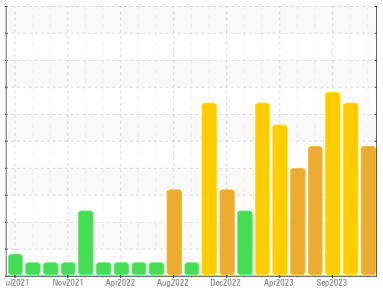
# OIL ANALYSIS REPORT

Sample Rating Trend



**DIRT**

Machine Id
## CATERPILLAR 12G 8318 (S/N 61M12623)
Component
**Left Final Drive**
Fluid
**TDTO FLUID SAE 30 (--- GAL)**

## DIAGNOSIS

**Recommendation**
We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

**Wear**
Bearing and/or bushing wear is indicated. Gear wear is indicated.

**Contamination**
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

**Fluid Condition**
The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0913064** | WC0862975 | WC0836998 |
| Sample Date | | Client Info | | **06 May 2024** | 03 Nov 2023 | 11 Sep 2023 |
| Machine Age | hrs | Client Info | | **13395** | 12357 | 11872 |
| Oil Age | hrs | Client Info | | **296** | 485 | 574 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >800 | ▲ **868** | ▲ 1036 | ▲ 1161 |
| Chromium | ppm | ASTM D5185m | >10 | **9** | 10 | 8 |
| Nickel | ppm | ASTM D5185m | >5 | **34** | 27 | 17 |
| Titanium | ppm | ASTM D5185m | >15 | **5** | 6 | 5 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >75 | ● **42** | ● 54 | ● 50 |
| Lead | ppm | ASTM D5185m | >10 | **2** | 2 | <1 |
| Copper | ppm | ASTM D5185m | >75 | ▲ **201** | ▲ 268 | ▲ 208 |
| Tin | ppm | ASTM D5185m | >8 | ▲ **11** | ▲ 15 | ▲ 11 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 37 | **151** | 192 | ▲ 173 |
| Barium | ppm | ASTM D5185m | 7 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 5 | **<1** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | **7** | 8 | 11 |
| Magnesium | ppm | ASTM D5185m | 40 | **4** | 4 | 6 |
| Calcium | ppm | ASTM D5185m | 2650 | **259** | 54 | 93 |
| Phosphorus | ppm | ASTM D5185m | 1050 | **419** | 351 | 367 |
| Zinc | ppm | ASTM D5185m | 1075 | **151** | 6 | 16 |
| Sulfur | ppm | ASTM D5185m | 5750 | **2237** | 1948 | 2277 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >400 | ▲ **523** | ▲ 584 | ▲ 516 |
| Sodium | ppm | ASTM D5185m | | **6** | 5 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **11** | 16 | 12 |

| 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 | **MODER** | 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 | >0.2 | **NEG** | 0.2% | 0.2% |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

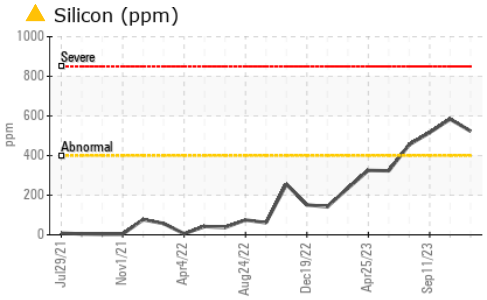
# OIL ANALYSIS REPORT

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 101 | **87.9** | 100 | 101 |

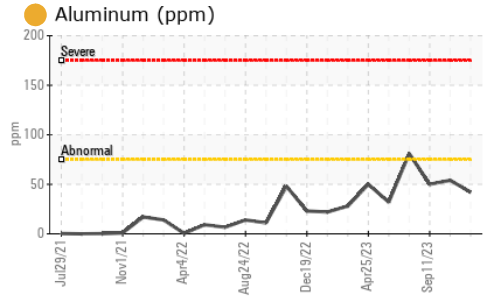
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | *no image* | *no image* | *no image* |
| Bottom | | | *no image* | *no image* | *no image* |

## GRAPHS

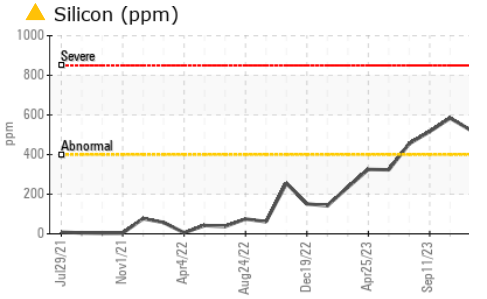
Silicon (ppm)



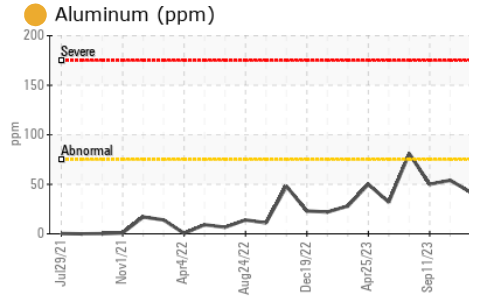

Aluminum (ppm)



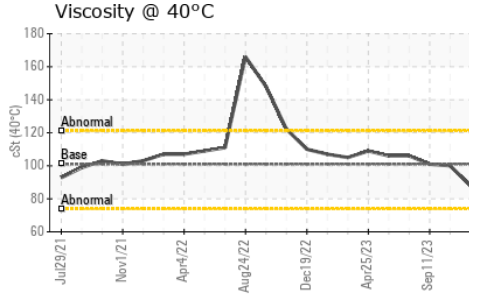

Silicon (ppm)



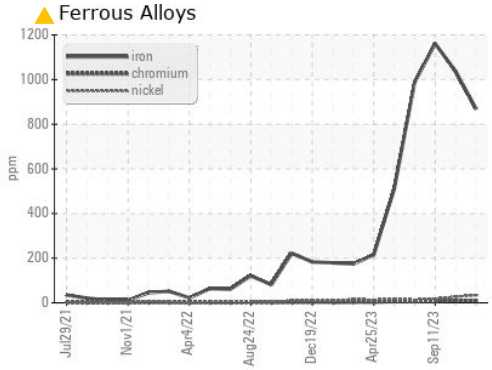

Aluminum (ppm)



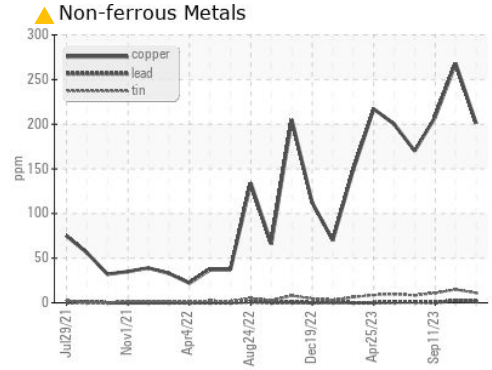

Viscosity @ 40°C



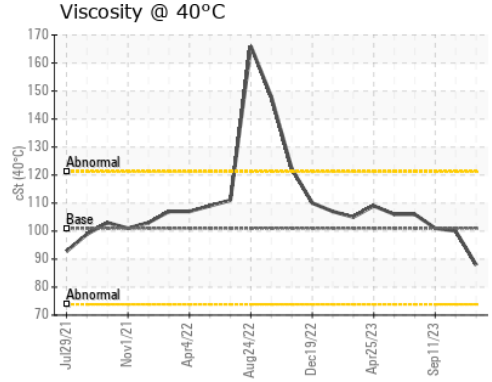

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 40°C




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0913064
**Lab Number** : 06180496
**Unique Number** : 11031822
**Test Package** : CONST

**Received** : 15 May 2024
**Tested** : 16 May 2024
**Diagnosed** : 17 May 2024 - Don Baldridge

*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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