



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

| | |
|-----------------|-----------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | ATTENTION |

Machine Id
CATERPILLAR 988F WRCH 2 (S/N 2ZR01298)

Component
Transmission (Manual)

Fluid
CAT TDTO 10W (18 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | TR06085440 | --- | --- |
| Sample Date | | Client Info | | 30 Jan 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 916 | --- | --- |
| Oil Age | hrs | Client Info | | 916 | --- | --- |
| Filter Age | hrs | Client Info | | 150 | --- | --- |
| Oil Changed | | Client Info | | Not Changd | --- | --- |
| Filter Changed | | Client Info | | Not Changd | --- | --- |
| Sample Status | | | | ATTENTION | --- | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|------|-----|-----|
| Iron | ppm | ASTM D5185m | >200 | 12 | --- | --- |
| Chromium | ppm | ASTM D5185m | >5 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >5 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | >7 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >25 | <1 | --- | --- |
| Lead | ppm | ASTM D5185m | >45 | 1 | --- | --- |
| Copper | ppm | ASTM D5185m | >225 | 33 | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

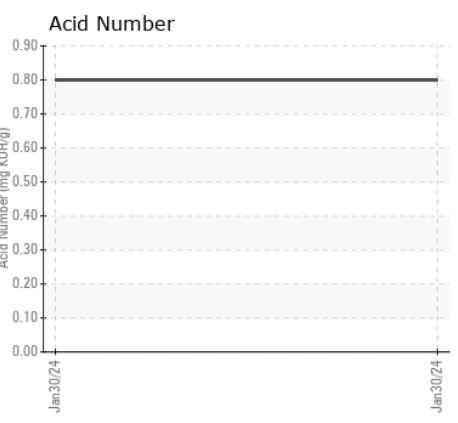
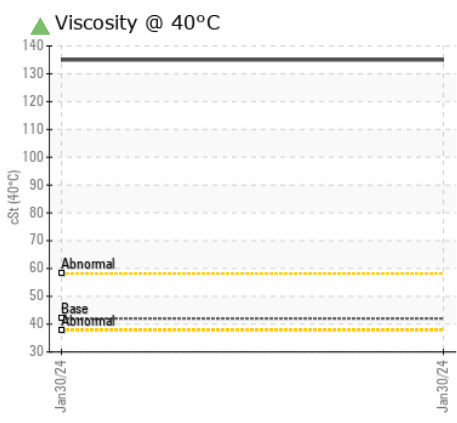
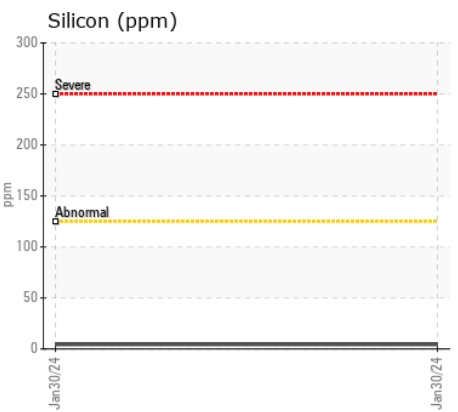
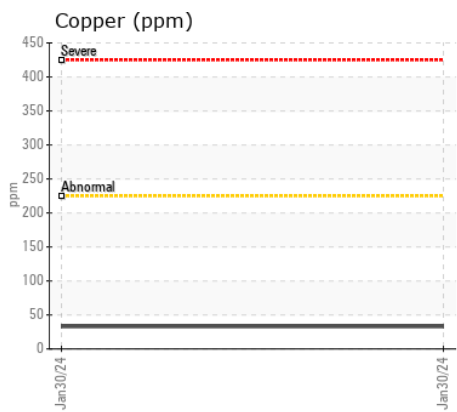
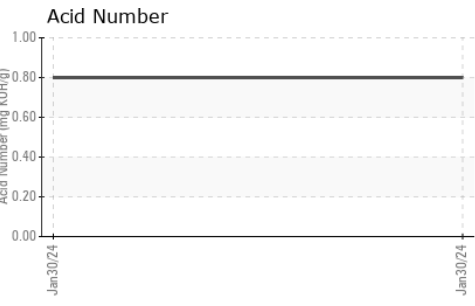
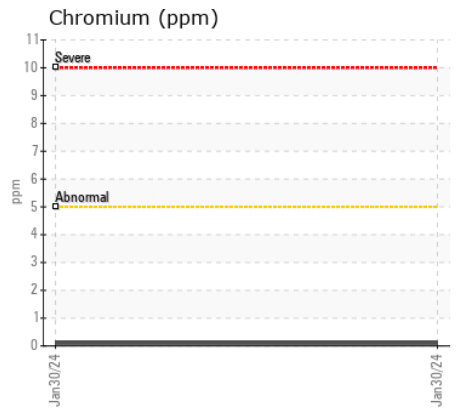
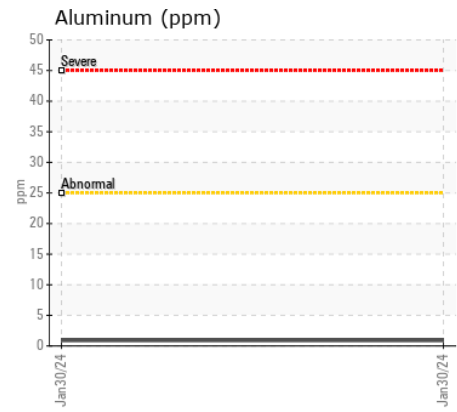
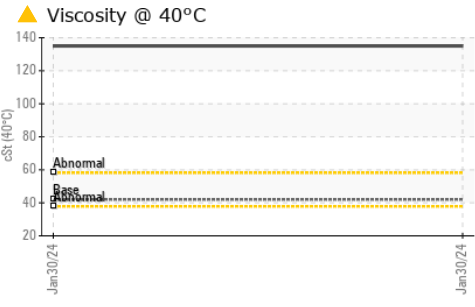
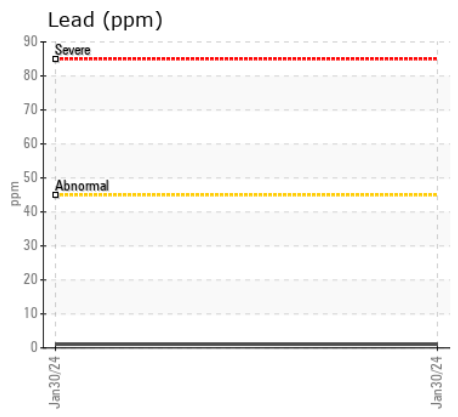
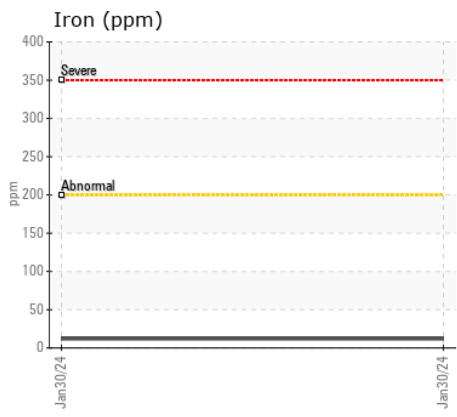
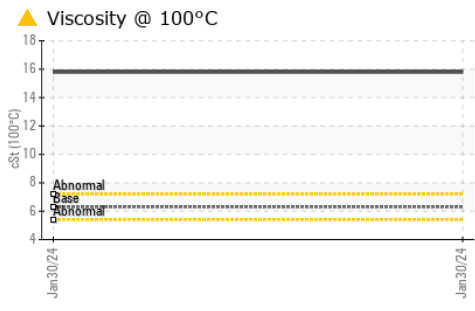
There is no indication of any contamination in the fluid.

| | | | | | | |
|------------------|--------|-------------|-------|-------|-----|-----|
| Silicon | ppm | ASTM D5185m | >125 | 4 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 2 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |

FLUID CONDITION

The fluid viscosity is higher than normal. Confirm oil type. The AN level is acceptable for this fluid.

| | | | | | | |
|----------------------|----------|-------------|------|--------|-----|-----|
| Sodium | ppm | ASTM D5185m | | 10 | --- | --- |
| Boron | ppm | ASTM D5185m | | 2 | --- | --- |
| Barium | ppm | ASTM D5185m | | 702 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 0 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 164 | --- | --- |
| Calcium | ppm | ASTM D5185m | 2980 | 1893 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 1100 | 661 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1270 | 817 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 4985 | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.80 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 42.0 | ▲ 135 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 6.3 | ▲ 15.8 | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | 97 | 122 | --- | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06085440 **Received** : 09 Feb 2024
Lab Number : 06085440 **Tested** : 12 Feb 2024
Unique Number : 10872885 **Diagnosed** : 12 Feb 2024 - Doug Bogart
Test Package : MOB 2 (Additional Tests: KV100, VI)

WIE - WESTERN INDUSTRIAL EQUIPMENT
 10761 N WILSON RD
 LAKE CITY, MI
 US 49651
 Contact: JOHN HIGGINS

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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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F: