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LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
042990-1491
Component
Hydraulic System
Fluid
TOTAL BIOHYDRAN SE 46 (--- GAL)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill.
Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

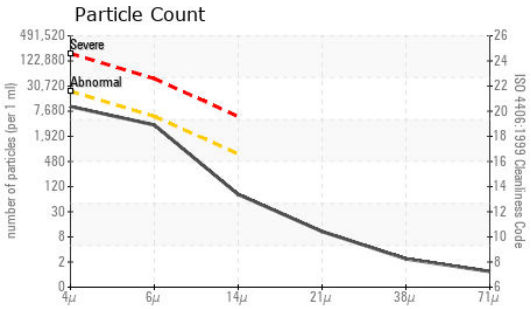
CONTAMINATION

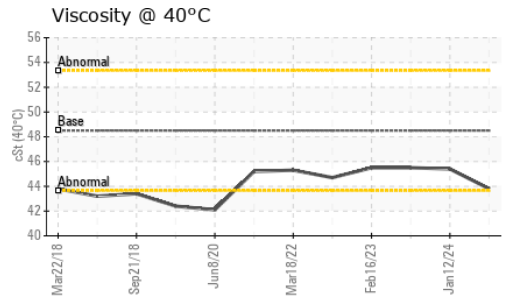
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

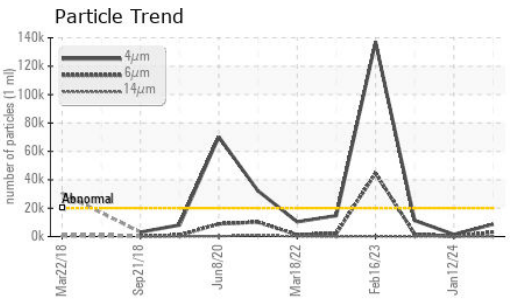
FLUID CONDITION

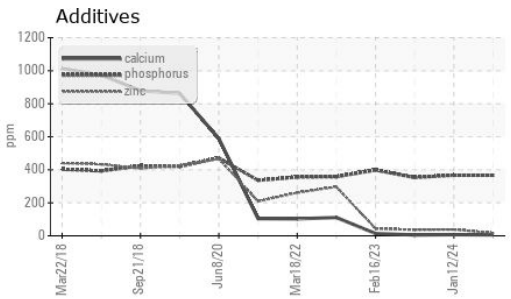
Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

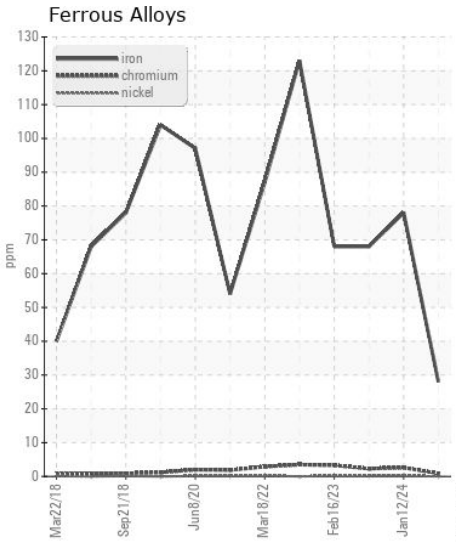
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**LH0281399**	LH0202820	LH0277803
Sample Date		Client Info		**16 Jan 2024**	12 Jan 2024	27 Nov 2023
Machine Age	hrs	Client Info		**7078**	7070	6947
Oil Age	hrs	Client Info		**0**	0	0
Filter Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Filter Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185(m)	>50	**28**	▲ 78	▲ 68
Chromium	ppm	ASTM D5185(m)	>15	**<1**	3	2
Nickel	ppm	ASTM D5185(m)	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>8	**<1**	1	<1
Lead	ppm	ASTM D5185(m)	>5	**0**	<1	<1
Copper	ppm	ASTM D5185(m)	>15	**2**	4	3
Tin	ppm	ASTM D5185(m)	>5	**<1**	1	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>25	**<1**	1	1
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	<1
Water		WC Method	>0.1	**NEG**	NEG	NEG
Particles >4µm		ASTM D7647	>20000	**8640**	1492	11311
Particles >6µm		ASTM D7647	>5000	**3135**	153	1636
Particles >14µm		ASTM D7647	>640	**69**	11	82
Particles >21µm		ASTM D7647	>160	**9**	3	18
Particles >38µm		ASTM D7647	>40	**2**	0	1
Particles >71µm		ASTM D7647	>10	**1**	0	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**20/19/13**	18/14/11	21/18/14
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
Sodium	ppm	ASTM D5185(m)		**<1**	<1	1
Boron	ppm	ASTM D5185(m)	0	**<1**	1	<1
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	0	**0**	<1	0
Magnesium	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)	0	**6**	7	5
Phosphorus	ppm	ASTM D5185(m)	0	**367**	367	353
Zinc	ppm	ASTM D5185(m)	0	**17**	38	36
Sulfur	ppm	ASTM D5185(m)	1100	**1164**	1762	1625
Visc @ 40°C	cSt	ASTM D7279(m)	48.5	**43.8**	45.4	45.5

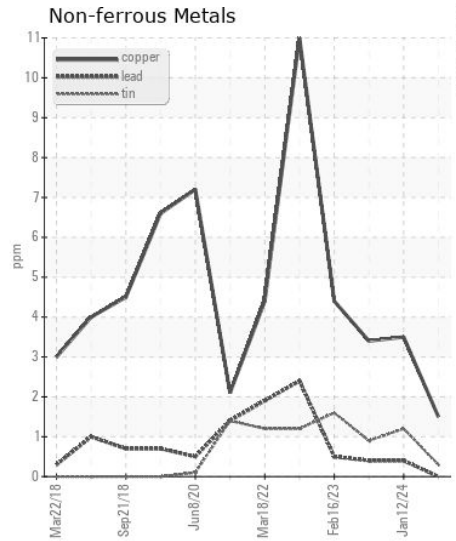


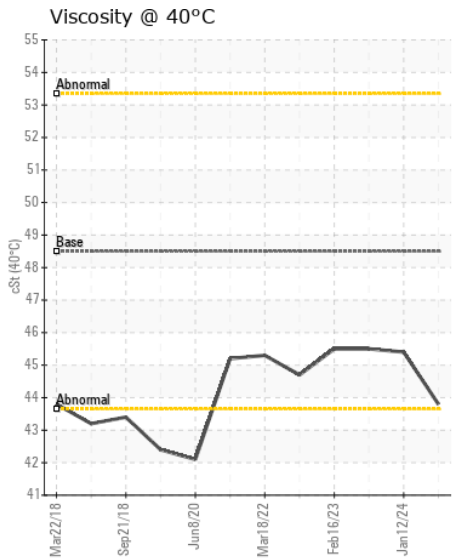


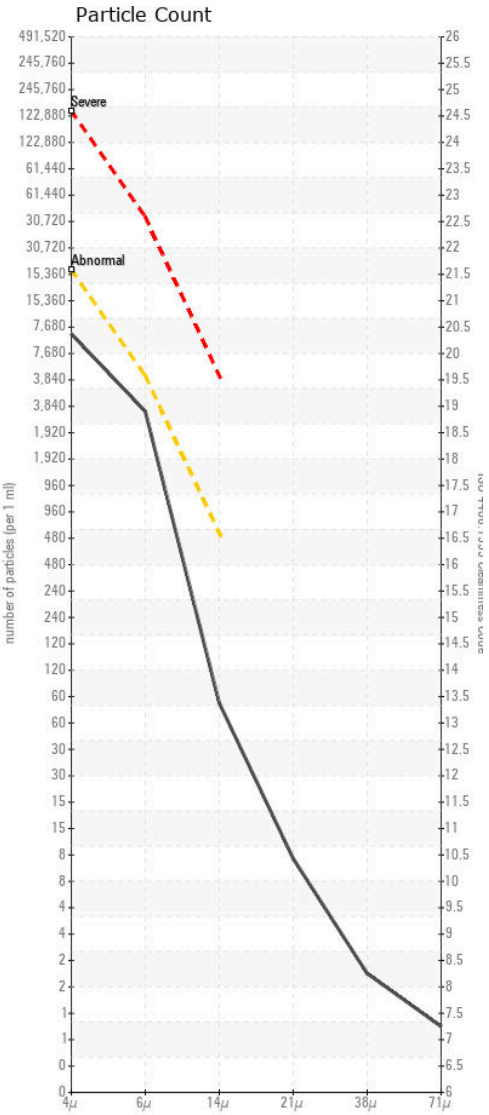












ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: LH0281399	**Recieved**	: 17 Jan 2024
Lab Number	: 02609418	**Diagnosed**	: 19 Jan 2024
Unique Number	: 5710504	**Diagnostician**	: Kevin Marson
Test Package	: MOB 1 (Additional Tests: PrtCount)		

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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