



OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area

9

Machine Id

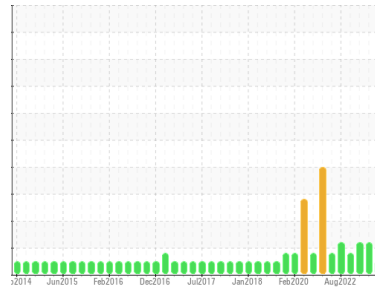
09-0030-020-020 PRESS BOTTOM DRIVE (9MC1M1)

Component

9 Gearbox

Fluid

SHELL OMALA S4 GXV 320 (205 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

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

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0855134 | WC0857967 | WC0841086 |
| Sample Date | Client Info | | 06 Dec 2023 | 26 Sep 2023 | 09 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 | ABNORMAL | ATTENTION |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185(m) | >200 | 67 | 56 | 56 |
| Chromium | ppm | ASTM D5185(m) | >15 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >15 | <1 | <1 | 2 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | <1 | 0 | <1 |
| Lead | ppm | ASTM D5185(m) | >100 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >200 | <1 | <1 | 1 |
| Tin | ppm | ASTM D5185(m) | >25 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) | | 8 | 7 | 8 |
| Barium | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Calcium | ppm | ASTM D5185(m) | | 9 | 7 | 7 |
| Phosphorus | ppm | ASTM D5185(m) | | 248 | 222 | 227 |
| Zinc | ppm | ASTM D5185(m) | | 12 | 10 | 11 |
| Sulfur | ppm | ASTM D5185(m) | | 9381 | 8802 | 8176 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

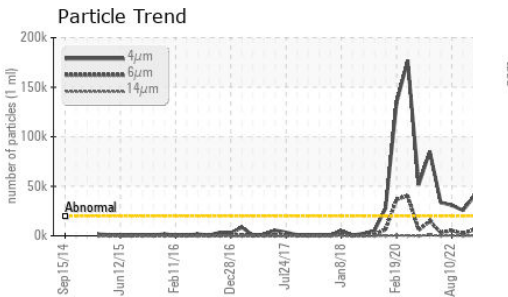
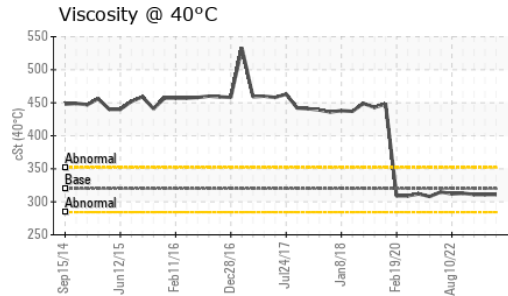
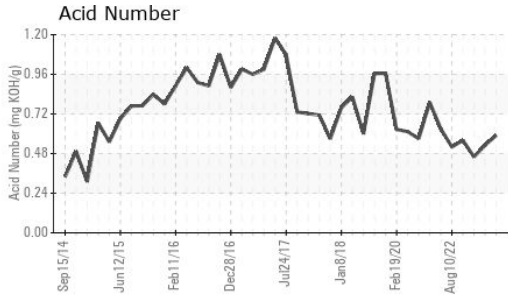
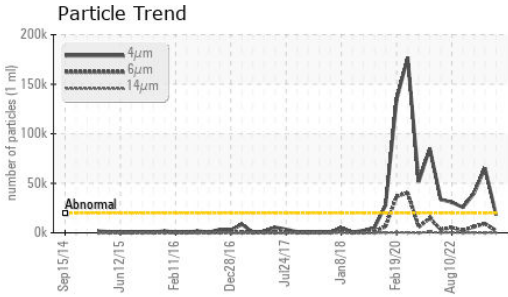
| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|---|
| Silicon | ppm | ASTM D5185(m) | >50 | 3 | 3 | 5 |
| Sodium | ppm | ASTM D5185(m) | | <1 | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) | >20 | 0 | 0 | 0 |

FLUID CLEANLINESS

| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|------------|------------|
| Particles >4µm | ASTM D7647 | >20000 | 17904 | ▲ 65471 | ▲ 39661 |
| Particles >6µm | ASTM D7647 | >5000 | 1954 | ▲ 9278 | ▲ 6083 |
| Particles >14µm | ASTM D7647 | >640 | 95 | 104 | 283 |
| Particles >21µm | ASTM D7647 | >160 | 34 | 24 | 66 |
| Particles >38µm | ASTM D7647 | >40 | 4 | 1 | 3 |
| Particles >71µm | ASTM D7647 | >10 | 0 | 1 | 1 |
| Oil Cleanliness | ISO 4406 (c) | >21/19/16 | 21/18/14 | ▲ 23/20/14 | ▲ 22/20/15 |



OIL ANALYSIS REPORT



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | 0.59 | 0.53 | 0.46 |

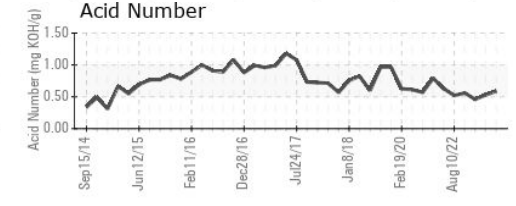
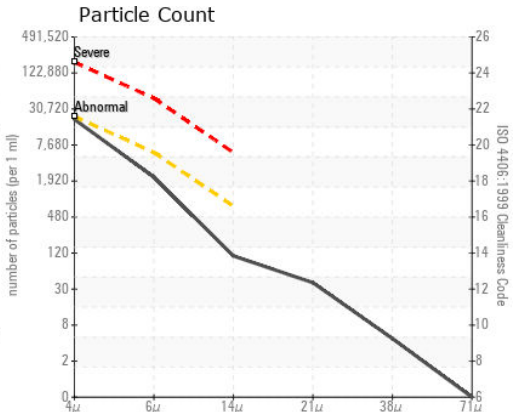
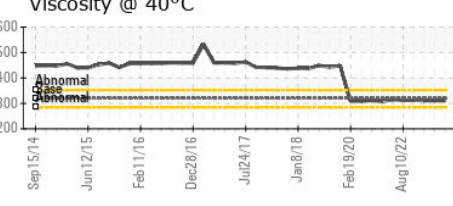
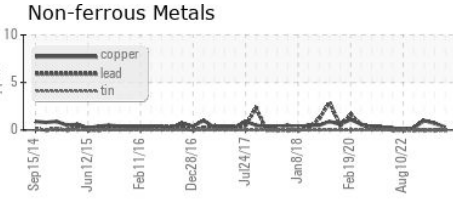
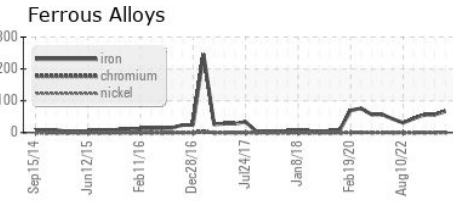
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | NONE | NONE | NONE |
| Silt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Debris | scalar | Visual* | NONE | NONE | NONE | VLITE |
| 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 | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|---------------|------------|------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 320 | 311 | 311 | 311 |

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0855134 **Received** : 07 Dec 2023
Lab Number : **02601682** **Diagnosed** : 08 Dec 2023
Unique Number : 5694767 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: TAN Man)

Roseburg Pembroke MDF Inc.
 777 Fibreboard Drive
 Pembroke, ON
 CA K8A 6W5
 Contact: Dan Havis
 danielh@rfpco.com
 T: (613)732-3939
 F: (613)732-2869

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.