



Machine Id  
**731111**  
Component  
**Natural Gas Engine**  
Fluid  
**RDL-3647 (--- GAL)**

**RECOMMENDATION**

Please note that all wear metal and contaminant levels are being considered accumulative. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes BN to determine the suitability of the oil for continued use.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0117130</b>	GFL0071082	GFL0054864
Sample Date		Client Info		<b>24 Apr 2024</b>	09 Mar 2023	03 Aug 2022
Machine Age	hrs	Client Info		<b>4468</b>	2910	20227
Oil Age	hrs	Client Info		<b>1200</b>	1200	0
Filter Age	hrs	Client Info		<b>1200</b>	1200	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

**WEAR**

Chromium ppm levels are abnormal. Ring wear is indicated.

Iron	ppm	ASTM D5185(m)	>50	<b>35</b>	13	12
Chromium	ppm	ASTM D5185(m)	>4	<b>▲ 8</b>	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<b>1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>9	<b>2</b>	2	2
Lead	ppm	ASTM D5185(m)	>30	<b>9</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>35	<b>3</b>	2	2
Tin	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---

**CONTAMINATION**

There is no indication of any contamination in the oil.

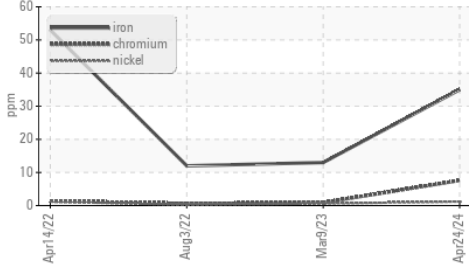
Silicon	ppm	ASTM D5185(m)	>+100	<b>3</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	2	1
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Soot %	%	ASTM D7844*		<b>0</b>	0	0
Nitration	Abs/cm	ASTM D7624*	>20	<b>11.9</b>	6.9	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>26.1</b>	18.2	20.6
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

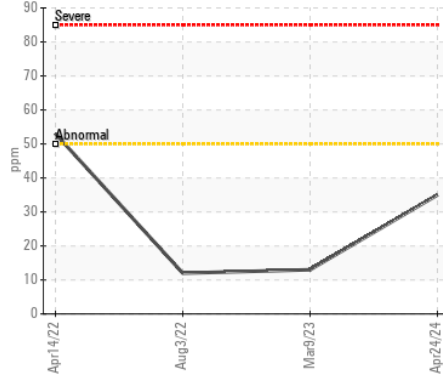
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>8</b>	9	7
Boron	ppm	ASTM D5185(m)	50	<b>8</b>	9	12
Barium	ppm	ASTM D5185(m)	5	<b>4</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	50	<b>59</b>	55	51
Manganese	ppm	ASTM D5185(m)	0	<b>2</b>	<1	1
Magnesium	ppm	ASTM D5185(m)	560	<b>624</b>	603	558
Calcium	ppm	ASTM D5185(m)	1510	<b>1619</b>	1746	1588
Phosphorus	ppm	ASTM D5185(m)	780	<b>711</b>	773	700
Zinc	ppm	ASTM D5185(m)	870	<b>959</b>	960	910
Sulfur	ppm	ASTM D5185(m)	2040	<b>2039</b>	2178	2075
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>20.1</b>	10.1	17.4
Visc @ 100°C	cSt	ASTM D7279(m)	15.1	<b>13.9</b>	14.2	14.6

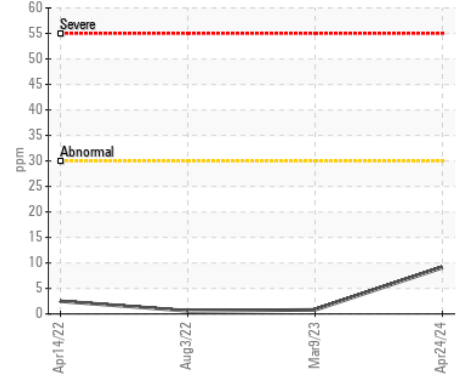
▲ Ferrous Alloys



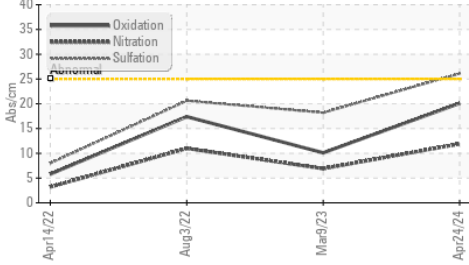
Iron (ppm)



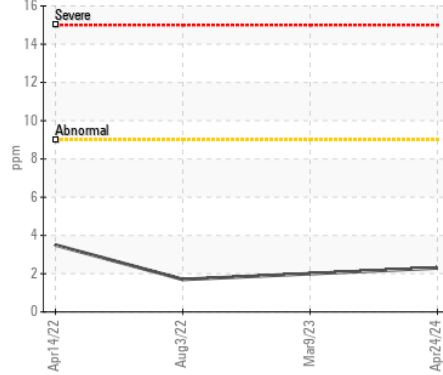
Lead (ppm)



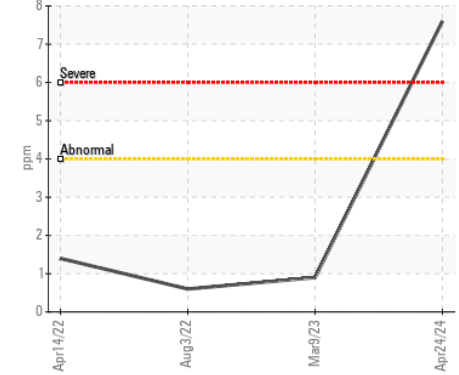
FT-IR (Direct Trend)



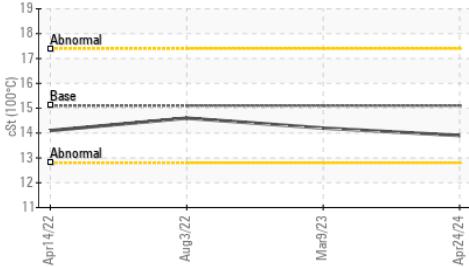
Aluminum (ppm)



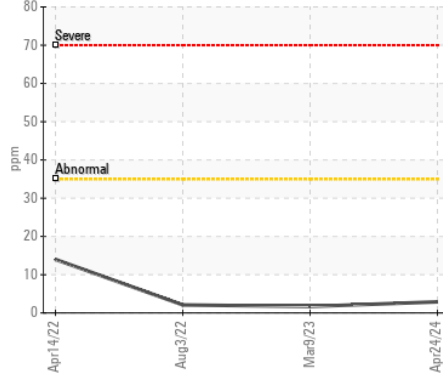
▲ Chromium (ppm)



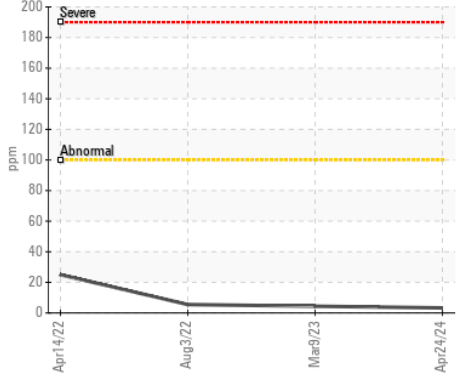
Viscosity @ 100°C



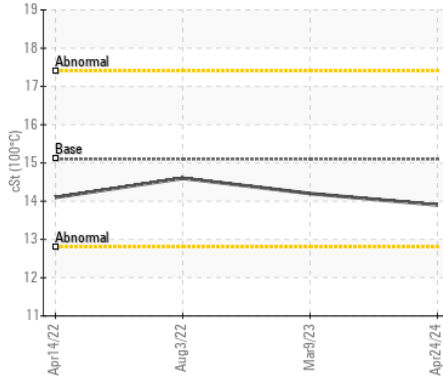
Copper (ppm)



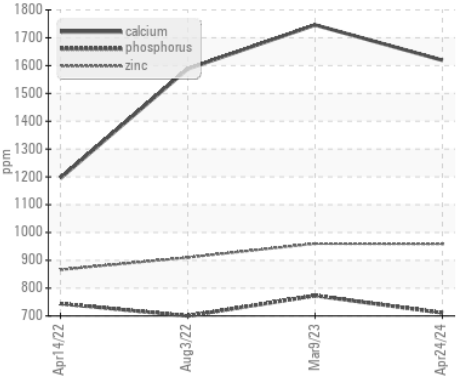
Silicon (ppm)



Viscosity @ 100°C



Additives



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0117130 **Received** : 26 Apr 2024  
**Lab Number** : 02631498 **Tested** : 26 Apr 2024  
**Unique Number** : 5772651 **Diagnosed** : 26 Apr 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: Visual )

**GFL Environmental - 209 - Hamilton**  
 560 Seaman Street  
 Stoney Creek, ON  
 CA L8E 3X7  
 Contact: Fred Carleton  
 fred.carleton@gflenv.com  
 T: (289)925-6693  
 F: (905)664-9008

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.