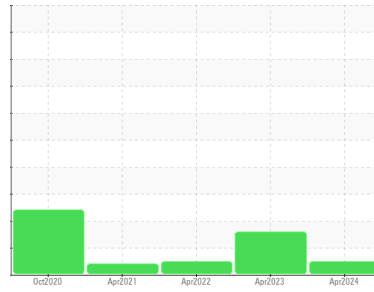




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**KAESER DSD 200 7168487 (S/N 1965)**  
 Component  
**Compressor**  
 Fluid  
**KAESER SIGMA (OEM) S-460 (--- LTR)**

## DIAGNOSIS

### Recommendation

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

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 acceptable for the time in service.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1    | history2    |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number      | Client Info |             |            | <b>KCPA015315</b>  | KCP53026    | KCP45106    |
| Sample Date        | Client Info |             |            | <b>16 Apr 2024</b> | 12 Apr 2023 | 27 Apr 2022 |
| Machine Age        | hrs         | Client Info |            | <b>19146</b>       | 14716       | 11462       |
| Oil Age            | hrs         | Client Info |            | <b>2188</b>        | 2071        | 5308        |
| Oil Changed        | Client Info |             |            | <b>Not Changd</b>  | Not Changd  | Changed     |
| Sample Status      |             |             |            | <b>NORMAL</b>      | ABNORMAL    | NORMAL      |

| WEAR METALS |     | method      | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|---------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <1      | 0        | 0        |
| Chromium    | ppm | ASTM D5185m | >10        | <1      | 0        | 0        |
| Nickel      | ppm | ASTM D5185m | >3         | <1      | 0        | 0        |
| Titanium    | ppm | ASTM D5185m | >3         | <1      | 0        | 0        |
| Silver      | ppm | ASTM D5185m | >2         | 0       | 0        | <1       |
| Aluminum    | ppm | ASTM D5185m | >10        | 2       | <1       | <1       |
| Lead        | ppm | ASTM D5185m | >10        | <1      | 0        | 0        |
| Copper      | ppm | ASTM D5185m | >50        | 6       | 1        | 5        |
| Tin         | ppm | ASTM D5185m | >10        | <1      | 0        | <1       |
| Antimony    | ppm | ASTM D5185m |            | ---     | ---      | ---      |
| Vanadium    | ppm | ASTM D5185m |            | 0       | 0        | 0        |
| Cadmium     | ppm | ASTM D5185m |            | <1      | 0        | 0        |

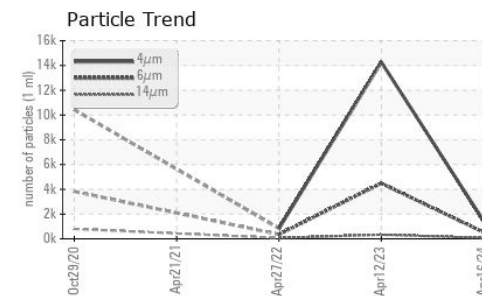
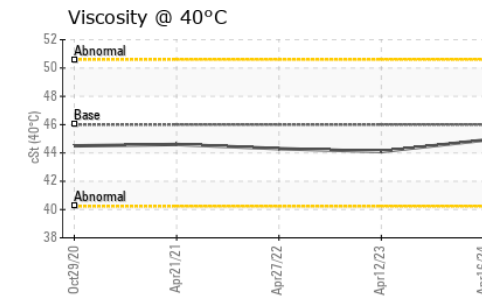
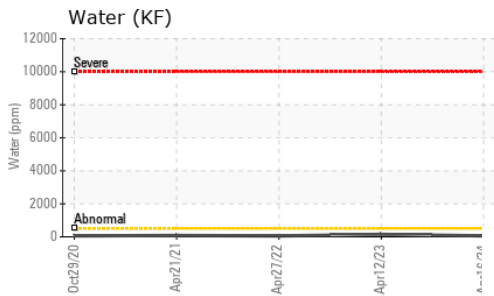
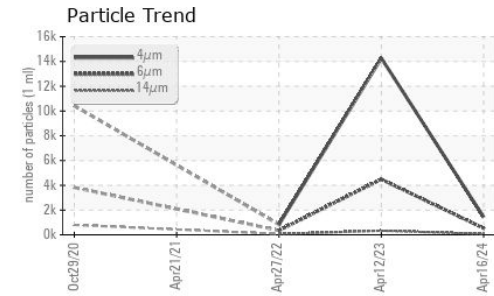
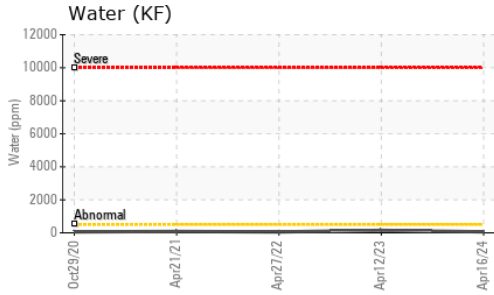
| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m |            | 0            | 0        | <1       |
| Barium     | ppm | ASTM D5185m | 90         | 0            | 4        | 0        |
| Molybdenum | ppm | ASTM D5185m |            | <1           | 0        | 0        |
| Manganese  | ppm | ASTM D5185m |            | <1           | <1       | 0        |
| Magnesium  | ppm | ASTM D5185m | 90         | 4            | 43       | 3        |
| Calcium    | ppm | ASTM D5185m | 2          | 3            | <1       | 0        |
| Phosphorus | ppm | ASTM D5185m |            | 3            | 2        | 2        |
| Zinc       | ppm | ASTM D5185m |            | 0            | 0        | 0        |
| Sulfur     | ppm | ASTM D5185m |            | <b>18567</b> | 21092    | 14819    |

| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <1           | 0        | <1       |
| Sodium       | ppm | ASTM D5185m |            | 0            | 7        | <1       |
| Potassium    | ppm | ASTM D5185m | >20        | <1           | 4        | 0        |
| Water        | %   | ASTM D6304  | >0.05      | <b>0.005</b> | 0.014    | 0.005    |
| ppm Water    | ppm | ASTM D6304  | >500       | <b>59</b>    | 149.9    | 53.8     |

| FLUID CLEANLINESS |  | method       | limit/base | current         | history1   | history2 |
|-------------------|--|--------------|------------|-----------------|------------|----------|
| Particles >4µm    |  | ASTM D7647   |            | <b>1433</b>     | 14267      | 832      |
| Particles >6µm    |  | ASTM D7647   | >1300      | <b>531</b>      | ▲ 4484     | 350      |
| Particles >14µm   |  | ASTM D7647   | >80        | <b>67</b>       | ▲ 333      | 66       |
| Particles >21µm   |  | ASTM D7647   | >20        | <b>22</b>       | ▲ 83       | 18       |
| Particles >38µm   |  | ASTM D7647   | >4         | <b>0</b>        | 2          | 2        |
| Particles >71µm   |  | ASTM D7647   | >3         | <b>0</b>        | 0          | 0        |
| Oil Cleanliness   |  | ISO 4406 (c) | >--/17/13  | <b>18/16/13</b> | ▲ 21/19/16 | 17/16/13 |

| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 | 0.4        | <b>0.48</b> | 0.41     | 0.42     |

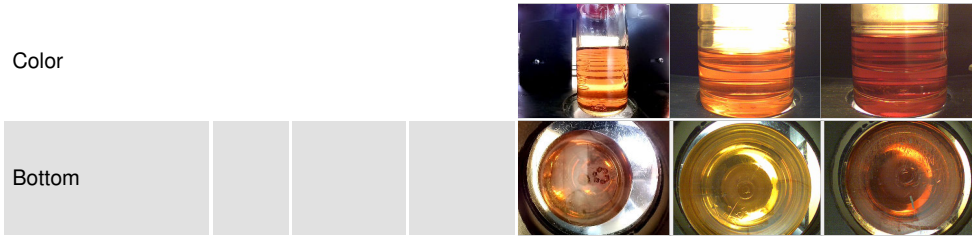
# OIL ANALYSIS REPORT



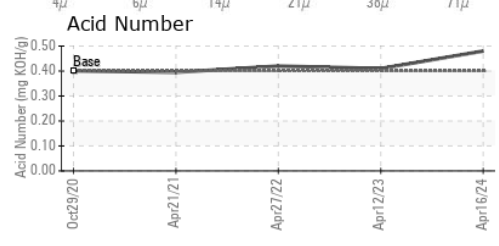
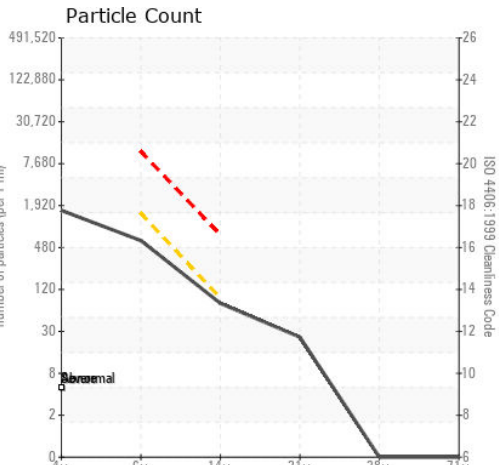
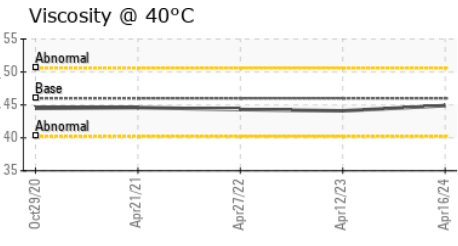
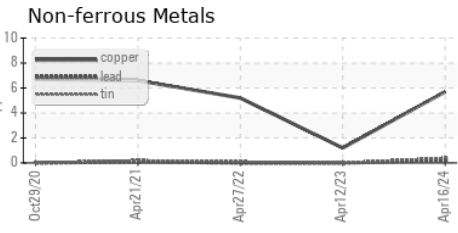
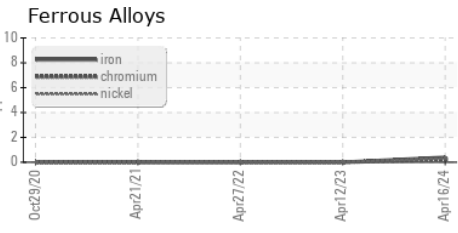
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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 46 | 44.9    | 44.1     | 44.3     |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KCPA015315 **Received** : 23 Apr 2024  
**Lab Number** : 06158467 **Tested** : 25 Apr 2024  
**Unique Number** : 10993890 **Diagnosed** : 25 Apr 2024 - Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**WILLIAMS ENERGY FRACTIONATOR PLANT**  
 1407 5TH AVE  
 MCPHERSON, KS  
 US 67460  
 Contact: TROY SMYRES  
 troy.smyres@williams.com

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)