

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# TOWER 14S (S/N K3543)

Right Gearbox Fluid SHELL MORLINA S4 B 220 (18 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 condition of the oil is acceptable for the time in service.

|                  |        | May202      | 3 Aug2023  | Jan2024 M   | /lar2024       |             |
|------------------|--------|-------------|------------|-------------|----------------|-------------|
| SAMPLE INFORM    | 1ATION | method      | limit/base | current     | history1       | history2    |
| Sample Number    |        | Client Info |            | TO60002409  | TO60001395     | TO60001116  |
| Sample Date      |        | Client Info |            | 25 Mar 2024 | 04 Jan 2024    | 03 Aug 2023 |
| Machine Age      | hrs    | Client Info |            | 0           | 0              | 0           |
| Oil Age          | hrs    | Client Info |            | 0           | 0              | 0           |
| Oil Changed      |        | Client Info |            | N/A         | N/A            | N/A         |
| Sample Status    |        |             |            | NORMAL      | NORMAL         | NORMAL      |
| CONTAMINATION    | ١      | method      | limit/base | current     | history1       | history2    |
| Water            |        | WC Method   | >0.2       | NEG         | NEG            | NEG         |
| WEAR METALS      |        | method      | limit/base | current     | history1       | history2    |
| PQ               |        | ASTM D8184  |            | 13          | 19             | 10          |
| Iron             | ppm    | ASTM D5185m | >200       | 15          | 12             | 5           |
| Chromium         | ppm    | ASTM D5185m | >15        | 0           | 0              | 0           |
| Nickel           | ppm    | ASTM D5185m | >15        | 0           | 0              | <1          |
| Titanium         | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Silver           | ppm    | ASTM D5185m |            | 0           | 0              | <1          |
| Aluminum         | ppm    | ASTM D5185m | >25        | 0           | 0              | 0           |
| Lead             | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Copper           | ppm    |             | >200       | <1          | <1             | <1          |
| Tin              | ppm    | ASTM D5185m |            | 0           | <1             | 0           |
| Vanadium         | ppm    | ASTM D5185m | 220        | 0           | 0              | 0           |
| Cadmium          | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
|                  | ppiii  |             |            |             |                |             |
| ADDITIVES        |        | method      | limit/base | current     | history1       | history2    |
| Boron            | ppm    | ASTM D5185m |            | 1           | 2              | 0           |
| Barium           | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Molybdenum       | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Manganese        | ppm    | ASTM D5185m |            | 0           | <1             | 0           |
| Magnesium        | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Calcium          | ppm    | ASTM D5185m |            | 0           | 0              | 0           |
| Phosphorus       | ppm    | ASTM D5185m |            | 289         | 279            | 307         |
| Zinc             | ppm    | ASTM D5185m |            | 0           | 0              | 2           |
| Sulfur           | ppm    | ASTM D5185m |            | 997         | 813            | 710         |
| CONTAMINANTS     |        | method      | limit/base | current     | history1       | history2    |
| Silicon          | ppm    | ASTM D5185m | >50        | 2           | 4              | 3           |
| Sodium           | ppm    | ASTM D5185m |            | <1          | <1             | 0           |
| Potassium        | ppm    | ASTM D5185m | >20        | 0           | 0              | <1          |
| VISUAL           |        | method      | limit/base | current     | history1       | history2    |
| White Metal      | scalar | *Visual     | NONE       | NONE        | NONE           | NONE        |
| Yellow Metal     | scalar | *Visual     | NONE       | NONE        | NONE           | NONE        |
| Precipitate      | scalar | *Visual     | NONE       | NONE        | NONE           | NONE        |
| Silt             | scalar | *Visual     | NONE       | NONE        | NONE           | NONE        |
| Debris           | scalar | *Visual     | NONE       | NONE        | LIGHT          | NONE        |
| Sand/Dirt        | scalar | *Visual     | NONE       | NONE        | NONE           | NONE        |
| Appearance       | scalar | *Visual     | NORML      | NORML       | NORML          | NORML       |
| Odor             | scalar | *Visual     | NORML      | NORML       | NORML          | NORML       |
| Emulsified Water | scalar | *Visual     | >0.2       | NEG         | NEG            | NEG         |
| Free Water       | scalar | *Visual     |            | NEG         | mittedEBy: CLA | Y OSTERHOUT |
|                  |        |             |            |             | -              |             |



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