

# **PROBLEM SUMMARY**

Sample Rating Trend

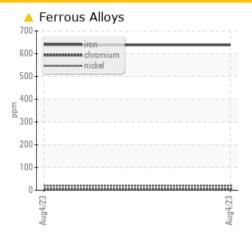


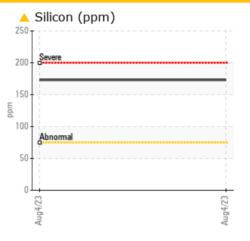
Machine Id 427167
Component

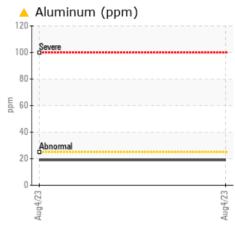
1 Differential

GEAR OIL SAE 75W90 (--- GAL)

## **COMPONENT CONDITION SUMMARY**







### RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. ( Customer Sample Comment: 1st Axle/ Pusher )

### PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	 
Iron	ppm	ASTM D5185m	>500	<b>△</b> 638	 
Nickel	ppm	ASTM D5185m	>10	<b>1</b> 9	 
Aluminum	ppm	ASTM D5185m	>25	<b>1</b> 9	 
Silicon	ppm	ASTM D5185m	>75	<b>173</b>	 

Customer Id: GFL983 Sample No.: GFL0089387 Lab Number: 05918932 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDE	D ACTIONS			
Action	Status	Date	Done By	Description
Check Dirt Access			?	We advise that you check all areas where dirt can enter the system.

# HISTORICAL DIAGNOSIS



# **OIL ANALYSIS REPORT**

Sample Rating Trend

DIRT



Machine Id **427167** Component

1 Differential

GEAR OIL SAE 75W90 (--- GAL)

## **DIAGNOSIS**

#### Recommendation

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. ( Customer Sample Comment: 1st Axle/ Pusher)

### Wear

Gear wear is indicated.

#### Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

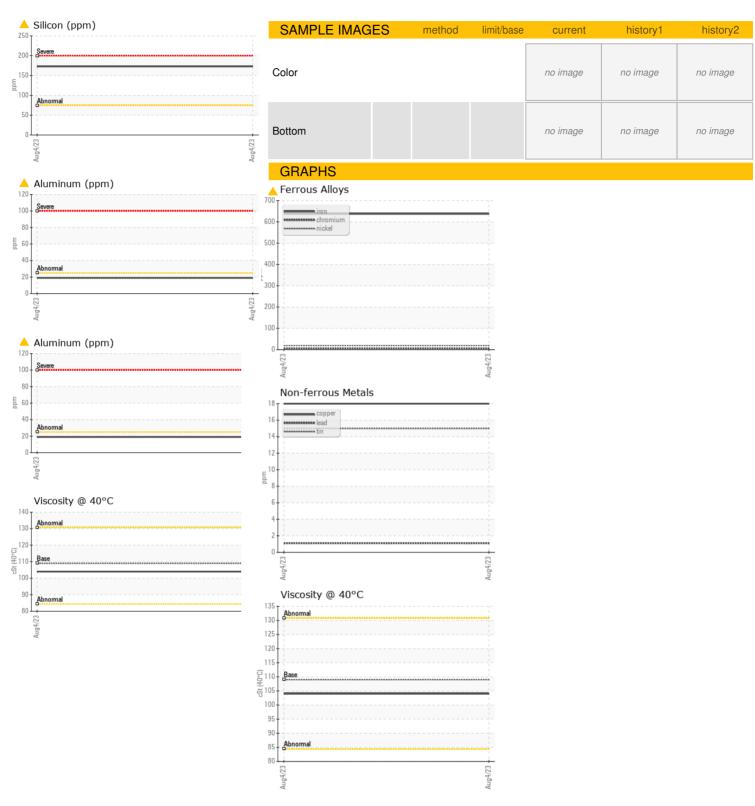
### **Fluid Condition**

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION         method         limit/base         current         history1         history2           Sample Number         Client Info         GFL0089387             Sample Date         Client Info         347849             Oil Age         mls         Client Info         347849             Oil Changed         Client Info         Changed              Oil Changed         Client Info         347849              Oil Changed         Client Info         347849               Oil Changed         Client Info         Changed                Oil Changed         Sample Status					Aug2023		
Sample Number         Client Info         GFL0089387            Sample Date         Client Info         04 Aug 2023            Machine Age         mls         Client Info         347849            Oil Age         mls         Client Info         Changed            Oil Changed         Client Info         Changed            Sample Status         method         Immilibrase         current         history1           Iron         ppm         ASTM D5185m         500         & 638            Iron         ppm         ASTM D5185m         >10         \$ 5            Chromium         ppm         ASTM D5185m         >10         \$ 19            Chromium         ppm         ASTM D5185m         >10         \$ 19            Silver         ppm         ASTM D5185m         >25         \$ 19            Itanium         ppm         ASTM D5185m         >25         \$ 19            Copper         ppm         ASTM D5185m         >25         \$ 19            Copper         ppm         ASTM D5185m         >10         \$ 15	CAMPLE INCOR	NANTIONI	l and the section of			la Carta caraci	1-1-1
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age         mls         Client Info         347849	Sample Number		Client Info		GFL0089387		
Oil Age         mls         Client Info         347849	Sample Date		Client Info		04 Aug 2023		
Client Info	Machine Age	mls	Client Info		347849		
WEAR METALS	Oil Age	mls	Client Info		347849		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >500         ▲ 638             Chromium         ppm         ASTM D5185m         >10         ▲ 5             Nickel         ppm         ASTM D5185m         >10         ▲ 19             Siliver         ppm         ASTM D5185m         >25         ▲ 19             Aluminum         ppm         ASTM D5185m         >25         ▲ 19             Aluminum         ppm         ASTM D5185m         >25         ▲ 19             Lead         ppm         ASTM D5185m         >25         ▲ 19             Lead         ppm         ASTM D5185m         >10         18             Copper         ppm         ASTM D5185m         >10         15             Tin         ppm         ASTM D5185m         >0         15             ADDITIVES         method         limit/base	Oil Changed		Client Info		Changed		
Chromium	Sample Status				ABNORMAL		
Description	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>500	<b>△</b> 638		
Titanium	Chromium	ppm	ASTM D5185m	>10	5		
Silver	Nickel	ppm	ASTM D5185m	>10	<u> </u>		
Astronomic   Ast	Titanium	ppm	ASTM D5185m		<1		
Lead	Silver	ppm	ASTM D5185m		0		
Copper	Aluminum	ppm	ASTM D5185m	>25	<u> </u>		
Copper         ppm         ASTM D5185m         >100         18             Tin         ppm         ASTM D5185m         >10         15             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         40         236             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         400         236             Barium         ppm         ASTM D5185m         12         0             Molybdenum         ppm         ASTM D5185m         12         0             Magnesium         ppm         ASTM D5185m         12         4             Magnesium         ppm         ASTM D5185m         150         28             Magnesium         ppm         ASTM D5185m         1650         1462             Phosphorus         ppm         ASTM D5185m         125 <td< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;25</td><td>1</td><td></td><td></td></td<>	Lead	ppm	ASTM D5185m	>25	1		
Tin	Copper		ASTM D5185m	>100	18		
Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         400         236             Barium         ppm         ASTM D5185m         200         0             Molybdenum         ppm         ASTM D5185m         12         0             Manganese         ppm         ASTM D5185m         12         4             Magnesium         ppm         ASTM D5185m         150         28             Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         125         35             Phosphorus         ppm         ASTM D5185m         125         35             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         >225 00	Tin				15		
ADDITIVES							
ADDITIVES	Cadmium				-		
Boron ppm ASTM D5185m 400 236  Barium ppm ASTM D5185m 200 0  Molybdenum ppm ASTM D5185m 12 0  Manganese ppm ASTM D5185m 12 4  Magnesium ppm ASTM D5185m 150 28  Phosphorus ppm ASTM D5185m 1650 1462  Sulfur ppm ASTM D5185m 125 35  Sulfur ppm ASTM D5185m 22500 28642  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >75 ▲ 173  Sodium ppm ASTM D5185m >20 14  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE NONE  Yellow Metal scalar *Visual NONE NONE  Silt scalar *Visual NONE NONE  Precipitate scalar *Visual NONE NONE  Sand/Dirt scalar *Visual NONE NONE  Pobasarance scalar *Visual NONE NONE  Sand/Dirt scalar *Visual NONE NONE  Appearance scalar *Visual NONE NONE  Appearance scalar *Visual NORML NORML  Prece Water *Visual NORML NORML  Prece Water *Visual NORML NORML  Prece Water *Visual *Visual NORML NORML	ADDITIVES		method	limit/base	current	history1	history2
Barium         ppm         ASTM D5185m         200         0             Molybdenum         ppm         ASTM D5185m         12         0             Magnesium         ppm         ASTM D5185m         13             Magnesium         ppm         ASTM D5185m         12         4             Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         4         173             Sodium         ppm         ASTM D5185m         >20         14             Potassium         ppm         ASTM D5185m		nnm					
Molybdenum         ppm         ASTM D5185m         12         0             Manganese         ppm         ASTM D5185m         13             Magnesium         ppm         ASTM D5185m         150         28             Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         173             Sodium         ppm         ASTM D5185m         >20         14             Potassium         ppm         ASTM D5185m         >20         14             VISUAL         method         limit/base         curre							
Manganese         ppm         ASTM D5185m         13             Magnesium         ppm         ASTM D5185m         12         4             Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         125         35             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         >20         14             Potassium         ppm         ASTM D5185m         >20         14             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE					-		
Magnesium         ppm         ASTM D5185m         12         4             Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         >20         14             Potassium         ppm         ASTM D5185m         >20         14             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE<	•			12			
Calcium         ppm         ASTM D5185m         150         28             Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         173             Sodium         ppm         ASTM D5185m         >6             Potassium         ppm         ASTM D5185m         >20         14             Potassium         ppm         ASTM D5185m         >20         14             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE         NONE	-			10			
Phosphorus         ppm         ASTM D5185m         1650         1462             Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         6              Potassium         ppm         ASTM D5185m         >20         14             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         *Vis	-			. –			
Zinc         ppm         ASTM D5185m         125         35             Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         6              Potassium         ppm         ASTM D5185m         >20         14             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         NONE             Sand/Dirit         scalar         *Visu							
Sulfur         ppm         ASTM D5185m         22500         28642             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         6             Potassium         ppm         ASTM D5185m         >20         14            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE         NONE            Precipitate         scalar         *Visual         NONE         NONE            Silt         scalar         *Visual         NONE         NONE            Debris         scalar         *Visual         NONE         NONE            Sand/Dirt         scalar         *Visual         NORML         NORML            Appearance         scalar							
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         6             Potassium         ppm         ASTM D5185m         >20         14            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         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML							
Silicon         ppm         ASTM D5185m         >75         ▲ 173             Sodium         ppm         ASTM D5185m         6             Potassium         ppm         ASTM D5185m         >20         14             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         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Godor         scalar         *Visual					28642		
Sodium		ITS				history1	history2
VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE         NONE            Precipitate         scalar         *Visual         NONE         NONE            Silt         scalar         *Visual         NONE         NONE            Debris         scalar         *Visual         NONE         NONE            Sand/Dirt         scalar         *Visual         NORML         NORML            Appearance         scalar         *Visual         NORML         NORML            Odor         scalar         *Visual         NORML         NORML            Free Water         scalar         *Visual         NEG	Silicon			>75			
VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE             Precipitate         scalar         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Codor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >.2         NEG             Free Water         scalar         *Visual         NEG		ppm			-		
White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Precipitate         scalar         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >.2         NEG             Free Water         scalar         *Visual         NEG	Potassium	ppm	ASTM D5185m	>20	14		
Yellow Metal         scalar         *Visual         NONE         NONE             Precipitate         scalar         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         >.2         NEG             Free Water         scalar         *Visual         NEG	VISUAL		method	limit/base	current	history1	history2
Precipitate         scalar         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             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	White Metal	scalar		NONE	NONE		
Silt         scalar         *Visual         NONE         NONE             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	Yellow Metal	scalar	*Visual	NONE	NONE		
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	Precipitate	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	Silt	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	Debris	scalar	*Visual	NONE	NONE		
Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >.2 NEG Free Water scalar *Visual NEG	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water       scalar       *Visual       >.2       NEG           Free Water       scalar       *Visual       NEG	Appearance	scalar	*Visual	NORML	NORML		
Free Water scalar *Visual NEG	Odor	scalar	*Visual	NORML	NORML		
	<b>Emulsified Water</b>	scalar	*Visual	>.2	NEG		
FLUID PROPERTIES method limit/base current history1 history2	Free Water	scalar	*Visual		NEG		
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2



# **OIL ANALYSIS REPORT**





Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: GFL0089387 : 05918932 : 10590846 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 08 Aug 2023 : 10 Aug 2023 Diagnosed

: Jonathan Hester Diagnostician

16011 West Belfort Street Sugar Land, TX US 77498

Contact: TECHNICIAN ACCOUNT

GFL Environmental - 983 - Sugar Land Hauling

wcgfldemo@gmail.com T:

\* - 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)

F: