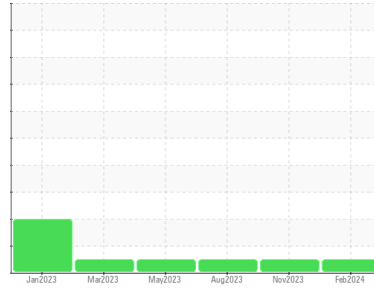


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**117 (S/N 3HSPAAPRXP664806)**

Component  
**Diesel Engine**

Fluid  
**SHELL ROTELLA T4 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### 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.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>PCA0105530</b>  | PCA0105515  | PCA0097123  |
| Sample Date   | Client Info |             | <b>08 Feb 2024</b> | 13 Nov 2023 | 31 Aug 2023 |
| Machine Age   | mls         | Client Info | <b>138599</b>      | 118700      | 98112       |
| Oil Age       | mls         | Client Info | <b>19899</b>       | 20588       | 19326       |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >3.0       | <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      |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >90  | <b>7</b>     | 9        | 9        |
| Chromium | ppm    | ASTM D5185m >20  | <b>&lt;1</b> | <1       | <1       |
| Nickel   | ppm    | ASTM D5185m >2   | <b>0</b>     | <1       | 0        |
| Titanium | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | <1       | <1       |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >20  | <b>2</b>     | 3        | 6        |
| Lead     | ppm    | ASTM D5185m >40  | <b>0</b>     | <1       | <1       |
| Copper   | ppm    | ASTM D5185m >330 | <b>&lt;1</b> | <1       | <1       |
| Tin      | ppm    | ASTM D5185m >15  | <b>0</b>     | <1       | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>&lt;1</b> | 0        | <1       |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base  | current     | history1 | history2 |
|------------|--------|-------------|-------------|----------|----------|
| Boron      | ppm    | ASTM D5185m | <b>100</b>  | 112      | 98       |
| Barium     | ppm    | ASTM D5185m | <b>0</b>    | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m | <b>5</b>    | 12       | 16       |
| Manganese  | ppm    | ASTM D5185m | <b>0</b>    | 0        | <1       |
| Magnesium  | ppm    | ASTM D5185m | <b>26</b>   | 46       | 49       |
| Calcium    | ppm    | ASTM D5185m | <b>1553</b> | 2048     | 2296     |
| Phosphorus | ppm    | ASTM D5185m | <b>814</b>  | 919      | 972      |
| Zinc       | ppm    | ASTM D5185m | <b>873</b>  | 1112     | 1252     |
| Sulfur     | ppm    | ASTM D5185m | <b>2692</b> | 3352     | 4205     |

## CONTAMINANTS

|           | method | limit/base      | current      | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>2</b>     | 5        | 5        |
| Sodium    | ppm    | ASTM D5185m     | <b>&lt;1</b> | 0        | 3        |
| Potassium | ppm    | ASTM D5185m >20 | <b>11</b>    | 16       | 19       |

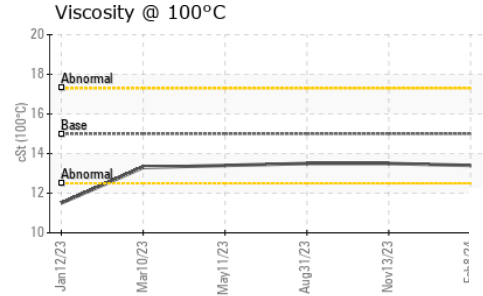
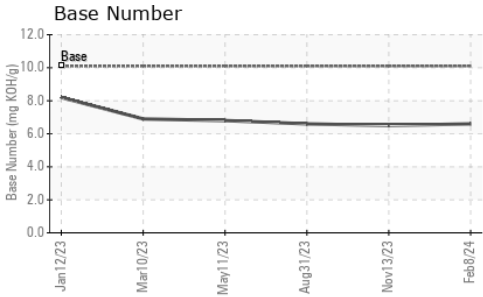
## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >6  | <b>0.2</b>  | 0.3      | 0.3      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>7.8</b>  | 7.9      | 7.8      |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>20.8</b> | 20.6     | 19.8     |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>16.5</b> | 16.1     | 15.5     |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.1 | <b>6.6</b>  | 6.5      | 6.6      |

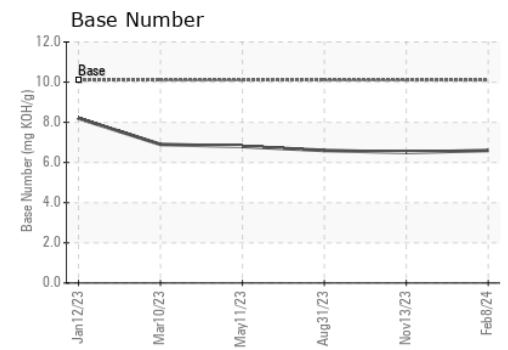
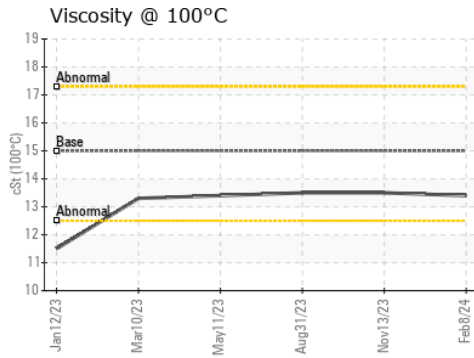
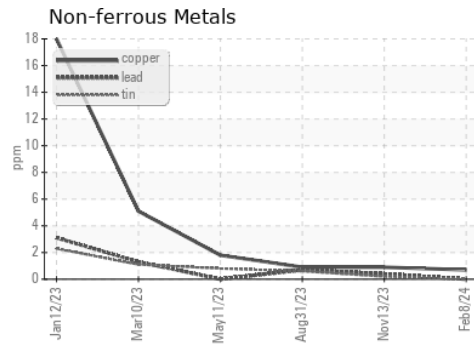
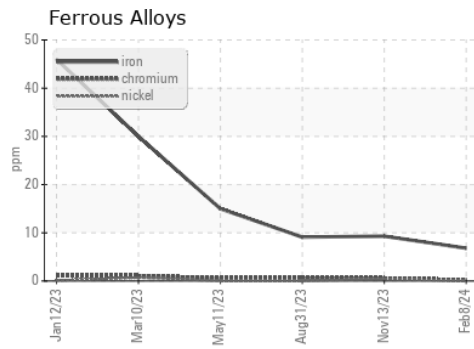
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE     | NONE     |
| Debris           | scalar | *Visual    | NONE    | NONE     | NONE     |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | NONE     |
| Appearance       | scalar | *Visual    | NORML   | NORML    | NORML    |
| Odor             | scalar | *Visual    | NORML   | NORML    | NORML    |
| Emulsified Water | scalar | *Visual    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |
|------------------|--------|------------|---------|-------------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15      | <b>13.4</b> | 13.5     |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0105530      **Received** : 13 Feb 2024  
**Lab Number** : 06086898      **Tested** : 13 Feb 2024  
**Unique Number** : 10874343      **Diagnosed** : 14 Feb 2024 - Sean Felton  
**Test Package** : FLEET

**VULCRAFT**  
 1501 W DARLINGTON ST  
 FLORENCE, SC  
 US 29501  
 Contact: DAVID VOUGHT  
 david.vought@vulcraft-sc.com  
 T: (843)409-3910  
 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)