



LIEBHERR

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ABNORMAL

SEVERE

NORMAL



Area

(358698)

Machine Id

LIEBHERR R934 053048-1550

Component

Left Final Drive

Fluid

PETRO CANADA TRAXON 75W90 SYNTHETIC (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0294724	LH0265660	LH0223996
Sample Date		Client Info		03 Jul 2024	04 Aug 2023	06 Sep 2022
Machine Age	hrs	Client Info		2720	2011	1073
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	NORMAL	NORMAL

WEAR

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.

PQ		ASTM D8184*	>1050	202	---	---
Iron	ppm	ASTM D5185(m)	>1700	▲ 2417	715	92
Chromium	ppm	ASTM D5185(m)	>30	27	10	2
Nickel	ppm	ASTM D5185(m)	>8	7	3	<1
Titanium	ppm	ASTM D5185(m)	>10	▲ 10	3	<1
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>100	● 215	54	13
Lead	ppm	ASTM D5185(m)	>10	2	1	<1
Copper	ppm	ASTM D5185(m)	>100	2	1	<1
Tin	ppm	ASTM D5185(m)	>8	0	0	0
Vanadium	ppm	ASTM D5185(m)		<1	<1	0
White Metal	scalar	Visual*	NONE	LIGHT	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

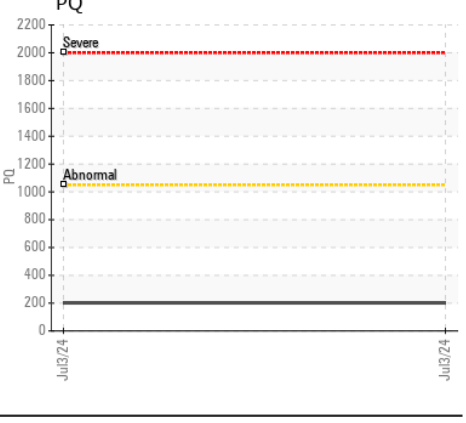
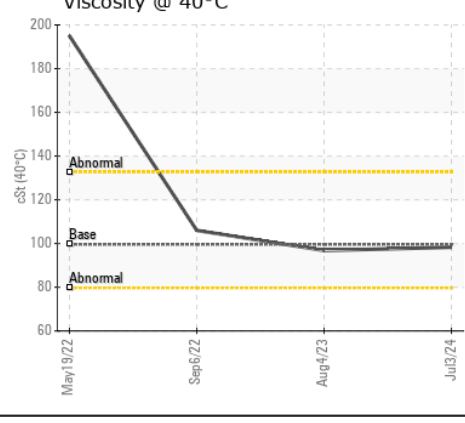
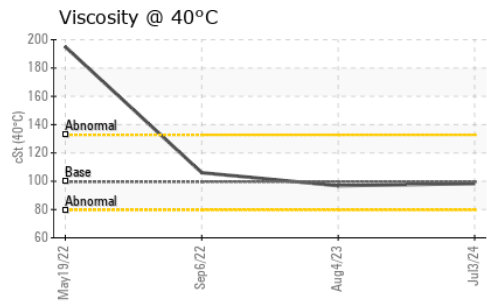
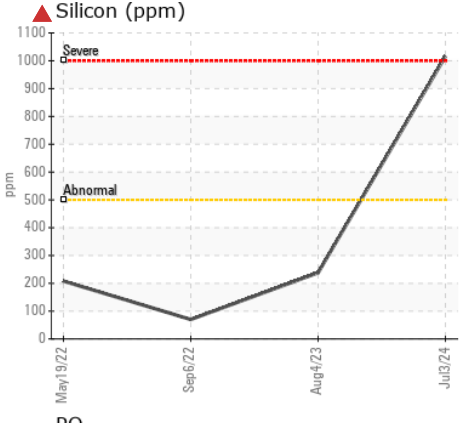
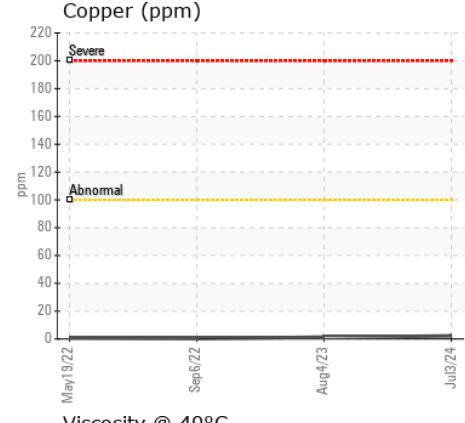
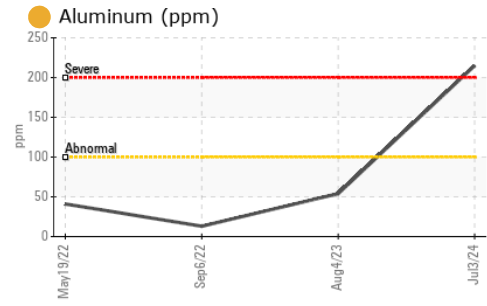
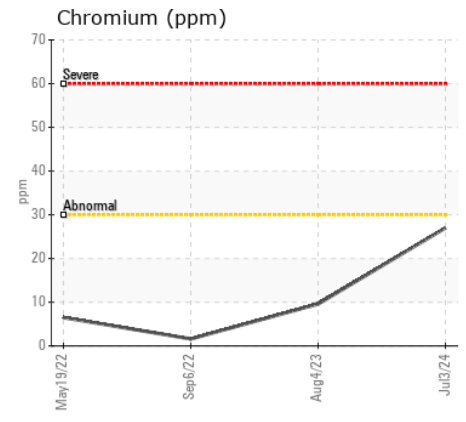
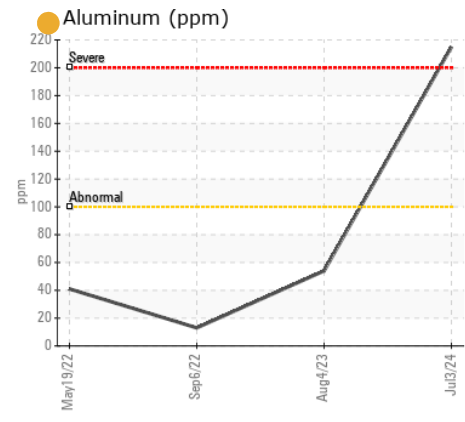
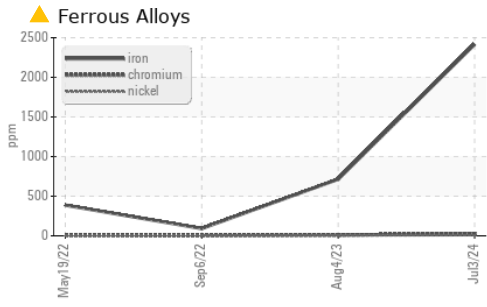
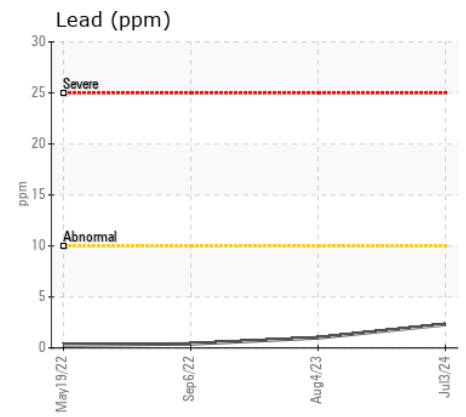
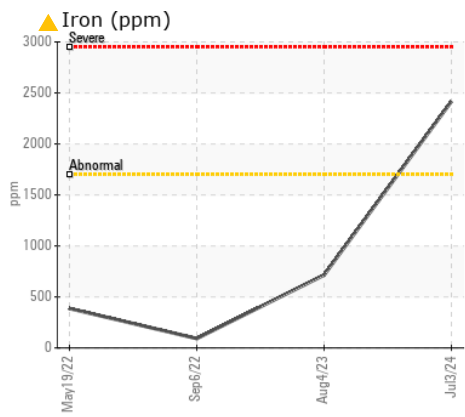
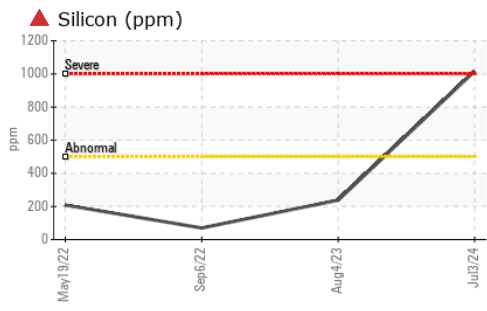
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Silicon	ppm	ASTM D5185(m)	>500	▲ 1016	238	70
Potassium	ppm	ASTM D5185(m)	>20	67	18	5
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	VLITE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	VLITE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185(m)		67	17	5
Boron	ppm	ASTM D5185(m)	328	271	270	284
Barium	ppm	ASTM D5185(m)	1	2	2	2
Molybdenum	ppm	ASTM D5185(m)		1	<1	<1
Manganese	ppm	ASTM D5185(m)		21	7	2
Magnesium	ppm	ASTM D5185(m)	1	69	22	6
Calcium	ppm	ASTM D5185(m)	7	234	79	23
Phosphorus	ppm	ASTM D5185(m)	1145	1175	1332	1278
Zinc	ppm	ASTM D5185(m)	3	31	28	20
Sulfur	ppm	ASTM D5185(m)	17909	22192	20821	20637
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	98.3	96.8	106



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0294724 **Received** : 04 Jul 2024
Lab Number : 02645565 **Tested** : 05 Jul 2024
Unique Number : 5803104 **Diagnosed** : 05 Jul 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PQ)

AMERICAN IRON AND METAL RECYCLING
 116 GOVERNMENT RD N
 TIMMINS, ON
 CA P4R 1M9
 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.

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