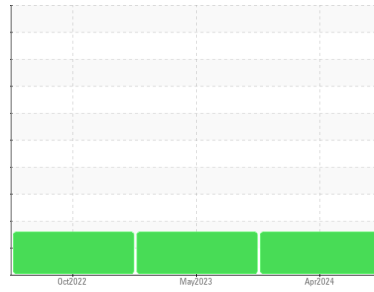




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
7696944 (S/N 1445)
 Component
Compressor
 Fluid
KAESER SIGMA (OEM) M-460 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate 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 | | | KCPA016064 | KCP53649 | KCP49073 |
| Sample Date | Client Info | | | 03 Apr 2024 | 04 May 2023 | 07 Oct 2022 |
| Machine Age | hrs | Client Info | | 11845 | 6316 | 3840 |
| Oil Age | hrs | Client Info | | 5529 | 2746 | 3840 |
| Oil Changed | Client Info | | | Changed | Changed | Not Changed |
| Sample Status | | | | ATTENTION | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|-----------|----------|----------|
| Iron | ppm | ASTM D5185m | >50 | 0 | <1 | <1 |
| Chromium | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >50 | 13 | 7 | 10 |
| Tin | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

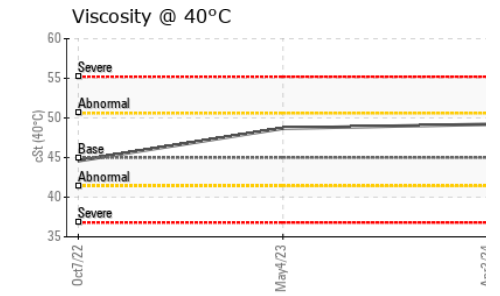
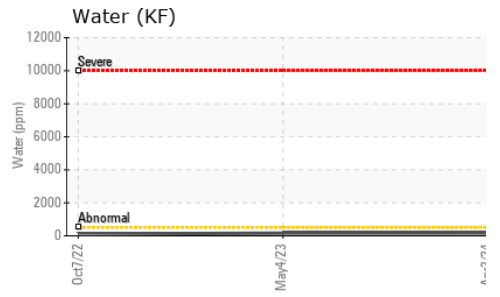
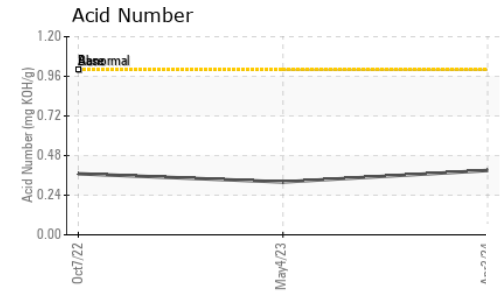
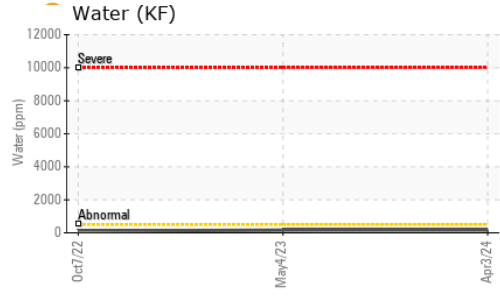
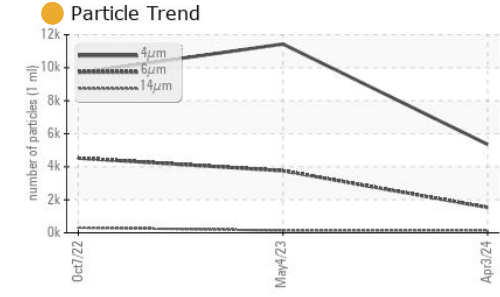
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 100 | <1 | 29 | 28 |
| Calcium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | 0 | 0 | 0 | 4 |
| Zinc | ppm | ASTM D5185m | 0 | 0 | 22 | 19 |
| Sulfur | ppm | ASTM D5185m | 23500 | 19679 | 20162 | 20233 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 0 | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | <1 | 5 | 12 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 1 | 0 |
| Water | % | ASTM D6304 | >0.05 | 0.016 | 0.016 | 0.011 |
| ppm Water | ppm | ASTM D6304 | >500 | 167 | 163.8 | 111.5 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|----------|----------|
| Particles >4µm | | ASTM D7647 | | 5356 | 11432 | 9689 |
| Particles >6µm | | ASTM D7647 | >1300 | 1531 | 3758 | 4526 |
| Particles >14µm | | ASTM D7647 | >80 | 146 | 138 | 312 |
| Particles >21µm | | ASTM D7647 | >20 | 48 | 25 | 39 |
| Particles >38µm | | ASTM D7647 | >4 | 3 | 1 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | 20/18/14 | 21/19/14 | 20/19/15 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | 0.39 | 0.32 | 0.37 |

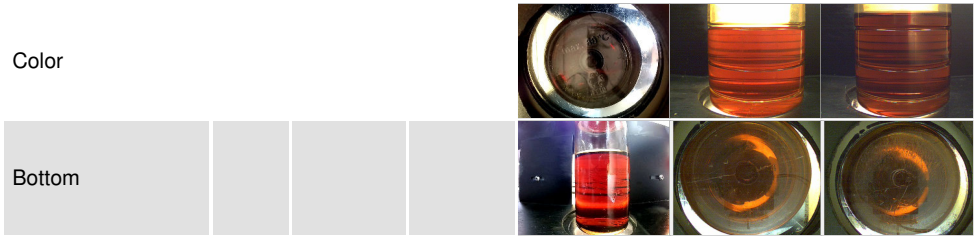
OIL ANALYSIS REPORT



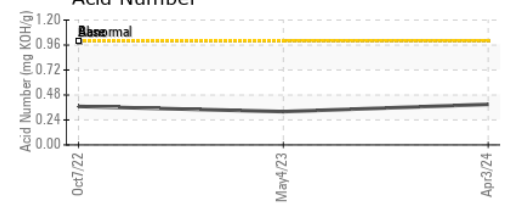
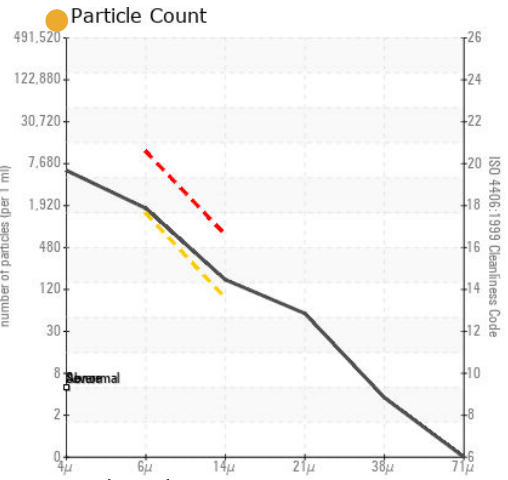
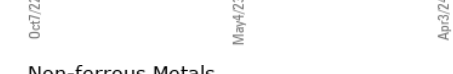
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.05 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 45 | 49.2 | 48.7 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA016064
Lab Number : 06144276
Unique Number : 10969084
Test Package : IND 2 (Additional Tests: KF, PrtCount)
Received : 10 Apr 2024
Tested : 11 Apr 2024
Diagnosed : 11 Apr 2024 - Doug Bogart

NORTH TEXAS MUNICIPAL WATER DISTRICT
 111 FT BURKTOWN RD
 RICHARDSON, TX
 US 75081
 Contact: Service Manager

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)