



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
(339786)
Machine Id
LIEBHERR R920 047100-1705
Component
Diesel Engine
Fluid
PETRO CANADA 10W40 (20 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0288055	LH0242087	LH0260637
Sample Date		Client Info		18 Apr 2024	07 Nov 2023	28 Apr 2023
Machine Age	hrs	Client Info		3616	3040	2450
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	12	12	10
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	1	2	2
Lead	ppm	ASTM D5185(m)	>30	0	<1	<1
Copper	ppm	ASTM D5185(m)	>125	2	3	6
Tin	ppm	ASTM D5185(m)	>5	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

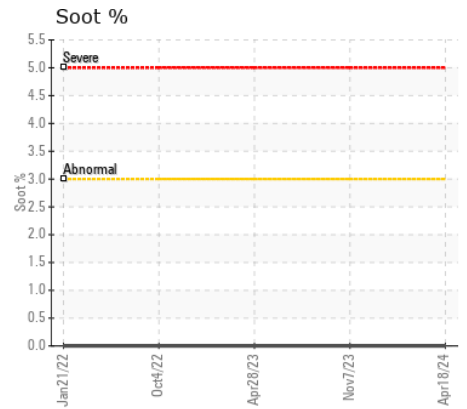
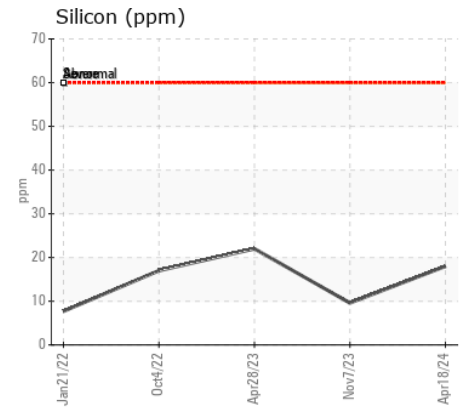
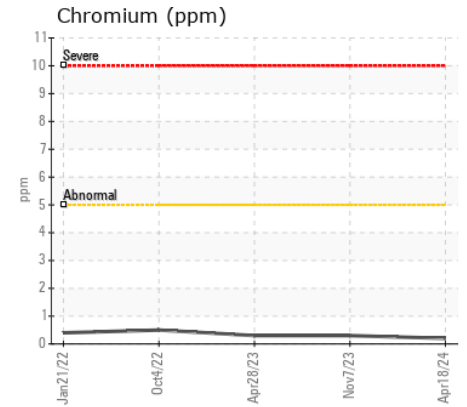
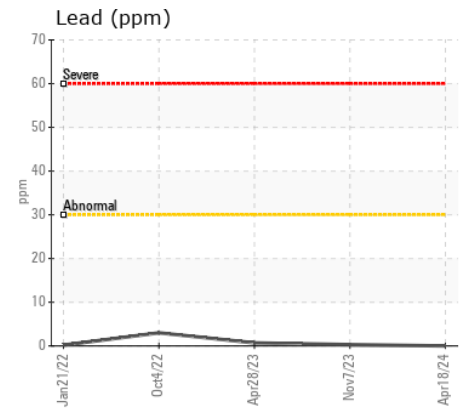
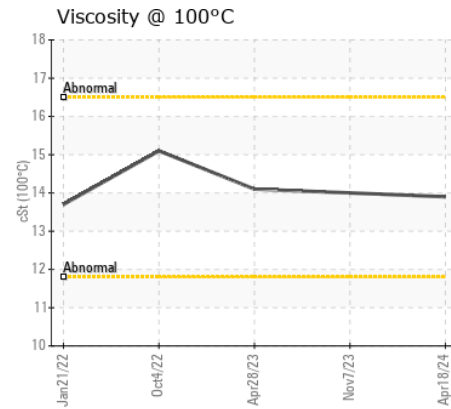
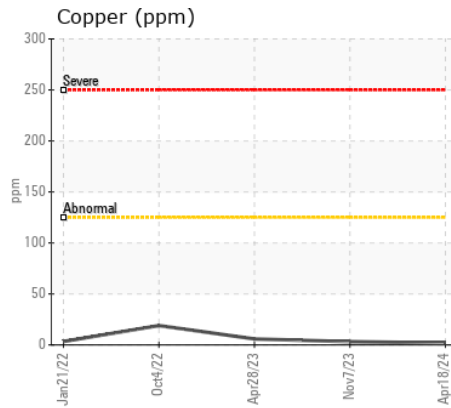
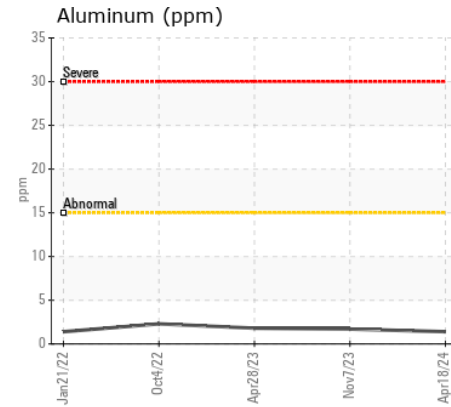
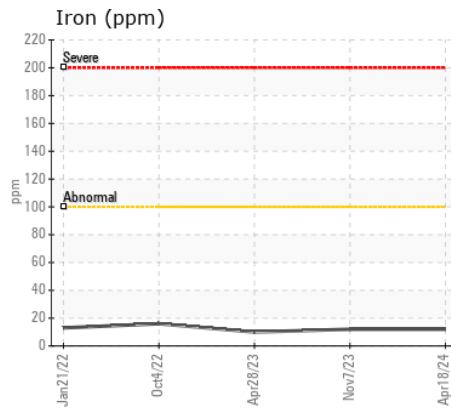
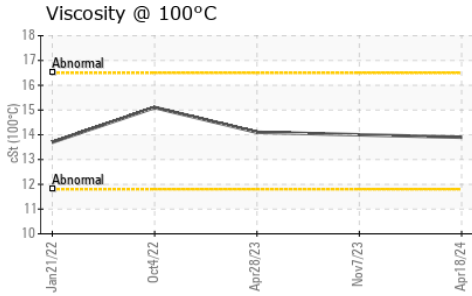
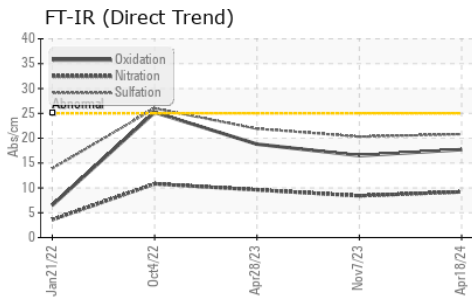
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	18	10	22
Potassium	ppm	ASTM D5185(m)	>20	<1	0	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	9.2	8.4	9.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	20.8	20.3	21.9
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>20	2	3	3
Boron	ppm	ASTM D5185(m)		18	11	26
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		50	55	52
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		990	1008	943
Calcium	ppm	ASTM D5185(m)		1208	1167	1364
Phosphorus	ppm	ASTM D5185(m)		978	998	1117
Zinc	ppm	ASTM D5185(m)		1173	1240	1253
Sulfur	ppm	ASTM D5185(m)		2496	2528	2701
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.7	16.5	18.8
Visc @ 100°C	cSt	ASTM D7279(m)		13.9	14.0	14.1



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0288055 **Received** : 22 Apr 2024
Lab Number : 02630501 **Tested** : 22 Apr 2024
Unique Number : 5763633 **Diagnosed** : 22 Apr 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

ECOWASTE INDUSTRIES LTD.
 15111 WILLIAMS ROAD
 RICHMOND, BC
 CA V6W 1G9
 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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