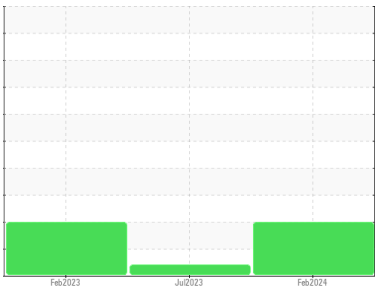
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**TSI**
Machine Id
**TSI 12855**
Component
**Front Differential**
Fluid
**{not provided} (--- GAL)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**
All component wear rates are normal.

**Contamination**
There is a high amount of particulates 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 | | **WC0934511** | WC0771187 | WC0771172 |
| Sample Date | | Client Info | | **29 Feb 2024** | 20 Jul 2023 | 05 Feb 2023 |
| Machine Age | mls | Client Info | | **142245** | 83566 | 0 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | SEVERE |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | **113** | 85 | 12 |
| Chromium | ppm | ASTM D5185m | >10 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **2** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >25 | **<1** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >100 | **2** | 0 | <1 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **238** | 231 | 274 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 4 |
| Molybdenum | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **5** | 4 | 4 |
| Magnesium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Calcium | ppm | ASTM D5185m | | **3** | 2 | 6 |
| Phosphorus | ppm | ASTM D5185m | | **1681** | 1602 | 1318 |
| Zinc | ppm | ASTM D5185m | | **3** | 0 | 7 |
| Sulfur | ppm | ASTM D5185m | | **25792** | 27957 | 21829 |

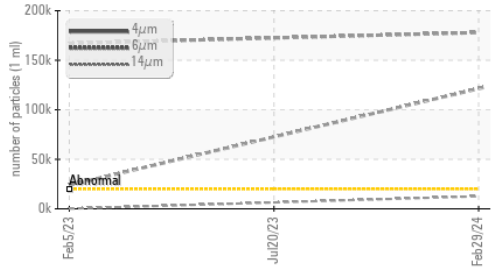
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **20** | 16 | 13 |
| Sodium | ppm | ASTM D5185m | | **3** | 1 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 0 | 1 |
| Water | % | ASTM D6304 | >.2 | **0.018** | 0.051 | 0.031 |
| ppm Water | ppm | ASTM D6304 | >2000 | **186** | 517.1 | 318.9 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **177957** | --- | ▲ 167057 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **121349** | --- | ▲ 23879 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ **12609** | --- | 173 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ **1685** | --- | 29 |
| Particles >38µm | | ASTM D7647 | >40 | **11** | --- | 1 |
| Particles >71µm | | ASTM D7647 | >10 | **0** | --- | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **25/24/21** | --- | ▲ 25/22/15 |

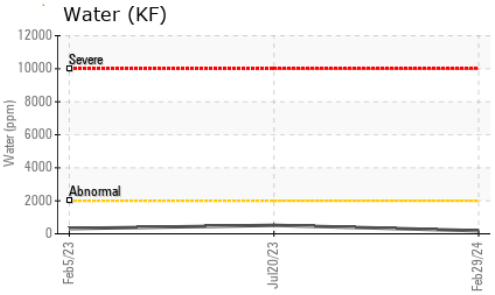
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **2.19** | 2.51 | 2.73 |

# OIL ANALYSIS REPORT

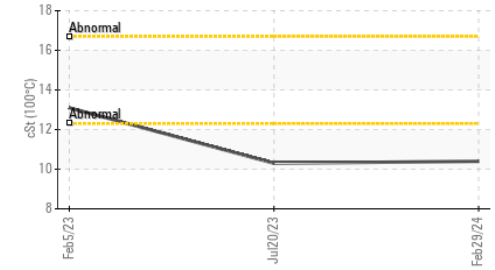
Particle Trend



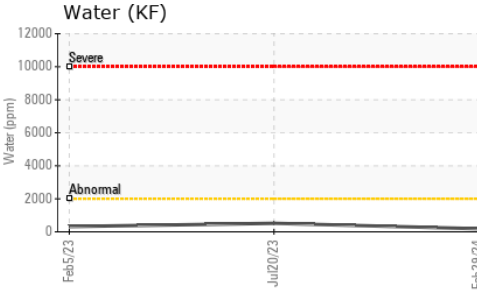

Water (KF)



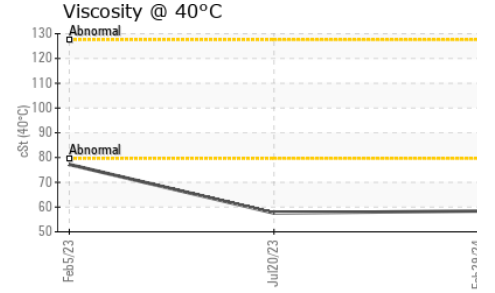

Viscosity @ 100°C




Water (KF)

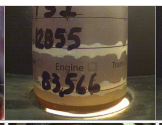
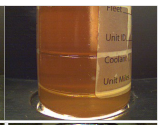
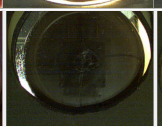



Viscosity @ 40°C



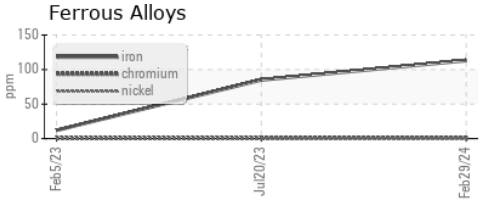

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | | **58.4** | 57.6 | 77.2 |
| Visc @ 100°C | cSt | ASTM D445 | | **10.4** | 10.3 | 13.1 |
| Viscosity Index (VI) | Scale | ASTM D2270 | | **168** | 169 | 172 |

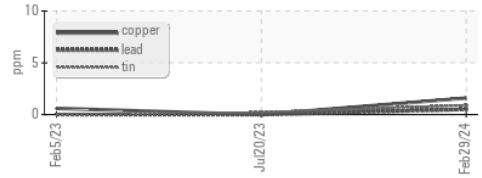
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  |  |
| Bottom | | |  |  |  |

## GRAPHS

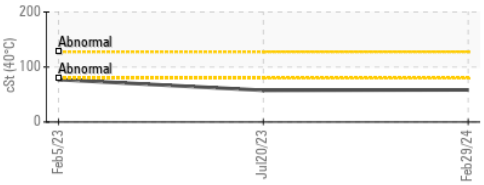
Ferrous Alloys



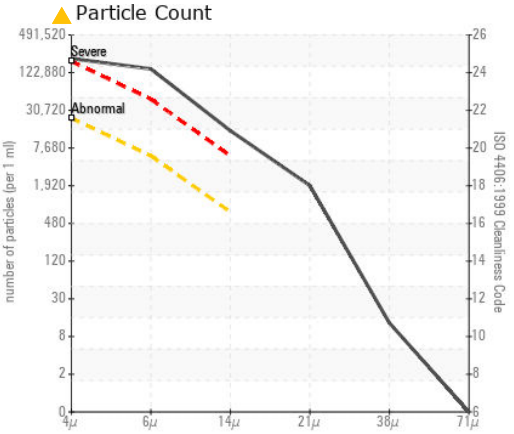

Non-ferrous Metals



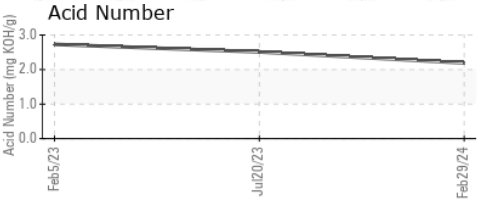

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0934511 **Received** : 15 May 2024
**Lab Number** : 06180631 **Tested** : 17 May 2024
**Unique Number** : 11031957 **Diagnosed** : 18 May 2024 - Jonathan Hester
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, PrtCount, VI )

*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)*

**BASF - GIANNA CREDAROLI**
500 WHITE PLAINS RD
TARRYTOWN, NY
US 10591
Contact: GIANNA CREDAROLI
gianna.credaroli@basf.com
T:
F: