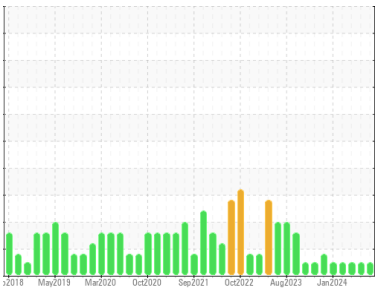
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
**CATERPILLAR D10T 15105049 (S/N CATOD10TCRJG01495)**
Component
**Hydraulic System**
Fluid
**ROYAL PURPLE SYNDRAULIC 46 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

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

**Contamination**
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination 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 | | **RP0040783** | RP0036964 | RP0036994 |
| Sample Date | | Client Info | | **22 May 2024** | 22 Apr 2024 | 25 Mar 2024 |
| Machine Age | hrs | Client Info | | **28263** | 27093 | 26857 |
| Oil Age | hrs | Client Info | | **506** | 236 | 1168 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **5** | 2 | 8 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Silver | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **<1** | 0 | 2 |
| Lead | ppm | ASTM D5185m | >10 | **1** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >75 | **21** | 19 | 38 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | 0 | <1 |
| 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 | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Calcium | ppm | ASTM D5185m | 150 | **2** | 17 | 67 |
| Phosphorus | ppm | ASTM D5185m | 670 | **346** | 305 | 309 |
| Zinc | ppm | ASTM D5185m | 800 | **260** | 252 | 167 |

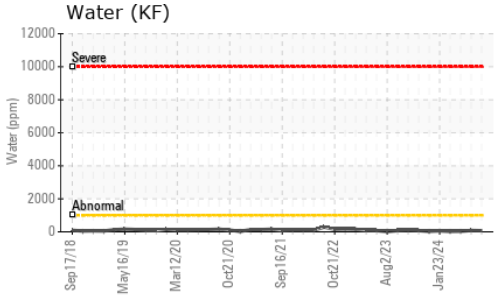
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **1** | <1 | 2 |
| Sodium | ppm | ASTM D5185m | | **<1** | 1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | 0 | <1 |
| Water | % | ASTM D6304 | >0.1 | **0.006** | 0.008 | 0.003 |
| ppm Water | ppm | ASTM D6304 | >1000 | **68** | 82 | 34 |

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | >5000 | **3018** | 1611 | 2134 |
| Particles >6µm | ASTM D7647 | >1300 | **541** | 438 | 508 |
| Particles >14µm | ASTM D7647 | >160 | **35** | 22 | 35 |
| Particles >21µm | ASTM D7647 | >40 | **12** | 5 | 11 |
| Particles >38µm | ASTM D7647 | >10 | **0** | 1 | 1 |
| Particles >71µm | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | **19/16/12** | 18/16/12 | 18/16/12 |

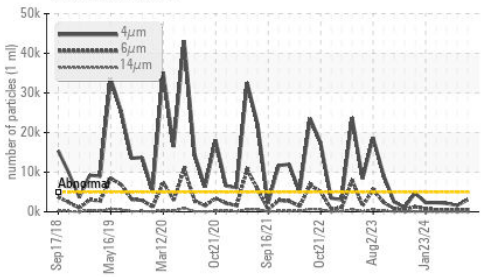
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.28** | 0.34 | 0.27 |

# OIL ANALYSIS REPORT

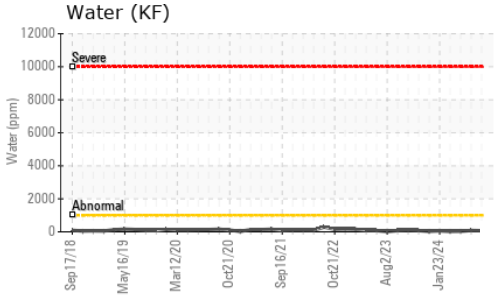
Water (KF)



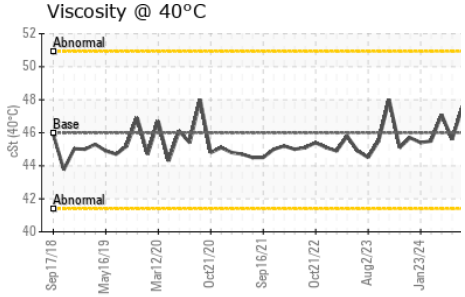

Particle Trend



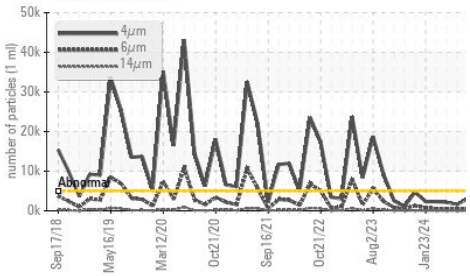

Water (KF)




Viscosity @ 40°C

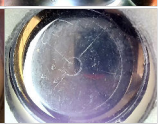



Particle Trend



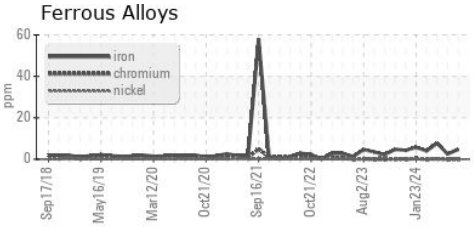

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46.0 | **47.6** | 45.6 | 47.1 |

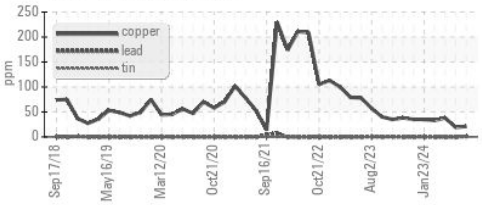
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  |  |
| Bottom | | |  |  |  |

## GRAPHS

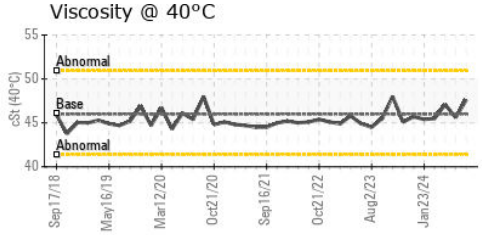
Ferrous Alloys



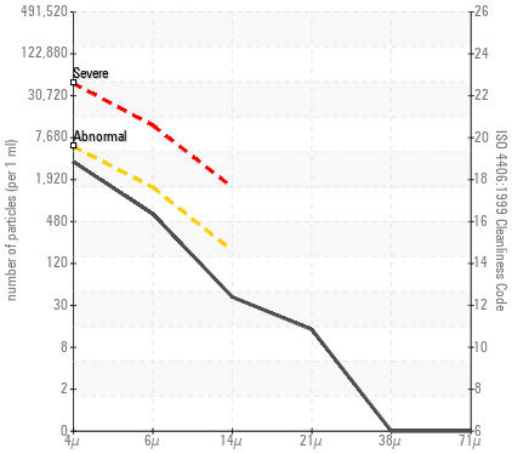

Non-ferrous Metals



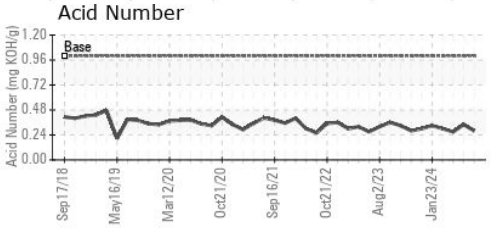

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RP0040783
**Lab Number** : 06193968
**Unique Number** : 11056091
**Test Package** : IND 2

**Received** : 29 May 2024
**Tested** : 30 May 2024
**Diagnosed** : 31 May 2024 - Angela Borella

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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