

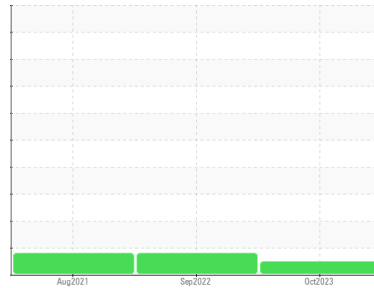


Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**KAESER 6767668**

Component  
**Compressor**

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

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are 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 |             |            | <b>KCPA009488</b>  | KCP41316    | KCP37837    |
| Sample Date        | Client Info |             |            | <b>30 Oct 2023</b> | 01 Sep 2022 | 23 Aug 2021 |
| Machine Age        | hrs         | Client Info |            | <b>9198</b>        | 8129        | 5210        |
| Oil Age            | hrs         | Client Info |            | <b>0</b>           | 2919        | 3335        |
| Oil Changed        | Client Info |             |            | <b>N/A</b>         | Changed     | Changed     |
| Sample Status      |             |             |            | <b>NORMAL</b>      | ATTENTION   | ATTENTION   |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <b>0</b>     | <1       | <1       |
| Chromium    | ppm | ASTM D5185m | >10        | <b>&lt;1</b> | 0        | 0        |
| Nickel      | ppm | ASTM D5185m | >3         | <b>0</b>     | 0        | 0        |
| Titanium    | ppm | ASTM D5185m | >3         | <b>0</b>     | 0        | 0        |
| Silver      | ppm | ASTM D5185m | >2         | <b>0</b>     | <1       | <1       |
| Aluminum    | ppm | ASTM D5185m | >10        | <b>2</b>     | <1       | <1       |
| Lead        | ppm | ASTM D5185m | >10        | <b>0</b>     | 0        | 0        |
| Copper      | ppm | ASTM D5185m | >50        | <b>4</b>     | 19       | 5        |
| Tin         | ppm | ASTM D5185m | >10        | <b>0</b>     | 0        | 0        |
| Antimony    | ppm | ASTM D5185m |            | <b>---</b>   | ---      | 0        |
| Vanadium    | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |

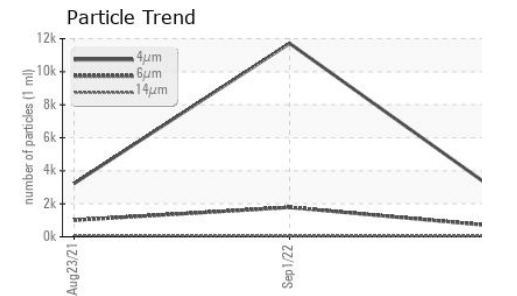
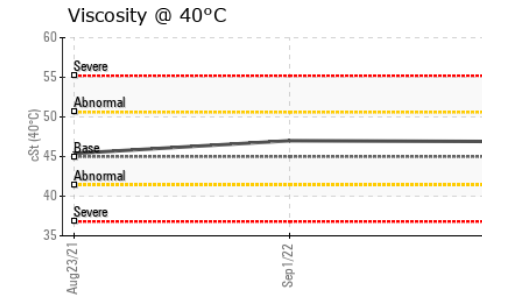
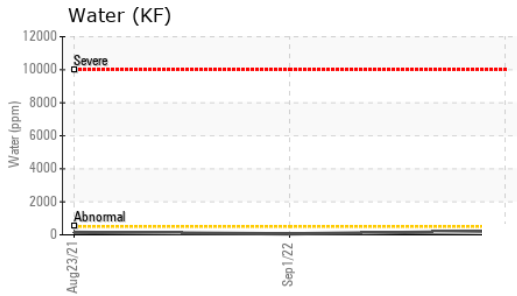
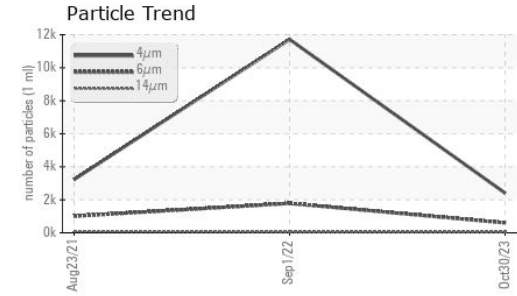
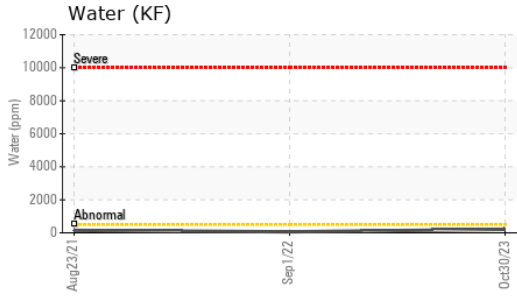
| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m | 0          | <b>0</b>     | 0        | 16       |
| Barium     | ppm | ASTM D5185m | 90         | <b>10</b>    | 0        | 0        |
| Molybdenum | ppm | ASTM D5185m | 0          | <b>0</b>     | 0        | 0        |
| Manganese  | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Magnesium  | ppm | ASTM D5185m | 100        | <b>61</b>    | 9        | 30       |
| Calcium    | ppm | ASTM D5185m | 0          | <b>1</b>     | 0        | 0        |
| Phosphorus | ppm | ASTM D5185m | 0          | <b>0</b>     | 2        | 0        |
| Zinc       | ppm | ASTM D5185m | 0          | <b>&lt;1</b> | 8        | 0        |
| Sulfur     | ppm | ASTM D5185m | 23500      | <b>20866</b> | 18158    | 18495    |

| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>&lt;1</b> | 1        | 0        |
| Sodium       | ppm | ASTM D5185m |            | <b>15</b>    | 3        | 9        |
| Potassium    | ppm | ASTM D5185m | >20        | <b>3</b>     | 0        | 0        |
| Water        | %   | ASTM D6304  | >0.05      | <b>0.021</b> | 0.005    | 0.014    |
| ppm Water    | ppm | ASTM D6304  | >500       | <b>212.6</b> | 59.6     | 149.5    |

| FLUID CLEANLINESS |  | method       | limit/base | current         | history1   | history2 |
|-------------------|--|--------------|------------|-----------------|------------|----------|
| Particles >4µm    |  | ASTM D7647   |            | <b>2407</b>     | 11715      | 3229     |
| Particles >6µm    |  | ASTM D7647   | >1300      | <b>604</b>      | ▲ 1784     | 1009     |
| Particles >14µm   |  | ASTM D7647   | >80        | <b>46</b>       | 55         | ▲ 89     |
| Particles >21µm   |  | ASTM D7647   | >20        | <b>11</b>       | 14         | ▲ 21     |
| Particles >38µm   |  | ASTM D7647   | >4         | <b>0</b>        | 0          | 0        |
| Particles >71µm   |  | ASTM D7647   | >3         | <b>0</b>        | 0          | 0        |
| Oil Cleanliness   |  | ISO 4406 (c) | >--/17/13  | <b>18/16/13</b> | ▲ 21/18/13 | ▲ 17/14  |

| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 | 1.0        | <b>0.39</b> | 0.39     | 0.387    |

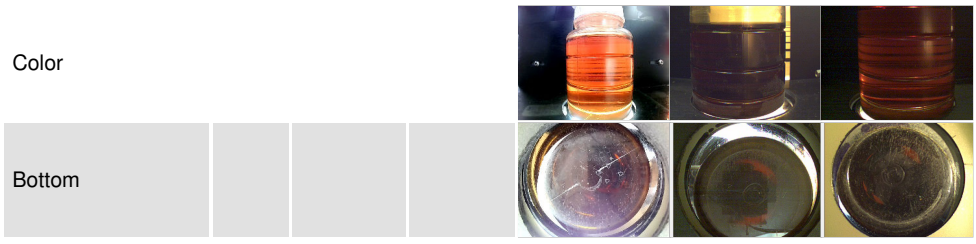
# OIL ANALYSIS REPORT



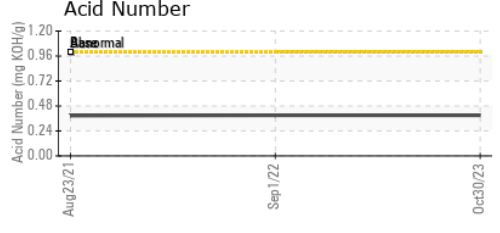
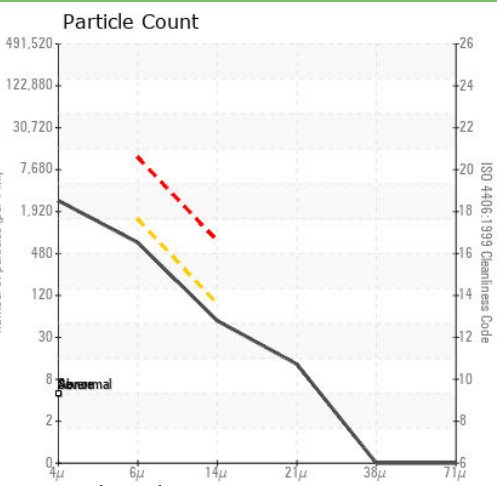
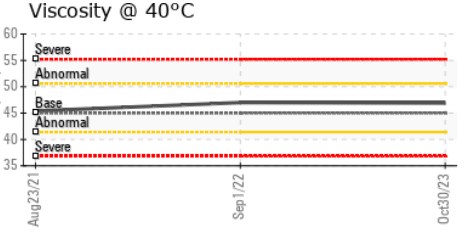
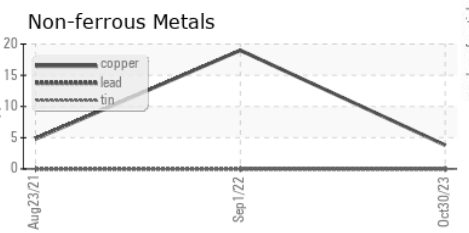
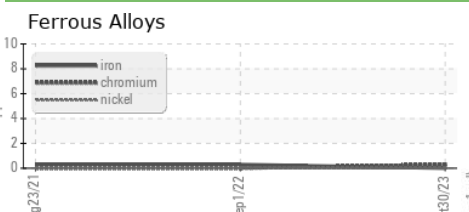
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | LIGHT    |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE     | NONE     |
| Debris           | scalar | *Visual    | NONE    | NONE     | LIGHT    |
| 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 | 46.9    | 47.0     | 45.4     |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KCPA009488 **Received** : 08 Nov 2023  
**Lab Number** : 06001605 **Diagnosed** : 09 Nov 2023  
**Unique Number** : 10729965 **Diagnostician** : Doug Bogart  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**KROGER**  
 1933 TOWER RD  
 AURORA, CO  
 US 80011  
 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: