



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR  
CONTAMINATION  
FLUID CONDITION

**ABNORMAL**

**SEVERE**

**NORMAL**



Machine Id  
**LIEBHERR R920 052179-1705**

Component  
**Right 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. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0269738</b>	LH0201938	LH0126749
Sample Date		Client Info		<b>16 May 2024</b>	22 Sep 2022	24 Jan 2022
Machine Age	hrs	Client Info		<b>2489</b>	950	447
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>None</b>	None	N/A
Sample Status				<b>SEVERE</b>	NORMAL	NORMAL

### WEAR

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184*		<b>100</b>	---	---
Iron	ppm	ASTM D5185(m)	>500	<b>▲ 828</b>	66	179
Chromium	ppm	ASTM D5185(m)	>10	<b>▲ 11</b>	1	4
Nickel	ppm	ASTM D5185(m)	>10	<b>2</b>	<1	1
Titanium	ppm	ASTM D5185(m)		<b>5</b>	<1	<1
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	<b>● 105</b>	2	4
Lead	ppm	ASTM D5185(m)	>25	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>50	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

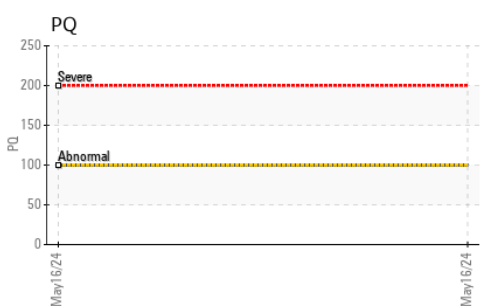
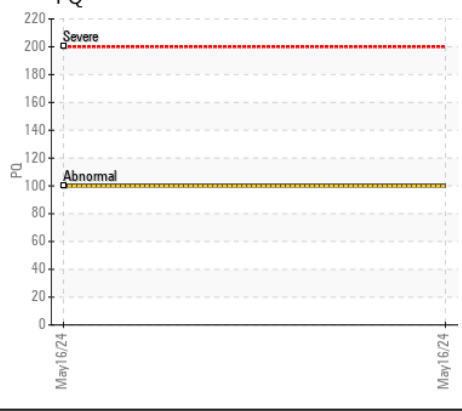
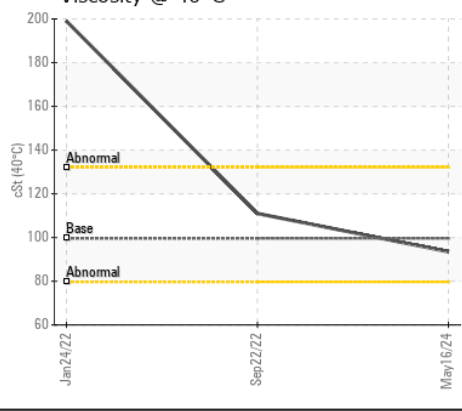
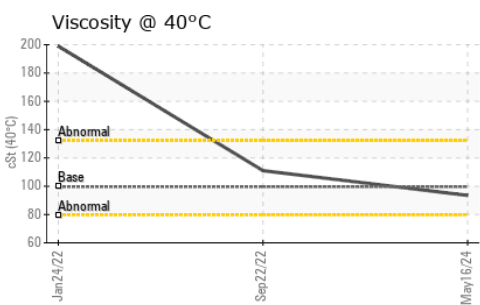
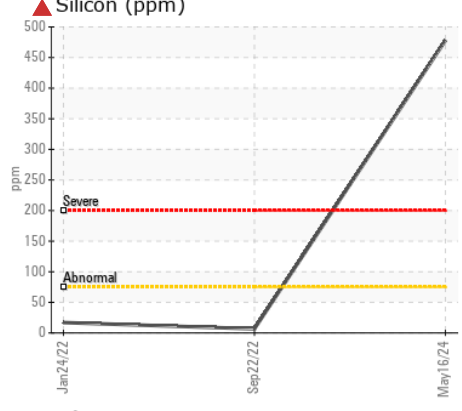
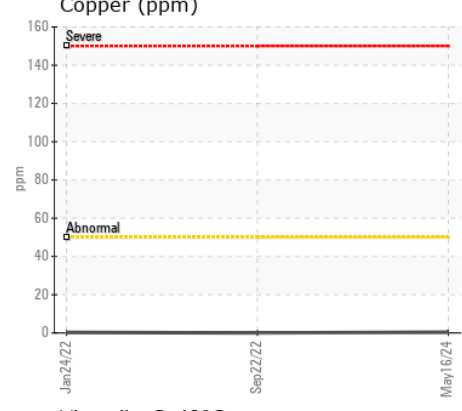
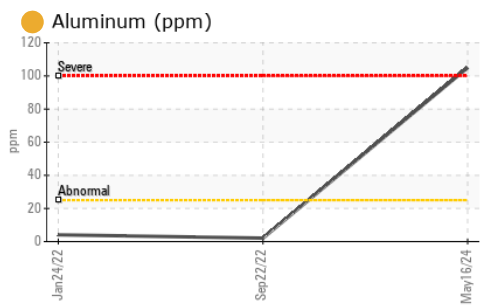
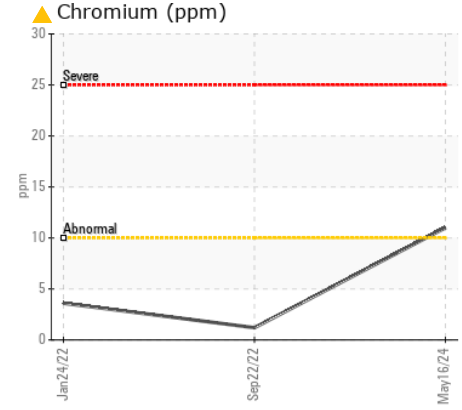
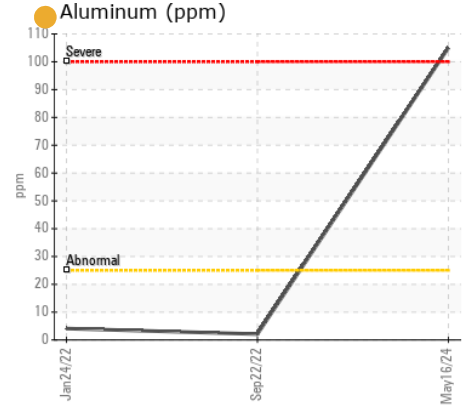
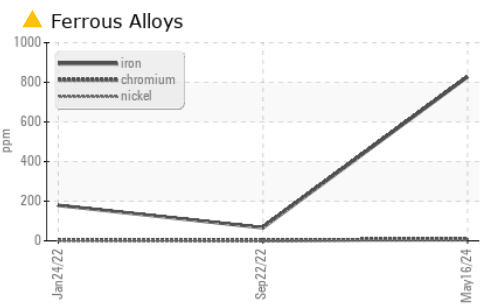
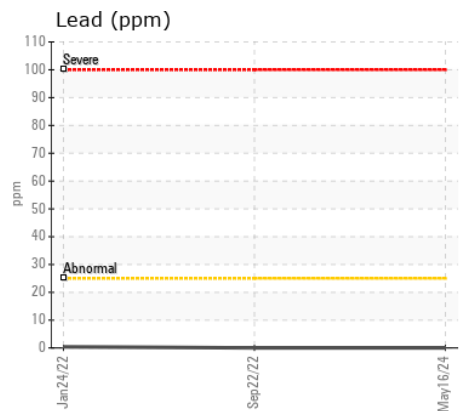
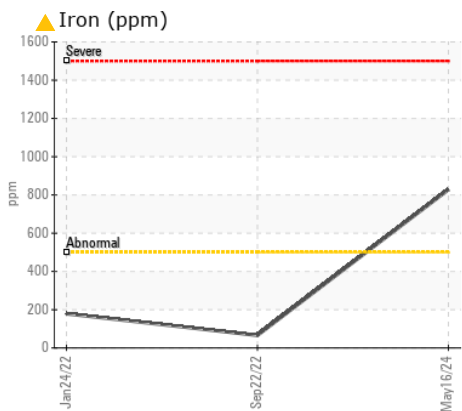
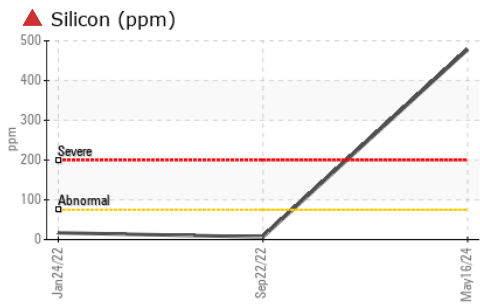
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Silicon	ppm	ASTM D5185(m)	>75	<b>▲ 478</b>	7	17
Potassium	ppm	ASTM D5185(m)	>20	<b>32</b>	2	5
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	Visual*	NONE	<b>VLITE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>10</b>	3	6
Boron	ppm	ASTM D5185(m)	328	<b>197</b>	175	6
Barium	ppm	ASTM D5185(m)	1	<b>4</b>	5	13
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185(m)		<b>8</b>	1	3
Magnesium	ppm	ASTM D5185(m)	1	<b>39</b>	<1	2
Calcium	ppm	ASTM D5185(m)	7	<b>151</b>	7	21
Phosphorus	ppm	ASTM D5185(m)	1145	<b>1259</b>	1423	1280
Zinc	ppm	ASTM D5185(m)	3	<b>17</b>	18	31
Sulfur	ppm	ASTM D5185(m)	17909	<b>21970</b>	24112	24846
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	<b>93.5</b>	111	199



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0269738  
**Lab Number** : 02637262  
**Unique Number** : 5786424  
**Test Package** : MOB 1 ( Additional Tests: PQ )

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

**Phoenix Treatment Systems Ltd.**  
 2615-26 Ave SW  
 Calgary, AB  
 CA T3E 8C7  
 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:  
F: