



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
(336303)
Machine Id
LIEBHERR R938 050385-1650
Component
Left Final Drive
Fluid
PETRO CANADA TRAXON SYNTHETIC 75W90 (12 LTR)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

WEAR

Chromium and iron ppm levels are abnormal. Aluminum ppm levels are noted. Titanium ppm levels are marginal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

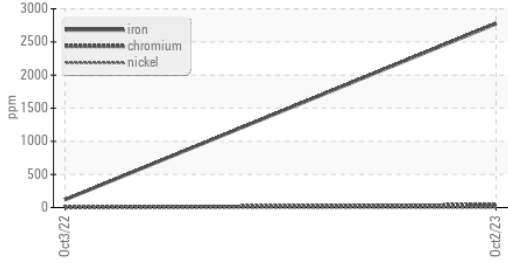
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0182162	LH0238480	---
Sample Date		Client Info		02 Oct 2023	03 Oct 2022	---
Machine Age	hrs	Client Info		1892	1274	---
Oil Age	hrs	Client Info		0	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Not Changed	Changed	---
Filter Changed		Client Info		Not Changed	N/A	---
Sample Status				ABNORMAL	NORMAL	---

PQ		ASTM D8184*		914	---	---
Iron	ppm	ASTM D5185(m)	>500	▲ 2775	118	---
Chromium	ppm	ASTM D5185(m)	>10	▲ 40	2	---
Nickel	ppm	ASTM D5185(m)	>10	2	<1	---
Titanium	ppm	ASTM D5185(m)		▲ 11	<1	---
Silver	ppm	ASTM D5185(m)		0	0	---
Aluminum	ppm	ASTM D5185(m)	>25	▲ 183	8	---
Lead	ppm	ASTM D5185(m)	>25	0	0	---
Copper	ppm	ASTM D5185(m)	>50	2	<1	---
Tin	ppm	ASTM D5185(m)	>10	0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---

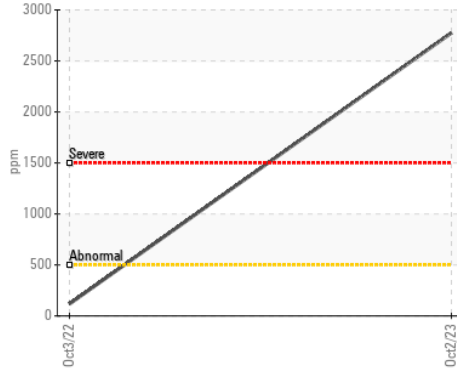
Silicon	ppm	ASTM D5185(m)	>75	▲ 840	14	---
Potassium	ppm	ASTM D5185(m)	>20	39	4	---
Water		WC Method	>0.2	NEG	NEG	---
Silt	scalar	Visual*	NONE	NONE	LIGHT	---
Debris	scalar	Visual*	NONE	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---

Sodium	ppm	ASTM D5185(m)		22	4	---
Boron	ppm	ASTM D5185(m)	328	120	4	---
Barium	ppm	ASTM D5185(m)	1	10	16	---
Molybdenum	ppm	ASTM D5185(m)		1	<1	---
Manganese	ppm	ASTM D5185(m)		29	3	---
Magnesium	ppm	ASTM D5185(m)	1	21	3	---
Calcium	ppm	ASTM D5185(m)	7	27	14	---
Phosphorus	ppm	ASTM D5185(m)	1145	1027	1573	---
Zinc	ppm	ASTM D5185(m)	3	35	18	---
Sulfur	ppm	ASTM D5185(m)	17909	20560	25985	---
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	108	186	---

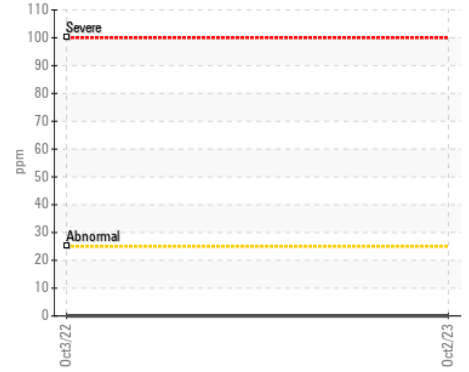
▲ Ferrous Alloys



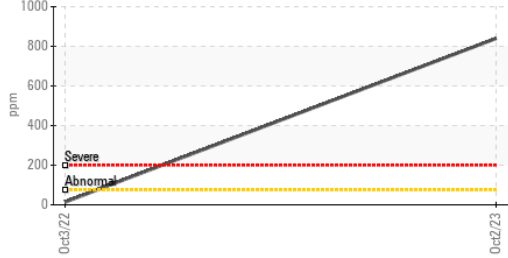
▲ Iron (ppm)



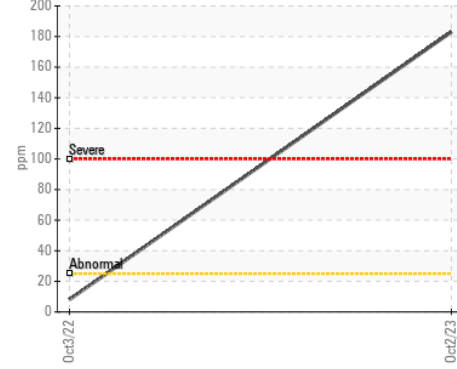
Lead (ppm)



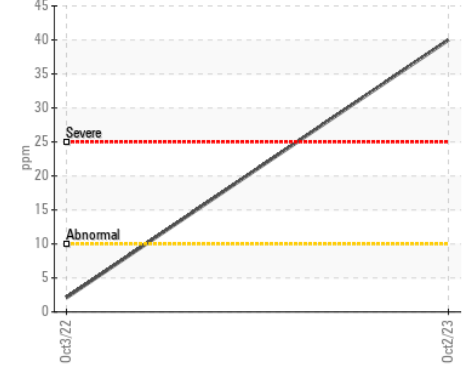
▲ Silicon (ppm)



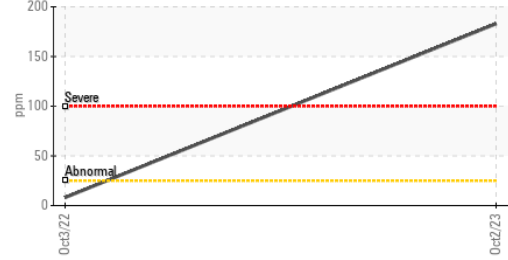
▲ Aluminum (ppm)



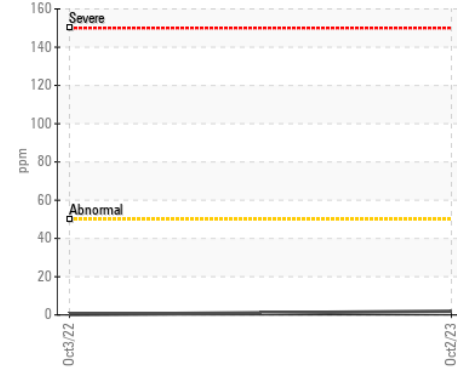
▲ Chromium (ppm)



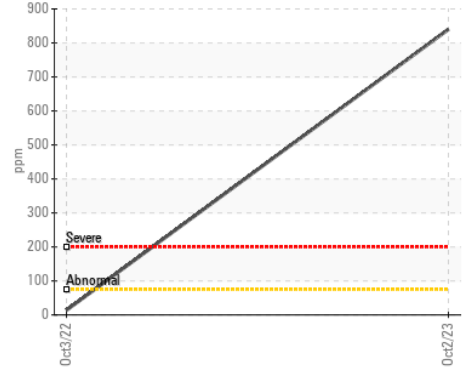
▲ Aluminum (ppm)



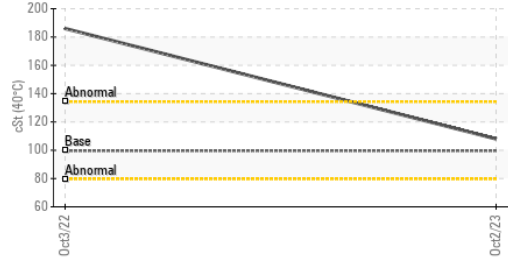
Copper (ppm)



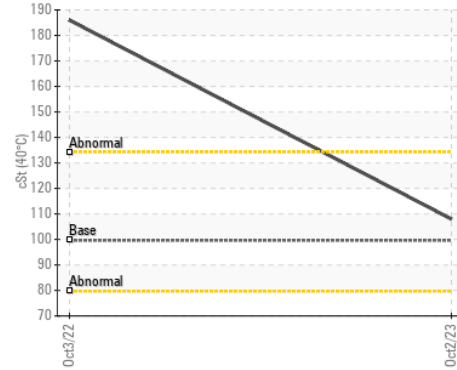
▲ Silicon (ppm)



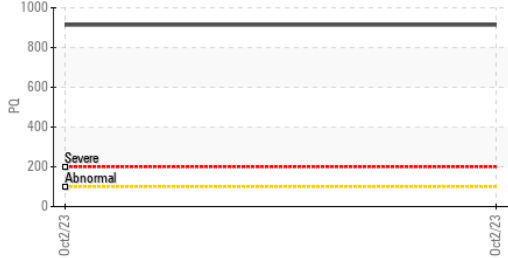
Viscosity @ 40°C



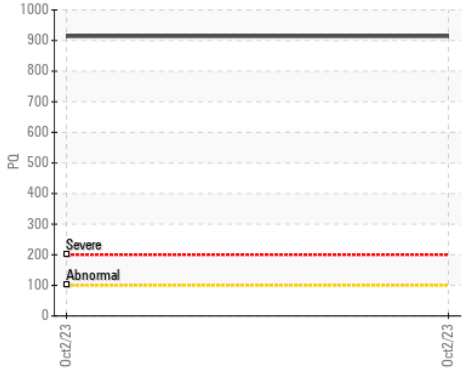
Viscosity @ 40°C



PQ



PQ



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **E. CUMMINGS CONTRACTING INC.**
Sample No. : LH0182162 **Received** : 04 Jan 2024
Lab Number : 02606602 **Diagnosed** : 05 Jan 2024
Unique Number : 5707688 **Diagnostician** : Kevin Marson
Test Package : MOBCE (Additional Tests: PQ, Visual)

852 MAIN STREET
 WOODSTOCK, NB
 CA E7M 2G1
 Contact: Service Manager

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.

T: (506)328-2974
 F: