



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
142001 - CLOSING
Component
Winch
Fluid
LIEBHERR GEAR HYPOID 90 EP (--- GAL)

RECOMMENDATION

The oil 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		LM0000708	---	---
Sample Date		Client Info		11 Jan 2024	---	---
Machine Age	hrs	Client Info		517	---	---
Oil Age	hrs	Client Info		517	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ABNORMAL	---	---

WEAR

The iron level is abnormal.

Iron	ppm	ASTM D5185m	>150	▲ 154	---	---
Chromium	ppm	ASTM D5185m	>10	2	---	---
Nickel	ppm	ASTM D5185m	>10	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m		0	---	---
Aluminum	ppm	ASTM D5185m	>5	1	---	---
Lead	ppm	ASTM D5185m	>15	2	---	---
Copper	ppm	ASTM D5185m	>80	5	---	---
Tin	ppm	ASTM D5185m		0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

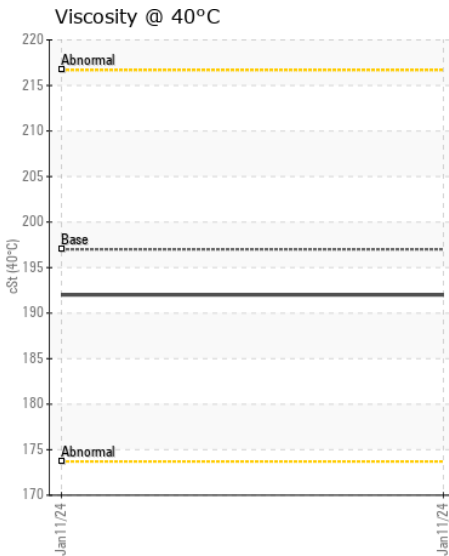
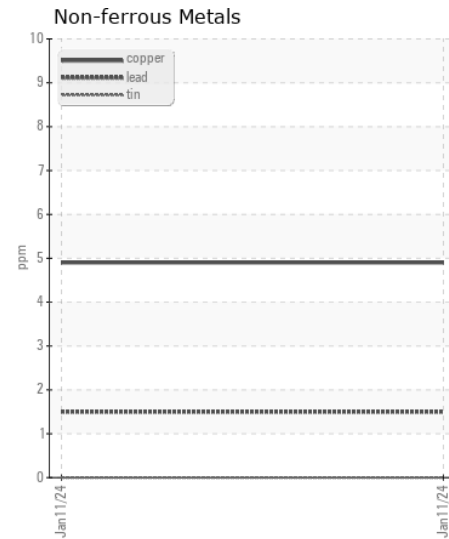
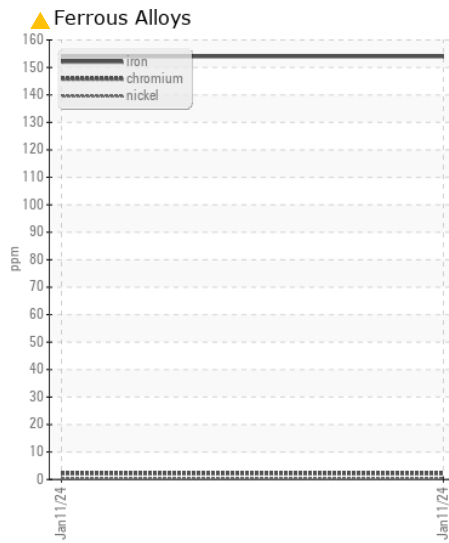
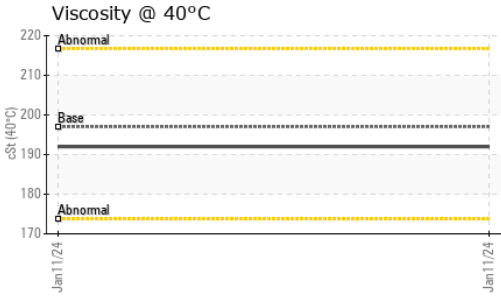
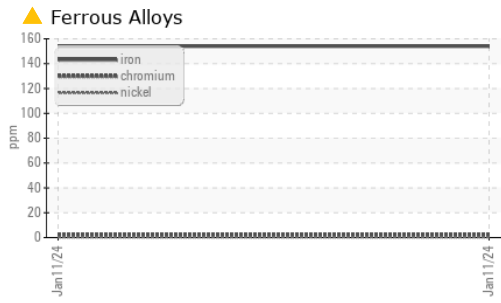
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	HAZY	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		3	---	---
Boron	ppm	ASTM D5185m		0	---	---
Barium	ppm	ASTM D5185m		3	---	---
Molybdenum	ppm	ASTM D5185m		0	---	---
Manganese	ppm	ASTM D5185m		2	---	---
Magnesium	ppm	ASTM D5185m		3	---	---
Calcium	ppm	ASTM D5185m		85	---	---
Phosphorus	ppm	ASTM D5185m		942	---	---
Zinc	ppm	ASTM D5185m		169	---	---
Sulfur	ppm	ASTM D5185m		21693	---	---
Visc @ 40°C	cSt	ASTM D445	197	192	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LM0000708 **Received** : 18 Jan 2024
Lab Number : 06065228 **Diagnosed** : 24 Jan 2024
Unique Number : 10836610 **Diagnostician** : Doug Bogart
Test Package : CONST

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 US 33018
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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)