



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR LH50M 086015-1203
Component
Transmission (Manual)
Fluid
PETRO CANADA 15W40 (--- GAL)

RECOMMENDATION

The fluid change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0278358	LH0234496	LH0137157
Sample Date		Client Info		28 Nov 2023	27 Jun 2022	07 Mar 2019
Machine Age	hrs	Client Info		20736	17693	10268
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

Copper ppm levels are abnormal. Clutch disc wear or oil cooler leaching indicated.

Iron	ppm	ASTM D5185(m)	>200	34	29	208
Chromium	ppm	ASTM D5185(m)	>5	0	0	<1
Nickel	ppm	ASTM D5185(m)	>5	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>7	0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	4	1	6
Lead	ppm	ASTM D5185(m)	>45	10	<1	1
Copper	ppm	ASTM D5185(m)	>225	▲ 301	5	49
Tin	ppm	ASTM D5185(m)	>10	<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

CONTAMINATION

There is no indication of any contamination in the fluid.

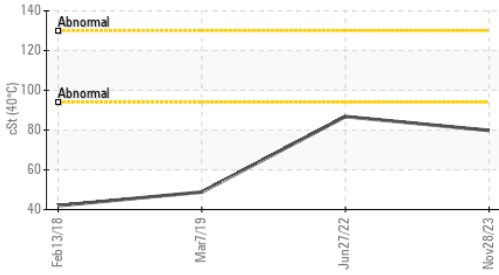
Silicon	ppm	ASTM D5185(m)	>125	4	2	5
Potassium	ppm	ASTM D5185(m)	>20	<1	10	4
Water		WC Method	>0.1	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	LIGHT	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG

FLUID CONDITION

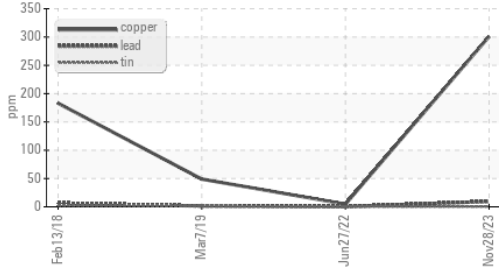
Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The fluid is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		3	2	11
Boron	ppm	ASTM D5185(m)		23	164	3
Barium	ppm	ASTM D5185(m)		<1	0	0
Molybdenum	ppm	ASTM D5185(m)		54	27	38
Manganese	ppm	ASTM D5185(m)		3	1	11
Magnesium	ppm	ASTM D5185(m)		812	434	600
Calcium	ppm	ASTM D5185(m)		960	513	1608
Phosphorus	ppm	ASTM D5185(m)		1097	1153	978
Zinc	ppm	ASTM D5185(m)		1050	565	1099
Sulfur	ppm	ASTM D5185(m)		4500	12393	3903
Visc @ 40°C	cSt	ASTM D7279(m)		▲ 79.8	▲ 86.8	48.8

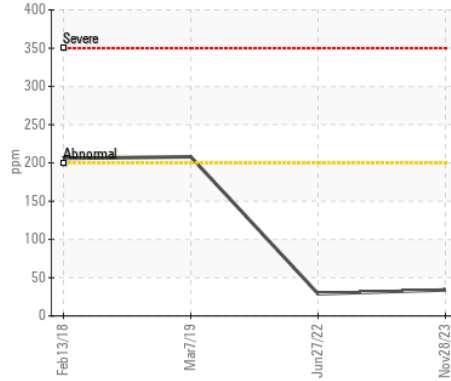
▲ Viscosity @ 40°C



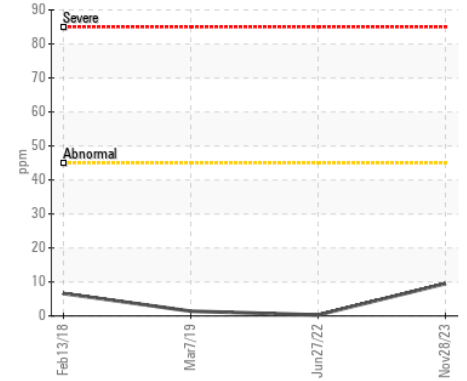
▲ Non-ferrous Metals



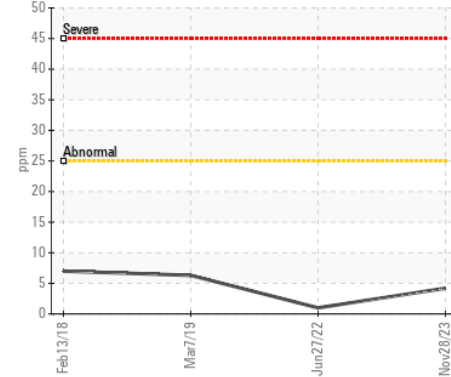
Iron (ppm)



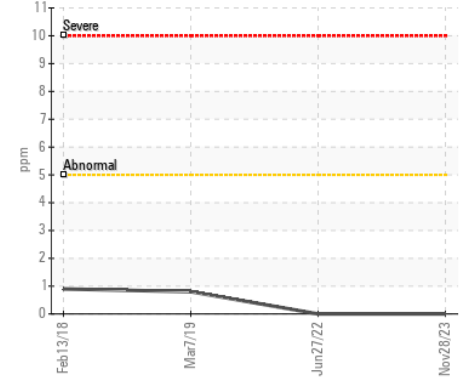
Lead (ppm)



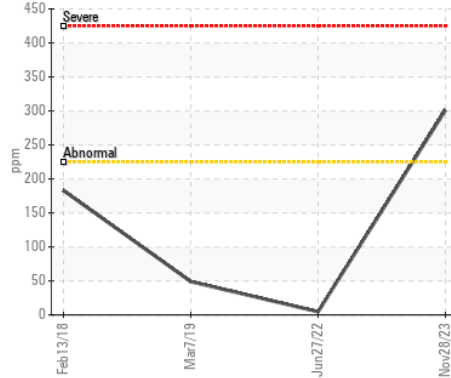
Aluminum (ppm)



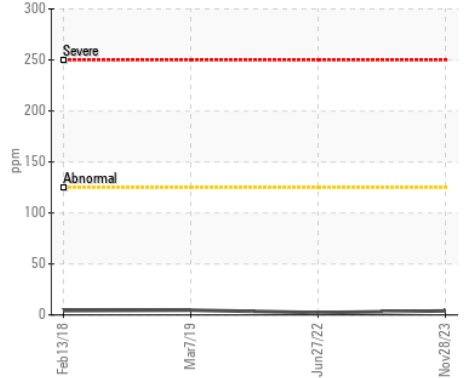
Chromium (ppm)



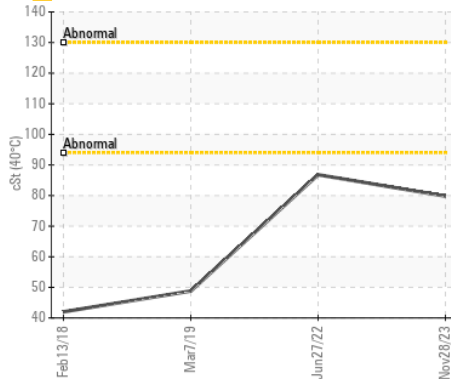
▲ Copper (ppm)



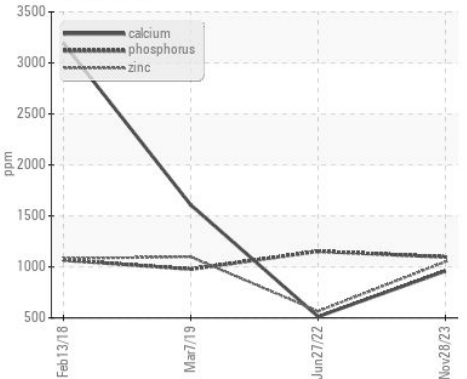
Silicon (ppm)



▲ Viscosity @ 40°C



Additives



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0278358 **Received** : 10 Jan 2024
Lab Number : 02607887 **Diagnosed** : 11 Jan 2024
Unique Number : 5708973 **Diagnostician** : Kevin Marson
Test Package : MOB 1

Dartmouth Metals & Bottle Ltd.
 14 Dawn Drive
 Dartmouth, NS
 CA B3B 1H9
 Contact: Service

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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F: