



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id  
**LIEBHERR LH60C 102201**

Component  
**Hydraulic System**

Fluid  
**PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- GAL)**

### RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0274859</b>	LH0242526	LH0234818
Sample Date		Client Info		<b>27 Feb 2024</b>	26 Oct 2022	14 Jul 2022
Machine Age	hrs	Client Info		<b>12877</b>	10545	10036
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ATTENTION	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>50	<b>4</b>	2	4
Chromium	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>8	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185(m)	>15	<b>1</b>	2	1
Tin	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

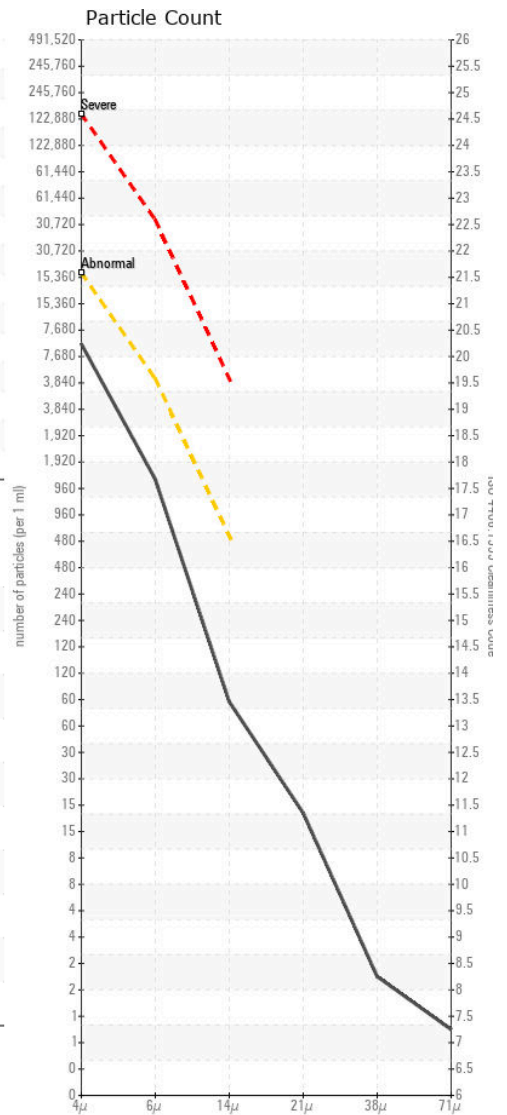
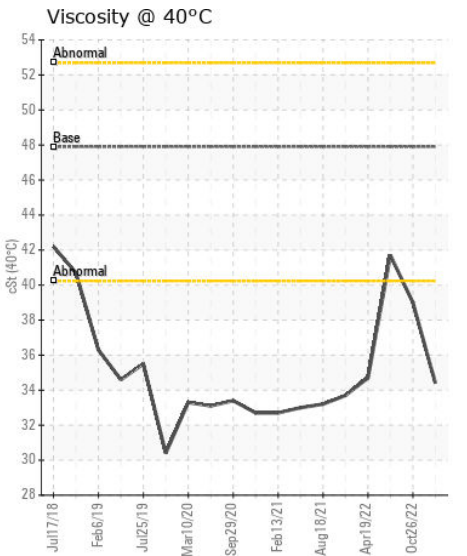
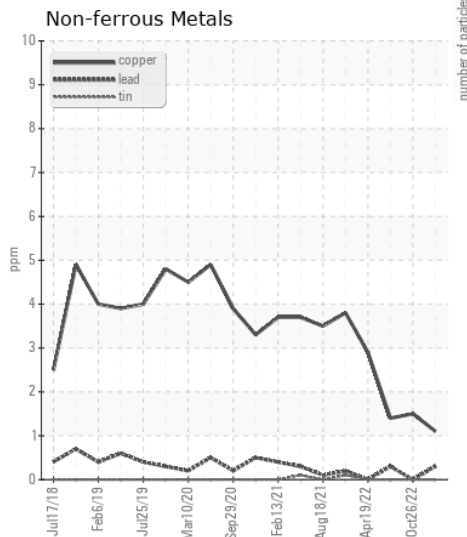
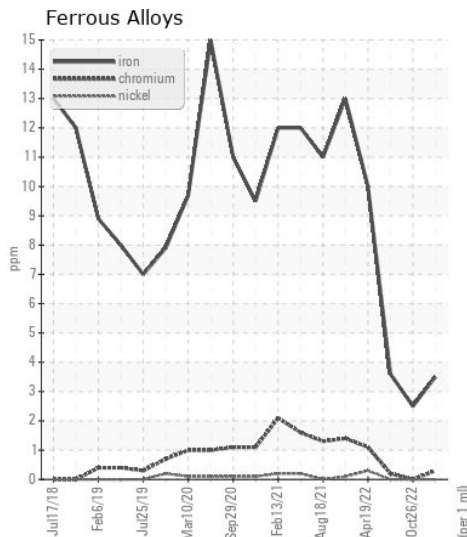
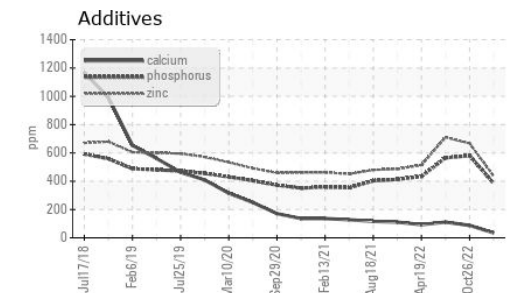
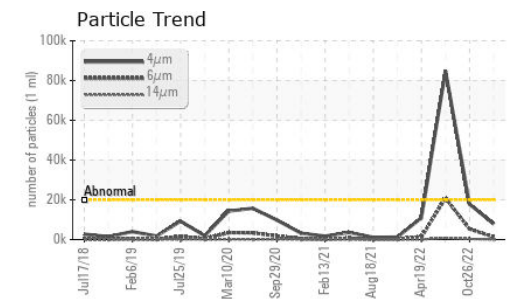
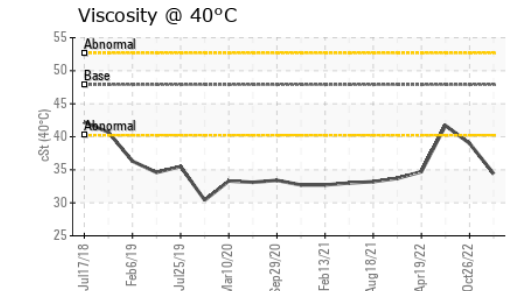
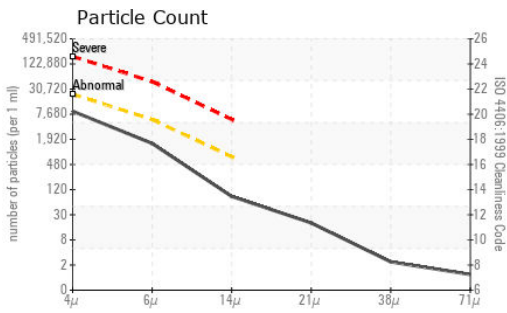
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>25	<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	<1
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>20000	<b>7881</b>	17814	▲ 84855
Particles >6µm		ASTM D7647	>5000	<b>1340</b>	● 5268	▲ 20917
Particles >14µm		ASTM D7647	>640	<b>73</b>	294	● 812
Particles >21µm		ASTM D7647	>160	<b>17</b>	73	131
Particles >38µm		ASTM D7647	>40	<b>2</b>	5	3
Particles >71µm		ASTM D7647	>10	<b>1</b>	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>20/18/13</b>	● 21/20/15	▲ 24/22/17
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Boron	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185(m)	1	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>0</b>	<1	12
Calcium	ppm	ASTM D5185(m)	100	<b>35</b>	88	111
Phosphorus	ppm	ASTM D5185(m)	670	<b>385</b>	581	565
Zinc	ppm	ASTM D5185(m)	850	<b>436</b>	668	710
Sulfur	ppm	ASTM D5185(m)	1600	<b>2245</b>	1535	1633
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	<b>34.4</b>	39.0	41.7



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0274859  
**Lab Number** : 02618712  
**Unique Number** : 5735822  
**Test Package** : MOB 1 ( Additional Tests: PrtCount )

**Received** : 28 Feb 2024  
**Tested** : 29 Feb 2024  
**Diagnosed** : 29 Feb 2024 - Kevin Marson

**BEN-MET STEEL & METAL INC.**  
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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.