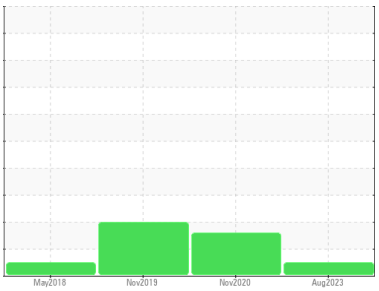
KAESER COMPRESSORS
Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## KAESER SM 10 4909859 (S/N 1631)
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 | | **KCPA004149** | KCP31099 | KCP23414 |
| Sample Date | | Client Info | | **02 Aug 2023** | 23 Nov 2020 | 21 Nov 2019 |
| Machine Age | hrs | Client Info | | **12516** | 9877 | 9804 |
| Oil Age | hrs | Client Info | | **0** | 613 | 540 |
| Oil Changed | | Client Info | | **N/A** | Changed | Changed |
| Sample Status | | | | **NORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **<1** | <1 | 5 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **<1** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **1** | 1 | 8 |
| Tin | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | <1 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **46** | 70 | <1 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 3 |
| Magnesium | ppm | ASTM D5185m | 100 | **88** | 89 | 51 |
| Calcium | ppm | ASTM D5185m | 0 | **4** | 2 | 2 |
| Phosphorus | ppm | ASTM D5185m | 0 | **4** | <1 | 3 |
| Zinc | ppm | ASTM D5185m | 0 | **5** | 3 | 3 |
| Sulfur | ppm | ASTM D5185m | 23500 | **25506** | 18097 | 16523 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **1** | 0 | <1 |
| Sodium | ppm | ASTM D5185m | | **18** | 8 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 5 | 2 |
| Water | % | ASTM D6304 | >0.05 | **0.039** | 0.016 | 0.015 |
| ppm Water | ppm | ASTM D6304 | >500 | **394.2** | 160.4 | 153.4 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **4853** | 8787 | 32046 |
| Particles >6µm | | ASTM D7647 | >1300 | **1123** | ▲ 2286 | ▲ 11409 |
| Particles >14µm | | ASTM D7647 | >80 | **69** | ▲ 296 | ▲ 1431 |
| Particles >21µm | | ASTM D7647 | >20 | **15** | ▲ 134 | ▲ 245 |
| Particles >38µm | | ASTM D7647 | >4 | **1** | ▲ 16 | ▲ 29 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | ▲ 17 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | **19/17/13** | ▲ 18/15 | ▲ 21/18 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.36** | 0.328 | 0.328 |

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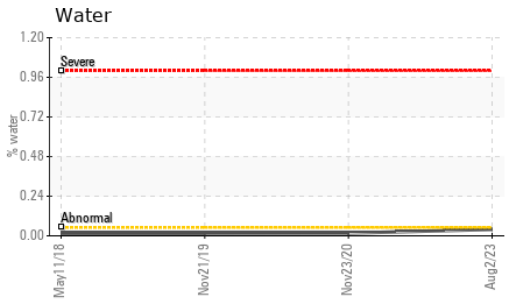
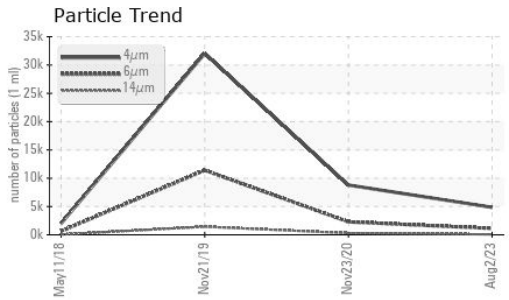
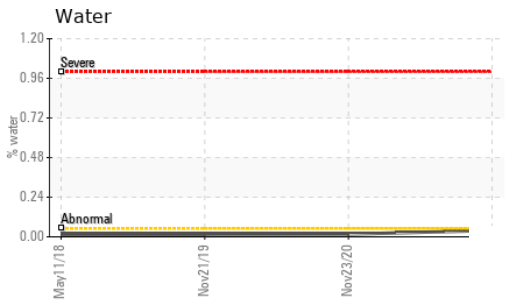
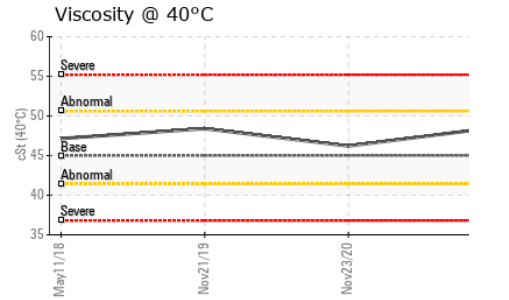
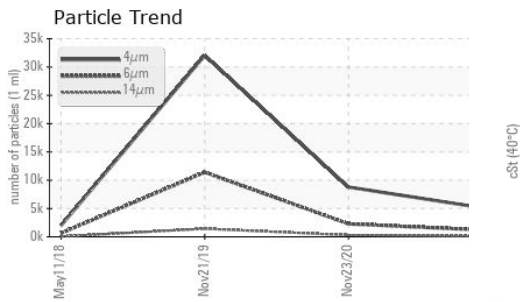


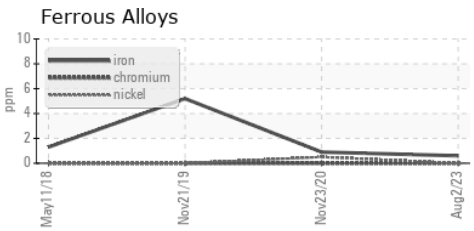



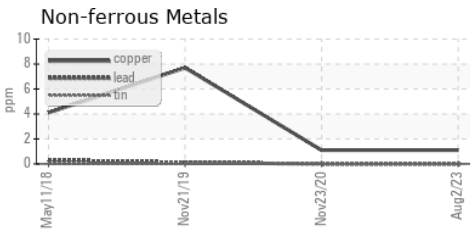

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

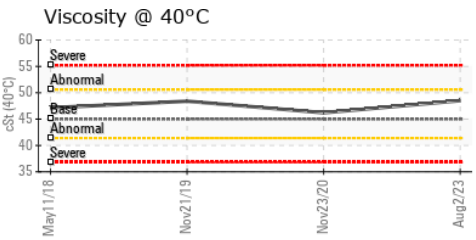
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 45 | **48.5** | 46.2 | 48.4 |

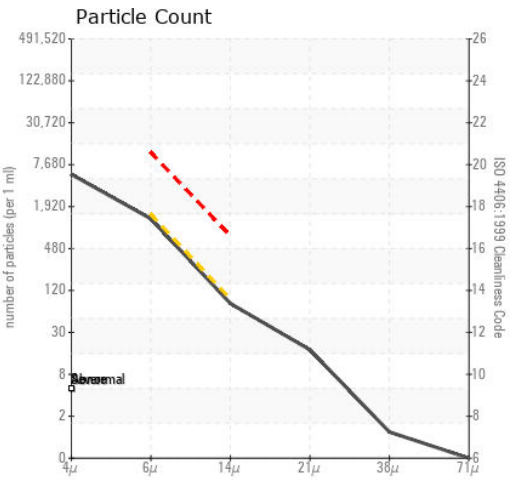
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

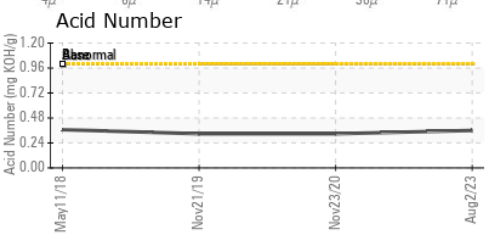
## GRAPHS




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA004149 **Received** : 14 Aug 2023
**Lab Number** : 05924329 **Diagnosed** : 16 Aug 2023
**Unique Number** : 10604276 **Diagnostician** : Don Baldridge
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

*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)*

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