|  |  |  |  | $V$ | VEAR | NORN | AL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MOB |  |  | CONTA | MINA | TION | NORM | AL |
| $\downarrow$ OIL ANALYSIS REPORT |  |  | FLUID C | OND | ION | NORN | A |
| COCACA-COLA [152755] |  |  |  |  |  |  |  |
| $37194902$ <br> Component |  |  |  |  |  |  |  |
| Diesel Engine <br> VALVOLINE 15W40 (--- GAL) |  |  |  |  |  |  |  |
| RECOMMENDATION | Test | UOM | Method | LimitAbn | Current | History1 | History2 |
|  | Sample Number |  | Client Info |  | CU0022459 | CU0020858 | --- |
| Resample at the next service interval to monitor. | Sample Date |  | Client Info |  | 18 Mar 2024 | 11 May 2023 | --- |
|  | Machine Age | hrs | Client Info |  | 289 | 262 | --- |
|  | Oil Age | hrs | Client Info |  | 0 | 30 | --- |
|  | Filter Age | hrs | Client Info |  | 0 | 30 | --- |
|  | Oil Changed |  | Client Info |  | Changed | Changed | --- |
|  | Filter Changed |  | Client Info |  | Changed | Changed | --- |
|  | Sample Status |  |  |  | NORMAL | NORMAL | --- |
| WEAR | Iron | ppm | ASTM D5185(m) | >90 | 4 | 3 | --- |
| Metal levels are typical for a new component breaking in. | Chromium | ppm | ASTM D5185(m) | >20 | <1 | 0 | --- |
| Metal levels are typical for a new component breaking in. | Nickel | ppm | ASTM D5185(m) | >2 | 0 | 0 | --- |
|  | Titanium | ppm | ASTM D5185(m) | >2 | <1 | <1 | --- |
|  | Silver | ppm | ASTM D5185(m) | >2 | 0 | <1 | --- |
|  | Aluminum | ppm | ASTM D5185(m) | >20 | <1 | 1 | --- |
|  | Lead | ppm | ASTM D5185(m) | >40 | 0 | 1 | --- |
|  | Copper | ppm | ASTM D5185(m) | >330 | 20 | 40 | --- |
|  | Tin | ppm | ASTM D5185(m) | >15 | <1 | <1 | --- |
|  | Vanadium | ppm | ASTM D5185(m) |  | 0 | 0 | --- |
|  | White Metal | scalar | Visual* | NONE | NONE | --- | --- |
|  | Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |
| CONTAMINATION | Silicon | ppm | ASTM D5185(m) | >25 | 2 | 4 | --- |
|  | Potassium | ppm | ASTM D5185(m) | >20 | <1 | <1 | --- |
| There is no indication of any contamination in the oil. | Fuel |  | WC Method | >3.0 | <1.0 | <1.0 | --- |
|  | Water |  | WC Method | $>0.2$ | NEG | NEG | --- |
|  | Glycol |  | WC Method |  | NEG | NEG | --- |
|  | Soot \% | \% | ASTM D7844* | >6 | 0 | 0 | --- |
|  | Nitration | Abs/cm | ASTM D7624* | >20 | 7.8 | 7.9 | --- |
|  | Sulfation | Abs. 1 mm | ASTM D7415* | >30 | 20.8 | 20.6 | --- |
|  | Silt | scalar | Visual* | NONE | NONE | --- | --- |
|  | Debris | scalar | Visual* | NONE | NONE | --- | --- |
|  | Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
|  | Appearance | scalar | Visual* | NORML | NORML | --- | --- |
|  | Odor | scalar | Visual* | NORML | NORML | NORML | --- |
|  | Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | --- |
| FLUID CONDITION | Sodium | ppm | ASTM D5185(m) |  | 3 | 4 | --- |
|  | Boron | ppm | ASTM D5185(m) | 39 | 42 | 49 | --- |
| The condition of the oil is acceptable for the time in service. | Barium | ppm | ASTM D5185(m) | 1 | 0 | 0 | --- |
|  | Molybdenum | ppm | ASTM D5185(m) | 49 | 46 | 38 | --- |
|  | Manganese | ppm | ASTM D5185(m) | 1 | <1 | <1 | --- |
|  | Magnesium | ppm | ASTM D5185(m) | 616 | 766 | 743 | --- |
|  | Calcium | ppm | ASTM D5185(m) | 1554 | 1179 | 1276 | --- |
|  | Phosphorus | ppm | ASTM D5185(m) | 899 | 730 | 835 | --- |
|  | Zinc | ppm | ASTM D5185(m) | 1069 | 825 | 873 | --- |
|  | Sulfur | ppm | ASTM D5185(m) | 2624 | 1992 | 2215 | --- |
|  | Oxidation | Abs/. 1 mm | ASTM D7414* | >25 | 18.7 | 18.2 | --- |
|  | Visc @ $100^{\circ} \mathrm{C}$ | cSt | ASTM D7279(m) | 13.6 | 13.2 | 14.3 | --- |



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.

Contact: Elisia Johnson elisia.johnson@cummins.com

T: (905)795-0050
F: (905)795-9252

