



LIEBHERR

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL



Area
[02638616]
 Machine Id
031629-793
 Component
Left Final Drive
 Fluid
PETRO CANADA TRAXON 75W90 SYNTHETIC (6 LTR)

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		LH0289500	LH0227402	LH
Sample Date		Client Info		24 May 2024	08 Apr 2022	09 Jan 2022
Machine Age	hrs	Client Info		16113	13549	12577
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		None	None	None
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

Chromium and iron ppm levels are severe. PQ levels are severe. Nickel ppm levels are abnormal. Aluminum ppm levels are noted. Titanium ppm levels are marginal. Gear wear is indicated. The very high ferrous density (PQ) index indicates that severe wear is occurring.

PQ		ASTM D8184*		▲ 1333	508	152
Iron	ppm	ASTM D5185(m)	>500	▲ 5774	▲ 2018	▲ 1911
Chromium	ppm	ASTM D5185(m)	>10	▲ 94	▲ 33	▲ 35
Nickel	ppm	ASTM D5185(m)	>10	▲ 13	4	5
Titanium	ppm	ASTM D5185(m)		▲ 17	▲ 12	6
Silver	ppm	ASTM D5185(m)		0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	● 225	● 168	● 81
Lead	ppm	ASTM D5185(m)	>25	10	14	6
Copper	ppm	ASTM D5185(m)	>50	74	36	28
Tin	ppm	ASTM D5185(m)	>10	2	2	1
Vanadium	ppm	ASTM D5185(m)		1	1	<1
White Metal	scalar	Visual*	NONE	NONE	VLITE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

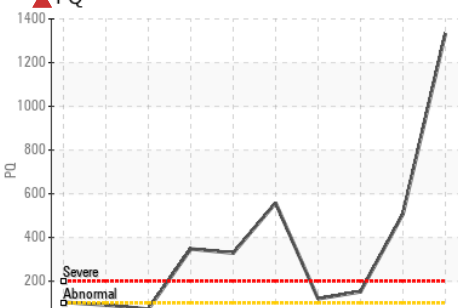
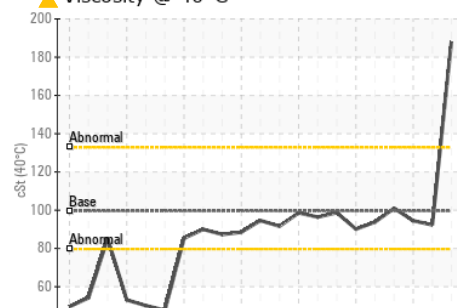
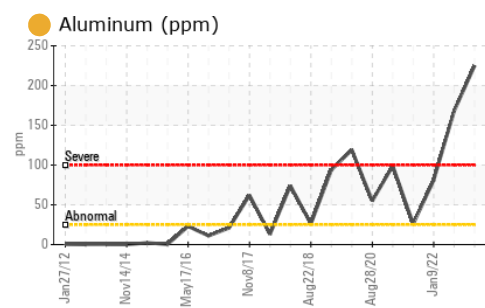
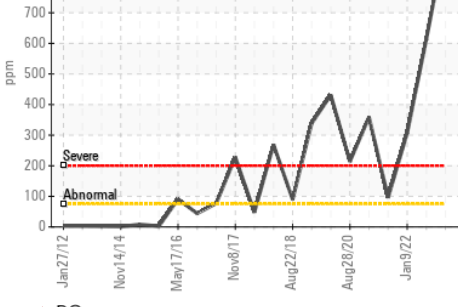
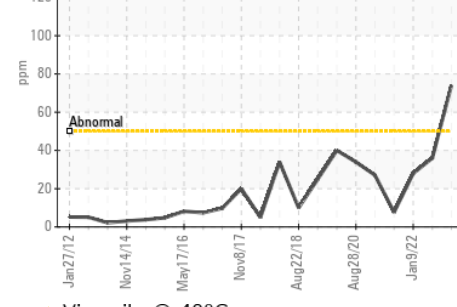
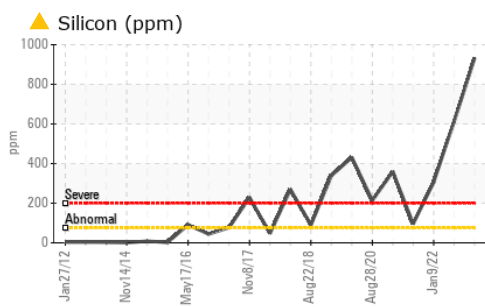
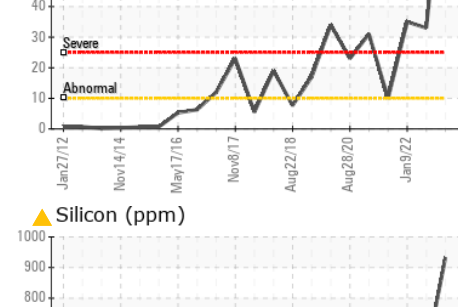
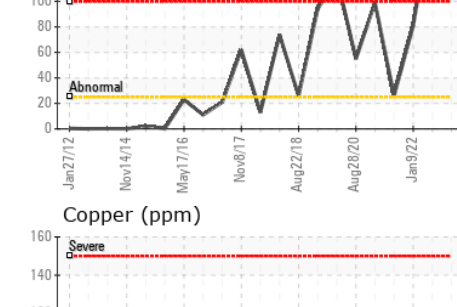
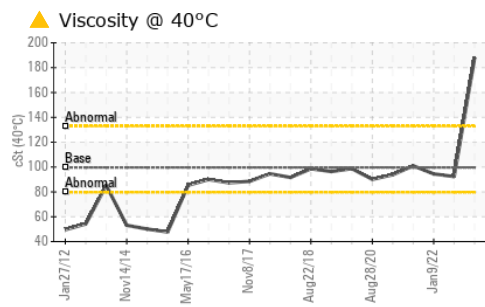
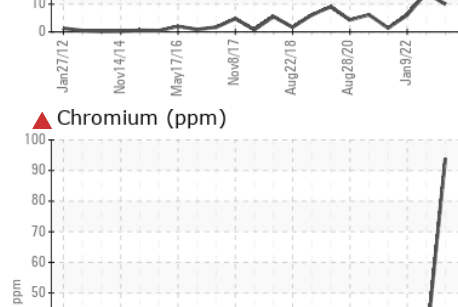
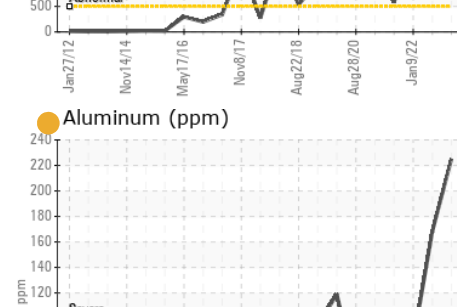
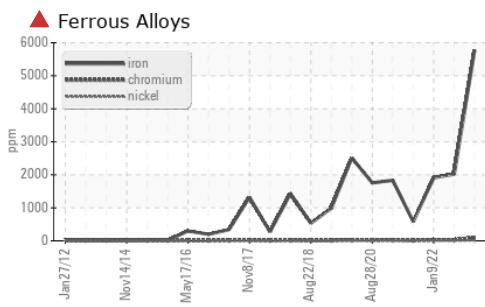
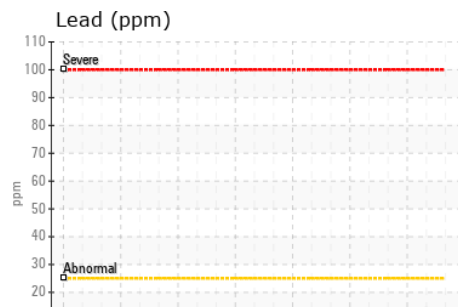
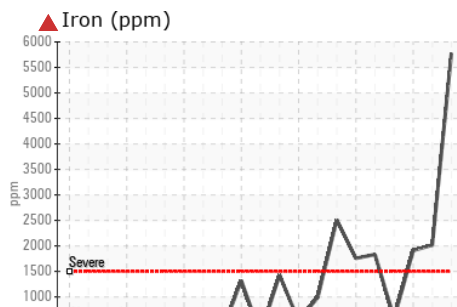
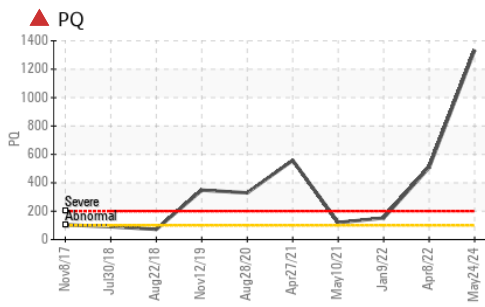
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Silicon	ppm	ASTM D5185(m)	>75	▲ 932	▲ 613	▲ 307
Potassium	ppm	ASTM D5185(m)	>20	61	44	22
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	VLITE	LIGHT	VLITE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
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*	>0.2	NEG	▲ .2%	NEG

FLUID CONDITION

Viscosity of sample indicates oil is within SAE 50 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		57	38	22
Boron	ppm	ASTM D5185(m)	328	266	243	199
Barium	ppm	ASTM D5185(m)	1	6	1	0
Molybdenum	ppm	ASTM D5185(m)		6	2	3
Manganese	ppm	ASTM D5185(m)		97	42	31
Magnesium	ppm	ASTM D5185(m)	1	144	115	52
Calcium	ppm	ASTM D5185(m)	7	1170	1201	485
Phosphorus	ppm	ASTM D5185(m)	1145	1105	1237	1290
Zinc	ppm	ASTM D5185(m)	3	53	43	30
Sulfur	ppm	ASTM D5185(m)	17909	34333	20327	22124
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	▲ 188	92.3	94.5



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289500 **Received** : 29 May 2024
Lab Number : 02638616 **Tested** : 30 May 2024
Unique Number : 5787778 **Diagnosed** : 31 May 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PQ)

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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