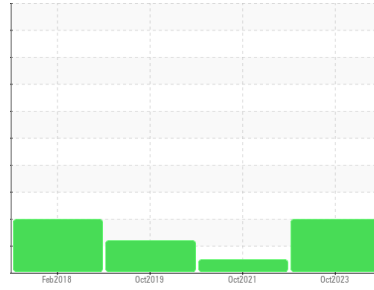




# PROBLEM SUMMARY

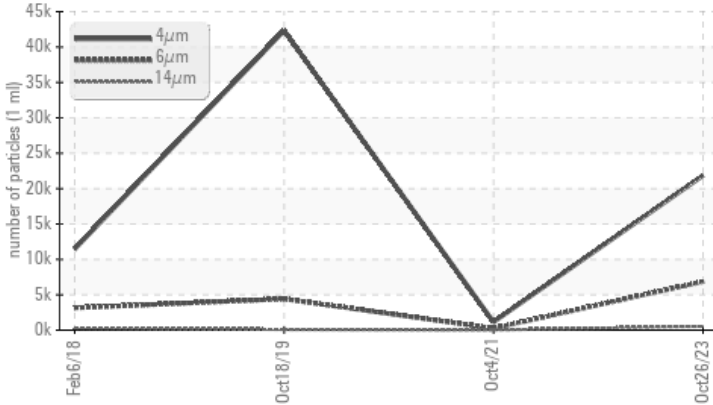
Sample Rating Trend



Machine Id  
**KAESER SK 15 5059954 (S/N 1650)**  
 Component  
**Compressor**  
 Fluid  
**KAESER SIGMA (OEM) M-460 (--- QTS)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## 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.

## PROBLEMATIC TEST RESULTS

| Sample Status   |              |           | ABNORMAL   | NORMAL | ABNORMAL |
|-----------------|--------------|-----------|------------|--------|----------|
| Particles >6µm  | ASTM D7647   | >1300     | ▲ 6847     | 252    | ▲ 4409   |
| Particles >14µm | ASTM D7647   | >80       | ▲ 530      | 20     | ▲ 88     |
| Particles >21µm | ASTM D7647   | >20       | ▲ 151      | 3      | ▲ 28     |
| Particles >38µm | ASTM D7647   | >4        | ▲ 6        | 0      | 2        |
| Oil Cleanliness | ISO 4406 (c) | >--/17/13 | ▲ 22/20/16 | 15/11  | ▲ 19/14  |

Customer Id: HARTRE  
 Sample No.: KCPA009348  
 Lab Number: 05996308  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

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

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 04 Oct 2021 Diag: Doug Bogart

NORMAL



Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 18 Oct 2019 Diag: Jonathan Hester

ISO



Oil and 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 high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 06 Feb 2018 Diag: Angela Borella

VISCOSITY



Oil and 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 high amount of particulates present in the oil. The oil viscosity is higher than expected for the fluid specified.

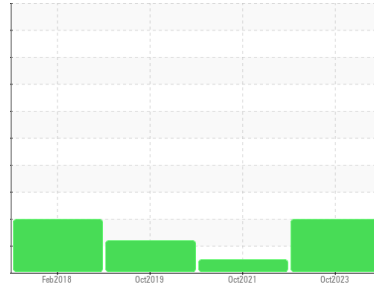
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**KAESER SK 15 5059954 (S/N 1650)**

Component  
**Compressor**  
Fluid  
**KAESER SIGMA (OEM) M-460 (--- QTS)**

## 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.

### 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 |             | <b>KCPA009348</b>  | KCP39077    | KCP21581    |
| Sample Date   | Client Info |             | <b>26 Oct 2023</b> | 04 Oct 2021 | 18 Oct 2019 |
| Machine Age   | hrs         | Client Info | <b>31554</b>       | 15078       | 9631        |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 5000        | 638         |
| Oil Changed   | Client Info |             | <b>N/A</b>         | Changed     | Changed     |
| Sample Status |             |             | <b>ABNORMAL</b>    | NORMAL      | ABNORMAL    |

## WEAR METALS

|          | method | limit/base      | current      | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >50 | <b>0</b>     | <1       | 3        |
| 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>     | 0        | <1       |
| Aluminum | ppm    | ASTM D5185m >10 | <b>0</b>     | <1       | 2        |
| Lead     | ppm    | ASTM D5185m >10 | <b>0</b>     | 0        | 0        |
| Copper   | ppm    | ASTM D5185m >50 | <b>10</b>    | 5        | 10       |
| Tin      | ppm    | ASTM D5185m >10 | <b>0</b>     | 0        | 0        |
| Antimony | ppm    | ASTM D5185m     | <b>---</b>   | 0        | 0        |
| Vanadium | ppm    | ASTM D5185m     | <b>&lt;1</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        | <1       |
| Barium     | ppm    | ASTM D5185m 90    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 0     | <b>0</b>     | 0        | 0        |
| Manganese  | ppm    | ASTM D5185m       | <b>0</b>     | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 100   | <b>&lt;1</b> | 22       | 22       |
| Calcium    | ppm    | ASTM D5185m 0     | <b>0</b>     | 0        | 1        |
| Phosphorus | ppm    | ASTM D5185m 0     | <b>0</b>     | 7        | 6        |
| Zinc       | ppm    | ASTM D5185m 0     | <b>0</b>     | 22       | 7        |
| Sulfur     | ppm    | ASTM D5185m 23500 | <b>15606</b> | 16221    | 15153    |

## CONTAMINANTS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25  | <b>&lt;1</b> | 0        | <1       |
| Sodium    | ppm    | ASTM D5185m      | <b>2</b>     | 6        | 7        |
| Potassium | ppm    | ASTM D5185m >20  | <b>3</b>     | 0        | 1        |
| Water     | %      | ASTM D6304 >0.05 | <b>0.006</b> | 0.019    | 0.015    |
| ppm Water | ppm    | ASTM D6304 >500  | <b>66.3</b>  | 197.3    | 159.1    |

## FLUID CLEANLINESS

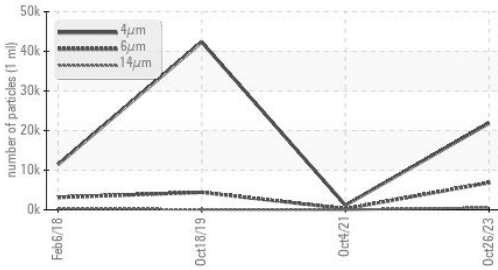
|                 | method       | limit/base | current           | history1 | history2 |
|-----------------|--------------|------------|-------------------|----------|----------|
| Particles >4µm  | ASTM D7647   |            | <b>21842</b>      | 1150     | 42317    |
| Particles >6µm  | ASTM D7647   | >1300      | ▲ <b>6847</b>     | 252      | ▲ 4409   |
| Particles >14µm | ASTM D7647   | >80        | ▲ <b>530</b>      | 20       | ▲ 88     |
| Particles >21µm | ASTM D7647   | >20        | ▲ <b>151</b>      | 3        | ▲ 28     |
| Particles >38µm | ASTM D7647   | >4         | ▲ <b>6</b>        | 0        | 2        |
| Particles >71µm | ASTM D7647   | >3         | ▲ <b>1</b>        | 0        | 0        |
| Oil Cleanliness | ISO 4406 (c) | >--/17/13  | ▲ <b>22/20/16</b> | 15/11    | ▲ 19/14  |

## FLUID DEGRADATION

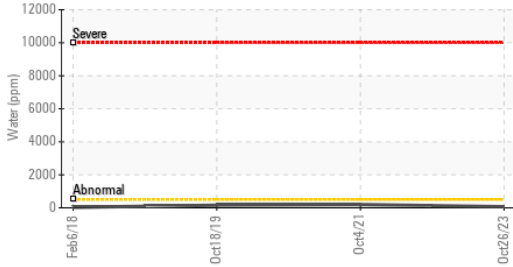
|                  | method   | limit/base     | current     | history1 | history2 |
|------------------|----------|----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 1.0 | <b>0.41</b> | 0.364    | 0.256    |

# OIL ANALYSIS REPORT

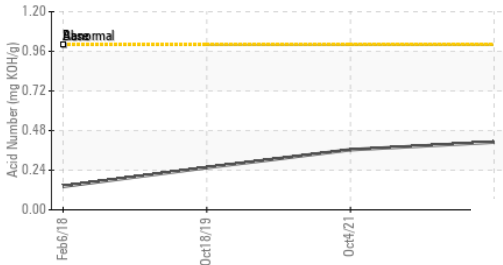
## Particle Trend



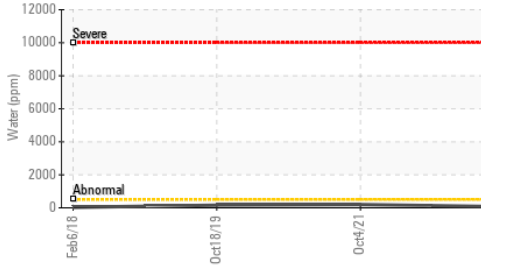
## Water (KF)



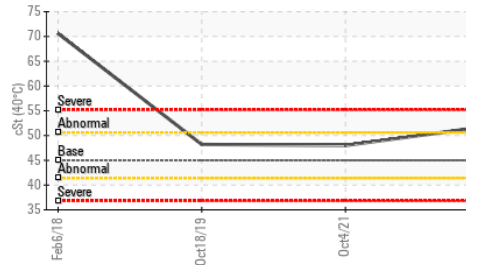
## Acid Number



## Water (KF)



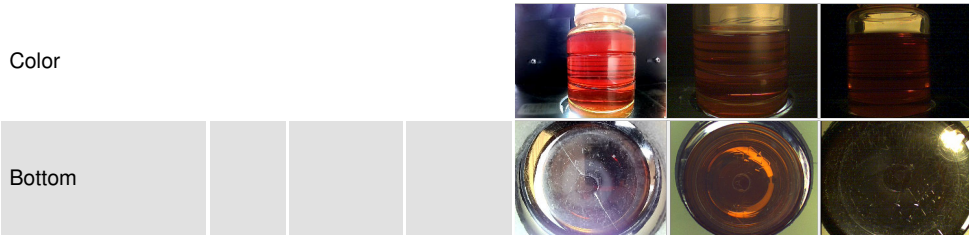
## Viscosity @ 40°C



| 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    | LIGHT    | 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      |

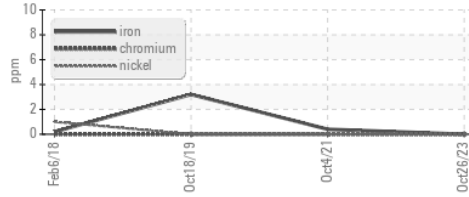
| FLUID PROPERTIES | method | limit/base   | current | history1 | history2 |
|------------------|--------|--------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445 45 | 51.9    | 48.0     | 48.2     |

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

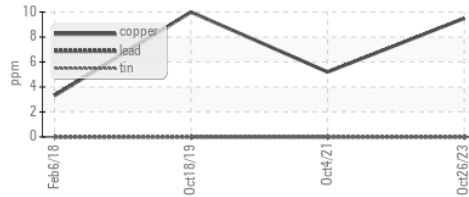


## GRAPHS

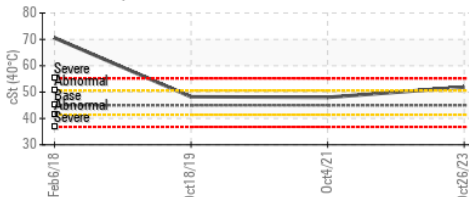
### Ferrous Alloys



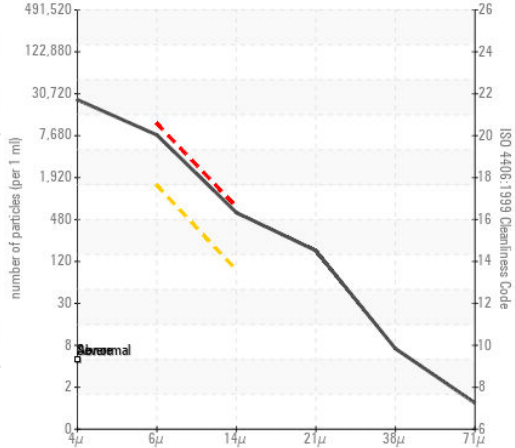
### Non-ferrous Metals



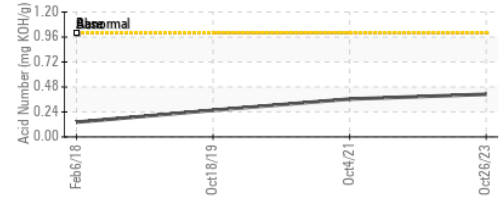
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : KCPA009348  
 Lab Number : 05996308  
 Unique Number : 10724668  
 Test Package : IND 2 ( Additional Tests: KF, PrtCount )

HART AGSTRONG - PERDUE AGRIBUSINESS  
 4300 DIXIE BEELINE RD  
 TRENTON, KY  
 US 42286  
 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: