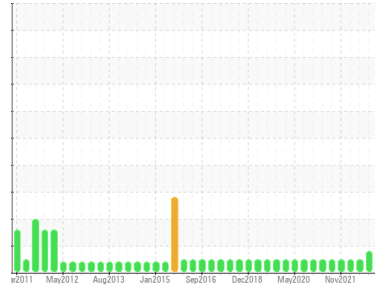




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Banbury 1
 Machine Id
BB01 Mori Roller Die
 Component
Gearbox
 Fluid
SHELL OMALA S2 G 220 (60 GAL)

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 | WC0873583 | WC0841261 | WC0754386 |
| Sample Date | Client Info | 05 Nov 2023 | 25 Aug 2023 | 05 Feb 2023 |
| Machine Age | hrs | Client Info | 0 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 |
| Oil Changed | Client Info | N/A | N/A | N/A |
| Sample Status | | NORMAL | ABNORMAL | NORMAL |

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 | 16 | 19 | 14 |
| Chromium | ppm | ASTM D5185(m) >15 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) >15 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) >25 | 0 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) >100 | <1 | 1 | 1 |
| Copper | ppm | ASTM D5185(m) >200 | <1 | <1 | 2 |
| 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

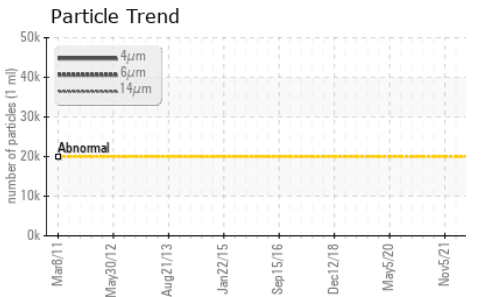
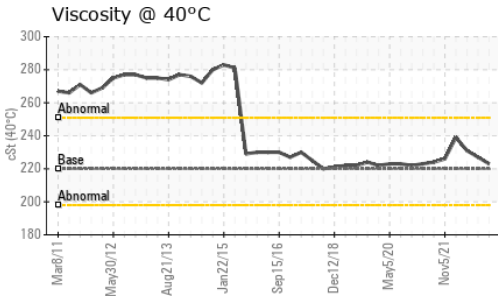
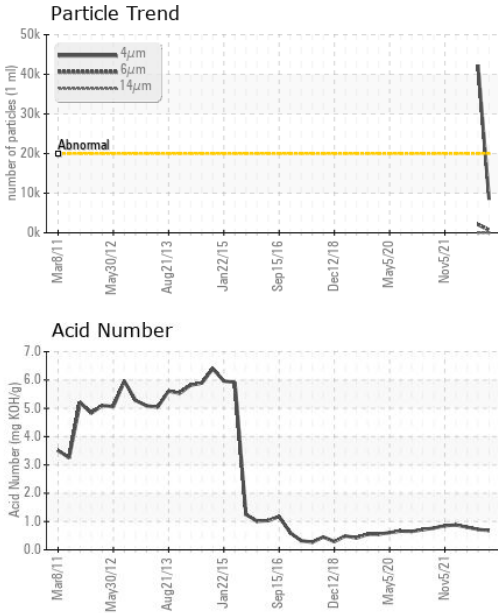
| method | limit/base | current | history1 | history2 | |
|------------|------------|--------------------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) 4.4 | 1 | <1 | 1 |
| Barium | ppm | ASTM D5185(m) 0.0 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 0 | 6 | 10 | 13 |
| Manganese | ppm | ASTM D5185(m) | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) 0 | <1 | <1 | <1 |
| Calcium | ppm | ASTM D5185(m) 0 | 8 | 12 | 11 |
| Phosphorus | ppm | ASTM D5185(m) 215 | 276 | 294 | 325 |
| Zinc | ppm | ASTM D5185(m) 0 | 93 | 117 | 113 |
| Sulfur | ppm | ASTM D5185(m) 7039 | 8978 | 8487 | 8386 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 | |
|-----------|------------|-------------------|--------------|----------|----|
| Silicon | ppm | ASTM D5185(m) >50 | 3 | 2 | 1 |
| Sodium | ppm | ASTM D5185(m) | <1 | <1 | 2 |
| Potassium | ppm | ASTM D5185(m) >20 | 0 | <1 | <1 |

FLUID CLEANLINESS

| method | limit/base | current | history1 | history2 |
|-----------------|------------------------|-----------------|------------|----------|
| Particles >4µm | ASTM D7647 >20000 | 8461 | ▲ 42300 | --- |
| Particles >6µm | ASTM D7647 >5000 | 710 | 2097 | --- |
| Particles >14µm | ASTM D7647 >640 | 15 | 28 | --- |
| Particles >21µm | ASTM D7647 >160 | 4 | 10 | --- |
| Particles >38µm | ASTM D7647 >40 | 1 | 5 | --- |
| Particles >71µm | ASTM D7647 >10 | 1 | 4 | --- |
| Oil Cleanliness | ISO 4406 (c) >21/19/16 | 20/17/11 | ▲ 23/18/12 | --- |



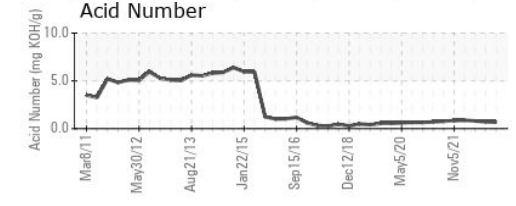
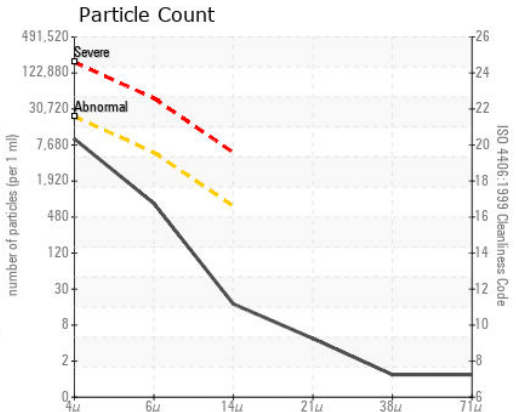
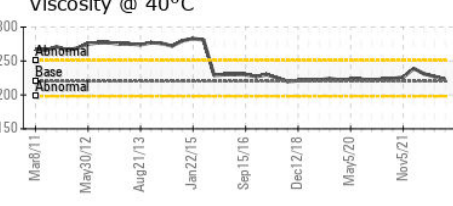
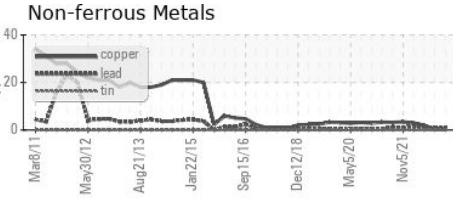
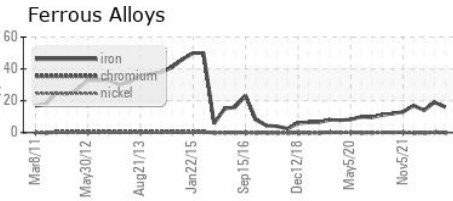
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | 0.68 | 0.72 | 0.80 |

| 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 | 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 | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|---------------|------------|------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 220 | 223 | 227 | 231 |

| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
|---------------|--|--------|------------|---------|----------|----------|
| Color | | | | | | |
| Bottom | | | | | | |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0873583 **Received** : 11 Dec 2023
Lab Number : **02602423** **Diagnosed** : 12 Dec 2023
Unique Number : 5695508 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: TAN Man)

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.

Goodyear Napanee
 388 Goodyear Road
 Napanee, ON
 CA K7R 3L2
 Contact: Mohammad Waleed
 Mohammad_Waleed@goodyear.com
 T: (613)354-7709
 F: (613)354-9377