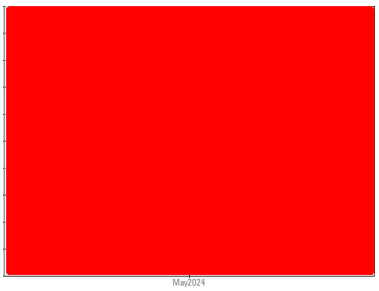
OIL DIAGNOSTICS

# PROBLEM SUMMARY

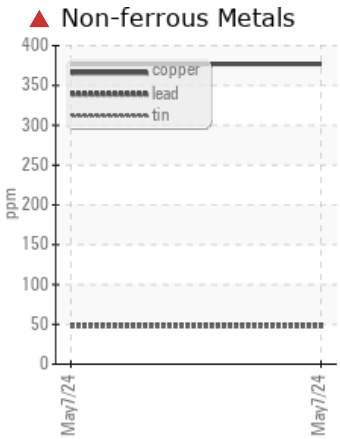
Sample Rating Trend

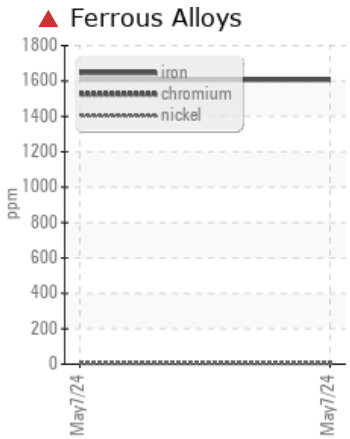


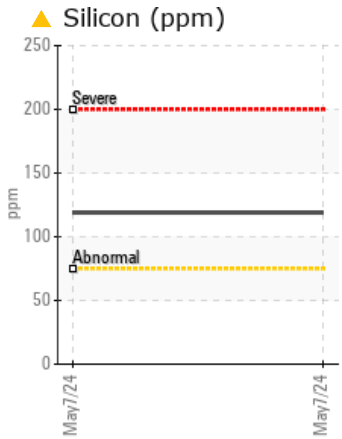
WEAR

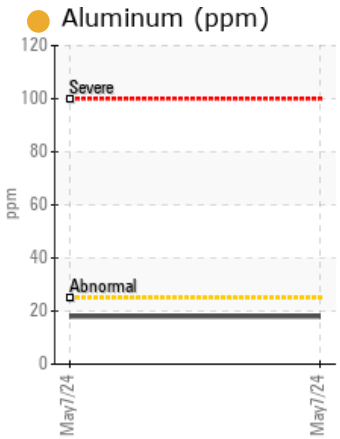
Machine Id
**171**
Component
**Front Differential**
Fluid
**GEAR OIL SAE 75W90 (--- QTS)**

## 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. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **SEVERE** | --- | --- |
| Iron | ppm | ASTM D5185m | >500 | **1607** | --- | --- |
| Lead | ppm | ASTM D5185m | >25 | **48** | --- | --- |
| Copper | ppm | ASTM D5185m | >100 | **377** | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | **47** | --- | --- |
| Silicon | ppm | ASTM D5185m | >75 | **119** | --- | --- |
| White Metal | scalar | *Visual | NONE | **HEAVY** | --- | --- |


**Customer Id:** GASMAN
**Sample No.:** PCA0124604
**Lab Number:** 06193554
**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

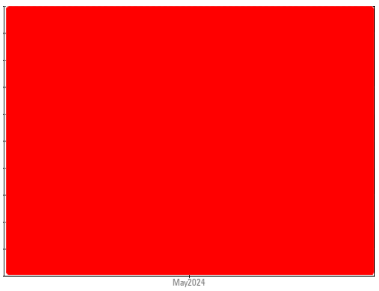
## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Inspect Wear Source | --- | --- | ? | We advise that you inspect for the source(s) of wear. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Dirt Access | --- | --- | ? | We advise that you check all areas where dirt can enter the system. |

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
**171**
Component
**Front Differential**
Fluid
**GEAR OIL SAE 75W90 (--- QTS)**

## 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. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

**▲ Wear**
Bearing and/or gear wear is indicated.

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

**Fluid Condition**
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PCA0124604** | --- | --- |
| Sample Date | | Client Info | | **07 May 2024** | --- | --- |
| Machine Age | mls | Client Info | | **375963** | --- | --- |
| Oil Age | mls | Client Info | | **375963** | --- | --- |
| Oil Changed | | Client Info | | **Changed** | --- | --- |
| Sample Status | | | | **SEVERE** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >.2 | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | ▲ **1607** | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | **7** | --- | --- |
| Nickel | ppm | ASTM D5185m | >10 | **6** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Silver | ppm | ASTM D5185m | | **<1** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >25 | ● **18** | --- | --- |
| Lead | ppm | ASTM D5185m | >25 | ▲ **48** | --- | --- |
| Copper | ppm | ASTM D5185m | >100 | ▲ **377** | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | ▲ **47** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 400 | **218** | --- | --- |
| Barium | ppm | ASTM D5185m | 200 | **5** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 12 | **2** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **17** | --- | --- |
| Magnesium | ppm | ASTM D5185m | 12 | **17** | --- | --- |
| Calcium | ppm | ASTM D5185m | 150 | **189** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 1650 | **1396** | --- | --- |
| Zinc | ppm | ASTM D5185m | 125 | **34** | --- | --- |
| Sulfur | ppm | ASTM D5185m | 22500 | **27862** | --- | --- |

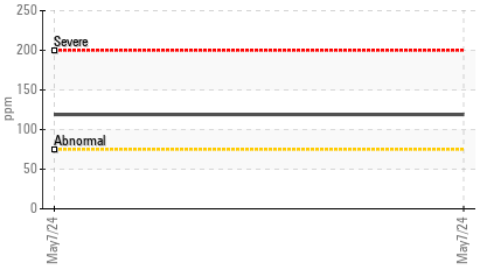
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | ▲ **119** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **6** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **3** | --- | --- |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | ▲ **HEAVY** | --- | --- |
| 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 | NONE | **NONE** | --- | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | --- | --- |
| Odor | scalar | *Visual | NORML | **NORML** | --- | --- |
| Emulsified Water | scalar | *Visual | >.2 | **NEG** | --- | --- |
| Free Water | scalar | *Visual | | **NEG** | --- | --- |

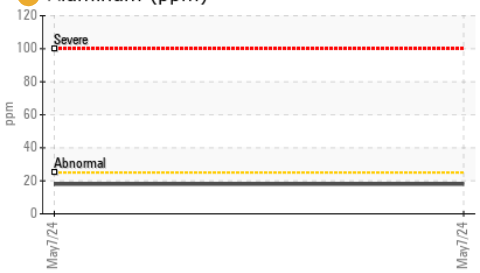
# OIL ANALYSIS REPORT

OIL DIAGNOSTICS

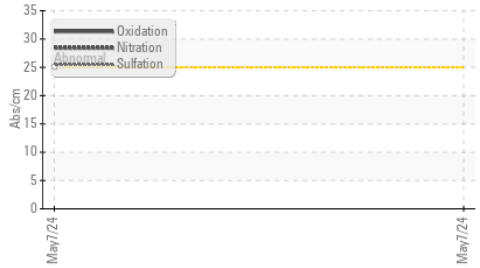
Silicon (ppm)



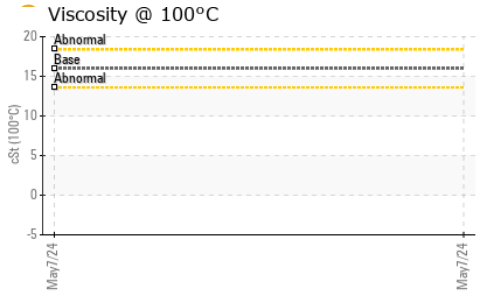

Aluminum (ppm)



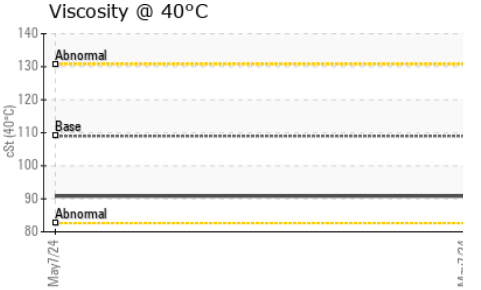

FT-IR (Direct Trend)




Viscosity @ 100°C




Viscosity @ 40°C

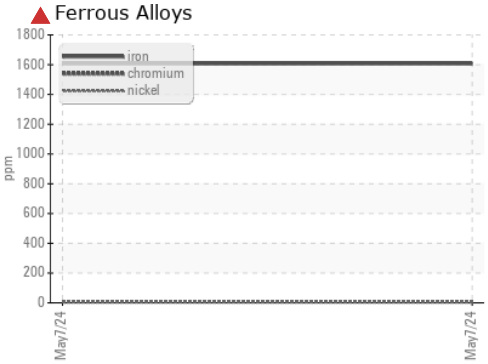



| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 109 | **90.82** | --- | --- |

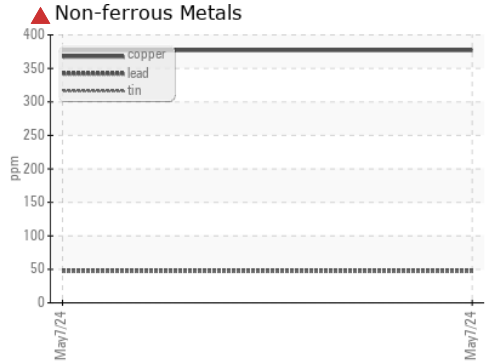
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | *no image* | *no image* | *no image* |
| Bottom | | | *no image* | *no image* | *no image* |

## GRAPHS

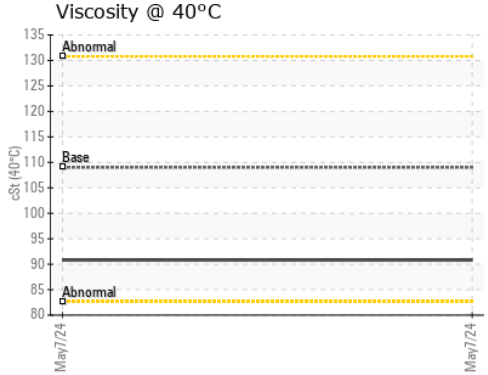
Ferrous Alloys




Non-ferrous Metals




Viscosity @ 40°C




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0124604 **Received** : 29 May 2024
**Lab Number** : 06193554 **Tested** : 03 Jun 2024
**Unique Number** : 11050306 **Diagnosed** : 03 Jun 2024 - Jonathan Hester
**Test Package** : FLEET ( Additional Tests: FT-IR, KV100 )

*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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