

## **OIL ANALYSI**

Area

### [73629612] KAESER SM 10 4944252 (S/N

Compressor

Fluic KAESER SIGMA (OEM) M-460 (--- GAL)

### DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample in 500 hours to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

There is a light concentration of water present 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.

		Samp	le Rating Tre	nd		
SIS REPO	)RT		_		1	VATER
(NI 1507)						
/N 1507)						
		Dec2015 /	Apr2016 Aug2016 Mar20	17 Oct2021 Feb2023 Dec2023	Jun2024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KCPA018472	KCPA010301	KCP01721
Sample Date		Client Info		12 Jun 2024	06 Dec 2023	24 Feb 2023
Machine Age	hrs	Client Info		80883	77153	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed ABNORMAL	N/A NORMAL	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	0	0	0
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>3	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>10	0	0	<1
Lead	ppm	ASTM D5185m	>10	0	2	0
Copper	ppm	ASTM D5185m	>50	7	5	14
Tin	ppm	ASTM D5185m	>10	0	<1	0
Antimony	ppm	ASTM D5185m				
Vanadium Cadmium	ppm	ASTM D5185m ASTM D5185m		<1 0	<1 0	0
	ppm				-	-
ADDITIVES		method	limit/base	current	history1	history2
			0		0	0
Boron	ppm	ASTM D5185m		0		
Barium	ppm	ASTM D5185m	90	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	90	0 0	0	0
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	90 0	0 0 <1	0 0 <1	0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 0 100	0 0 <1 6	0 0 <1 0	0 0 1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 0 100 0	0 0 <1 6 0	0 0 <1 0 0	0 0 1 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 0 100 0 0	0 0 <1 6 0 1	0 0 <1 0 0 0	0 0 1 0 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 0 100 0 0 0	0 0 <1 6 0 1 14	0 0 <1 0 0 0 0	0 0 1 0 4 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 0 100 0 0 0 23500	0 0 <1 6 0 1 14 19355	0 0 <1 0 0 0 0 0 16383	0 0 1 0 4 0 13353
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>Method</b>	90 0 100 0 0 0 23500 limit/base	0 0 <1 6 0 1 14 19355 current	0 0 <1 0 0 0 0 16383 history1	0 0 1 0 4 0 13353 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	90 0 100 0 0 0 23500 limit/base	0 0 <1 6 0 1 1 14 19355 current <1	0 0 <1 0 0 0 0 16383 history1 <1	0 0 1 0 4 0 13353 history2 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	90 0 100 0 0 23500 limit/base >25	0 0 <1 6 0 1 14 19355 current <1 5	0 0 <1 0 0 0 0 16383 history1 <1 2	0 0 1 0 4 0 13353 history2 2 <1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	90 0 100 0 0 23500 limit/base >25 >20	0 0 <1 6 0 1 1 14 19355 current <1 5 <1	0 0 <1 0 0 0 0 16383 history1 <1 2 1	0 0 1 0 4 0 13353 history2 2 <1 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	90 0 100 0 0 23500 limit/base >25 >20 >20	0 0 <1 6 0 1 14 19355 current <1 5 <1 5 <1 ▲ 0.098	0 0 <1 0 0 0 0 16383 history1 <1 2 1 1 0.006	0 0 1 0 4 0 13353 history2 2 <1 0 0 0.006
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304	90 0 100 0 0 23500 limit/base >25 >20 >0.05 >500	0 0 <1 6 0 1 14 19355 current <1 5 <1 ▲ 0.098 ▲ 980	0 0 <1 0 0 0 0 16383 history1 <1 2 1 0.006 69	0 0 1 0 4 0 13353 history2 2 <1 0 0.006 61.0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	90 0 100 0 0 23500 limit/base >25 >20 >20	0 0 <1 6 0 1 14 19355 current <1 5 <1 5 <1 0.098 ▶ 980 current	0 0 <1 0 0 0 0 16383 history1 <1 2 1 0.006 69 history1	0 0 1 0 4 0 13353 history2 2 <1 0 0 0.006
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304	90 0 100 0 0 23500 limit/base >25 >20 >0.05 >500 limit/base	0 0 <1 6 0 1 14 19355 current <1 5 <1 5 <1 ▲ 0.098 980 current 653	0 0 ( 1 0 0 0 0 0 16383 history1 <1 2 1 2 1 0.006 69 69 history1 375	0 0 1 1 0 4 0 13353 history2 2 2 <1 0 0.006 61.0 history2 
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	90 0 100 0 0 23500 23500 imit/base >25 >20 >0.05 >500 imit/base >1300	0 0 <1 6 0 1 14 19355 current <1 5 <1 0.098 ▲ 980 current 653 356	0 0 ( 1 0 0 0 0 16383 history1 <1 2 1 2 1 0.006 69 history1 375 99	0 0 1 1 0 4 0 13353 history2 2 <1 0 0.006 61.0 history2 
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	90 0 100 0 0 23500 23500 limit/base >25 >20 >0.05 >500 limit/base >500	0 0 <1 6 0 1 14 19355 current <1 5 <1 ▲ 0.098 ▲ 980 current 653 356 61	0 0 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	0 0 1 1 0 4 0 13353 history2 2 <1 0 0.006 61.0 history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	90 0 100 0 23500 23500 limit/base >25 >20 >0.05 >500 limit/base >1300 >80 >20	0 0 <1 6 0 1 14 19355 current <1 5 <1 0.098 ▲ 0.098 ▲ 980 current 653 356 61 20	0 0 ( ) 0 0 0 0 16383 history1 <1 2 1 0.006 69 ( ) history1 375 99 12 3	0 0 1 1 0 4 0 13353 history2 2 <1 0 0.006 61.0 history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 0 100 0 23500 23500 1imit/base >25 >20 >0.05 >500 1imit/base >1300 >80 >20 >20 >4	0 0 <1 6 0 1 14 19355 1<br 1<br 1<br 1<br 1<br 1<br 1<br 1</th <th>0 0 ( 1 0 0 0 0 16383 history1 &lt;1 2 1 0.006 69 history1 375 99 12 3 0</th> <th>0 0 1 1 0 4 0 13353 history2 2 2 &lt;1 0 0.006 61.0 history2  </th>	0 0 ( 1 0 0 0 0 16383 history1 <1 2 1 0.006 69 history1 375 99 12 3 0	0 0 1 1 0 4 0 13353 history2 2 2 <1 0 0.006 61.0 history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 0 100 0 0 23500 23500 1imit/base >25 >20 >0.05 >500 1imit/base >1300 >80 >20 >4 >3	0 0 <1 6 0 1 14 19355 <urrent &lt;1 5 &lt;1 ▲ 0.098 ● 980 <urrent 653 356 61 20 3 0 0</urrent </urrent 	0 0 ( 1 0 0 0 0 16383 history1 <1 2 1 0.006 69 history1 375 99 12 3 7 5 99 12 3 0 0 0	0 0 1 1 0 4 0 13353 history2 2 <1 0 0.006 61.0 0.006 61.0 history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Vater ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 0 100 0 23500 23500 1imit/base >25 >20 >0.05 >500 1imit/base >1300 >80 >20 >20 >4	0 0 <1 6 0 1 14 19355 1<br 1<br 1<br 1<br 1<br 1<br 1<br 1</th <th>0 0 ( 1 0 0 0 0 16383 history1 &lt;1 2 1 0.006 69 history1 375 99 12 3 0</th> <th>0 0 1 1 0 4 0 13353 history2 2 2 &lt;1 0 0.006 61.0 history2  </th>	0 0 ( 1 0 0 0 0 16383 history1 <1 2 1 0.006 69 history1 375 99 12 3 0	0 0 1 1 0 4 0 13353 history2 2 2 <1 0 0.006 61.0 history2  

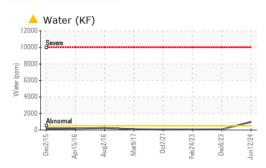
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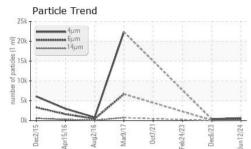
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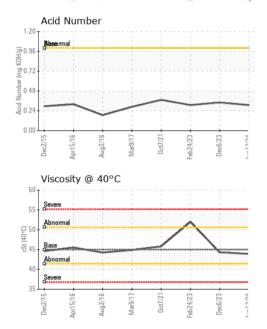
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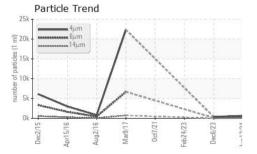


# **OIL ANALYSIS REPORT**









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	🔺 MODER
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	0.2%	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	43.9	44.3	52.0
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				a		

Bottom

10

GRAPHS

In15/1

Viscosity @ 40°C

Aug2/16

lec2/

Dec2/

Se

Se

l/Cael

Abnorma

or15/16

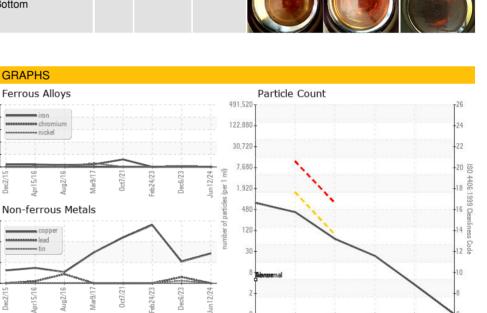
60

45 쳜

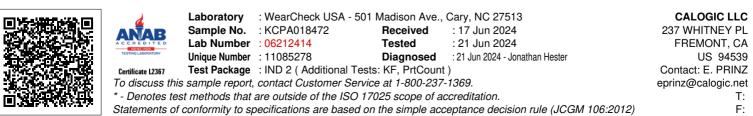
40

35

15



Acid Number (B/1.20 HOX 0.96 Ë 0.72 · 은 0.48 LIN 0.24 0.00 <del>V</del> Apr15/16 eb24/23 Dec6/23 lun12/24 Jg2/16 lar9/17 lec?/



Aar9/17

Dec6/23 -

eb24/23

Jun12/24 -

Contact/Location: E. PRINZ - CALFREKC

Page 2 of 2