



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR R920 052179-1705
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0224811	LH0201936	LH0201925
Sample Date		Client Info		16 May 2024	22 Sep 2022	24 Jan 2022
Machine Age	hrs	Client Info		2489	950	447
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		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	21	19	27
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	1
Nickel	ppm	ASTM D5185(m)	>5	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	<1	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>15	1	2	3
Lead	ppm	ASTM D5185(m)	>30	0	0	2
Copper	ppm	ASTM D5185(m)	>125	6	6	24
Tin	ppm	ASTM D5185(m)	>5	0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---

CONTAMINATION

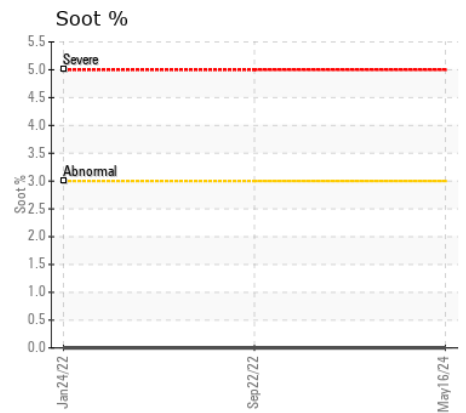
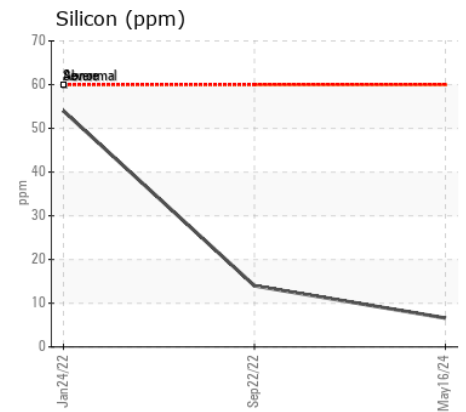
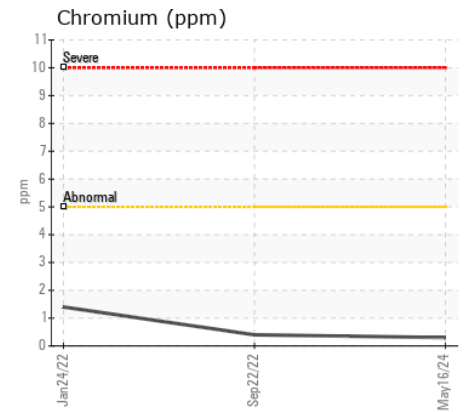
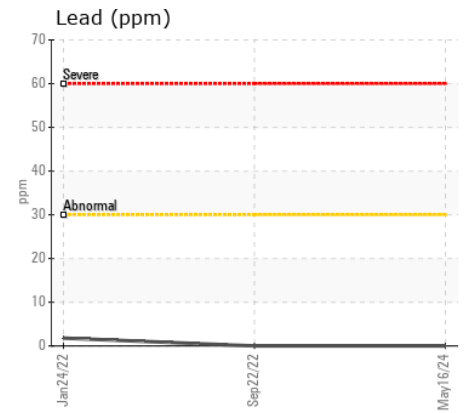
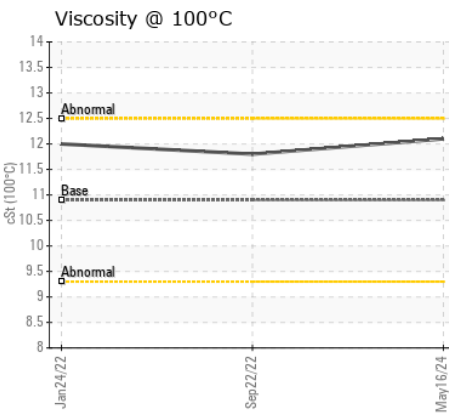
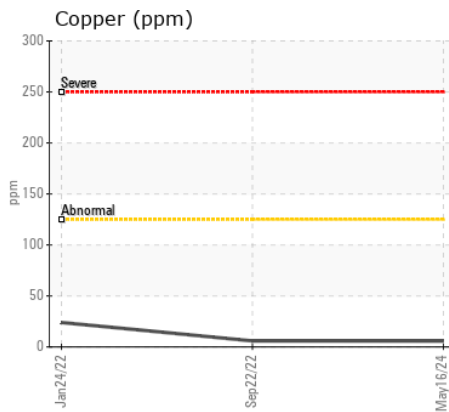
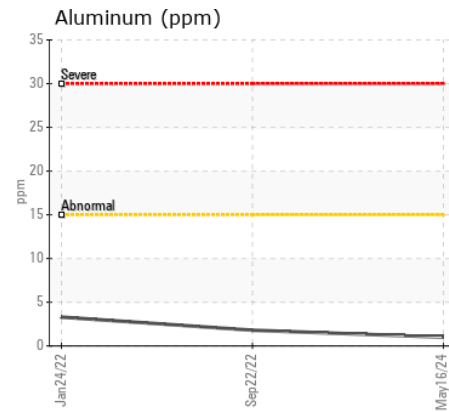
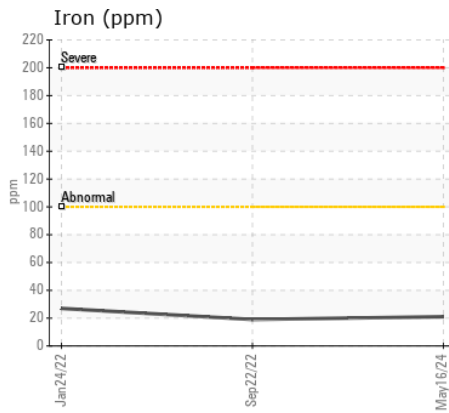
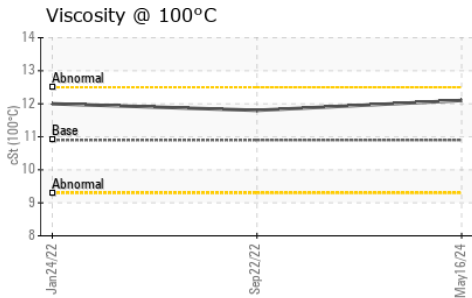
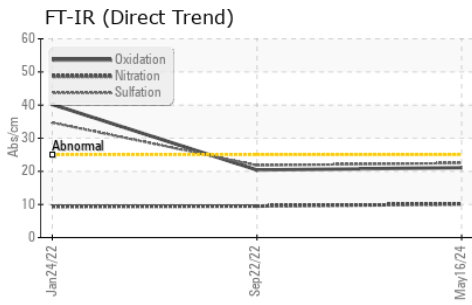
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	7	14	54
Potassium	ppm	ASTM D5185(m)	>20	1	0	2
Fuel		WC Method	>5	<1.0	<1.0	0.2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	10.1	9.5	9.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.5	21.8	34.7
Silt	scalar	Visual*	NONE	VLITE	NONE	---
Debris	scalar	Visual*	NONE	NONE	VLITE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)	>75	5	5	6
Boron	ppm	ASTM D5185(m)	250	47	42	105
Barium	ppm	ASTM D5185(m)	10	0	<1	6
Molybdenum	ppm	ASTM D5185(m)	100	52	56	41
Manganese	ppm	ASTM D5185(m)		<1	<1	2
Magnesium	ppm	ASTM D5185(m)	450	1014	1096	798
Calcium	ppm	ASTM D5185(m)	3000	1030	869	1637
Phosphorus	ppm	ASTM D5185(m)	1150	1018	1075	812
Zinc	ppm	ASTM D5185(m)	1350	1234	1169	938
Sulfur	ppm	ASTM D5185(m)	4250	2673	2735	2205
Oxidation	Abs/.1mm	ASTM D7414*	>25	21.1	20.4	40.2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	12.1	11.8	12.0



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0224811 **Received** : 23 May 2024
Lab Number : 02637063 **Tested** : 23 May 2024
Unique Number : 5786225 **Diagnosed** : 23 May 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

Phoenix Treatment Systems Ltd.
 2615-26 Ave SW
 Calgary, AB
 CA T3E 8C7
 Contact: Service Manager

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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F: