

## **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

#### Machine Id

7 MILL FEED END Component Feed Trunnion Bearing

Fluid SHELL OMALA S2 GX 320 (--- GAL)

#### DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## Wear

All component wear rates are normal.

## Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORM    | <b>MATION</b> | method        | limit/base | current     | history1 | history2 |  |
|------------------|---------------|---------------|------------|-------------|----------|----------|--|
| Sample Number    |               | Client Info   |            | WC0898809   |          |          |  |
| Sample Date      |               | Client Info   |            | 24 Jun 2024 |          |          |  |
| Machine Age      | hrs           | Client Info   |            | 0           |          |          |  |
| Oil Age          | hrs           | Client Info   |            | 0           |          |          |  |
| Oil Changed      |               | Client Info   |            | Not Changd  |          |          |  |
| Sample Status    |               |               |            | NORMAL      |          |          |  |
| CONTAMINATIO     | N             | method        | limit/base | current     | history1 | history2 |  |
| Water            |               | WC Method     | >2         | NEG         |          |          |  |
| WEAR METALS      |               | method        | limit/base | current     | history1 | history2 |  |
| PQ               |               | ASTM D8184*   |            | 0           |          |          |  |
| Iron             | ppm           | ASTM D5185(m) | >20        | 7           |          |          |  |
| Chromium         | ppm           | ASTM D5185(m) | >20        | 0           |          |          |  |
| Nickel           | ppm           | ASTM D5185(m) | >20        | <1          |          |          |  |
| Titanium         | ppm           | ASTM D5185(m) |            | 0           |          |          |  |
| Silver           | ppm           | ASTM D5185(m) |            | 0           |          |          |  |
| Aluminum         | ppm           | ASTM D5185(m) | >20        | <1          |          |          |  |
| Lead             | ppm           | ASTM D5185(m) | >20        | <1          |          |          |  |
| Copper           | ppm           | ASTM D5185(m) | >20        | 2           |          |          |  |
| Tin              | ppm           | ASTM D5185(m) | >20        | 0           |          |          |  |
| Antimony         | ppm           | ASTM D5185(m) |            | <1          |          |          |  |
| 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) | 6.2        | <1          |          |          |  |
| Barium           | ppm           | ASTM D5185(m) | 0.0        | 0           |          |          |  |
| Molybdenum       | ppm           | ASTM D5185(m) | 0          | 0           |          |          |  |
| Manganese        | ppm           | ASTM D5185(m) |            | 0           |          |          |  |
| Magnesium        | ppm           | ASTM D5185(m) | 0          | <1          |          |          |  |
| Calcium          | ppm           | ASTM D5185(m) |            | 3           |          |          |  |
| Phosphorus       | ppm           | ASTM D5185(m) | 290        | 255         |          |          |  |
| Zinc             | ppm           | ASTM D5185(m) | 3.8        | 12          |          |          |  |
| Sulfur           | ppm           | ASTM D5185(m) | 8167       | 8092        |          |          |  |
| Lithium          | ppm           | ASTM D5185(m) |            | <1          |          |          |  |
| CONTAMINANTS     | \$            | method        | limit/base | current     | history1 | history2 |  |
| Silicon          | ppm           | ASTM D5185(m) | >15        | 1           |          |          |  |
| Sodium           | ppm           | ASTM D5185(m) |            | <1          |          |          |  |
| Potassium        | ppm           | ASTM D5185(m) | >20        | <1          |          |          |  |
| FLUID DEGRADA    | ATION         | method        | limit/base | current     | history1 | history2 |  |
| Acid Number (AN) | mg KOH/g      | ASTM D974*    |            | 0.43        |          |          |  |



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| Acid Number  | VISUAL                         |                        | method                             | limit/base                                  | current          | history1                      | history2   |
|--|--------------------------------|------------------------|------------------------------------|---|------------------|-------------------------------|--|
|  | White Metal                    | scalar                 | Visual*                            | NONE  | VLITE            |                               |  |
| 40   | Yellow Metal                   | scalar                 | Visual*                            | NONE  | NONE             |                               |  |
| 30   | Precipitate                    | scalar                 | Visual*                            | NONE  | NONE             |                               |  |
| 20-  | Silt                           | scalar                 | Visual*                            | NONE  | VLITE            |                               |  |
| 10-  | Debris                         | scalar                 | Visual*                            | NONE  | VLITE            |                               |  |
| 00   | Sand/Dirt                      | scalar                 | Visual*                            | NONE  | NONE             |                               |  |
| 4,24 +   | Appearance                     | scalar                 | Visual*                            | NORML                                       | NORML            |                               |  |
| Jun 24/24<br>Jun 24/24   | Odor                           | scalar                 | Visual*                            | NORML                                       | NORML            |                               |  |
|  | Emulsified Water               | scalar                 | Visual*                            | >2  | NEG              |                               |  |
| Viscosity @ 40°C   | Free Water                     | scalar                 | Visual*                            |   | NEG              |                               |  |
| 50 - Abnormal  | FLUID PROPER                   |                        |                                    | limit/baco                                  |                  | history1                      | history2   |
| 40 -<br>30 -<br>20 - <b>Base</b>   | Visc @ 40°C                    | cSt                    |                                    | limit/base<br>320                           | current<br>322   | history1                      |  |
| 20 - <b>Base</b><br>10 -   |                                |                        | ASTM D7279(m)                      |   |                  |                               |  |
| 100 -  | SAMPLE IMAGE                   | S                      | method                             | limit/base                                  | current          | history1                      | history2   |
| 90<br>60<br>427<br>427   | Color                          |                        |                                    |   |                  | no image                      | no image   |
| Jun24,24   |                                |                        |                                    |   |                  |                               |  |
| PQ   | Bottom                         |                        |                                    |   |                  | no image                      | no image   |
| 00 - Severe  | 20110111                       |                        |                                    |   |                  | no inago                      | ne inage   |
| 50   | GRAPHS                         |                        |                                    |   |                  |                               |  |
| 00 - Abnomal   | Ferrous Alloys                 |                        |                                    |   | PQ               |                               |  |
| 50 -   | <sup>10</sup> T                |                        |                                    | 220   |                  |                               |  |
|  | 8 - iron                       |                        |                                    | 200   | Severe           |                               |  |
| Jun24/24   | E 6-                           |                        |                                    | 180   |                  |                               |  |
| Jun2   | · 4                            |                        |                                    |   |                  |                               |  |
|  | 2-                             |                        |                                    | 160   |                  |                               |  |
|  | 24                             |                        |                                    | 140   |                  |                               |  |
|  | Jun24/24                       |                        |                                    | Jun 24/24                                   |                  |                               |  |
|  |                                |                        |                                    | 루 문<br>100                                  | Abnormal         |                               |  |
|  | Non-ferrous Meta               | als                    |                                    | 80  |                  |                               |  |
|  | 8 copper                       |                        |                                    |   |                  |                               |  |
|  | E 6+ minimum tin               |                        |                                    | 60  |                  |                               |  |
|  |                                |                        |                                    | 40  |                  |                               |  |
|  | 2                              |                        |                                    | 20  | -                |                               |  |
|  | 0                              |                        |                                    | 0   |                  |                               |  |
|  | Jun24/24                       |                        |                                    | Jun24/24                                    | Jun24/24         |                               |  |
|  | ⊸<br>Viscosity @ 40°C          |                        |                                    | 7   | 특<br>Acid Number |                               |  |
|  | 360 Abnormal                   |                        |                                    | €0.50                                       |                  |                               |  |
|  | 340                            |                        |                                    | ( <sup>B</sup> HOX 0.40                     |                  |                               |  |
|  | 다.<br>안 320 - <b>Base</b><br>장 |                        |                                    | <u>ຍ</u> ິ 0.30                             |                  |                               |  |
|  | 경<br>300 -                     |                        |                                    | - 0.20                                      | •                |                               |  |
|  | Abnormal                       |                        |                                    | 0.20<br>aquinu 0.20<br>N por<br>V 0.00      |                  |                               |  |
|  | 280                            |                        |                                    | 1/24  | 4/24             |                               |  |
|  | Jun24/24                       |                        |                                    | Jun24/24                                    | Jun24/24         |                               |  |
| Laboratory<br>Sample No.<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory<br>Laboratory | : 5802545<br>: IND 2           | Rece<br>Teste<br>Diagr | ived : 02<br>id : 02<br>nosed : 04 | 2 Jul 2024<br>4 Jul 2024<br>Jul 2024 - Kevi |                  | MTW (Mill,1<br>COPF<br>Contac | Clarabelle M<br>Failings&Wate<br>PER CLIFF, C<br>CA POM 11<br>t: Guy Gauthi<br>thior@vale.co |
| To discuss this sample report<br><b>PLED</b> Test denoted (*) outside scop   |                                | nethod m               | odified, (e) te                    | ested at exterr                             |                  | T:                            | hier@vale.co<br>(705)682-564<br>(705)682-627   |

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