



# OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |



Machine Id  
**CATERPILLAR 980M 6161 (S/N MK210767)**  
Component  
**Rear Left Differential**  
Fluid  
**TULCO LUBSOIL TO-4 50 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number  |     | Client Info |           | <b>TO10002793</b>  | ---      | ---      |
| Sample Date    |     | Client Info |           | <b>18 Oct 2023</b> | ---      | ---      |
| Machine Age    | hrs | Client Info |           | <b>8534</b>        | ---      | ---      |
| Oil Age        | hrs | Client Info |           | <b>300</b>         | ---      | ---      |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed    |     | Client Info |           | <b>Not Changd</b>  | ---      | ---      |
| Filter Changed |     | Client Info |           | <b>None</b>        | ---      | ---      |
| Sample Status  |     |             |           | <b>NORMAL</b>      | ---      | ---      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |     |     |
|--------------|--------|-------------|------|--------------|-----|-----|
| PQ           |        | ASTM D8184  |      | <b>20</b>    | --- | --- |
| Iron         | ppm    | ASTM D5185m | >500 | <b>15</b>    | --- | --- |
| Chromium     | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | --- | --- |
| Nickel       | ppm    | ASTM D5185m | >3   | <b>0</b>     | --- | --- |
| Titanium     | ppm    | ASTM D5185m | >2   | <b>0</b>     | --- | --- |
| Silver       | ppm    | ASTM D5185m | >2   | <b>0</b>     | --- | --- |
| Aluminum     | ppm    | ASTM D5185m | >30  | <b>1</b>     | --- | --- |
| Lead         | ppm    | ASTM D5185m | >13  | <b>0</b>     | --- | --- |
| Copper       | ppm    | ASTM D5185m | >103 | <b>2</b>     | --- | --- |
| Tin          | ppm    | ASTM D5185m | >5   | <b>0</b>     | --- | --- |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | --- | --- |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |

## CONTAMINATION

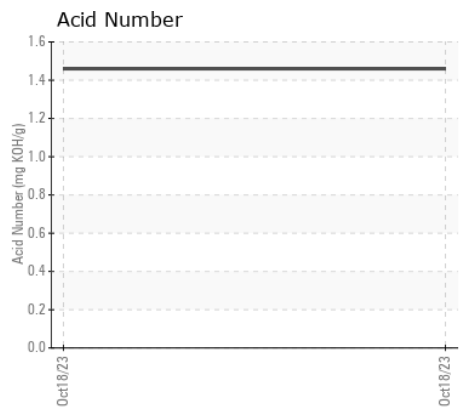
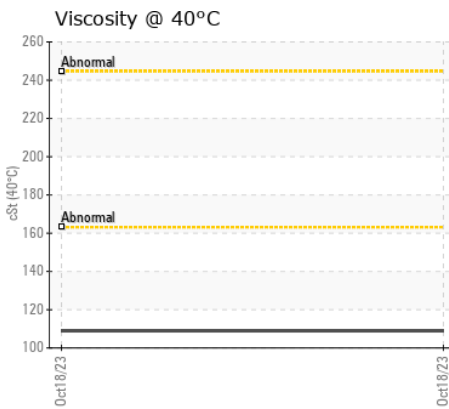
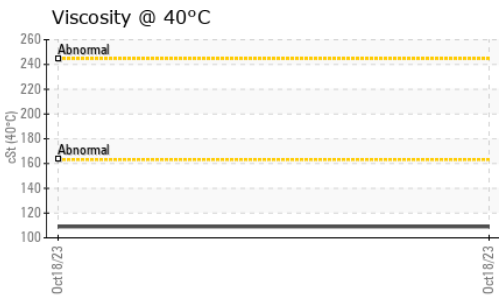
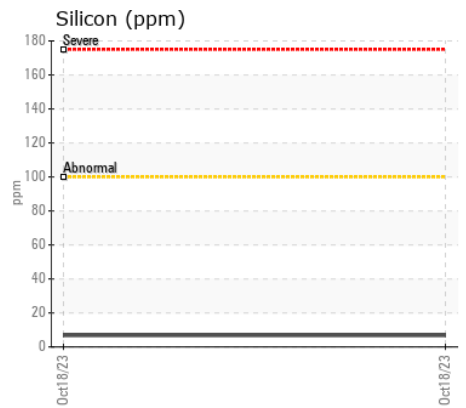
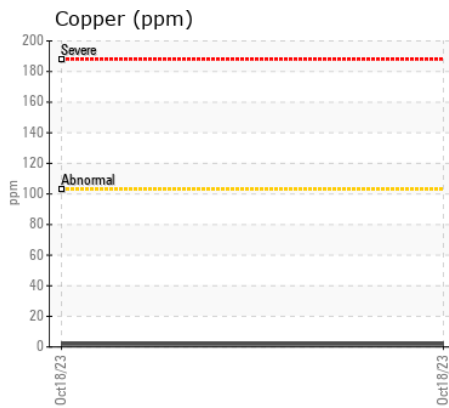
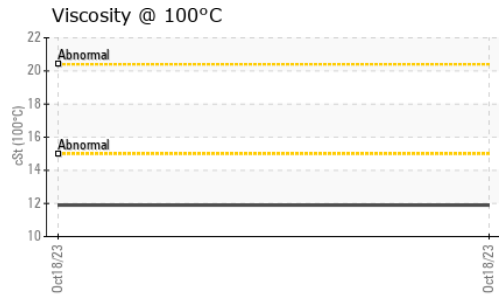
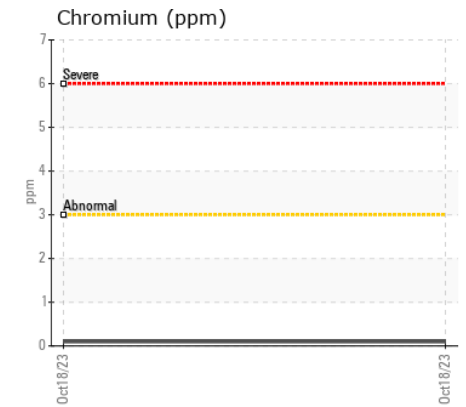
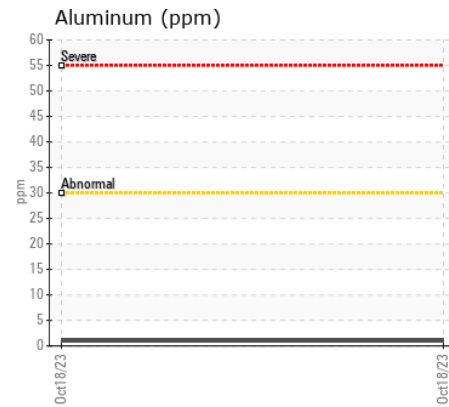
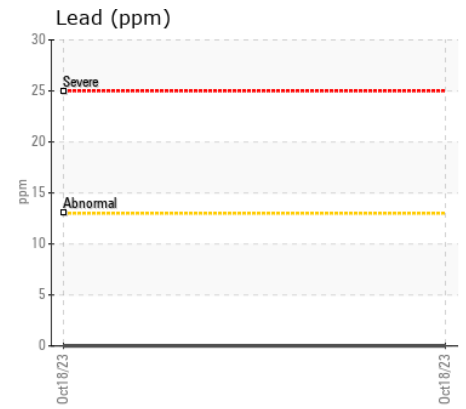
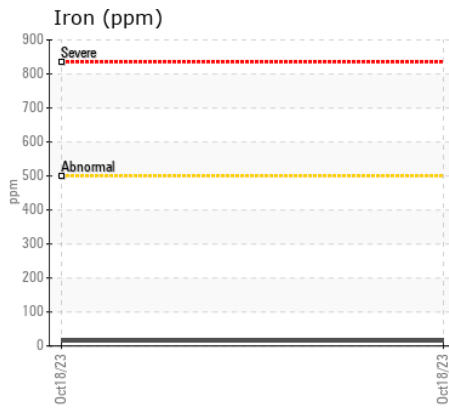
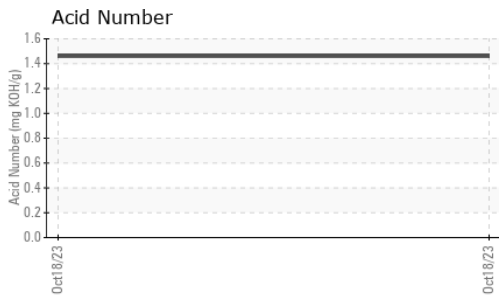
There is no indication of any contamination in the oil.

|                  |        |             |       |              |     |     |
|------------------|--------|-------------|-------|--------------|-----|-----|
| Silicon          | ppm    | ASTM D5185m | >100  | <b>7</b>     | --- | --- |
| Potassium        | ppm    | ASTM D5185m | >20   | <b>&lt;1</b> | --- | --- |
| Water            |        | WC Method   | >.2   | <b>NEG</b>   | --- | --- |
| Silt             | scalar | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Debris           | scalar | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Sand/Dirt        | scalar | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Appearance       | scalar | *Visual     | NORML | <b>NORML</b> | --- | --- |
| Odor             | scalar | *Visual     | NORML | <b>NORML</b> | --- | --- |
| Emulsified Water | scalar | *Visual     | >.2   | <b>NEG</b>   | --- | --- |

## FLUID CONDITION

Confirm oil type. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

|                      |          |             |  |              |     |     |
|----------------------|----------|-------------|--|--------------|-----|-----|
| Sodium               | ppm      | ASTM D5185m |  | <b>0</b>     | --- | --- |
| Boron                | ppm      | ASTM D5185m |  | <b>0</b>     | --- | --- |
| Barium               | ppm      | ASTM D5185m |  | <b>0</b>     | --- | --- |
| Molybdenum           | ppm      | ASTM D5185m |  | <b>1</b>     | --- | --- |
| Manganese            | ppm      | ASTM D5185m |  | <b>&lt;1</b> | --- | --- |
| Magnesium            | ppm      | ASTM D5185m |  | <b>28</b>    | --- | --- |
| Calcium              | ppm      | ASTM D5185m |  | <b>2943</b>  | --- | --- |
| Phosphorus           | ppm      | ASTM D5185m |  | <b>1018</b>  | --- | --- |
| Zinc                 | ppm      | ASTM D5185m |  | <b>1246</b>  | --- | --- |
| Sulfur               | ppm      | ASTM D5185m |  | <b>6422</b>  | --- | --- |
| Acid Number (AN)     | mg KOH/g | ASTM D8045  |  | <b>1.46</b>  | --- | --- |
| Visc @ 40°C          | cSt      | ASTM D445   |  | <b>109</b>   | --- | --- |
| Visc @ 100°C         | cSt      | ASTM D445   |  | <b>11.9</b>  | --- | --- |
| Viscosity Index (VI) | Scale    | ASTM D2270  |  | <b>97</b>    | --- | --- |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TO10002793 **Received** : 24 Oct 2023  
**Lab Number** : 05988275 **Diagnosed** : 26 Oct 2023  
**Unique Number** : 10710937 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: KV100, PQ, 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)

**ANCHOR STONE TULSA ROCK**  
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE  
 TULSA, OK  
 US 74137

Contact: SKIP SAENGERHAUSEN  
 skip@anchorstoneco.com

T: (918)928-4575

F: