



# OIL ANALYSIS REPORT

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

Area

[62005688690]

Machine Id

21

Component

Diesel Engine

Fluid

DIESEL ENGINE OIL SAE 15W40 (--- QTS)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0828097</b>   | WC0723390   | WC0723381   |
| Sample Date    |     | Client Info |           | <b>31 Oct 2023</b> | 01 Feb 2023 | 21 Nov 2022 |
| Machine Age    | mls | Client Info |           | <b>144274</b>      | 129825      | 124509      |
| Oil Age        | mls | Client Info |           | <b>0</b>           | 5000        | 0           |
| Filter Age     | mls | Client Info |           | <b>0</b>           | 5000        | 0           |
| Oil Changed    |     | Client Info |           | <b>Not Changd</b>  | Not Changd  | Not Changd  |
| Filter Changed |     | Client Info |           | <b>Not Changd</b>  | Changed     | Not Changd  |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>34</b>    | 38   | 21   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>&lt;1</b> | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | 0    | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <b>63</b>    | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | <1   |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>10</b>    | 7    | 5    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 0    | <1   |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | <1   | <1   |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | 0    | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | <1   |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

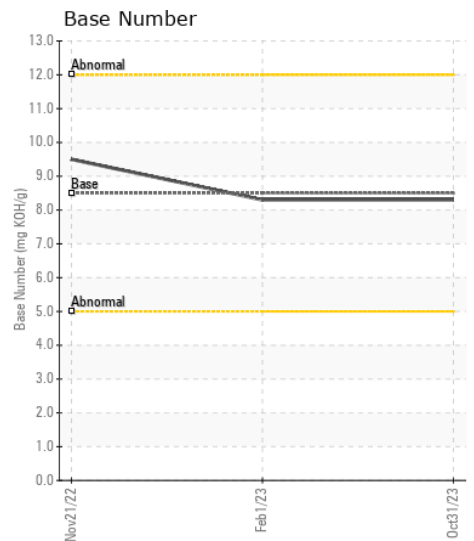
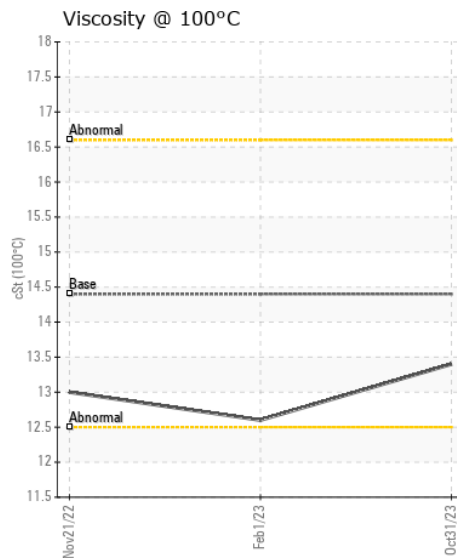
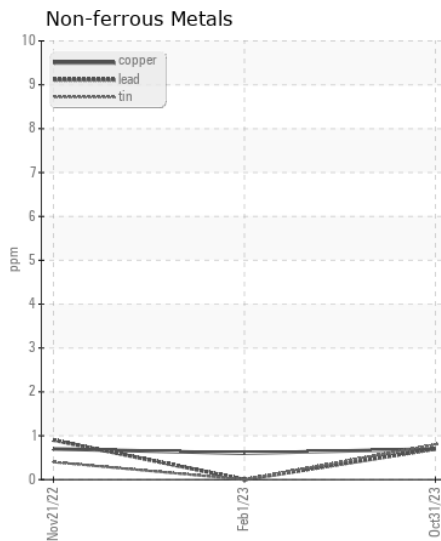
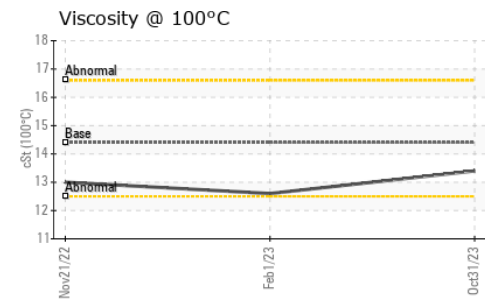
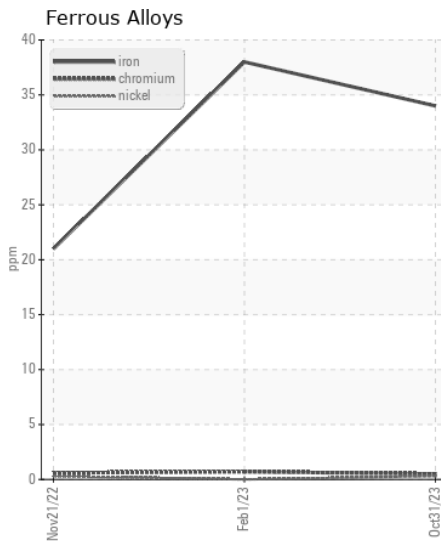
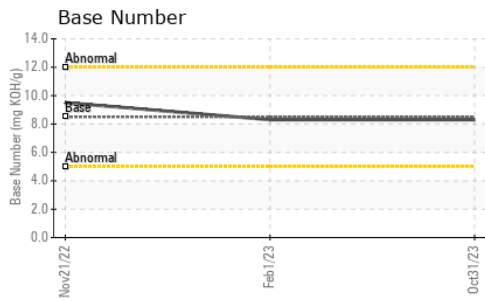
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>6</b>       | 6     | 5     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>6</b>       | 5     | 5     |
| Fuel             |          | WC Method   | >5    | <b>&lt;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>1.3</b>     | 1.4   | 0.9   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>10.4</b>    | 10.3  | 9.2   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>22.0</b>    | 22.4  | 22.2  |
| 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>2</b>     | 3    | 3    |
| Boron            | ppm      | ASTM D5185m | 250  | <b>54</b>    | 37   | 65   |
| Barium           | ppm      | ASTM D5185m | 10   | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 100  | <b>7</b>     | 9    | 8    |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 1    | <1   |
| Magnesium        | ppm      | ASTM D5185m | 450  | <b>504</b>   | 688  | 688  |
| Calcium          | ppm      | ASTM D5185m | 3000 | <b>1562</b>  | 1336 | 1383 |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | <b>1021</b>  | 998  | 1028 |
| Zinc             | ppm      | ASTM D5185m | 1350 | <b>1215</b>  | 1212 | 1228 |
| Sulfur           | ppm      | ASTM D5185m | 4250 | <b>3649</b>  | 3924 | 3931 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>15.7</b>  | 14.0 | 13.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 8.5  | <b>8.3</b>   | 8.3  | 9.5  |
| Visc @ 100°C     | cSt      | ASTM D445   | 14.4 | <b>13.4</b>  | 12.6 | 13.0 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0828097 **Received** : 14 Feb 2024  
**Lab Number** : 06089460 **Tested** : 15 Feb 2024  
**Unique Number** : 10876905 **Diagnosed** : 15 Feb 2024 - Wes Davis  
**Test Package** : FLEET

**CASWELL COUNTY SCHOOL BUS**  
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 F:

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)