



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
LIEBHERR LH110 1227-155752
Component
Transmission (Manual)
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

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		LH0267076	LH0267546	---
Sample Date		Client Info		10 Jun 2024	20 May 2024	---
Machine Age	hrs	Client Info		2998	2578	---
Oil Age	hrs	Client Info		967	547	---
Filter Age	hrs	Client Info		967	0	---
Oil Changed		Client Info		Changed	Not Changd	---
Filter Changed		Client Info		Changed	N/A	---
Sample Status				ATTENTION	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	17	10	---
Chromium	ppm	ASTM D5185m	>5	<1	2	---
Nickel	ppm	ASTM D5185m	>5	0	<1	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>7	0	<1	---
Aluminum	ppm	ASTM D5185m	>25	2	1	---
Lead	ppm	ASTM D5185m	>45	0	<1	---
Copper	ppm	ASTM D5185m	>225	1	3	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Vanadium	ppm	ASTM D5185m		0	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

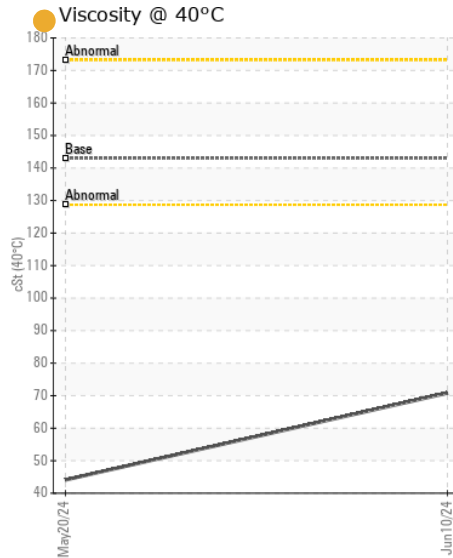
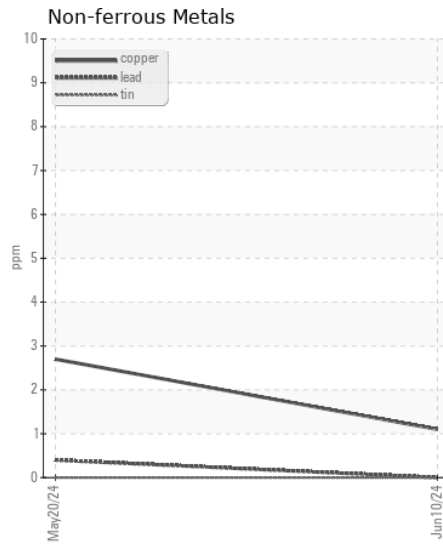
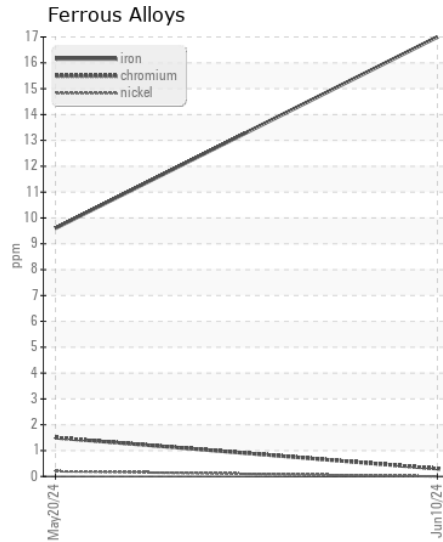
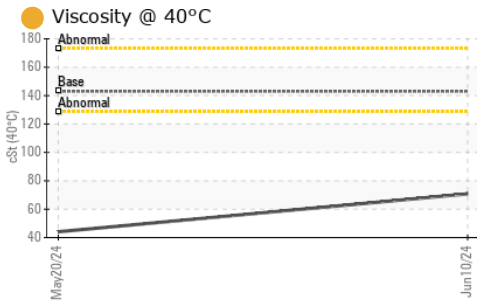
There is no indication of any contamination in the fluid.

Silicon	ppm	ASTM D5185m	>125	3	7	---
Potassium	ppm	ASTM D5185m	>20	1	2	---
Water		WC Method	>0.1	NEG	NEG	---
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	>0.1	NEG	NEG	---

FLUID CONDITION

The fluid viscosity is lower than normal. Confirm oil type.

Sodium	ppm	ASTM D5185m	>170	0	2	---
Boron	ppm	ASTM D5185m	400	9	41	---
Barium	ppm	ASTM D5185m	200	0	0	---
Molybdenum	ppm	ASTM D5185m	12	2	12	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m	12	34	61	---
Calcium	ppm	ASTM D5185m	150	437	1559	---
Phosphorus	ppm	ASTM D5185m	1650	717	704	---
Zinc	ppm	ASTM D5185m	125	276	804	---
Sulfur	ppm	ASTM D5185m	22500	11883	5249	---
Visc @ 40°C	cSt	ASTM D445	143	70.8	44.1	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0267076
Lab Number : 06216211
Unique Number : 11089075
Test Package : CONST

Received : 20 Jun 2024
Tested : 21 Jun 2024
Diagnosed : 23 Jun 2024 - Don Baldrige

KINDER MORGAN
 4301 IVERSON
 TRINITY, AL
 US 35601

Contact: RICKY JOHNSON
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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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