



# OIL ANALYSIS REPORT

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

Machine Id  
**731**  
 Component  
**Front Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time. Please specify the component make and model with your next sample.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0844106</b>   | WC0844199   | WC0778915   |
| Sample Date    |     | Client Info |           | <b>07 May 2024</b> | 22 Dec 2023 | 22 Jun 2023 |
| Machine Age    | hrs | Client Info |           | <b>4300</b>        | 450         | 2826        |
| Oil Age        | hrs | Client Info |           | <b>450</b>         | 450         | 450         |
| Filter Age     | hrs | Client Info |           | <b>450</b>         | 450         | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | N/A         | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | N/A         | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>44</b>    | 12   | 11   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>&lt;1</b> | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | 0    | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 1    | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | 0    | <1   |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>10</b>    | 14   | 13   |
| Lead         | ppm    | ASTM D5185m | >40  | <b>0</b>     | 0    | 0    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>13</b>    | 4    | 5    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | 1    | 1    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

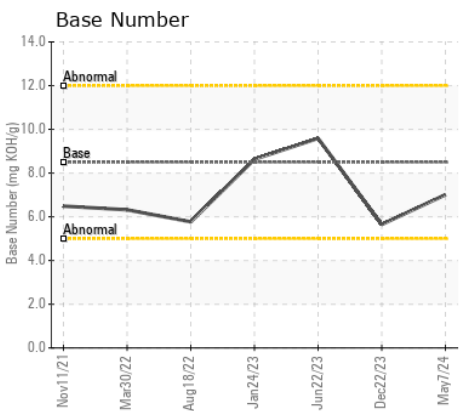
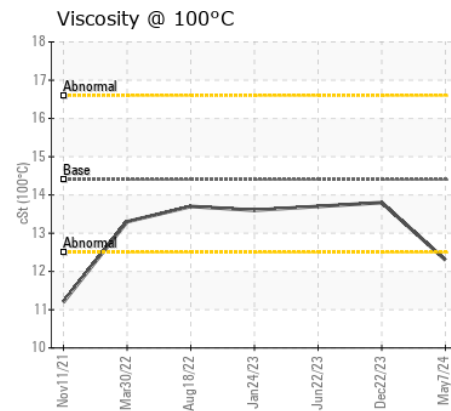
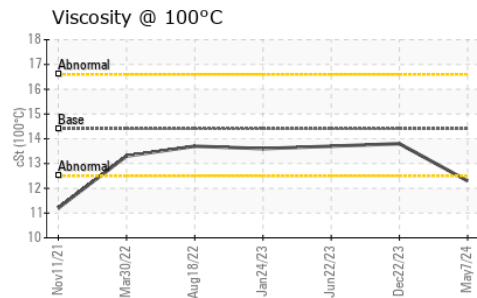
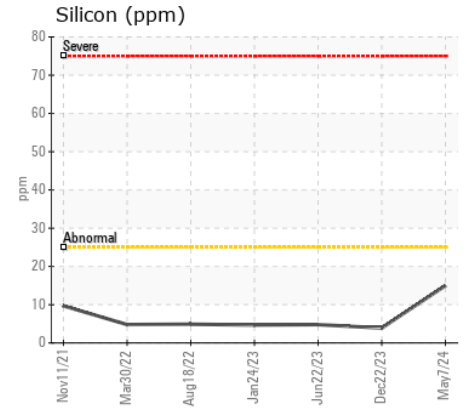
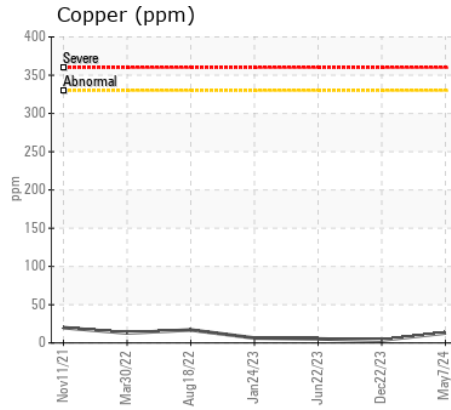
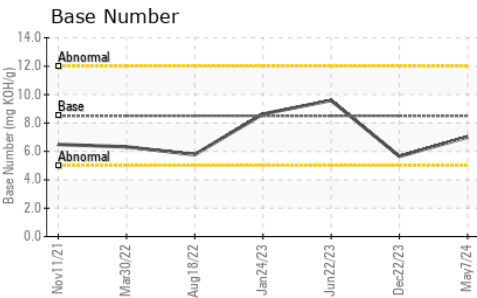
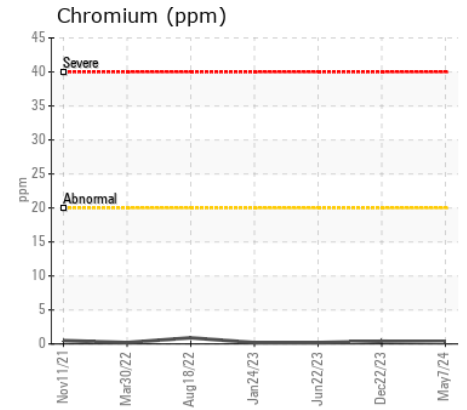
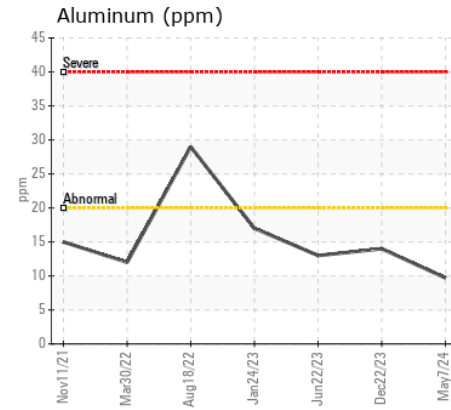
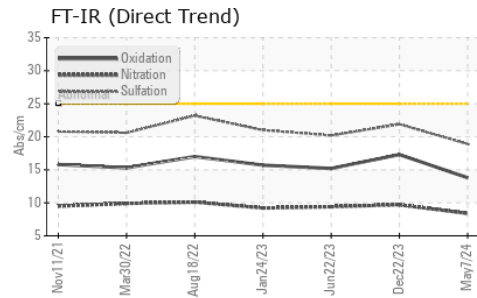
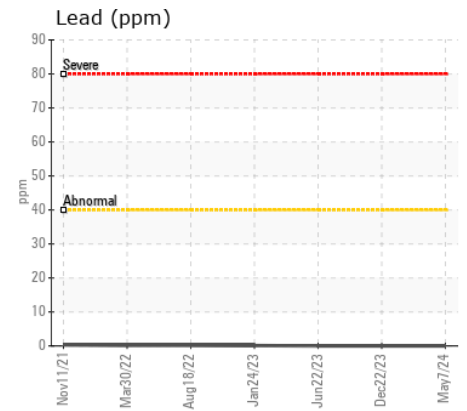
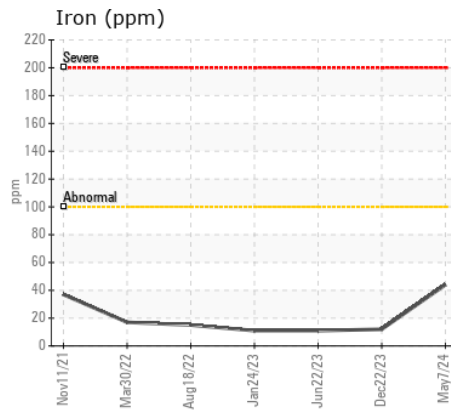
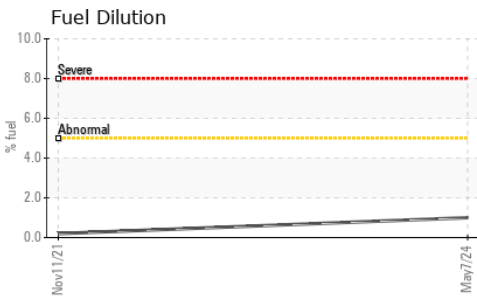
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring. No other contaminants were detected in the oil.

|                  |          |             |       |              |       |       |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>15</b>    | 4     | 5     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>17</b>    | 22    | 13    |
| Fuel             | %        | ASTM D3524  | >5    | <b>1.0</b>   | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.2  | <b>NEG</b>   | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>   | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.2</b>   | 0.4   | 0.3   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>8.4</b>   | 9.7   | 9.4   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>18.9</b>  | 21.9  | 20.2  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b> | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b> | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>   | NEG   | NEG   |

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |             |      |      |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium           | ppm      | ASTM D5185m | >158 | <b>5</b>    | 0    | <1   |
| Boron            | ppm      | ASTM D5185m | 250  | <b>53</b>   | 37   | 57   |
| Barium           | ppm      | ASTM D5185m | 10   | <b>7</b>    | 0    | <1   |
| Molybdenum       | ppm      | ASTM D5185m | 100  | <b>5</b>    | 6    | 4    |
| Manganese        | ppm      | ASTM D5185m |      | <b>3</b>    | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m | 450  | <b>667</b>  | 703  | 774  |
| Calcium          | ppm      | ASTM D5185m | 3000 | <b>1207</b> | 1324 | 1498 |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | <b>719</b>  | 718  | 775  |
| Zinc             | ppm      | ASTM D5185m | 1350 | <b>752</b>  | 820  | 922  |
| Sulfur           | ppm      | ASTM D5185m | 4250 | <b>5142</b> | 3018 | 3617 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>13.8</b> | 17.3 | 15.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 8.5  | <b>7.01</b> | 5.65 | 9.59 |
| Visc @ 100°C     | cSt      | ASTM D445   | 14.4 | <b>12.3</b> | 13.8 | 13.7 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : WC0844106

**Lab Number** : 06211956

**Unique Number** : 11084820

**Test Package** : MOB 2 ( Additional Tests: FuelDilution, PercentFuel )

**Received** : 17 Jun 2024

**Tested** : 20 Jun 2024

**Diagnosed** : 20 Jun 2024 - Wes Davis

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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