



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR R934 025778-918
Component
Hydraulic System
Fluid
LIEBHERR HYDRAULIC HVI (--- GAL)

RECOMMENDATION

The 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		LH0273809	LH0190478	LHMC38049
Sample Date		Client Info		12 Apr 2024	09 Apr 2021	02 Sep 2011
Machine Age	hrs	Client Info		4594	3853	572
Oil Age	hrs	Client Info		0	0	572
Filter Age	hrs	Client Info		0	0	572
Oil Changed		Client Info		Not Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	10	14	4
Chromium	ppm	ASTM D5185m	>15	1	2	<1
Nickel	ppm	ASTM D5185m	>5	<1	1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>8	3	<1	<1
Lead	ppm	ASTM D5185m	>5	<1	2	<1
Copper	ppm	ASTM D5185m	>15	3	7	6
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

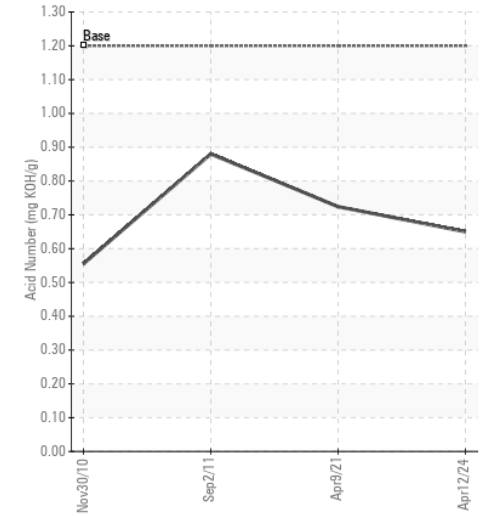
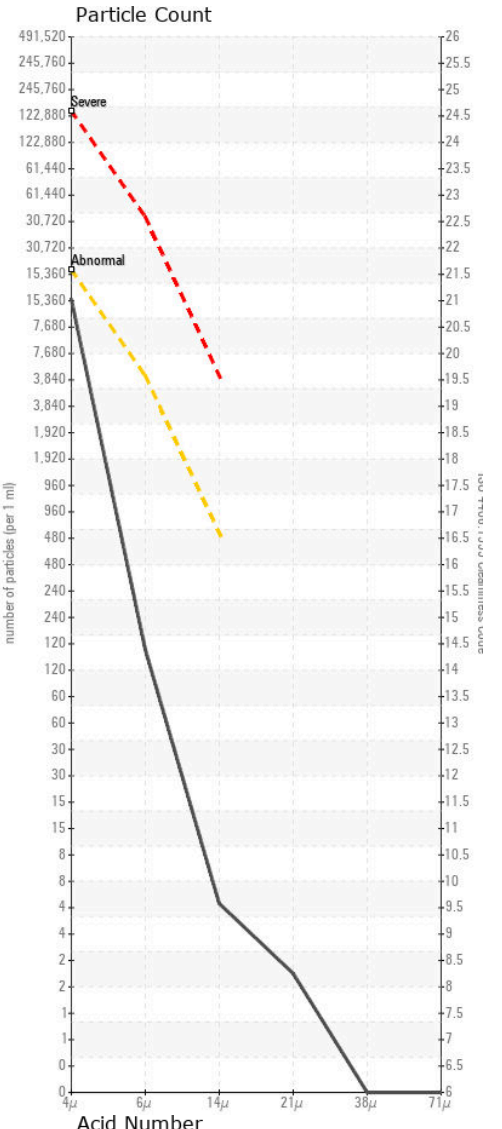
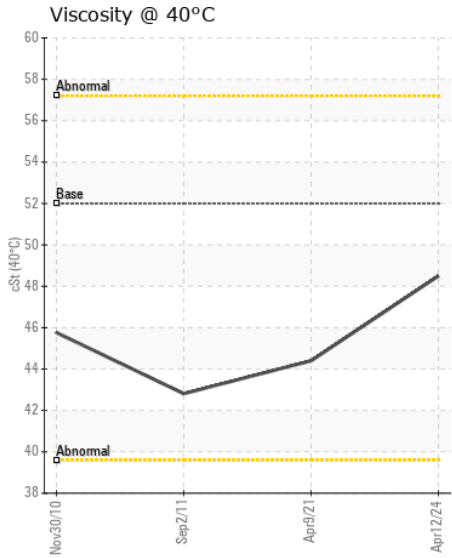
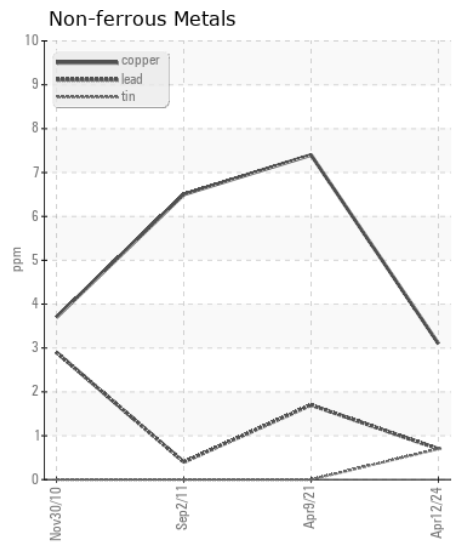
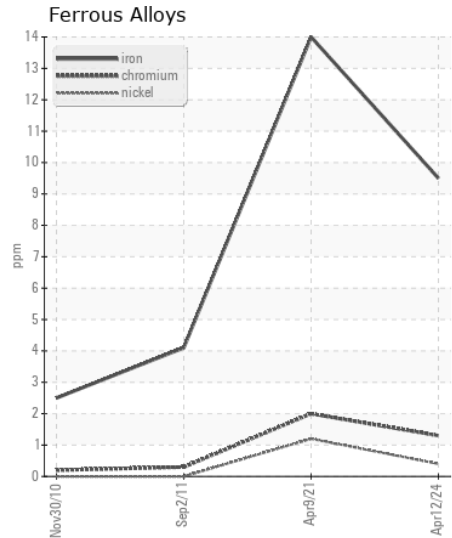
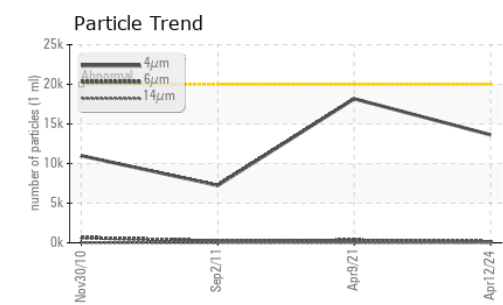
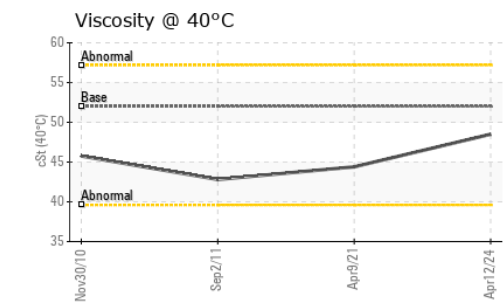
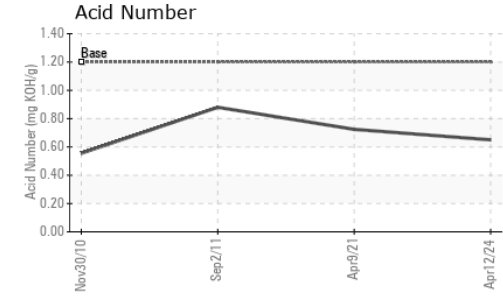
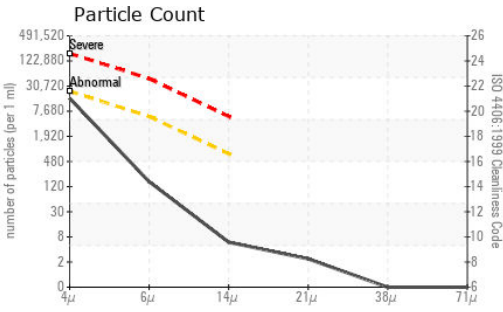
The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>25	2	3	1
Potassium	ppm	ASTM D5185m	>20	2	3	0
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	13625	18174	7241
Particles >6µm		ASTM D7647	>5000	139	307	216
Particles >14µm		ASTM D7647	>640	5	4	2
Particles >21µm		ASTM D7647	>160	2	1	0
Particles >38µm		ASTM D7647	>40	0	0	0
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	21/14/10	21/15/9	20/15/8
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	4	6
Boron	ppm	ASTM D5185m		4	12	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	<1	0
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	7	13	17	0
Calcium	ppm	ASTM D5185m	1500	744	1993	1391
Phosphorus	ppm	ASTM D5185m	750	483	647	459
Zinc	ppm	ASTM D5185m	820	548	752	514
Sulfur	ppm	ASTM D5185m	4000	2207	3990	4690
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	0.65	0.724	0.880
Visc @ 40°C	cSt	ASTM D445	52	48.5	44.4	42.81



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0273809
Lab Number : 06156863
Unique Number : 10992286
Test Package : CONST

Received : 22 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 24 Apr 2024 - Angela Borella

AMERICAN STATE EQUIPMENT CO.
 2400 NORTH 14TH AVENUE
 WAUSAU, WI
 US 54401
 Contact: CHRIS BARTNIK
 cbartnik@amstate.com
 T: (715)675-6900
 F: (715)675-9748

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)