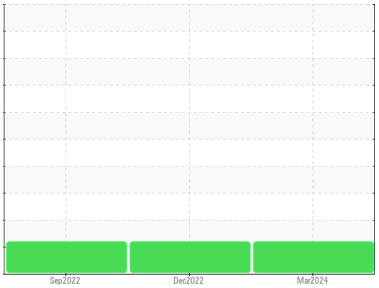
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**PLOGER**
Machine Id
**9211 - PLOGER**
Component
**Front Differential**
Fluid
**{not provided} (--- GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for laboratory data updates.

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

**Contamination**
There is a high amount of silt (particulates < 14 microns in size) 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 | | **WC0900792** | WC0771196 | WC0728459 |
| Sample Date | | Client Info | | **29 Mar 2024** | 15 Dec 2022 | 14 Sep 2022 |
| Machine Age | mls | Client Info | | **349550** | 183602 | 149552 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | **407** | 310 | 283 |
| Chromium | ppm | ASTM D5185m | >10 | **4** | 3 | 3 |
| Nickel | ppm | ASTM D5185m | >10 | **6** | 3 | 5 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **9** | 13 | 16 |
| Lead | ppm | ASTM D5185m | >25 | **11** | 2 | 2 |
| Copper | ppm | ASTM D5185m | >100 | **24** | 20 | 20 |
| Tin | ppm | ASTM D5185m | >10 | **2** | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **66** | 64 | 64 |
| Barium | ppm | ASTM D5185m | | **<1** | 3 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | **15** | 11 | 11 |
| Magnesium | ppm | ASTM D5185m | | **166** | 143 | 151 |
| Calcium | ppm | ASTM D5185m | | **17** | 12 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **1716** | 1418 | 1567 |
| Zinc | ppm | ASTM D5185m | | **9** | 12 | 0 |
| Sulfur | ppm | ASTM D5185m | | **29133** | 24052 | 25056 |

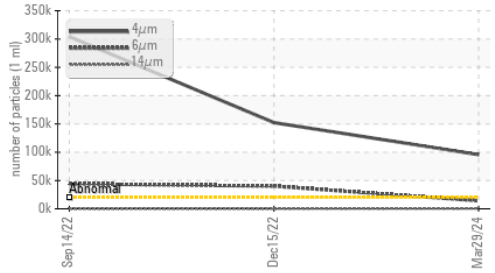
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **56** | 32 | 30 |
| Sodium | ppm | ASTM D5185m | | **7** | 3 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 2 | 2 |
| Water | % | ASTM D6304 | >.2 | **0.040** | 0.046 | 0.047 |
| ppm Water | ppm | ASTM D6304 | >2000 | **402** | 468.0 | 473.3 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **95730** | ▲ 152304 | ▲ 304252 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **14126** | ▲ 40017 | ▲ 44166 |
| Particles >14µm | | ASTM D7647 | >640 | **314** | 92 | 64 |
| Particles >21µm | | ASTM D7647 | >160 | **61** | 7 | 17 |
| Particles >38µm | | ASTM D7647 | >40 | **2** | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **24/21/15** | ▲ 24/23/14 | ▲ 25/23/13 |

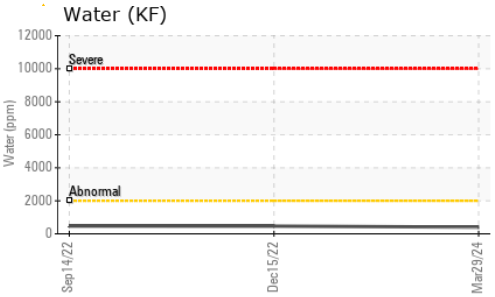
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **1.07** | 1.25 | 0.87 |

# OIL ANALYSIS REPORT

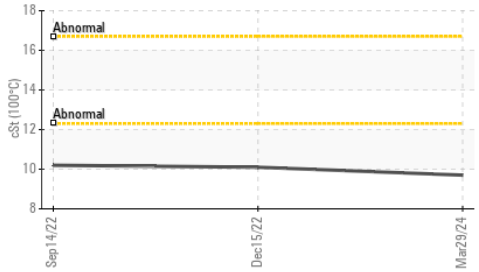
Particle Trend



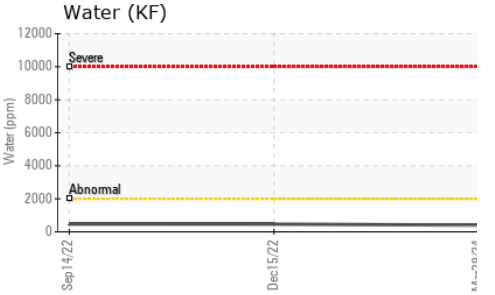

Water (KF)



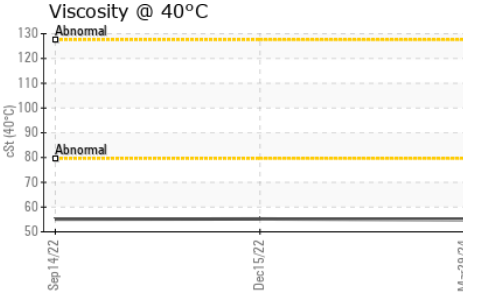

Viscosity @ 100°C




Water (KF)

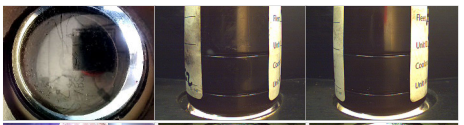
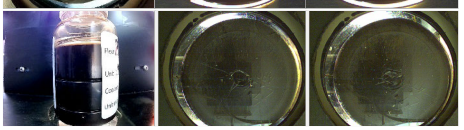



Viscosity @ 40°C



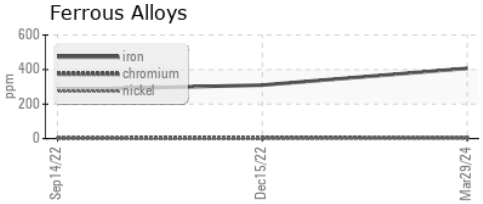

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | LIGHT |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | 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 | | **54.9** | 55.2 | 55.1 |
| Visc @ 100°C | cSt | ASTM D445 | | **9.7** | 10.1 | 10.2 |
| Viscosity Index (VI) | Scale | ASTM D2270 | | **163** | 172 | 175 |

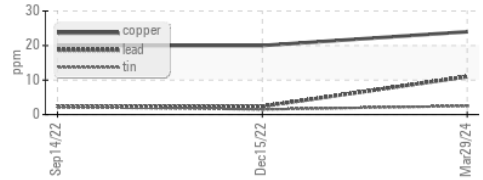
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | |  | | |
| Bottom | | | |  | | |

## GRAPHS

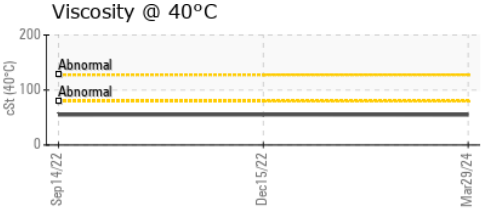
Ferrous Alloys



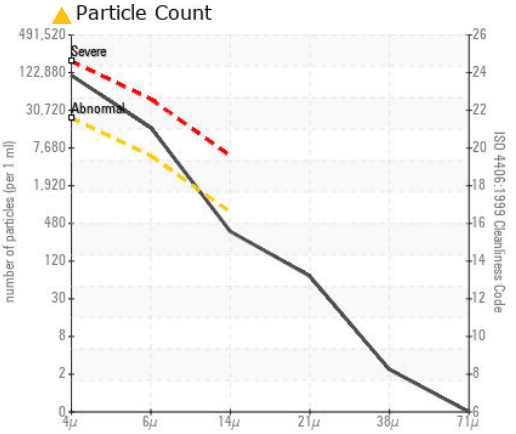

Non-ferrous Metals



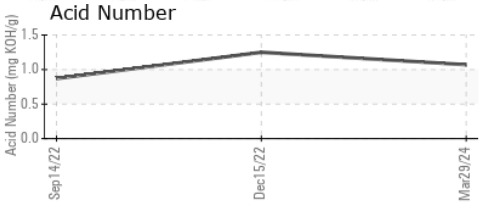

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0900792 **Received** : 16 Apr 2024
**Lab Number** : 06151067 **Tested** : 22 Apr 2024
**Unique Number** : 10981145 **Diagnosed** : 22 Apr 2024 - Doug Bogart
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, PrtCount, VI )

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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