



Machine Id  
**4707**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (42 LTR)**

### RECOMMENDATION

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>GFL0118909</b>	GFL0094447	GFL0086791
Sample Date		Client Info		<b>07 May 2024</b>	05 Apr 2024	31 Jan 2024
Machine Age	hrs	Client Info		<b>16920</b>	16785	283393
Oil Age	hrs	Client Info		<b>16920</b>	600	283393
Filter Age	hrs	Client Info		<b>16920</b>	600	283393
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	NORMAL

### WEAR

Aluminum ppm levels are severe. Piston wear is indicated.

Iron	ppm	ASTM D5185(m)	>120	<b>36</b>	▲ 96	7
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	1	0
Titanium	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>▲ 128</b>	▲ 136	4
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	0	2
Copper	ppm	ASTM D5185(m)	>330	<b>4</b>	3	<1
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>VLITE</b>	NONE	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

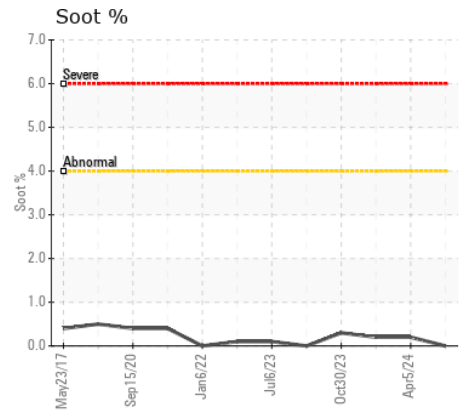
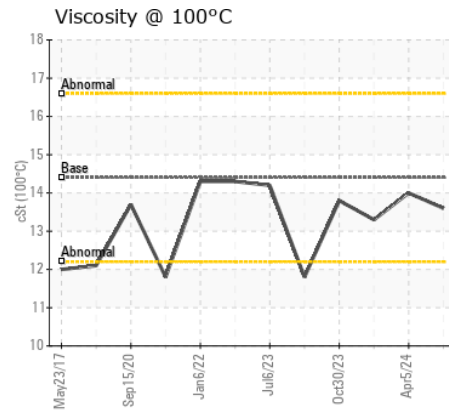
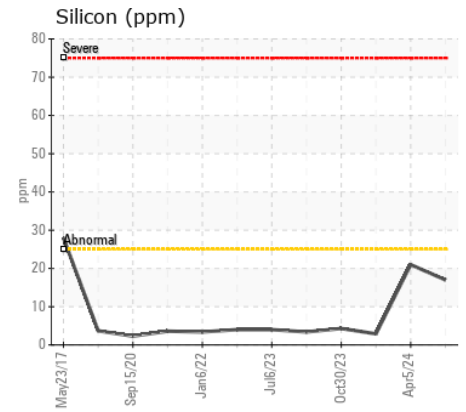
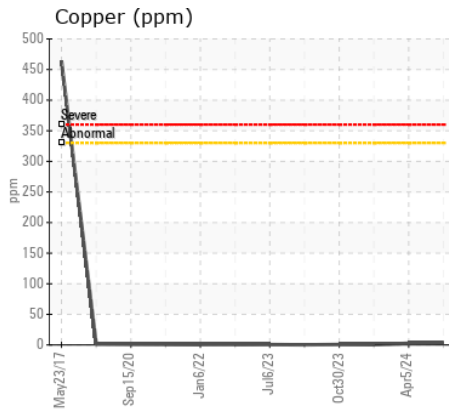
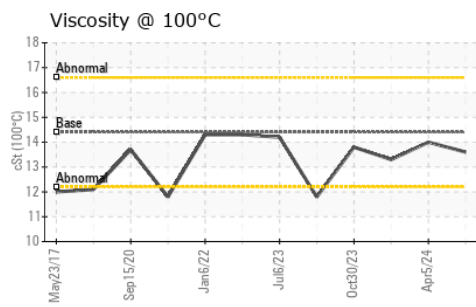
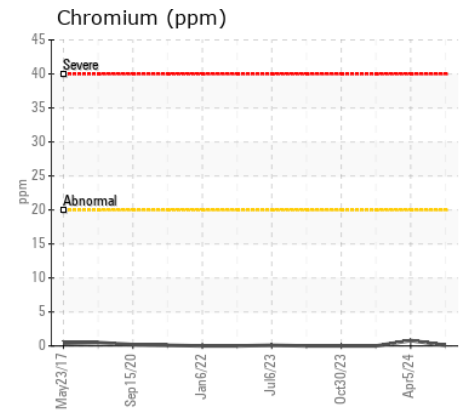
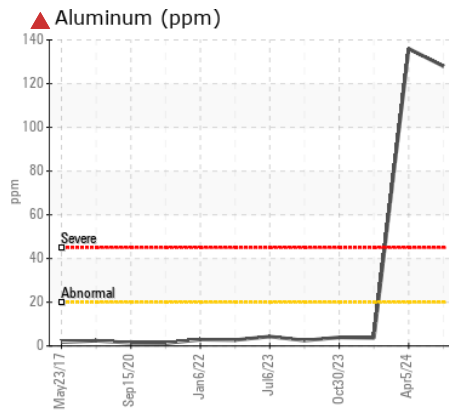
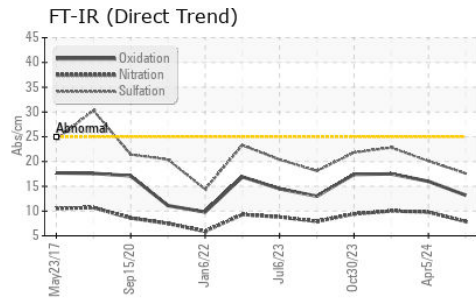
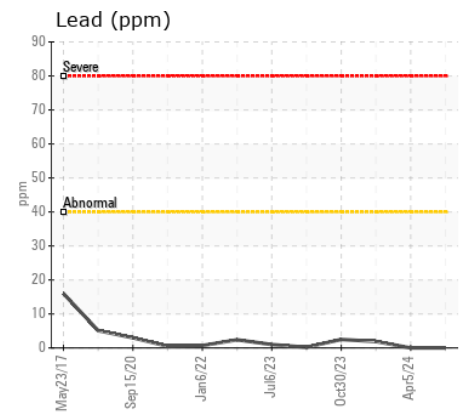
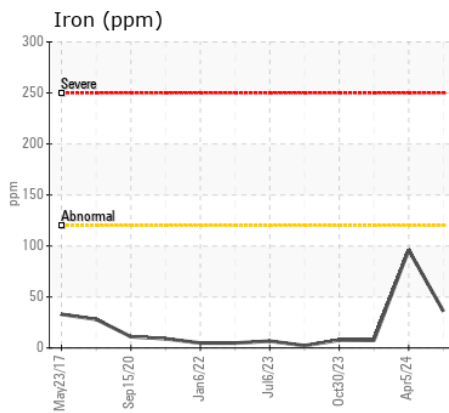
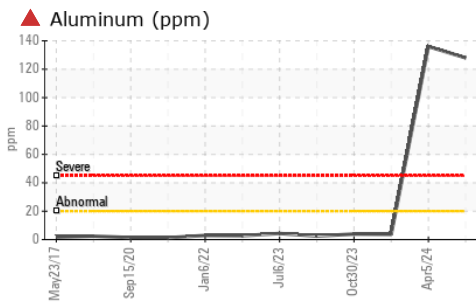
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>17</b>	21	3
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	1	1
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	ASTM D7844*	>4	<b>0</b>	0.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	<b>7.9</b>	9.8	10.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>17.6</b>	20.1	22.8
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	---
Debris	scalar	Visual*	NONE	<b>VLITE</b>	VLITE	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	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)	>158	<b>2</b>	4	3
Boron	ppm	ASTM D5185(m)	250	<b>65</b>	43	26
Barium	ppm	ASTM D5185(m)	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	100	<b>88</b>	89	85
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185(m)	450	<b>81</b>	97	93
Calcium	ppm	ASTM D5185(m)	3000	<b>2126</b>	2104	2076
Phosphorus	ppm	ASTM D5185(m)	1150	<b>1005</b>	1002	965
Zinc	ppm	ASTM D5185(m)	1350	<b>1146</b>	1189	1107
Sulfur	ppm	ASTM D5185(m)	4250	<b>3145</b>	3073	3089
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>13.2</b>	16.0	17.5
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	<b>13.6</b>	14.0	13.3



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0118909 **Received** : 08 May 2024  
**Lab Number** : 02634046 **Tested** : 08 May 2024  
**Unique Number** : 5775199 **Diagnosed** : 08 May 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: Visual )

**GFL Environmental - 222 - Sandhill**  
 SANDHILL DISPOSAL & RECYCLING DIVIS, 19 COMMERCE ROAD  
 ORANGEVILLE, ON  
 CA L9W 3X5  
 Contact: GLENN COOK  
 gcook@gflenv.com  
 T: (519)940-4167  
 F:

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.