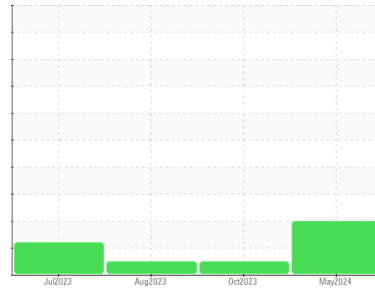




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
TRIO LIET BV 11732972/ING04

Component
Gearbox
Fluid
SHELL OMALA S4 GX 220 (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. Please note that this is a corrected copy for laboratory data updates.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

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 | | | PE0003823 | PE0002510 | PE0002483 |
| Sample Date | Client Info | | | 14 May 2024 | 20 Oct 2023 | 08 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 | | | | ABNORMAL | NORMAL | NORMAL |

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

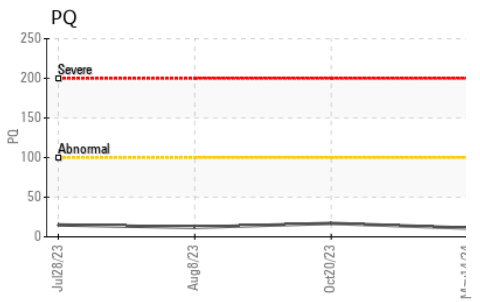
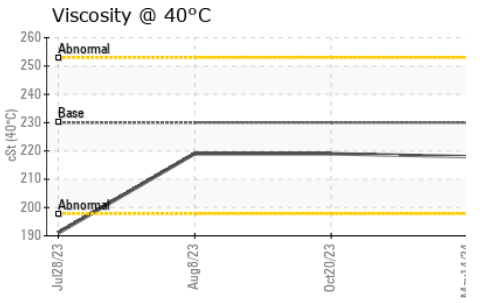
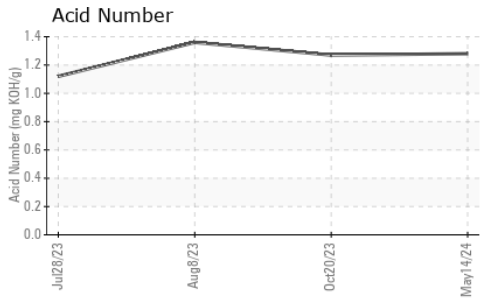
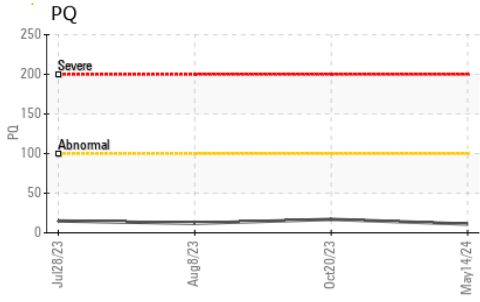
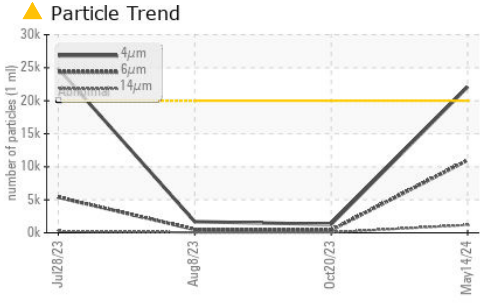
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| PQ | | ASTM D8184 | | 11 | 17 | 12 |
| Iron | ppm | ASTM D5185m | >200 | 33 | 35 | 35 |
| Chromium | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >15 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >100 | 1 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >200 | <1 | 0 | <1 |
| Tin | ppm | ASTM D5185m | >25 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | <1 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 4 | 3 | 9 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 0 | 6 | 3 |
| Calcium | ppm | ASTM D5185m | | 8 | 16 | 16 |
| Phosphorus | ppm | ASTM D5185m | | 412 | 423 | 397 |
| Zinc | ppm | ASTM D5185m | | 548 | 616 | 460 |
| Sulfur | ppm | ASTM D5185m | | 6420 | 5775 | 5183 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m | >50 | 5 | 3 | 3 |
| Sodium | ppm | ASTM D5185m | | 4 | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 0 | 1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-------------------|----------|----------|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ 22095 | 1291 | 1689 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ 10993 | 412 | 505 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ 1194 | 64 | 51 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ 188 | 20 | 15 |
| Particles >38µm | | ASTM D7647 | >40 | 15 | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >10 | 3 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ 22/21/17 | 17/16/13 | 18/16/13 |

OIL ANALYSIS REPORT

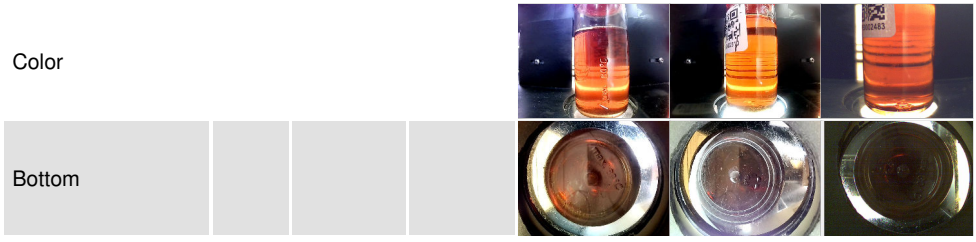


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 1.28 | 1.27 | 1.36 |

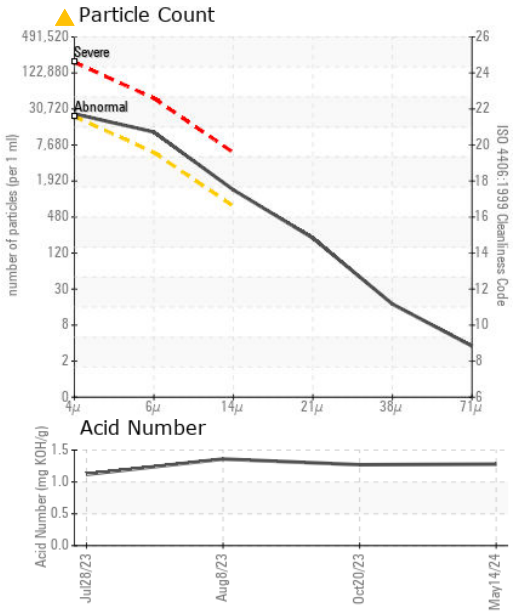
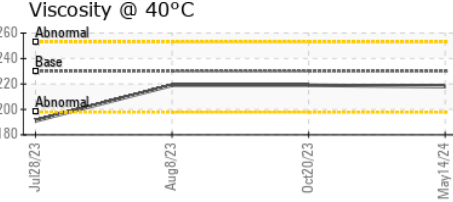
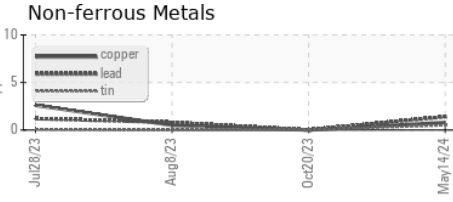
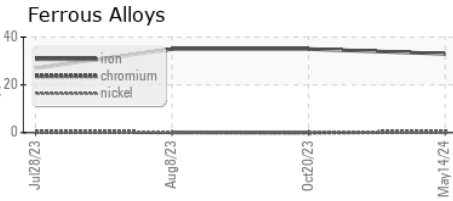
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | LIGHT | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | LIGHT |
| 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 D445 | 230 | 218 | 219 | 219 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003823 **Received** : 17 May 2024
Lab Number : **06182668** **Tested** : 22 May 2024
Unique Number : 11033994 **Diagnosed** : 22 May 2024 - Don Baldrige
Test Package : CONST (Additional Tests: ICP, KV40, PQ, PrtCount, SCREEN)

MORNING STAR DAIRY
 801 FM 694
 DALHART, TX
 US 79022
 Contact: JOHN DEVRIES
 johndevries@gmail.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)