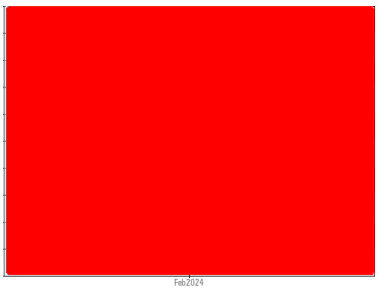
# PROBLEM SUMMARY

Sample Rating Trend

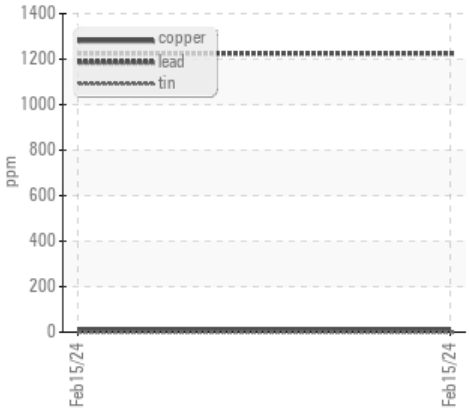



**WEAR**

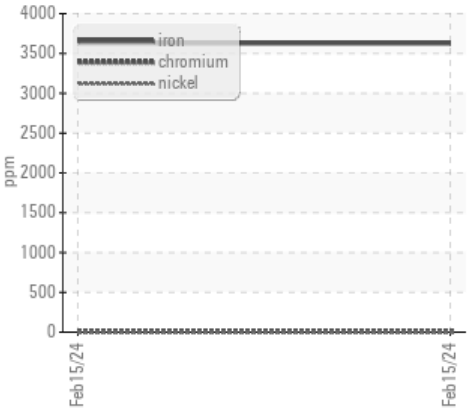
Machine Id
**PM3-002**
Component
**Gearbox**
Fluid
**{not provided} (--- GAL)**

## COMPONENT CONDITION SUMMARY

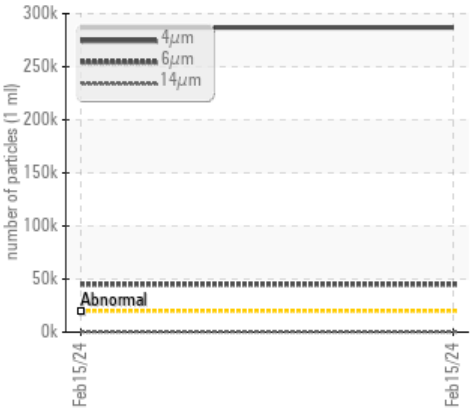
▲ Non-ferrous Metals




▲ Ferrous Alloys




▲ Particle Trend




## RECOMMENDATION

We recommend an early resample to monitor this condition. Pour Point -36C.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **SEVERE** | --- | --- |
| Iron | ppm | ASTM D5185m | >200 | ▲ **3628** | --- | --- |
| Lead | ppm | ASTM D5185m | >100 | ▲ **1225** | --- | --- |
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **286884** | --- | --- |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **45065** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **25/23/16** | --- | --- |

**Customer Id:** CARVALGA
**Sample No.:** USP0008124
**Lab Number:** 06137017
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

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

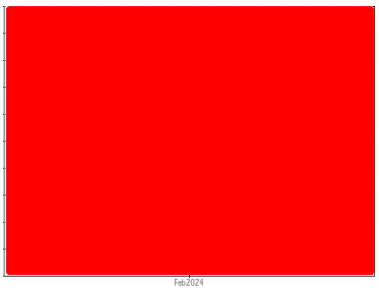
## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
**PM3-002**
Component
**Gearbox**
Fluid
**{not provided} (--- GAL)**

## DIAGNOSIS

**▲ Recommendation**
We recommend an early resample to monitor this condition. Pour Point -36C.

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

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

**Fluid Condition**
Confirm oil type. The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **USP0008124** | --- | --- |
| Sample Date | | Client Info | | **15 Feb 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **N/A** | --- | --- |
| Sample Status | | | | **SEVERE** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >200 | ▲ **3628** | --- | --- |
| Chromium | ppm | ASTM D5185m | >15 | **8** | --- | --- |
| Nickel | ppm | ASTM D5185m | >15 | **4** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **2** | --- | --- |
| Silver | ppm | ASTM D5185m | | **<1** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >25 | **4** | --- | --- |
| Lead | ppm | ASTM D5185m | >100 | ▲ **1225** | --- | --- |
| Copper | ppm | ASTM D5185m | >200 | **13** | --- | --- |
| Tin | ppm | ASTM D5185m | >25 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **<1** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **17** | --- | --- |
| Barium | ppm | ASTM D5185m | | **1** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | **12** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **29** | --- | --- |
| Magnesium | ppm | ASTM D5185m | | **7** | --- | --- |
| Calcium | ppm | ASTM D5185m | | **846** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | **815** | --- | --- |
| Zinc | ppm | ASTM D5185m | | **358** | --- | --- |
| Sulfur | ppm | ASTM D5185m | | **2161** | --- | --- |

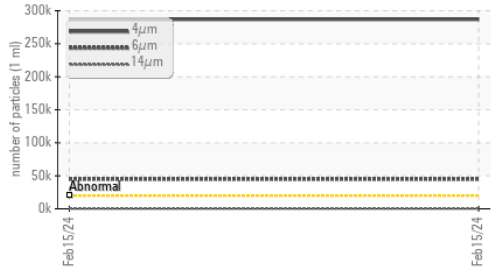
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **35** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **4** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **9** | --- | --- |
| Water | % | ASTM D6304 | >0.2 | **0.030** | --- | --- |
| ppm Water | ppm | ASTM D6304 | >2000 | **306** | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **286884** | --- | --- |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **45065** | --- | --- |
| Particles >14µm | | ASTM D7647 | >640 | **421** | --- | --- |
| Particles >21µm | | ASTM D7647 | >160 | **122** | --- | --- |
| Particles >38µm | | ASTM D7647 | >40 | **13** | --- | --- |
| Particles >71µm | | ASTM D7647 | >10 | **2** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **25/23/16** | --- | --- |

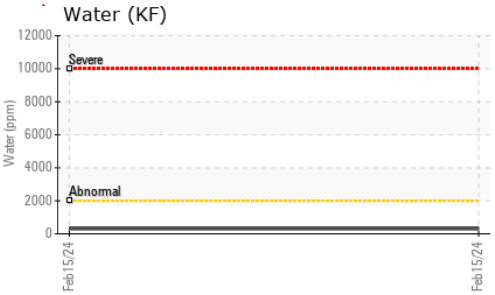
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.92** | --- | --- |

# OIL ANALYSIS REPORT

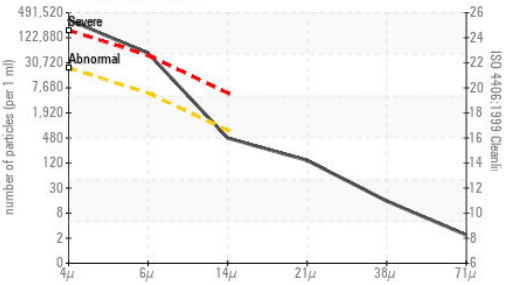
Particle Trend



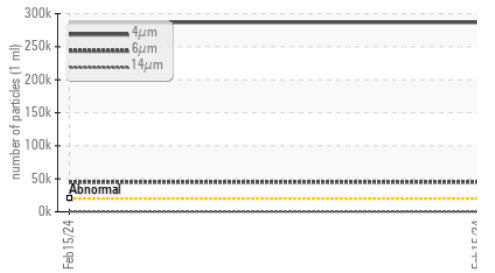

Water (KF)



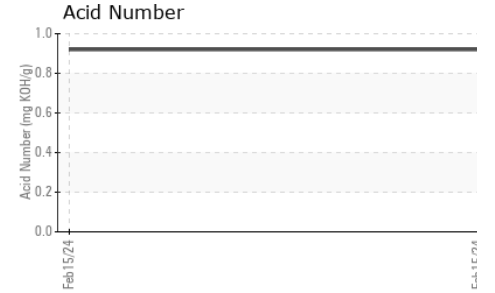

Particle Count




Particle Trend




Acid Number



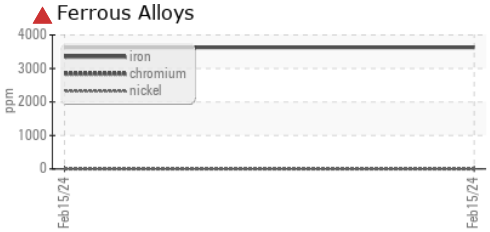

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt |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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | | **149.8** | --- | --- |
| Pour Point | °C | ASTM D5950 | | **-36** | --- | --- |

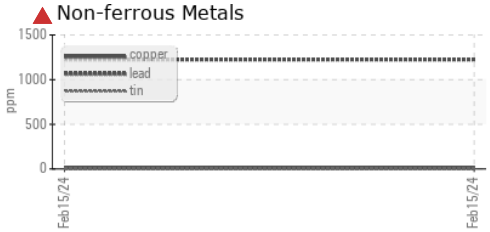
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | *no image* | *no image* |
| Bottom | | |  | *no image* | *no image* |

## GRAPHS

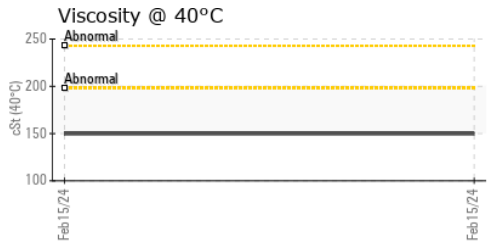
Ferrous Alloys



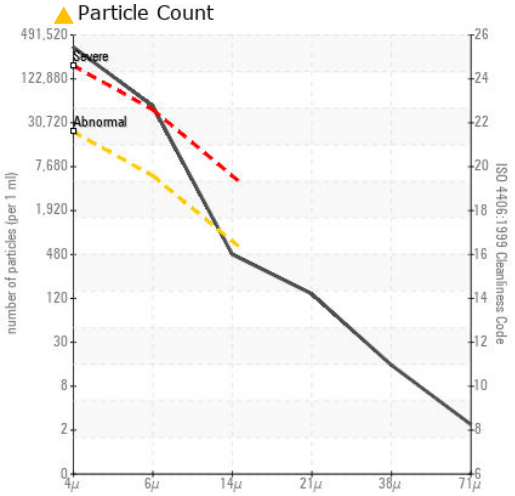

Non-ferrous Metals




Viscosity @ 40°C




Particle Count




Acid Number


**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : USP0008124
**Lab Number** : 06137017
**Unique Number** : 10956482
**Test Package** : IND 2 ( Additional Tests: PourPt )

**Received** : 02 Apr 2024
**Tested** : 11 Apr 2024
**Diagnosed** : 11 Apr 2024 - Doug Bogart

Certificate L2367

**CARGILL CFN**
407 CLAY RD
VALDOSTA, GA
US 31601
Contact: Service Manager

*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)*

T:
F: