



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

Machine Id  
**228069**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 5W40 (4 GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

**WEAR**

All component wear rates are normal.

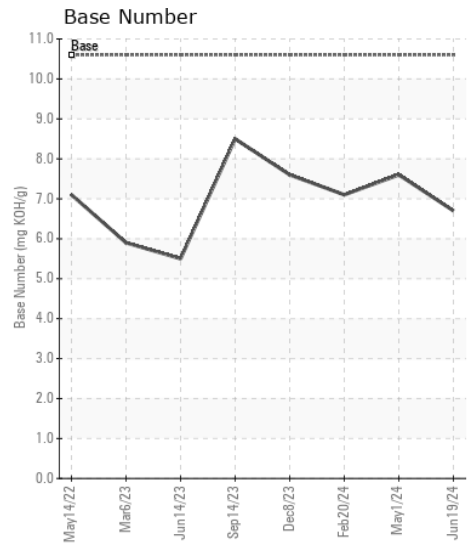
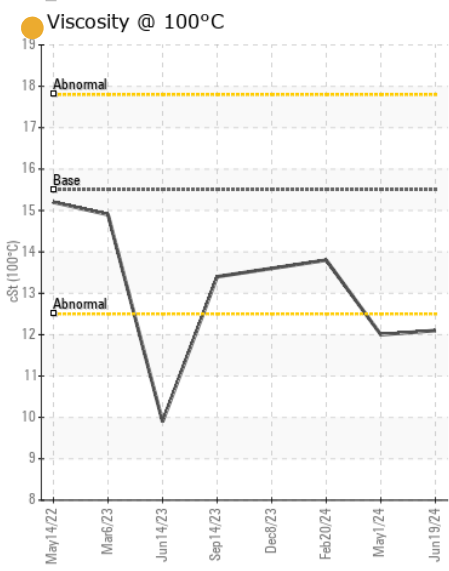
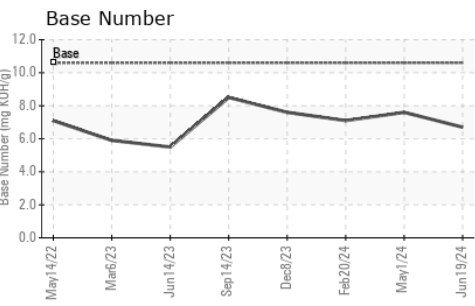
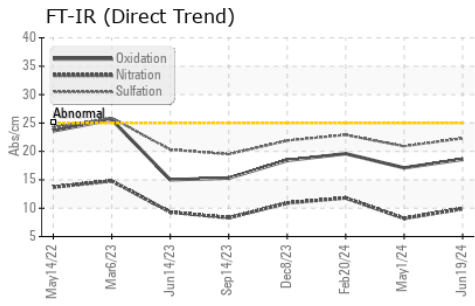
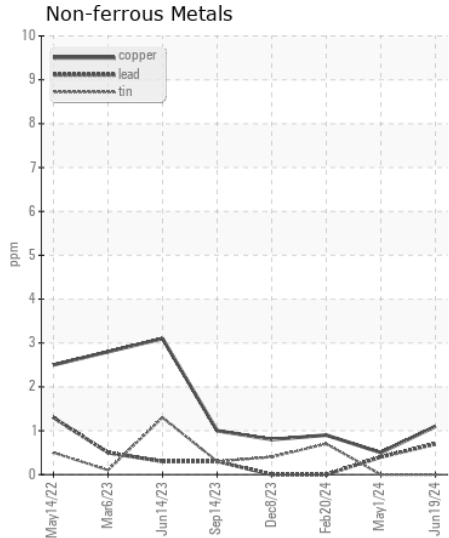
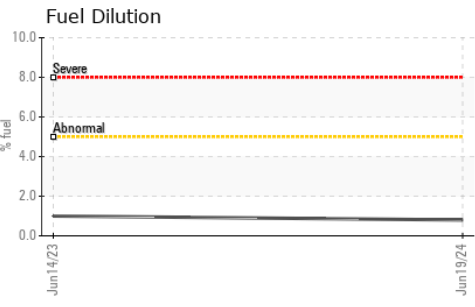
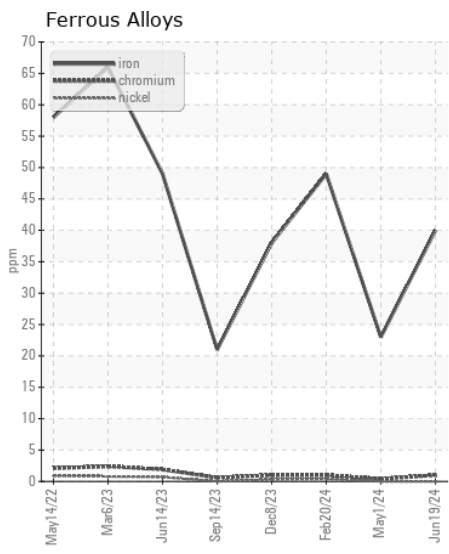
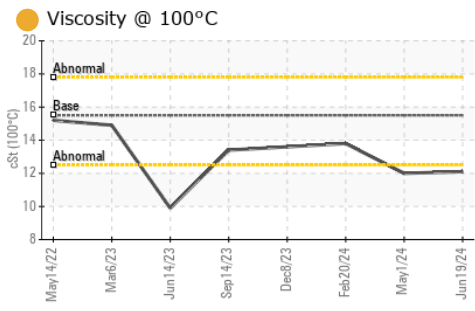
**CONTAMINATION**

Fuel content negligible. There is no indication of any contamination in the oil.

**FLUID CONDITION**

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0120942</b>	GFL0114573	GFL0081089
Sample Date		Client Info		<b>19 Jun 2024</b>	01 May 2024	20 Feb 2024
Machine Age	mls	Client Info		<b>90032</b>	88319	86625
Oil Age	mls	Client Info		<b>6000</b>	1694	5340
Filter Age	mls	Client Info		<b>6000</b>	1694	5340
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Changed
Filter Changed		Client Info		<b>Changed</b>	Not Changed	Changed
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	<b>40</b>	23	49
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>8</b>	6	11
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	<b>12</b>	9	6
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	5	3
Fuel	%	ASTM D3524	>5	<b>0.8</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>0.4</b>	0.2	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.9</b>	8.2	11.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.3</b>	20.9	22.9
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
Sodium	ppm	ASTM D5185m		<b>2</b>	2	2
Boron	ppm	ASTM D5185m		<b>96</b>	139	35
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>9</b>	10	36
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>117</b>	119	387
Calcium	ppm	ASTM D5185m		<b>2525</b>	2137	1684
Phosphorus	ppm	ASTM D5185m		<b>1132</b>	1064	962
Zinc	ppm	ASTM D5185m		<b>1381</b>	1213	1165
Sulfur	ppm	ASTM D5185m		<b>4286</b>	4162	2869
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.6</b>	17.1	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	<b>6.7</b>	7.6	7.1
Visc @ 100°C	cSt	ASTM D445	15.5	<b>12.1</b>	12.0	13.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0120942 **Received** : 20 Jun 2024  
**Lab Number** : 06215657 **Tested** : 24 Jun 2024  
**Unique Number** : 11088521 **Diagnosed** : 24 Jun 2024 - Don Baldrige  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**GFL Environmental - 884 - Lake County - Tavares**  
 321 Southridge Industrial Way  
 Tavares, FL  
 US 32778  
 Contact: JEFF COOPERSMITH

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: