

# **OIL ANALYSIS REPORT**



**GLYCOL** 



# NO UNIT WA001756

Component

**Diesel Engine** 

SHELL ROTELLA T5 10W30 (CJ4) (--- GAL

### **DIAGNOSIS**

#### Recommendation

Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

#### Wear

We have assumed that the oil was taken hot, according to the sampling instructions. All component wear rates are normal.

#### Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

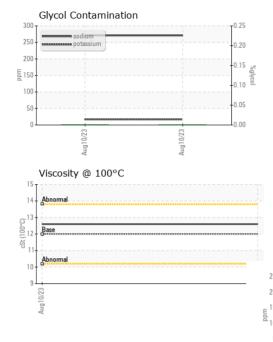
#### Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service (see recommendation).

| )                         |           |                           |            | Aug2023              |                |                |
|---------------------------|-----------|---------------------------|------------|----------------------|----------------|----------------|
| SAMPLE INFOR              | MATION    | method                    | limit/base | current              | history1       | history2       |
|                           | W/ CFTOTE |                           | minu base  |                      |                |                |
| Sample Number             |           | Client Info               |            | WA0017536            |                |                |
| Sample Date               | Luca      | Client Info               |            | 10 Aug 2023          |                |                |
| Machine Age               | kms       | Client Info               |            | 1156421              |                |                |
| Oil Age                   | kms       | Client Info               |            | 38156                |                |                |
| Oil Changed Sample Status |           | Client Info               |            | Not Changd ATTENTION |                |                |
| ·                         | AN I      | method                    | limit/base |                      |                |                |
| CONTAMINATION Fuel        | VIN .     | WC Method                 |            | current<br><1.0      | history1       | history2       |
|                           |           |                           |            |                      | To Control and | la la La va vO |
| WEAR METALS               |           | method                    | limit/base | current              | history1       | history2       |
| Iron                      | ppm       | ASTM D5185(m)             | >90        | 28                   |                |                |
| Chromium                  | ppm       | ASTM D5185(m)             | >20        | 1                    |                |                |
| Nickel                    | ppm       | ASTM D5185(m)             | >2         | <1                   |                |                |
| Titanium                  | ppm       | ASTM D5185(m)             | >2         | 0                    |                |                |
| Silver                    | ppm       | ASTM D5185(m)             | >2         | <1                   |                |                |
| Aluminum                  | ppm       | ASTM D5185(m)             | >20        | 6                    |                |                |
| Lead                      | ppm       | ASTM D5185(m)             | >40        | 5                    |                |                |
| Copper                    | ppm       | ASTM D5185(m)             | >330       | 3                    |                |                |
| Tin                       | ppm       | ASTM D5185(m)             | >15        | <1                   |                |                |
| Antimony                  | ppm       | ASTM D5185(m)             |            | 0                    |                |                |
| Vanadium                  | ppm       | ASTM D5185(m)             |            | 0                    |                |                |
| Beryllium                 | ppm       | ASTM D5185(m)             |            | 0                    |                |                |
| Cadmium                   | ppm       | ASTM D5185(m)             |            | 0                    |                |                |
| ADDITIVES                 |           | method                    | limit/base | current              | history1       | history2       |
| Boron                     | ppm       | ASTM D5185(m)             |            | 22                   |                |                |
| Barium                    | ppm       | ASTM D5185(m)             | 0          | 0                    |                |                |
| Molybdenum                | ppm       | ASTM D5185(m)             |            | 23                   |                |                |
| Manganese                 | ppm       | ASTM D5185(m)             |            | <1                   |                |                |
| Magnesium                 | ppm       | ASTM D5185(m)             |            | 16                   |                |                |
| Calcium                   | ppm       | ASTM D5185(m)             |            | 2323                 |                |                |
| Phosphorus                | ppm       | ASTM D5185(m)             |            | 1021                 |                |                |
| Zinc                      | ppm       | ASTM D5185(m)             |            | 1196                 |                |                |
| Sulfur                    | ppm       | ASTM D5185(m)             |            | 2901                 |                |                |
| Lithium                   | ppm       | ASTM D5185(m)             |            | <1                   |                |                |
| CONTAMINANTS              | S         | method                    | limit/base | current              | history1       | history2       |
| Silicon                   | ppm       | ASTM D5185(m)             | >25        | 9                    |                |                |
| Sodium                    | ppm       | ASTM D5185(m)             |            | <u>^</u> 271         |                |                |
| Potassium                 | ppm       | ASTM D5185(m)             | >20        | 17                   |                |                |
| Glycol                    | %         | ASTM D7922*               |            | 0.0                  |                |                |
| INFRA-RED                 |           | method                    | limit/base | current              | history1       | history2       |
| Soot %                    | %         | ASTM D7844*               | >6         | 0.5                  |                |                |
| Nitration                 | Abs/cm    | ASTM D7644*               | >20        | 11.9                 |                |                |
| Sulfation                 | Abs/.1mm  | ASTM D7624<br>ASTM D7415* | >30        | 30.2                 |                |                |
|                           |           |                           |            |                      |                |                |
| FLUID DEGRAD              |           | method                    | limit/base | current              | history1       | history2       |
| Oxidation                 | Abs/.1mm  | ASTM D7414*               | >25        | 23.8                 |                |                |



# **OIL ANALYSIS REPORT**



| VISUAL                   |                  | method        | limit/base     | current        | history1 | history                                 |
|--------------------------|------------------|---------------|----------------|----------------|----------|---|
|                          |                  |               |                |                |          |   |
| White Metal              | scalar           | Visual*       | NONE           | NONE<br>VLITE  |          |   |
| Yellow Metal             | scalar           | Visual*       | NONE           |                |          |   |
| Precipitate<br>Silt      | scalar           | Visual*       | NONE           | NONE           |          |   |
|                          | scalar           | Visual*       | NONE           | NONE<br>NONE   |          |   |
| Debris<br>Sand/Dirt      | scalar           | Visual*       | NONE           | NONE           |          |   |
|                          | scalar           | Visual*       | NONE           | _              |          |   |
| Appearance               | scalar           | Visual*       | NORML<br>NORML | NORML          |          |   |
| Odor<br>Emulsified Water | scalar           | Visual*       |                | NORML<br>NEG   |          |   |
| Free Water               | scalar           | Visual*       | >0.2           | NEG            |          |   |
|                          | scalar           | Visual*       |                | NEG            |          |   |
| FLUID PROPERT            | TES              | method        | limit/base     | current        | history1 | history                                 |
| /isc @ 100°C             | cSt              | ASTM D7279(m) | 12.0           | 12.6           |          |   |
| GRAPHS                   |                  |               |                |                |          |   |
| Iron (ppm)               |                  |               | Lead (ppm)     |                |          |   |
| Severe                   | 100<br>80 Severe |               |                |                |          |   |
| <b>.</b>                 |                  |               | E 60           | ) <del>-</del> |          |   |
| Abnormal                 |                  |               | E 40           | Abnormal       |          |   |
| -                        |                  |               | 20             | ) -            |          |   |
| E                        |                  |               |                |                |          |   |
| Aug10/23                 |                  |               | Aug10/23.      | Aug10/23       |          |   |
|                          |                  |               | Ani            |                | ,        |   |
| Aluminum (ppm)           |                  | 50            | Chromium (ppm) |                |          |   |
| Severe                   |                  |               | 40             | Severe         |          |   |
|                          |                  |               |                | ) -            |          |   |
| Abnormal                 |                  |               | E 20           | Abnormal       |          | *************************************** |
|                          |                  |               | 10             |                |          |   |
|                          |                  |               |                |                |          |   |
| Aug10/23                 |                  |               | Aug10/23       | Aug 10/23      |          |   |
|                          |                  |               | Aug            |                |          |   |
| Copper (ppm)             |                  |               | 80             | Silicon (ppm)  |          |   |
| Severe<br>Abnormal       |                  |               |                |                |          | *************************************** |
| !                        |                  |               | 60             |                |          |   |
| -                        |                  |               | E 40           |                |          |   |
| -                        |                  |               | 20             | Abnormal       |          |   |
|                          |                  |               |                |                |          |   |
| Aug10/23                 |                  |               | Aug10/23.      | Aug10/23       |          |   |
|                          |                  |               | Aug            |                |          |   |
| Viscosity @ 100°C        |                  |               | 300            | Glycol Contar  | nination | 0.20                                    |
| Abnormal                 |                  |               | 250            | sodium         |          | 0.25                                    |
|                          |                  |               | 200            | ) -            | L        |   |
| Base                     |                  |               | 틆 150          | )              |          | 0.15                                    |
| + 1,,                    |                  |               | 100            | ) +            |          | T <sup>0.10</sup>                       |
| Abnormal                 |                  |               | 50             | 1              |          | 0.05                                    |



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5620861

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

: WA0017536 : 02575810

Received Diagnosed

: 15 Aug 2023 : 16 Aug 2023

Diagnostician : Kevin Marson Test Package : MOB 1 ( Additional Tests: Glycol, Visual )

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Validity of results and interpretation are based on the sample and information as supplied.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

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