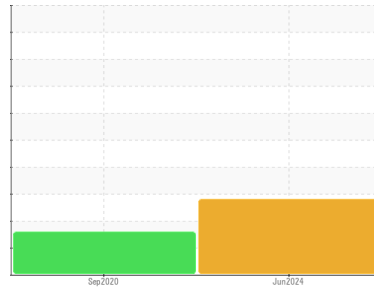




# OIL ANALYSIS REPORT

## Sample Rating Trend



**WATER**



Machine Id  
**KAESER 5641608**

Component  
**Compressor**

Fluid  
**KAESER SIGMA (OEM) M-460 (--- GAL)**

### DIAGNOSIS

#### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample in 500 hours to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.

#### ▲ Wear

The copper level is abnormal. All other component wear rates are normal.

#### ▲ Contamination

Moderate concentration of visible dirt/debris present in the oil. There is a light concentration of water 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 |             |            | <b>KCPA012271</b>  | KCP29148    | ---      |
| Sample Date        | Client Info |             |            | <b>07 Jun 2024</b> | 02 Sep 2020 | ---      |
| Machine Age        | hrs         | Client Info |            | <b>2961</b>        | 2437        | ---      |
| Oil Age            | hrs         | Client Info |            | <b>0</b>           | 2437        | ---      |
| Oil Changed        | Client Info |             |            | <b>Changed</b>     | Changed     | ---      |
| Sample Status      |             |             |            | <b>ABNORMAL</b>    | ABNORMAL    | ---      |

| WEAR METALS |     | method      | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|---------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <1      | 1        | ---      |
| Chromium    | ppm | ASTM D5185m | >10        | <1      | <1       | ---      |
| Nickel      | ppm | ASTM D5185m | >3         | <1      | 0        | ---      |
| Titanium    | ppm | ASTM D5185m | >3         | <1      | 0        | ---      |
| Silver      | ppm | ASTM D5185m | >2         | 0       | <1       | ---      |
| Aluminum    | ppm | ASTM D5185m | >10        | 2       | 0        | ---      |
| Lead        | ppm | ASTM D5185m | >10        | <1      | <1       | ---      |
| Copper      | ppm | ASTM D5185m | >50        | ▲ 64    | 3        | ---      |
| Tin         | ppm | ASTM D5185m | >10        | <1      | <1       | ---      |
| Antimony    | ppm | ASTM D5185m |            | ---     | 0        | ---      |
| Vanadium    | ppm | ASTM D5185m |            | 0       | 0        | ---      |
| Cadmium     | ppm | ASTM D5185m |            | 0       | 0        | ---      |

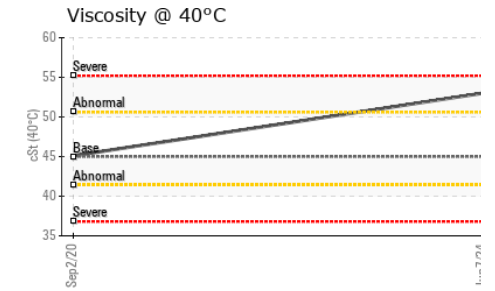
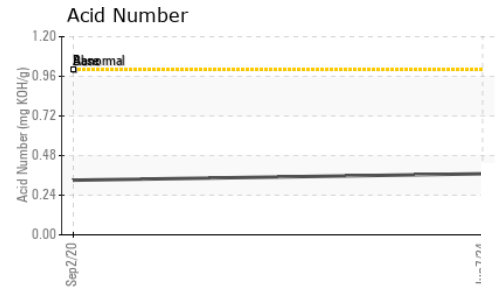
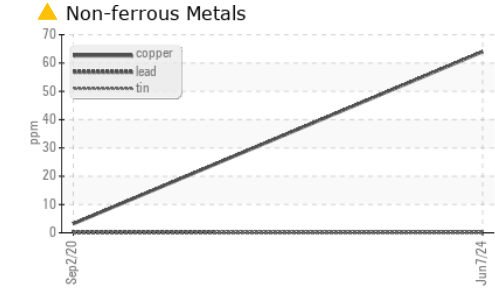
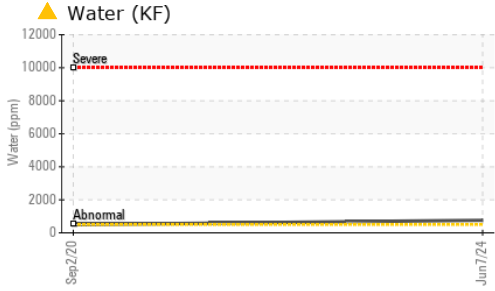
| ADDITIVES  |     | method      | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|---------|----------|----------|
| Boron      | ppm | ASTM D5185m | 0          | 0       | <1       | ---      |
| Barium     | ppm | ASTM D5185m | 90         | 0       | 3        | ---      |
| Molybdenum | ppm | ASTM D5185m | 0          | <1      | 0        | ---      |
| Manganese  | ppm | ASTM D5185m |            | 0       | <1       | ---      |
| Magnesium  | ppm | ASTM D5185m | 100        | <1      | 62       | ---      |
| Calcium    | ppm | ASTM D5185m | 0          | 0       | <1       | ---      |
| Phosphorus | ppm | ASTM D5185m | 0          | 3       | 4        | ---      |
| Zinc       | ppm | ASTM D5185m | 0          | 0       | 0        | ---      |
| Sulfur     | ppm | ASTM D5185m | 23500      | 11879   | 18402    | ---      |

| CONTAMINANTS |     | method      | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|---------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | 8       | 4        | ---      |
| Sodium       | ppm | ASTM D5185m |            | 0       | 23       | ---      |
| Potassium    | ppm | ASTM D5185m | >20        | <1      | 3        | ---      |
| Water        | %   | ASTM D6304  | >0.05      | ▲ 0.076 | 0.049    | ---      |
| ppm Water    | ppm | ASTM D6304  | >500       | ▲ 764   | 495.0    | ---      |

| FLUID CLEANLINESS |  | method       | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|---------|----------|----------|
| Particles >4µm    |  | ASTM D7647   |            | ---     | 14308    | ---      |
| Particles >6µm    |  | ASTM D7647   | >1300      | ---     | ▲ 4011   | ---      |
| Particles >14µm   |  | ASTM D7647   | >80        | ---     | ▲ 460    | ---      |
| Particles >21µm   |  | ASTM D7647   | >20        | ---     | ▲ 140    | ---      |
| Particles >38µm   |  | ASTM D7647   | >4         | ---     | ● 7      | ---      |
| Particles >71µm   |  | ASTM D7647   | >3         | ---     | 0        | ---      |
| Oil Cleanliness   |  | ISO 4406 (c) | >--/17/13  | ---     | ▲ 19/16  | ---      |

| FLUID DEGRADATION |          | method     | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|---------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 | 1.0        | 0.37    | 0.331    | ---      |

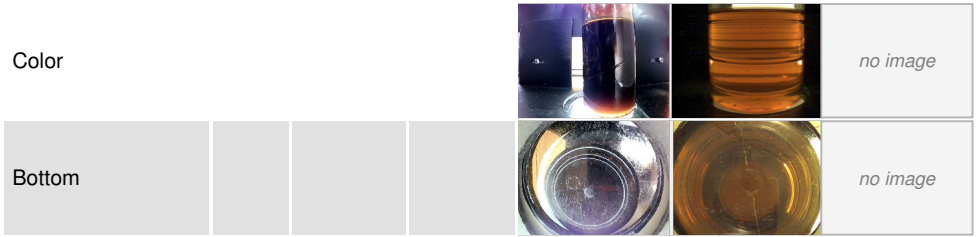
# OIL ANALYSIS REPORT



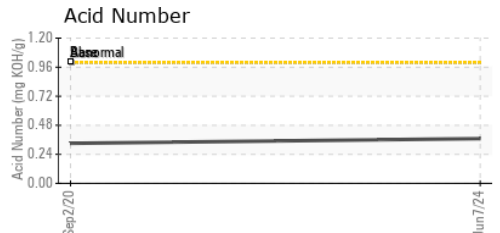
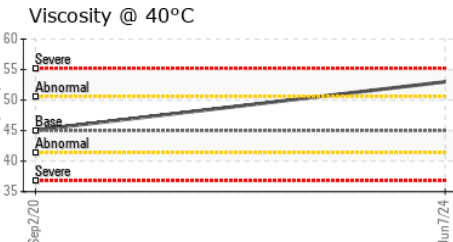
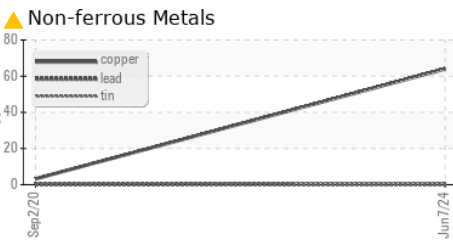
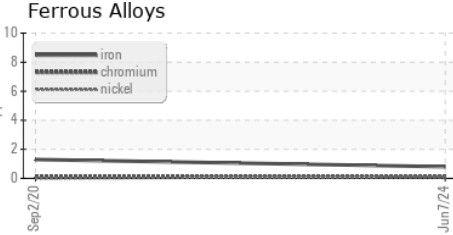
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | ---      |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | ---      |
|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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 45      | 53.0     | 45.1     |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KCPA012271 **Received** : 13 Jun 2024  
**Lab Number** : 06209248 **Tested** : 16 Jun 2024  
**Unique Number** : 11076709 **Diagnosed** : 16 Jun 2024 - Doug Bogart  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**ZIPS DRY CLEANERS**  
 371 W DEKALB PIKE  
 KING OF PRUSSIA, PA  
 US 19406  
 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)

T:  
F: