



OIL ANALYSIS REPORT

|                 |          |
|-----------------|----------|
| WEAR            | NORMAL   |
| CONTAMINATION   | ABNORMAL |
| FLUID CONDITION | ABNORMAL |

Area  
**QC Engine**  
 Machine Id  
**QC230725MOB2**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 40 (--- GAL)**

**RECOMMENDATION**

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0894148</b>   | WC0894147   | WC0894146   |
| Sample Date    |     | Client Info |           | <b>11 Jan 2024</b> | 10 Jan 2024 | 09 Jan 2024 |
| Machine Age    | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

**WEAR**

All component wear rates are normal.

|          |     |               |      |              |    |    |
|----------|-----|---------------|------|--------------|----|----|
| Iron     | ppm | ASTM D5185(m) | >100 | <b>20</b>    | 19 | 20 |
| Chromium | ppm | ASTM D5185(m) | >20  | <b>&lt;1</b> | <1 | <1 |
| Nickel   | ppm | ASTM D5185(m) | >4   | <b>&lt;1</b> | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) |      | <b>2</b>     | 2  | 2  |
| Silver   | ppm | ASTM D5185(m) | >3   | <b>&lt;1</b> | <1 | 0  |
| Aluminum | ppm | ASTM D5185(m) | >20  | <b>5</b>     | 5  | 5  |
| Lead     | ppm | ASTM D5185(m) | >40  | <b>2</b>     | 2  | 1  |
| Copper   | ppm | ASTM D5185(m) | >330 | <b>9</b>     | 9  | 9  |
| Tin      | ppm | ASTM D5185(m) | >15  | <b>&lt;1</b> | <1 | <1 |
| Vanadium | ppm | ASTM D5185(m) |      | <b>0</b>     | 0  | 0  |

**CONTAMINATION**

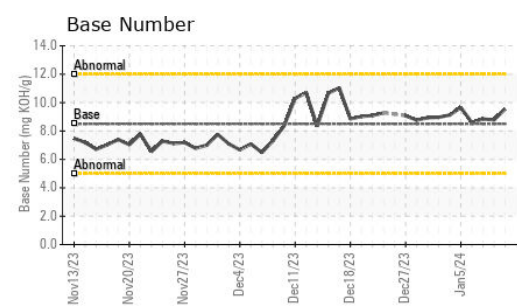
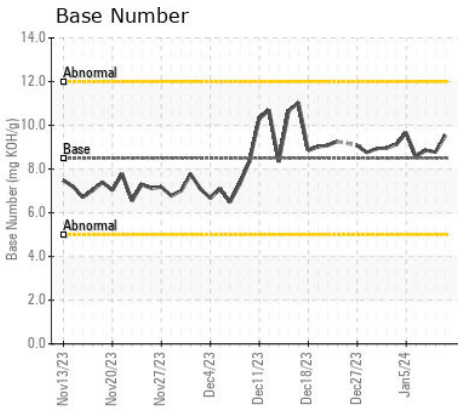
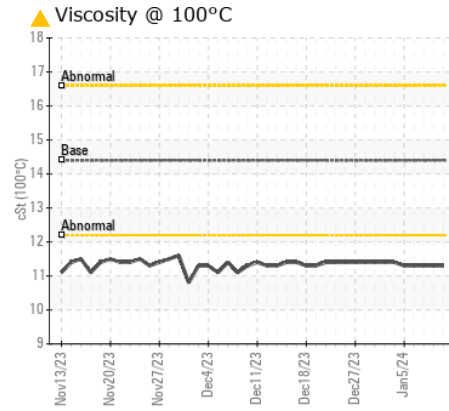
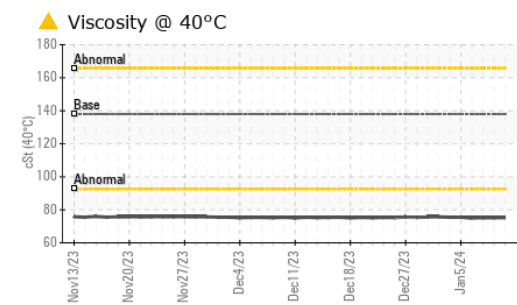
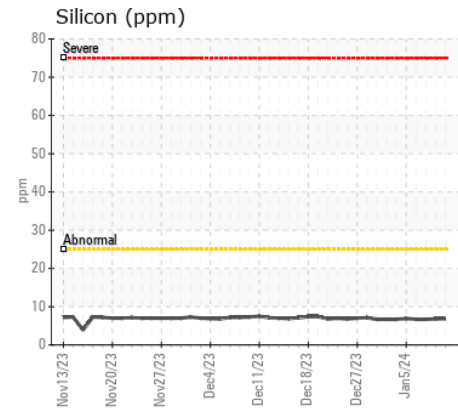
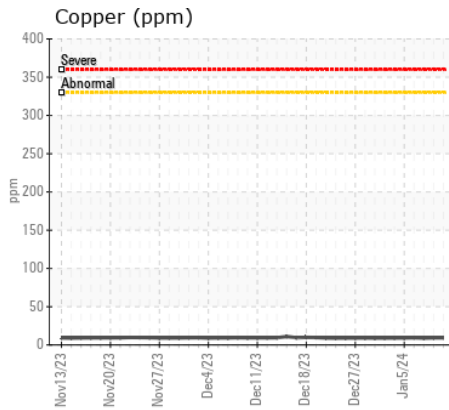
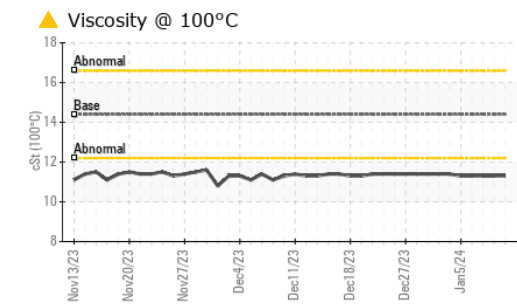
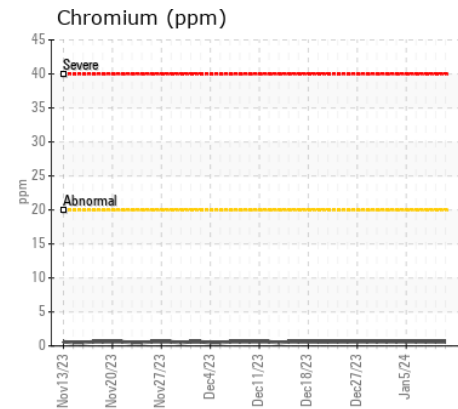
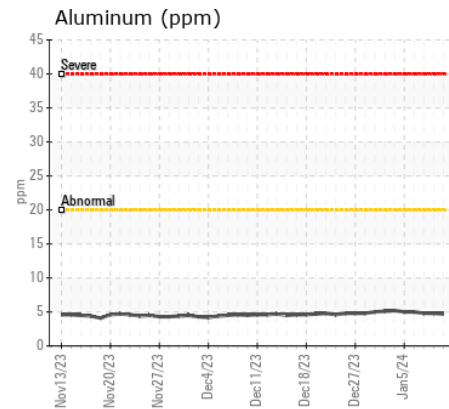
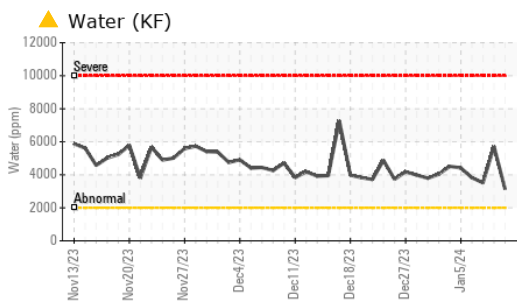
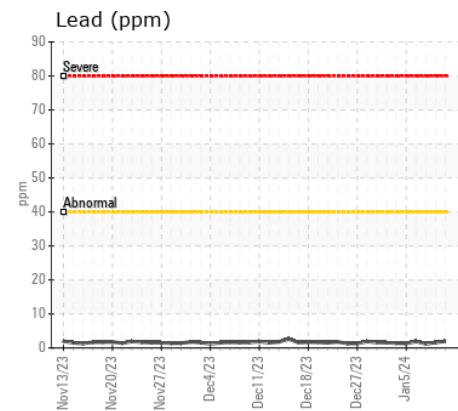
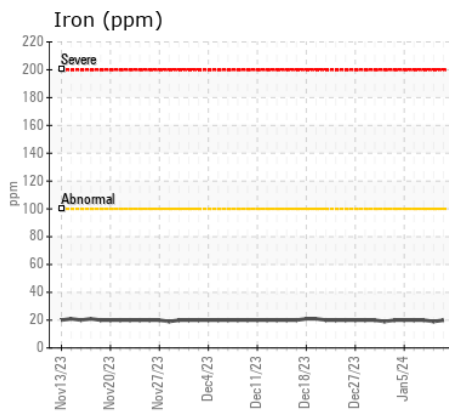
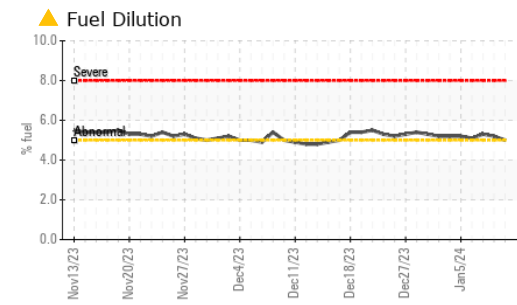
There is a moderate amount of fuel present in the oil. There is a light concentration of water present in the oil. Tests confirm the presence of fuel in the oil.

|                  |          |               |       |                |         |         |
|------------------|----------|---------------|-------|----------------|---------|---------|
| Silicon          | ppm      | ASTM D5185(m) | >25   | <b>7</b>       | 7       | 7       |
| Potassium        | ppm      | ASTM D5185(m) | >20   | <b>▲ 18</b>    | ▲ 16    | ▲ 15    |
| Fuel             | %        | ASTM D7593*   | >5    | <b>▲ 5</b>     | ▲ 5.2   | ▲ 5.3   |
| Water            | %        | ASTM D6304*   | >0.2  | <b>▲ 0.313</b> | ▲ 0.571 | ▲ 0.351 |
| ppm Water        | ppm      | ASTM D6304*   | >2000 | <b>▲ 3130</b>  | ▲ 5712  | ▲ 3518  |
| Glycol           | %        | ASTM D7922*   |       | <b>NEG</b>     | NEG     | NEG     |
| Soot %           | %        | ASTM D7844*   | >3    | <b>0.3</b>     | 0.3     | 0.3     |
| Nitration        | Abs/cm   | ASTM D7624*   | >20   | <b>10.1</b>    | 10.2    | 10.2    |
| Sulfation        | Abs/.1mm | ASTM D7415*   | >30   | <b>20.4</b>    | 20.3    | 20.3    |
| Emulsified Water | scalar   | Visual*       | >0.2  | <b>▲ .2%</b>   | ▲ .2%   | ▲ .2%   |

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 10W30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.

|                      |          |               |      |               |        |        |
|----------------------|----------|---------------|------|---------------|--------|--------|
| Sodium               | ppm      | ASTM D5185(m) | >216 | <b>▲ 67</b>   | ▲ 67   | ▲ 67   |
| Boron                | ppm      | ASTM D5185(m) | 250  | <b>37</b>     | 30     | 31     |
| Barium               | ppm      | ASTM D5185(m) | 10   | <b>0</b>      | 0      | 0      |
| Molybdenum           | ppm      | ASTM D5185(m) | 100  | <b>46</b>     | 47     | 46     |
| Manganese            | ppm      | ASTM D5185(m) |      | <b>0</b>      | 0      | 0      |
| Magnesium            | ppm      | ASTM D5185(m) | 450  | <b>615</b>    | 620    | 611    |
| Calcium              | ppm      | ASTM D5185(m) | 3000 | <b>1505</b>   | 1473   | 1471   |
| Phosphorus           | ppm      | ASTM D5185(m) | 1150 | <b>890</b>    | 876    | 866    |
| Zinc                 | ppm      | ASTM D5185(m) | 1350 | <b>1014</b>   | 1025   | 999    |
| Sulfur               | ppm      | ASTM D5185(m) | 4250 | <b>2770</b>   | 2774   | 2725   |
| Oxidation            | Abs/.1mm | ASTM D7414*   | >25  | <b>16.4</b>   | 16.5   | 16.7   |
| Base Number (BN)     | mg KOH/g | ASTM D2896*   | 8.5  | <b>9.54</b>   | 8.78   | 8.85   |
| Visc @ 40°C          | cSt      | ASTM D7279(m) | 138  | <b>▲ 75.2</b> | ▲ 75.2 | ▲ 75.2 |
| Visc @ 100°C         | cSt      | ASTM D7279(m) | 14.4 | <b>▲ 11.3</b> | ▲ 11.3 | ▲ 11.3 |
| Viscosity Index (VI) | Scale    | ASTM D2270*   | 102  | <b>141</b>    | 141    | 141    |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **WearCheck Quality Control Sample Results**  
**Sample No.** : WC0894148 **Received** : 11 Jan 2024  
**Lab Number** : 02608113 **Diagnosed** : 15 Jan 2024  
**Unique Number** : 5709199 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 2 ( Additional Tests: Glycol, KF, KV40, PercentFuel, VI )  
 To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

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