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LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Machine Id
LIEBHERR R930 052446-1716
Component
Right Final Drive
Fluid
PETRO CANADA TRAXON SYNTHETIC 75W90 (--- 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.

WEAR

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

CONTAMINATION

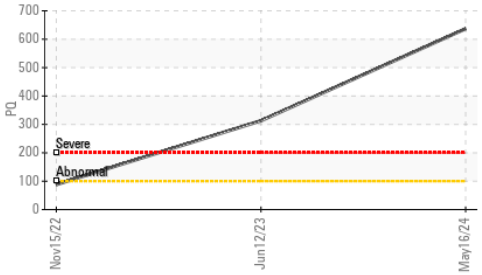
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

FLUID CONDITION

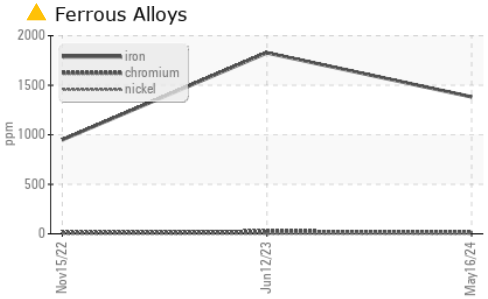
Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0286579	LH0202860	LH0242616
Sample Date		Client Info		16 May 2024	12 Jun 2023	15 Nov 2022
Machine Age	hrs	Client Info		3969	2977	2489
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				ABNORMAL	SEVERE	ABNORMAL
PQ		ASTM D8184*		▲ 637	▲ 313	88
Iron	ppm	ASTM D5185(m)	>500	▲ 1382	▲ 1827	▲ 949
Chromium	ppm	ASTM D5185(m)	>10	▲ 19	▲ 25	▲ 12
Nickel	ppm	ASTM D5185(m)	>10	<1	1	<1
Titanium	ppm	ASTM D5185(m)		▲ 12	▲ 13	3
Silver	ppm	ASTM D5185(m)		0	1	0
Aluminum	ppm	ASTM D5185(m)	>25	● 208	● 195	● 48
Lead	ppm	ASTM D5185(m)	>25	0	<1	0
Copper	ppm	ASTM D5185(m)	>50	<1	1	<1
Tin	ppm	ASTM D5185(m)	>10	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	<1	<1
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>75	▲ 788	▲ 733	▲ 202
Potassium	ppm	ASTM D5185(m)	>20	75	65	19
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
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	NEG	NEG
Sodium	ppm	ASTM D5185(m)		50	58	16
Boron	ppm	ASTM D5185(m)	328	103	4	5
Barium	ppm	ASTM D5185(m)	1	3	5	2
Molybdenum	ppm	ASTM D5185(m)		<1	2	1
Manganese	ppm	ASTM D5185(m)		14	16	8
Magnesium	ppm	ASTM D5185(m)	1	● 70	56	19
Calcium	ppm	ASTM D5185(m)	7	● 459	2005	1898
Phosphorus	ppm	ASTM D5185(m)	1145	1575	4707	4624
Zinc	ppm	ASTM D5185(m)	3	● 182	707	730
Sulfur	ppm	ASTM D5185(m)	17909	16717	3333	3067
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	119	334	239

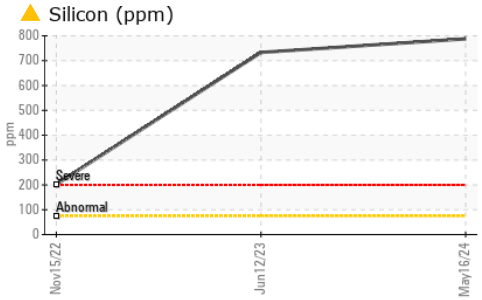
PQ



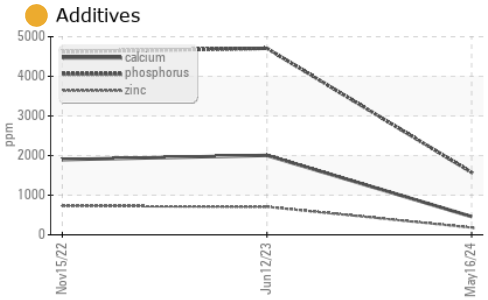
Ferrous Alloys



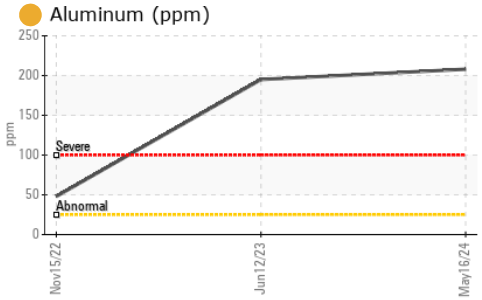
Silicon (ppm)



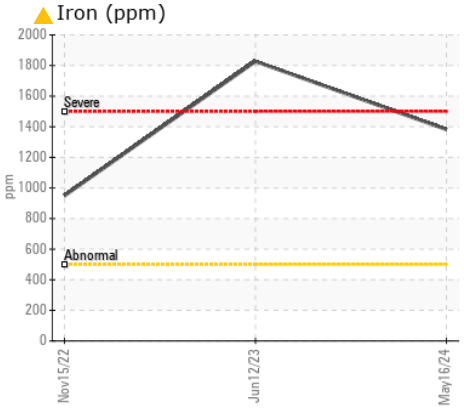
Additives



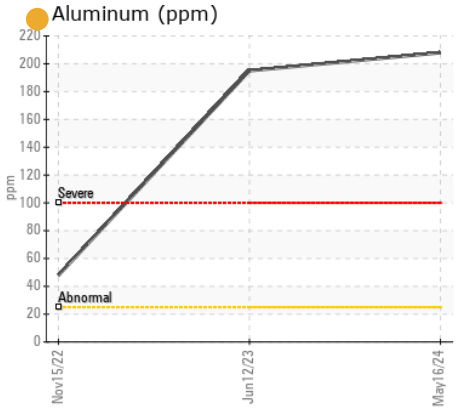
Aluminum (ppm)



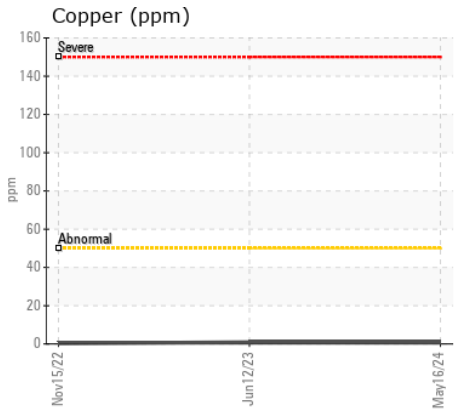
Iron (ppm)



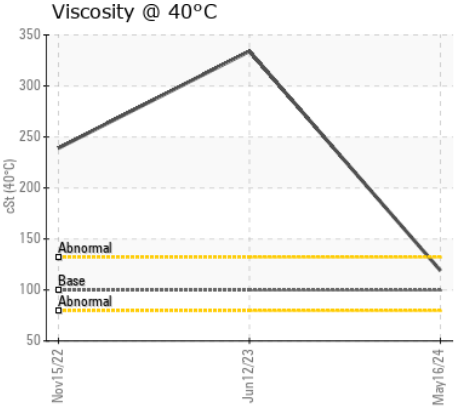
Aluminum (ppm)



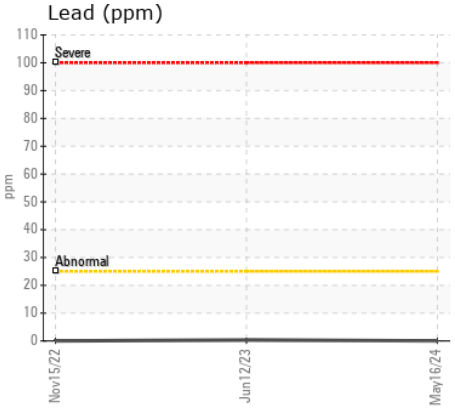
Copper (ppm)



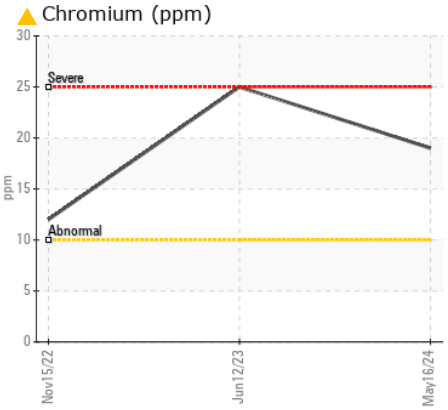
Viscosity @ 40°C



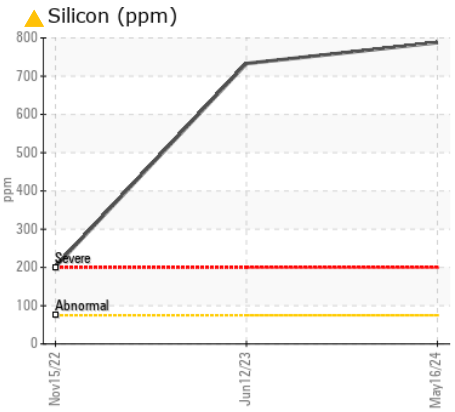
Lead (ppm)



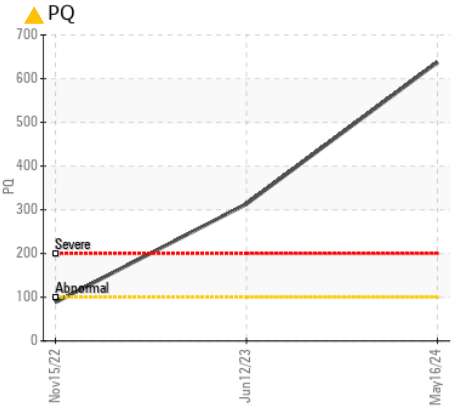
Chromium (ppm)



Silicon (ppm)



PQ



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0286579
Lab Number : 02637282
Unique Number : 5786444
Test Package : MOB 1 (Additional Tests: PQ)

Received : 23 May 2024
Tested : 23 May 2024
Diagnosed : 24 May 2024 - Kevin Marson

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.

THOMAS CAVANAGH CONSTRUCTION LTD
RR # 2, 9094 CAVANAGH ROAD
ASHTON, ON
CA K0A 1B0
Contact: Keith

T: (613)257-4995
F: (613)253-0071