



# OIL ANALYSIS REPORT

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

Machine Id  
**63001**  
Component  
**Diesel Engine**  
Fluid  
**CASTROL VECTON 15W40 CK4 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0813374</b>   | WC0666195   | WC0666225   |
| Sample Date    |     | Client Info |           | <b>17 Jan 2024</b> | 16 Jan 2024 | 22 Mar 2023 |
| Machine Age    | hrs | Client Info |           | <b>2003</b>        | 1679        | 1470        |
| 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>NORMAL</b>      | ATTENTION   | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>4</b>     | 5    | 8    |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>0</b>     | 0    | <1   |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>0</b>     | 0    | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>1</b>     | 2    | 3    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 0    | 0    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | <1   | 2    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | <1   | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1   | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

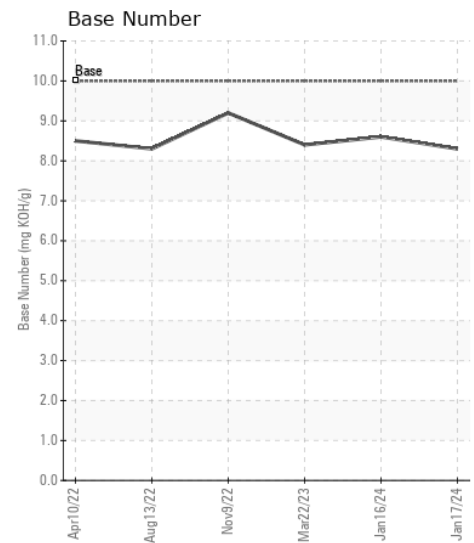
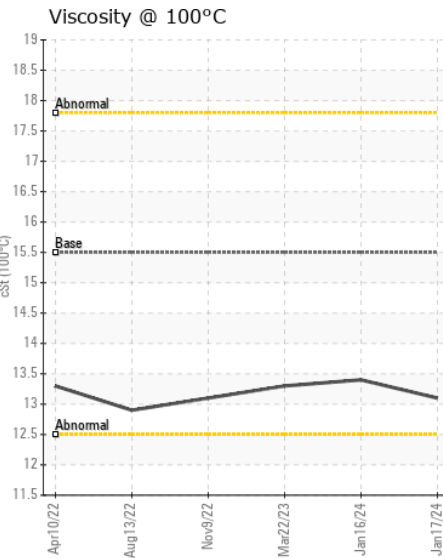
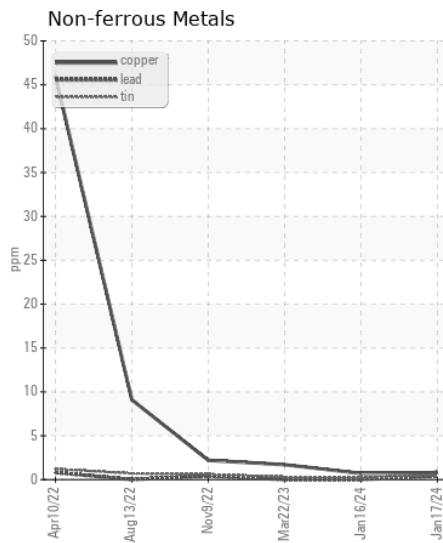
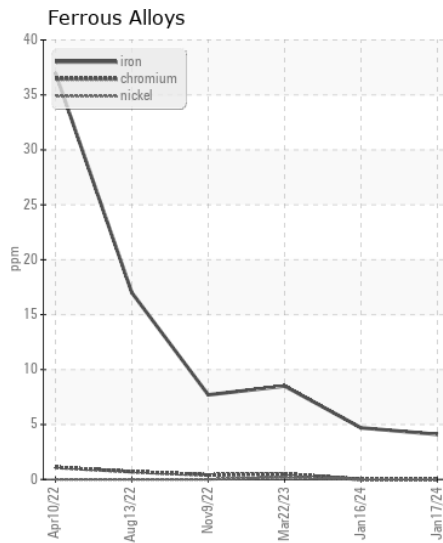
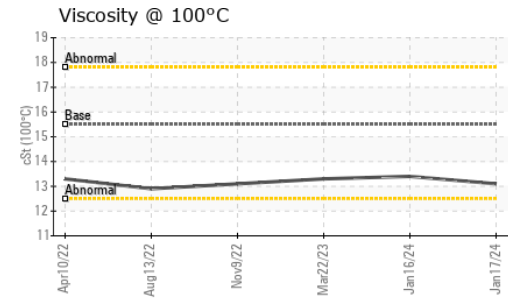
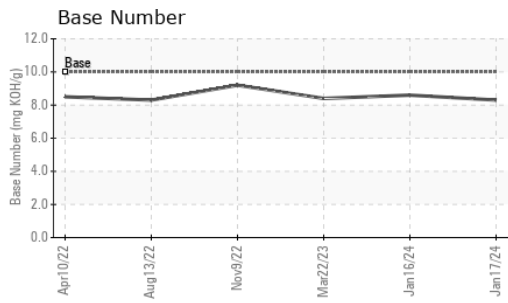
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>4</b>       | 4     | 6     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>&lt;1</b>   | 1     | 1     |
| 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>0.3</b>     | 0.2   | 0.3   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>8.1</b>     | 7.6   | 8.9   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>19.0</b>    | 18.9  | 19.7  |
| 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 |      | <b>2</b>    | 3      | 2    |
| Boron            | ppm      | ASTM D5185m |      | <b>30</b>   | 36     | 36   |
| Barium           | ppm      | ASTM D5185m |      | <b>0</b>    | <1     | 0    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>43</b>   | 41     | 44   |
| Manganese        | ppm      | ASTM D5185m |      | <b>0</b>    | <1     | <1   |
| Magnesium        | ppm      | ASTM D5185m |      | <b>536</b>  | 503    | 488  |
| Calcium          | ppm      | ASTM D5185m |      | <b>1452</b> | ▲ 1321 | 1476 |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>746</b>  | 735    | 693  |
| Zinc             | ppm      | ASTM D5185m |      | <b>899</b>  | ▲ 876  | 876  |
| Sulfur           | ppm      | ASTM D5185m |      | <b>2209</b> | ▲ 2245 | 2299 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>15.7</b> | 15.7   | 16.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 10   | <b>8.3</b>  | 8.6    | 8.4  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.5 | <b>13.1</b> | 13.4   | 13.3 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0813374 **Received** : 18 Jan 2024  
**Lab Number** : 06064696 **Diagnosed** : 21 Jan 2024  
**Unique Number** : 10836078 **Diagnostician** : Don Baldrige  
**Test Package** : FLEET

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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