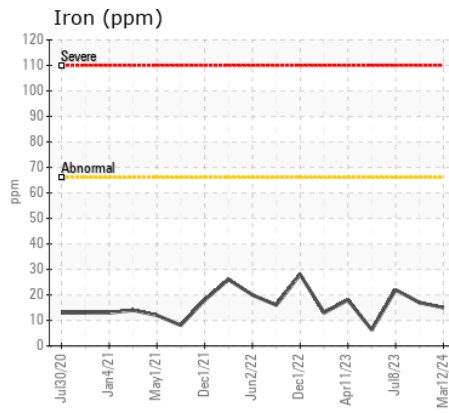
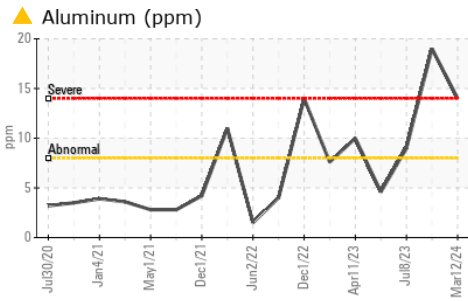
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>15	6	11	7
Potassium	ppm	ASTM D5185(m)	>20	1	2	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	1.1	1	1.6
Nitration	Abs/cm	ASTM D7624*	>20	9.8	8.9	10.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.0	20.5	24.7
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		4	4	6
Boron	ppm	ASTM D5185(m)	70	4	4	4
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		6	14	9
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)	50	73	176	94
Calcium	ppm	ASTM D5185(m)	2000	2193	2039	2152
Phosphorus	ppm	ASTM D5185(m)	1000	846	874	903
Zinc	ppm	ASTM D5185(m)	1100	1015	1019	1005
Sulfur	ppm	ASTM D5185(m)	3400	2819	3005	2813
Oxidation	Abs/.1mm	ASTM D7414*	>25	12.9	11.9	14.5
Visc @ 100°C	cSt	ASTM D7279(m)	14.8	13.4	13.4	13.4



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0281214
Lab Number : 02624884
Unique Number : 5750003
Test Package : MOB 1

Received : 27 Mar 2024
Tested : 27 Mar 2024
Diagnosed : 27 Mar 2024 - Kevin Marson

ABC RECYCLING
 8081 MEADOW AVE.
 BURNABY, BC
 CA V3N 2V9

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 F:

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.