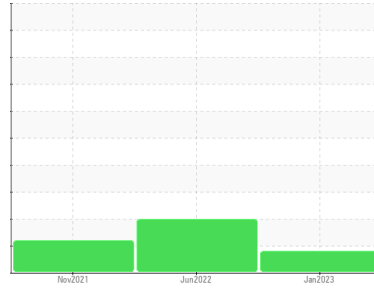




# PROBLEM SUMMARY

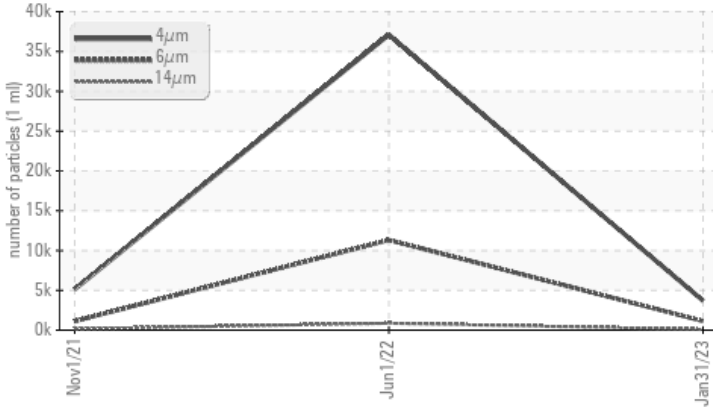
Sample Rating Trend



Machine Id  
**KAESER SM 15 3449916 (S/N 1152)**  
 Component  
**Compressor**  
 Fluid  
**KAESER SIGMA (OEM) M-460 (--- GAL)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status		ATTENTION	ABNORMAL	ATTENTION
Particles >14µm	ASTM D7647 >80	▲ 82	▲ 867	▲ 154
Oil Cleanliness	ISO 4406 (c) >--/17/13	▲ 19/17/14	▲ 22/21/17	▲ 17/14

Customer Id: ASPATL  
 Sample No.: KCP54685  
 Lab Number: 05778225  
 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

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.

## HISTORICAL DIAGNOSIS

### 01 Jun 2022 Diag: Don Baldrige

#### 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 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](#)



### 01 Nov 2021 Diag: Don Baldrige

#### VISCOSITY



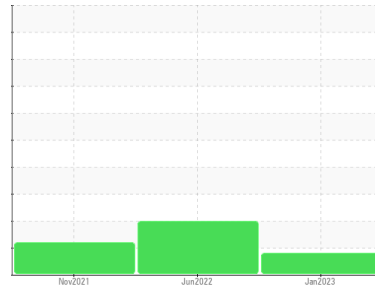
No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of particulates present in the oil. The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

[view report](#)



# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**KAESER SM 15 3449916 (S/N 1152)**

Component  
**Compressor**

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

**DIAGNOSIS**

▲ **Recommendation**

No corrective action is recommended at this time. Oil and 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 moderate 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>KCP54685</b>	KCP40437	KCP38796
Sample Date	Client Info		<b>31 Jan 2023</b>	01 Jun 2022	01 Nov 2021
Machine Age	hrs	Client Info	<b>26188</b>	24177	22117
Oil Age	hrs	Client Info	<b>4071</b>	2060	3502
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Changed
Sample Status			<b>ATTENTION</b>	ABNORMAL	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>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>&lt;1</b>	<1	0
Lead	ppm	ASTM D5185m >10	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >50	<b>16</b>	9	37
Tin	ppm	ASTM D5185m >10	<b>0</b>	0	<1
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	25
Barium	ppm	ASTM D5185m 90	<b>8</b>	24	0
Molybdenum	ppm	ASTM D5185m 0	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m 100	<b>23</b>	58	35
Calcium	ppm	ASTM D5185m 0	<b>&lt;1</b>	<1	1
Phosphorus	ppm	ASTM D5185m 0	<b>8</b>	5	4
Zinc	ppm	ASTM D5185m 0	<b>74</b>	32	85
Sulfur	ppm	ASTM D5185m 23500	<b>18996</b>	18992	19786

**CONTAMINANTS**

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>&lt;1</b>	<1	<1
Sodium	ppm	ASTM D5185m	<b>6</b>	15	19
Potassium	ppm	ASTM D5185m >20	<b>2</b>	1	3
Water	%	ASTM D6304 >0.05	<b>0.011</b>	0.021	0.008
ppm Water	ppm	ASTM D6304 >500	<b>110.3</b>	210.6	86.6

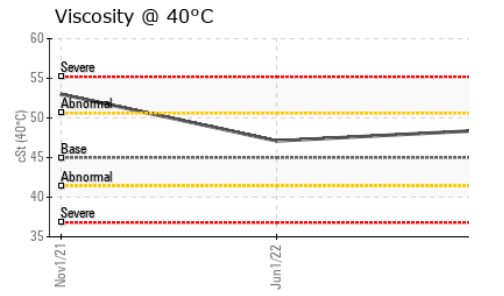
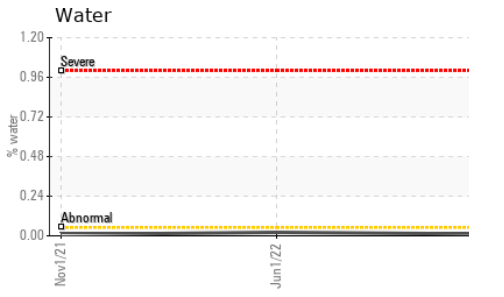
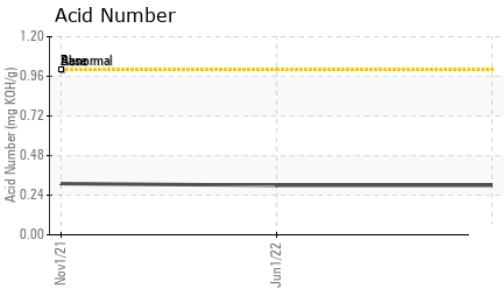
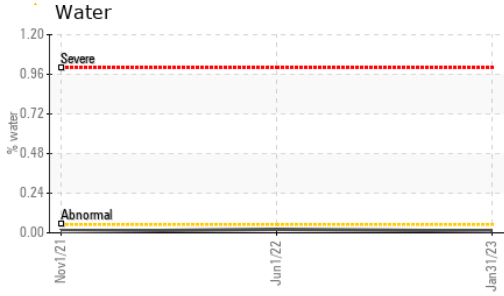
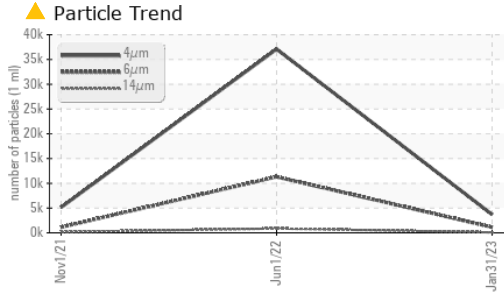
**FLUID CLEANLINESS**

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>3702</b>	37095	5130
Particles >6µm	ASTM D7647 >1300		<b>1129</b>	▲ 11309	1128
Particles >14µm	ASTM D7647 >80		▲ <b>82</b>	▲ 867	▲ 154
Particles >21µm	ASTM D7647 >20		<b>14</b>	▲ 127	▲ 59
Particles >38µm	ASTM D7647 >4		<b>0</b>	▲ 4	3
Particles >71µm	ASTM D7647 >3		<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >--/17/13		▲ <b>19/17/14</b>	▲ 22/21/17	▲ 17/14

**FLUID DEGRADATION**

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	<b>0.30</b>	0.30	0.310

# OIL ANALYSIS REPORT

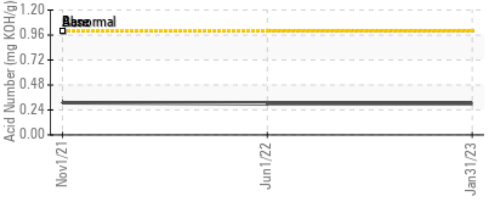
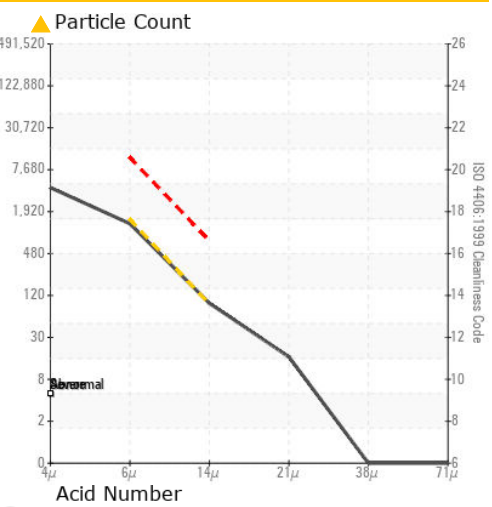
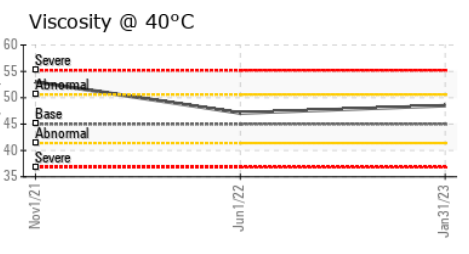
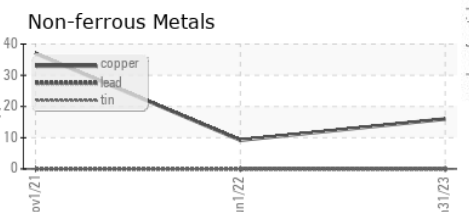
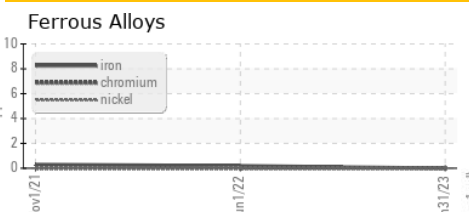


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual NONE	<b>NONE</b>	NONE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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 45	<b>48.5</b>	47.1	▲ 53.0

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KCP54685 **Received** : 27 Feb 2023  
**Lab Number** : 05778225 **Diagnosed** : 01 Mar 2023  
**Unique Number** : 10357895 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**ASPEN REFRIGERATION**  
 5211 IND CT SC  
 ATLANTA, GA  
 US 30339  
 Contact: BRIAN LORD  
 BRIANLORD@ASPENREFRIGERANTS.COM  
 T:  
 F:

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)