



# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**ZIMMERMAN**  
 Machine Id  
**2331 - ZIMMERMAN**  
 Component  
**Rear Differential**  
 Fluid  
**GEAR OIL SAE 75W90 (--- GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0900773</b>	---	---
Sample Date	Client Info	<b>27 Feb 2024</b>	---	---
Machine Age	mls Client Info	<b>126607</b>	---	---
Oil Age	mls Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>N/A</b>	---	---
Sample Status		<b>ABNORMAL</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>500	<b>297</b>	---	---
Chromium ppm ASTM D5185m	>10	<b>3</b>	---	---
Nickel ppm ASTM D5185m	>10	<b>6</b>	---	---
Titanium ppm ASTM D5185m		<b>&lt;1</b>	---	---
Silver ppm ASTM D5185m		<b>0</b>	---	---
Aluminum ppm ASTM D5185m	>25	<b>3</b>	---	---
Lead ppm ASTM D5185m	>25	<b>&lt;1</b>	---	---
Copper ppm ASTM D5185m	>100	<b>3</b>	---	---
Tin ppm ASTM D5185m	>10	<b>1</b>	---	---
Vanadium ppm ASTM D5185m		<b>&lt;1</b>	---	---
Cadmium ppm ASTM D5185m		<b>&lt;1</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m	400	<b>256</b>	---	---
Barium ppm ASTM D5185m	200	<b>2</b>	---	---
Molybdenum ppm ASTM D5185m	12	<b>&lt;1</b>	---	---
Manganese ppm ASTM D5185m		<b>13</b>	---	---
Magnesium ppm ASTM D5185m	12	<b>3</b>	---	---
Calcium ppm ASTM D5185m	150	<b>81</b>	---	---
Phosphorus ppm ASTM D5185m	1650	<b>1473</b>	---	---
Zinc ppm ASTM D5185m	125	<b>36</b>	---	---
Sulfur ppm ASTM D5185m	22500	<b>24959</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>75	<b>69</b>	---	---
Sodium ppm ASTM D5185m		<b>8</b>	---	---
Potassium ppm ASTM D5185m	>20	<b>3</b>	---	---
Water % ASTM D6304	>.2	<b>0.056</b>	---	---
ppm Water ppm ASTM D6304	>2000	<b>569</b>	---	---

## FLUID CLEANLINESS

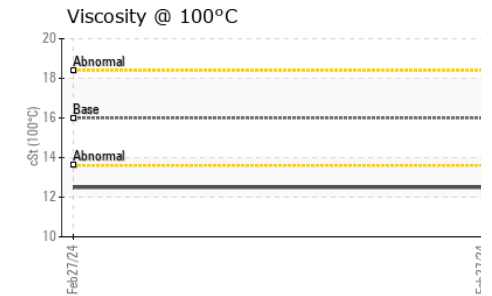
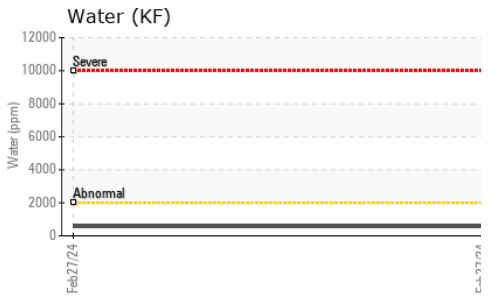
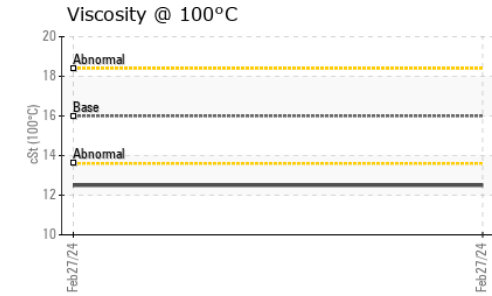
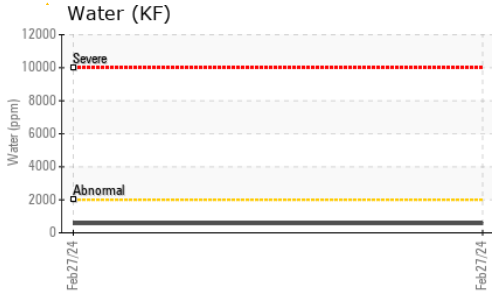
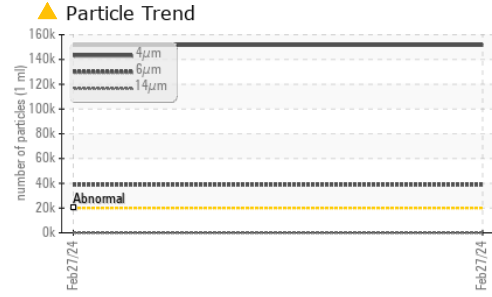
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>20000	<b>▲ 151567</b>	---	---
Particles >6µm ASTM D7647	>5000	<b>▲ 38786</b>	---	---
Particles >14µm ASTM D7647	>640	<b>100</b>	---	---
Particles >21µm ASTM D7647	>160	<b>13</b>	---	---
Particles >38µm ASTM D7647	>40	<b>1</b>	---	---
Particles >71µm ASTM D7647	>10	<b>0</b>	---	---
Oil Cleanliness ISO 4406 (c)	>21/19/16	<b>▲ 24/22/14</b>	---	---

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045	2.00	<b>2.68</b>	---	---



# OIL ANALYSIS REPORT

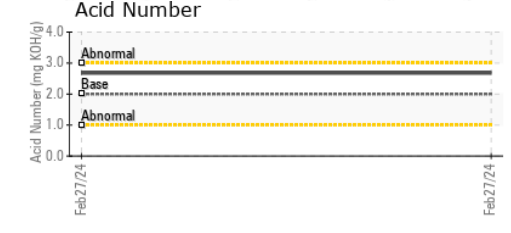
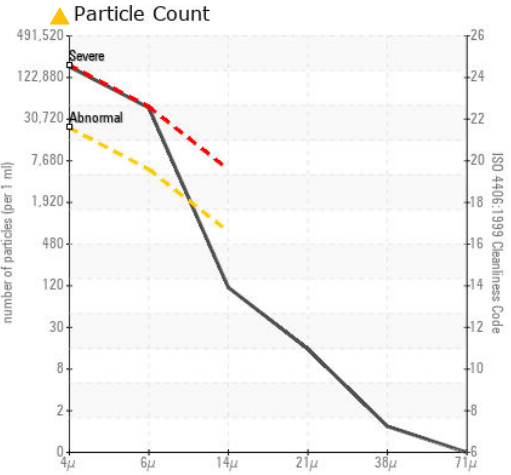
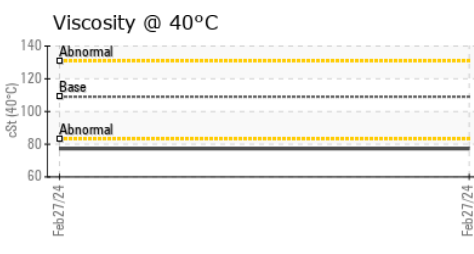
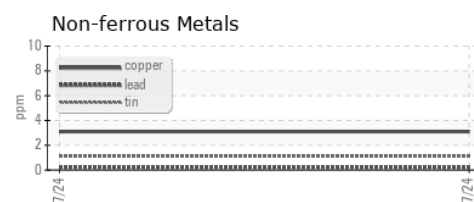
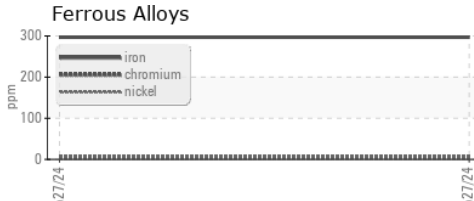


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	LIGHT	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	109	77.3	---
Visc @ 100°C	cSt	ASTM D445	16.0	12.5	---
Viscosity Index (VI)	Scale	ASTM D2270	157	160	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				no image	no image
Bottom				no image	no image

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0900773 **Received** : 23 Apr 2024  
**Lab Number** : 06157695 **Tested** : 24 Apr 2024  
**Unique Number** : 10993118 **Diagnosed** : 25 Apr 2024 - Jonathan Hester  
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, PrtCount, VI )

**BASF - GIANNA CREDAROLI**  
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 US 10591  
 Contact: GIANNA CREDAROLI  
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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)