



WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>ABNORMAL</b>

Machine Id  
**GFL/WCA Rent 449**  
 Component  
**Diesel Engine**  
 Fluid  
**{not provided} (--- GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0046901</b>	GFL0046894	GFL0046885
Sample Date		Client Info		<b>02 Feb 2023</b>	06 Jan 2023	19 Dec 2022
Machine Age	hrs	Client Info		<b>2038</b>	1858	1699
Oil Age	hrs	Client Info		<b>180</b>	1858	1699
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

**WEAR**

Valve wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>67</b>	59	60
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	2	2
Nickel	ppm	ASTM D5185m	>4	<b>▲ 20</b>	▲ 21	▲ 21
Titanium	ppm	ASTM D5185m		<b>3</b>	3	4
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	3	4
Lead	ppm	ASTM D5185m	>40	<b>1</b>	2	2
Copper	ppm	ASTM D5185m	>330	<b>11</b>	11	11
Tin	ppm	ASTM D5185m	>15	<b>2</b>	3	2
Vanadium	ppm	ASTM D5185m		<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**

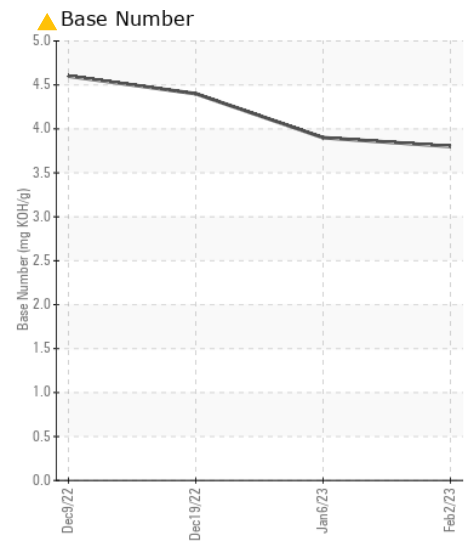
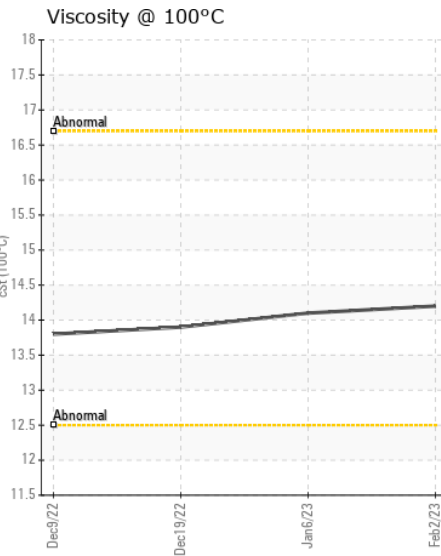
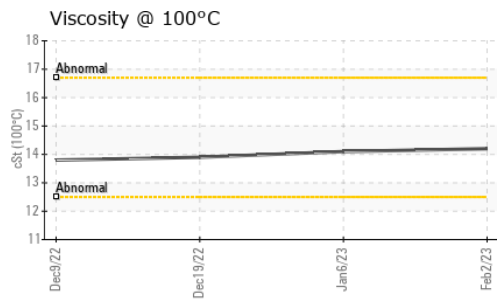
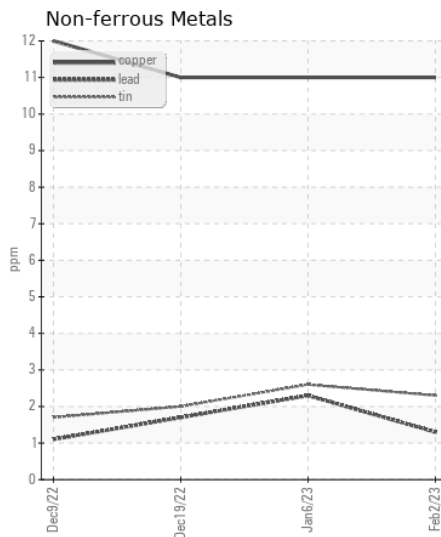
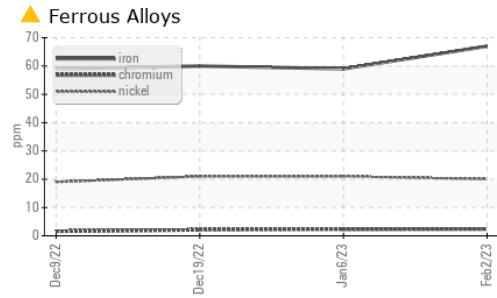
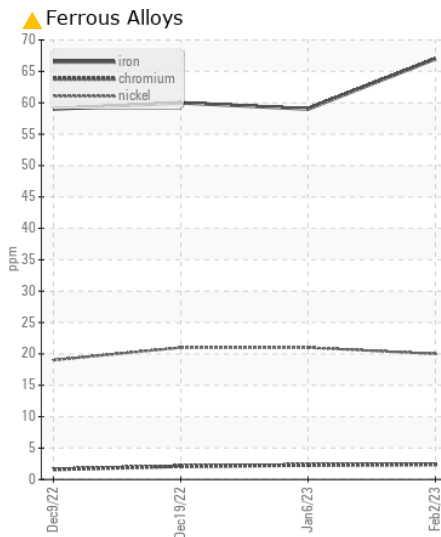
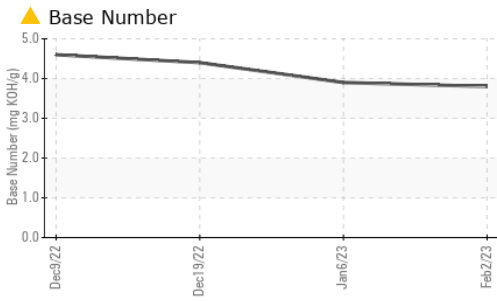
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>11</b>	8	11
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	4	4
Fuel		WC Method	>5	<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	>3	<b>0.9</b>	0.9	1
Nitration	Abs/cm	*ASTM D7624	>20	<b>13.3</b>	13.2	14.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.0</b>	26.9	29.5
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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 BN level is low. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>9</b>	10	10
Boron	ppm	ASTM D5185m		<b>21</b>	22	36
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>97</b>	97	99
Manganese	ppm	ASTM D5185m		<b>3</b>	2	3
Magnesium	ppm	ASTM D5185m		<b>688</b>	715	688
Calcium	ppm	ASTM D5185m		<b>1407</b>	1551	1517
Phosphorus	ppm	ASTM D5185m		<b>732</b>	749	720
Zinc	ppm	ASTM D5185m		<b>936</b>	935	867
Sulfur	ppm	ASTM D5185m		<b>2310</b>	2545	2615
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>26.2</b>	26.0	28.7
Base Number (BN)	mg KOH/g	ASTM D2896		<b>▲ 3.8</b>	▲ 3.9	4.4
Visc @ 100°C	cSt	ASTM D445		<b>14.2</b>	14.1	13.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0046901 **Received** : 08 Feb 2023  
**Lab Number** : **05762767** **Diagnosed** : 10 Feb 2023  
**Unique Number** : 10332375 **Diagnostician** : Don Baldridge  
**Test Package** : FLEET

GFL Environmental - 9999 - Moved No Longer Used Units

US  
Contact:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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F: