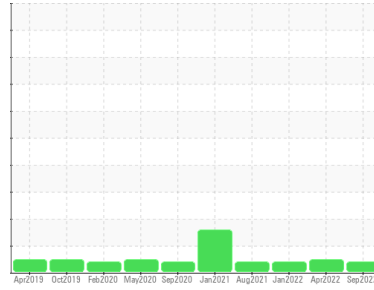




# PROBLEM SUMMARY

Sample Rating Trend



VIS DEBRIS



Machine Id  
**KAESER BSD 60 6601702 (S/N 1472)**  
 Component  
**Compressor**  
 Fluid  
**KAESER SIGMA (OEM) S-460 (--- GAL)**

## COMPONENT CONDITION SUMMARY

No relevant graphs to display

## RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

## PROBLEMATIC TEST RESULTS

| Sample Status |                | ABNORMAL | NORMAL | ATTENTION |
|---------------|----------------|----------|--------|-----------|
| Debris        | scalar *Visual | ▲ MODER  | NONE   | LIGHT     |

Customer Id: UNILIB  
 Sample No.: KC99645  
 Lab Number: 05644872  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Angela Borella +1 800-237-1369  
[angela.borella@wearcheckusa.com](mailto:angela.borella@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description   |
|--------|--------|------|---------|---|
| Alert  | ---    | ---  | ?       | We were unable to perform a particle count due to a high concentration of particles present in this sample. |

## HISTORICAL DIAGNOSIS

**27 Apr 2022 Diag: Don Baldrige**

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



**05 Jan 2022 Diag: Jonathan Hester**

ISO



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



**31 Aug 2021 Diag: Angela Borella**

VIS DEBRIS

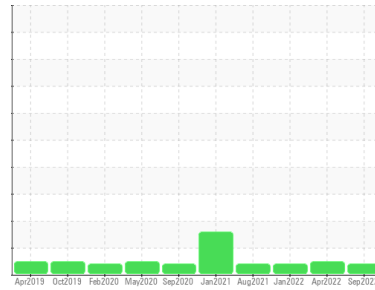


The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Machine Id  
**KAESER BSD 60 6601702 (S/N 1472)**  
Component  
**Compressor**  
Fluid  
**KAESER SIGMA (OEM) S-460 (--- GAL)**



**DIAGNOSIS**

**Recommendation**

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

**Wear**

All component wear rates are normal.

**Contamination**

Moderate concentration of visible dirt/debris 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            | history 1   | history 2   |
|---------------|--------|------------|--------------------|-------------|-------------|
| Sample Number |        |            | <b>KC99645</b>     | KC103756    | KC99576     |
| Sample Date   |        |            | <b>06 Sep 2022</b> | 27 Apr 2022 | 05 Jan 2022 |
| Machine Age   | hrs    |            | <b>11722</b>       | 10550       | 9368        |
| Oil Age       | hrs    |            | <b>1172</b>        | 3154        | 1972        |
| Oil Changed   |        |            | <b>Not Changed</b> | Changed     | N/A         |
| Sample Status |        |            | <b>ABNORMAL</b>    | NORMAL      | ATTENTION   |

**WEAR METALS**

|          | method | limit/base      | current      | history 1 | history 2 |
|----------|--------|-----------------|--------------|-----------|-----------|
| Iron     | ppm    | ASTM D5185m >50 | <b>&lt;1</b> | <1        | <1        |
| Chromium | ppm    | ASTM D5185m >10 | <b>0</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        | 0         |
| Aluminum | ppm    | ASTM D5185m >10 | <b>&lt;1</b> | 1         | 1         |
| Lead     | ppm    | ASTM D5185m >10 | <b>0</b>     | <1        | 0         |
| Copper   | ppm    | ASTM D5185m >50 | <b>12</b>    | 7         | 8         |
| 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  | history 1 | history 2 |
|------------|--------|----------------|----------|-----------|-----------|
| Boron      | ppm    | ASTM D5185m    | <b>0</b> | 0         | 0         |
| Barium     | ppm    | ASTM D5185m 90 | <b>0</b> | 0         | 0         |
| Molybdenum | ppm    | ASTM D5185m    | <b>0</b> | 0         | 0         |
| Manganese  | ppm    | ASTM D5185m    | <b>0</b> | 0         | <1        |
| Magnesium  | ppm    | ASTM D5185m 90 | <b>8</b> | 2         | 17        |
| Calcium    | ppm    | ASTM D5185m 2  | <b>0</b> | 0         | 0         |
| Phosphorus | ppm    | ASTM D5185m    | <b>3</b> | 0         | 3         |
| Zinc       | ppm    | ASTM D5185m    | <b>6</b> | 5         | 10        |

**CONTAMINANTS**

|           | method | limit/base       | current      | history 1 | history 2 |
|-----------|--------|------------------|--------------|-----------|-----------|
| Silicon   | ppm    | ASTM D5185m >25  | <b>&lt;1</b> | <1        | 0         |
| Sodium    | ppm    | ASTM D5185m      | <b>4</b>     | 0         | 8         |
| Potassium | ppm    | ASTM D5185m >20  | <b>0</b>     | <1        | 0         |
| Water     | %      | ASTM D6304 >0.05 | <b>0.019</b> | 0.005     | 0.009     |
| ppm Water | ppm    | ASTM D6304 >500  | <b>198.9</b> | 59.5      | 98.5      |

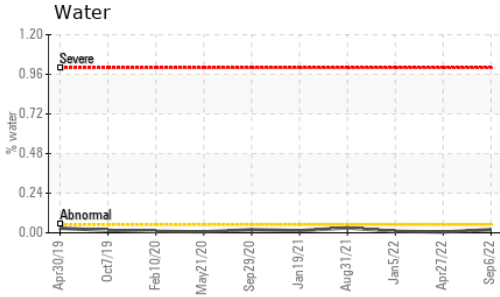
**FLUID CLEANLINESS**

|                 | method                 | limit/base | current    | history 1 | history 2 |
|-----------------|------------------------|------------|------------|-----------|-----------|
| Particles >4µm  | ASTM D7647             |            | <b>---</b> | 1288      | 5856      |
| Particles >6µm  | ASTM D7647 >1300       |            | <b>---</b> | 285       | ▲ 1518    |
| Particles >14µm | ASTM D7647 >80         |            | <b>---</b> | 27        | 64        |
| Particles >21µm | ASTM D7647 >20         |            | <b>---</b> | 9         | 14        |
| Particles >38µm | ASTM D7647 >4          |            | <b>---</b> | 0         | 0         |
| Particles >71µm | ASTM D7647 >3          |            | <b>---</b> | 0         | 0         |
| Oil Cleanliness | ISO 4406 (c) >--/17/13 |            | <b>---</b> | 15/12     | ▲ 18/13   |

**FLUID DEGRADATION**

|                  | method   | limit/base     | current     | history 1 | history 2 |
|------------------|----------|----------------|-------------|-----------|-----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 0.4 | <b>0.35</b> | 0.42      | 0.437     |

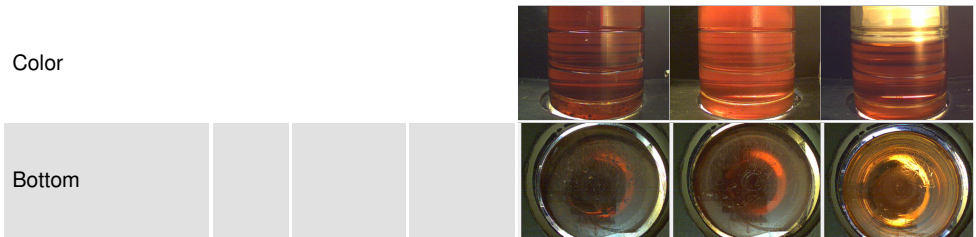
# OIL ANALYSIS REPORT



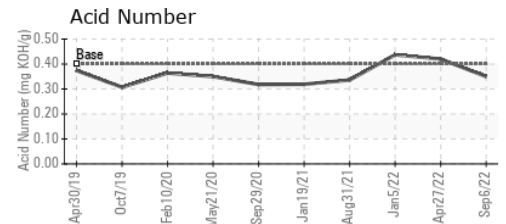
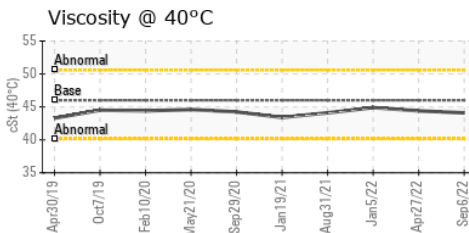
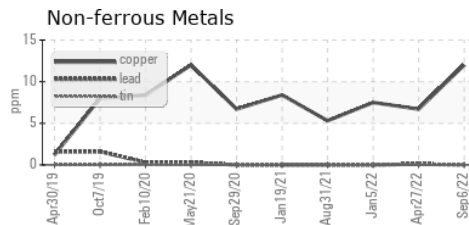
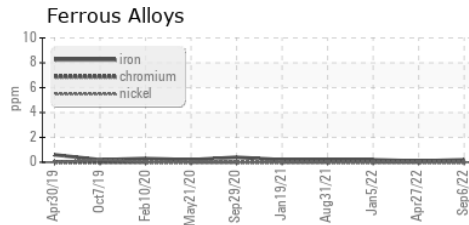
| VISUAL           | method | limit/base | current | history 1 | history 2 |
|------------------|--------|------------|---------|-----------|-----------|
| White Metal      | scalar | *Visual    | NONE    | NONE      | NONE      |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE      | NONE      |
| Precipitate      | scalar | *Visual    | NONE    | NONE      | NONE      |
| Silt             | scalar | *Visual    | NONE    | NONE      | NONE      |
| Debris           | scalar | *Visual    | ▲ MODER | 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 | history 1 | history 2 |
|------------------|--------|------------|---------|-----------|-----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 46      | 44.4      | 44.9      |

| SAMPLE IMAGES | method | limit/base | current | history 1 | history 2 |
|---------------|--------|------------|---------|-----------|-----------|
|---------------|--------|------------|---------|-----------|-----------|



## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KC99645 **Received** : 19 Sep 2022  
**Lab Number** : 05644872 **Diagnosed** : 20 Sep 2022  
**Unique Number** : 10139411 **Diagnostician** : Angela Borella  
**Test Package** : IND 2

**UNITED TOOL & MOLD**  
 106 FINANCIAL BLVD  
 LIBERTY, SC  
 USA 29657  
 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: