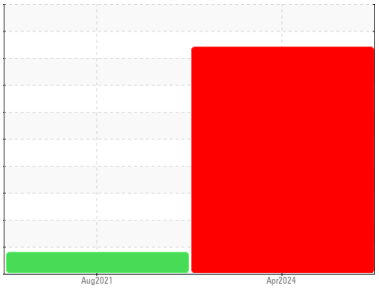
# PROBLEM SUMMARY

Sample Rating Trend

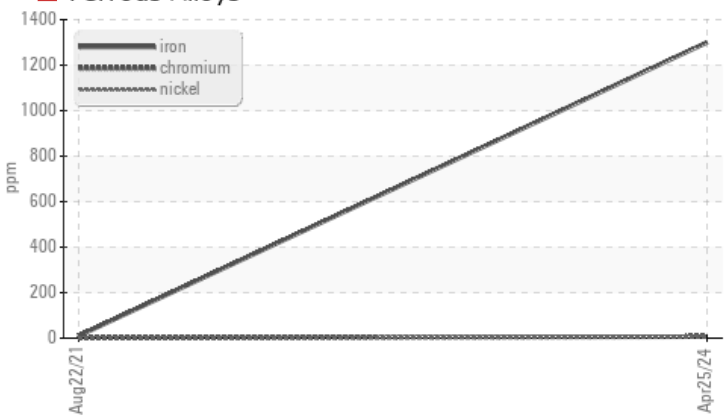



**WEAR**

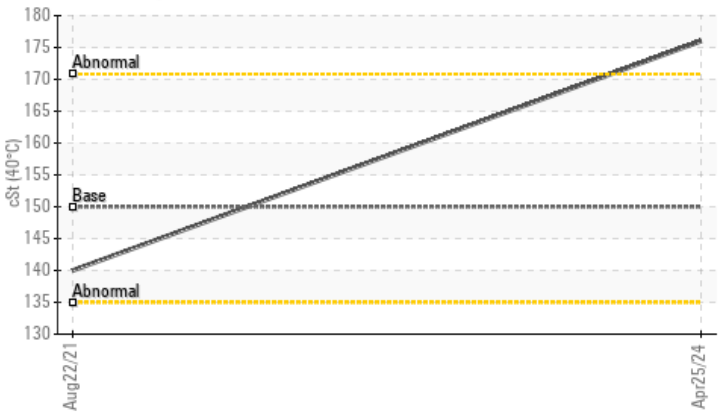
Machine Id
## CMMS 00313-A
Component
**Gearbox**
Fluid
**GEAR OIL ISO 150 (40 QTS)**

## COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys




▲ Viscosity @ 40°C




## RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **SEVERE** | ABNORMAL | --- |
| Iron | ppm | ASTM D5185m | >200 | ▲ **1300** | 10 | --- |
| White Metal | scalar | *Visual | NONE | ▲ **MODER** | NONE | --- |
| Silt | scalar | *Visual | NONE | ▲ **MODER** | NONE | --- |
| Visc @ 40°C | cSt | ASTM D445 | 150 | ▲ **176** | 140 | --- |

**Customer Id:** CARMTJ
**Sample No.:** USPM24621
**Lab Number:** 06161460
**Test Package:** IND 2

*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. |
| Change Fluid | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |
| Change Filter | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Alert | --- | --- | ? | We were unable to perform a particle count due to a high concentration of particles present in this sample. |

## HISTORICAL DIAGNOSIS

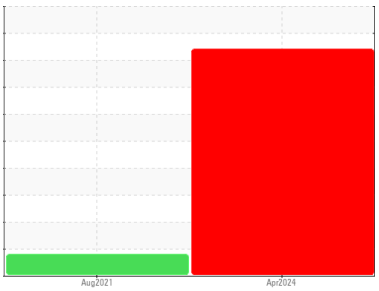
ISO

**22 Aug 2021 Diag: Doug Bogart**
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
## CMMS 00313-A
Component
**Gearbox**
Fluid
**GEAR OIL ISO 150 (40 QTS)**

## DIAGNOSIS

**▲ Recommendation**
We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.

**▲ Wear**
The iron level is severe. Moderate concentration of visible metal present.

**▲ Contamination**
There is a moderate amount of visible silt present in the sample.

**▲ Fluid Condition**
The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **USPM24621** | USP05332285 | --- |
| Sample Date | | Client Info | | **25 Apr 2024** | 22 Aug 2021 | --- |
| Machine Age | hrs | Client Info | | **0** | 0 | --- |
| Oil Age | hrs | Client Info | | **0** | 0 | --- |
| Oil Changed | | Client Info | | **N/A** | N/A | --- |
| Sample Status | | | | **SEVERE** | ABNORMAL | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >200 | ▲ **1300** | 10 | --- |
| Chromium | ppm | ASTM D5185m | >15 | **7** | 0 | --- |
| Nickel | ppm | ASTM D5185m | >15 | **7** | <1 | --- |
| Titanium | ppm | ASTM D5185m | | **1** | 0 | --- |
| Silver | ppm | ASTM D5185m | | **0** | 1 | --- |
| Aluminum | ppm | ASTM D5185m | >25 | **2** | 0 | --- |
| Lead | ppm | ASTM D5185m | >100 | **<1** | <1 | --- |
| Copper | ppm | ASTM D5185m | >200 | **2** | <1 | --- |
| Tin | ppm | ASTM D5185m | >25 | **0** | <1 | --- |
| Antimony | ppm | ASTM D5185m | >5 | **---** | 0 | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **<1** | <1 | --- |

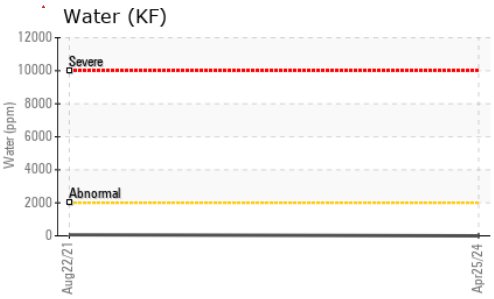
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **8** | 10 | --- |
| Barium | ppm | ASTM D5185m | 15 | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 15 | **3** | 0 | --- |
| Manganese | ppm | ASTM D5185m | | **14** | 1 | --- |
| Magnesium | ppm | ASTM D5185m | 50 | **<1** | 0 | --- |
| Calcium | ppm | ASTM D5185m | 50 | **7** | 16 | --- |
| Phosphorus | ppm | ASTM D5185m | 350 | **531** | 463 | --- |
| Zinc | ppm | ASTM D5185m | 100 | **10** | 8 | --- |
| Sulfur | ppm | ASTM D5185m | 12500 | **9586** | 9118 | --- |

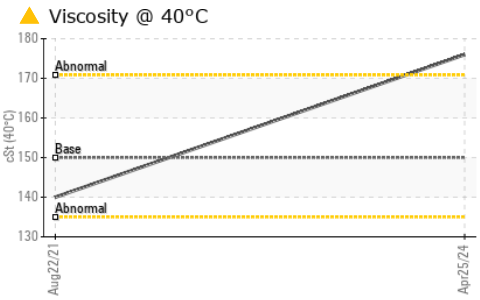
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **25** | 11 | --- |
| Sodium | ppm | ASTM D5185m | | **2** | 0 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 0 | --- |
| Water | % | ASTM D6304 | >0.2 | **0.000** | 0.006 | --- |
| ppm Water | ppm | ASTM D6304 | >2000 | **0** | 67.9 | --- |

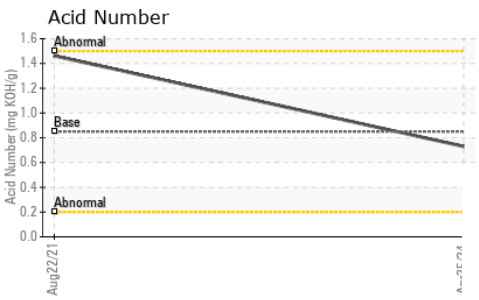
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | **---** | ▲ 91131 | --- |
| Particles >6µm | | ASTM D7647 | >5000 | **---** | ▲ 10884 | --- |
| Particles >14µm | | ASTM D7647 | >640 | **---** | 200 | --- |
| Particles >21µm | | ASTM D7647 | >160 | **---** | 30 | --- |
| Particles >38µm | | ASTM D7647 | >40 | **---** | 0 | --- |
| Particles >71µm | | ASTM D7647 | >10 | **---** | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | **---** | ▲ 24/21/15 | --- |

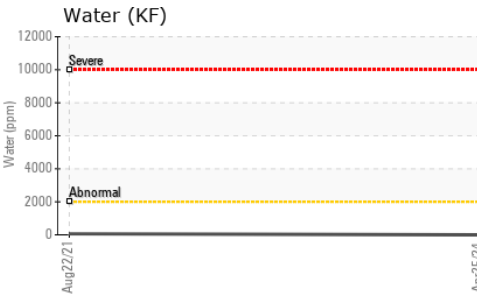
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.85 | **0.73** | 1.462 | --- |

# OIL ANALYSIS REPORT



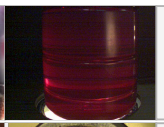
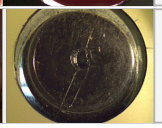



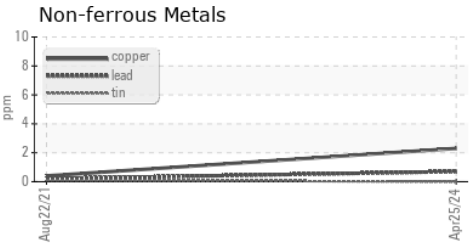



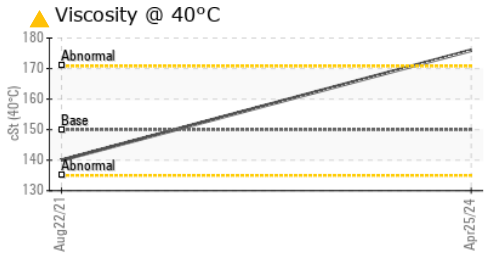

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | ▲ **MODER** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | scalar | *Visual | NONE | ▲ **MODER** | NONE | --- |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Appearance | scalar | *Visual | NORML | **MILKY** | NORML | --- |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | **0.2%** | NEG | --- |
| Free Water | scalar | *Visual | | **NEG** | NEG | --- |

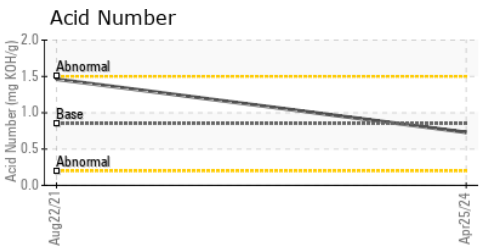
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 150 | ▲ **176** | 140 | --- |

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

## GRAPHS


**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : USPM24621
**Lab Number** : 06161460
**Unique Number** : 10996883
**Test Package** : IND 2

**Received** : 26 Apr 2024
**Tested** : 02 May 2024
**Diagnosed** : 02 May 2024 - Jonathan Hester

Certificate L2367

*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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