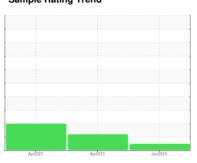


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

KAESER 6810572

Component Compressor

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

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 no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

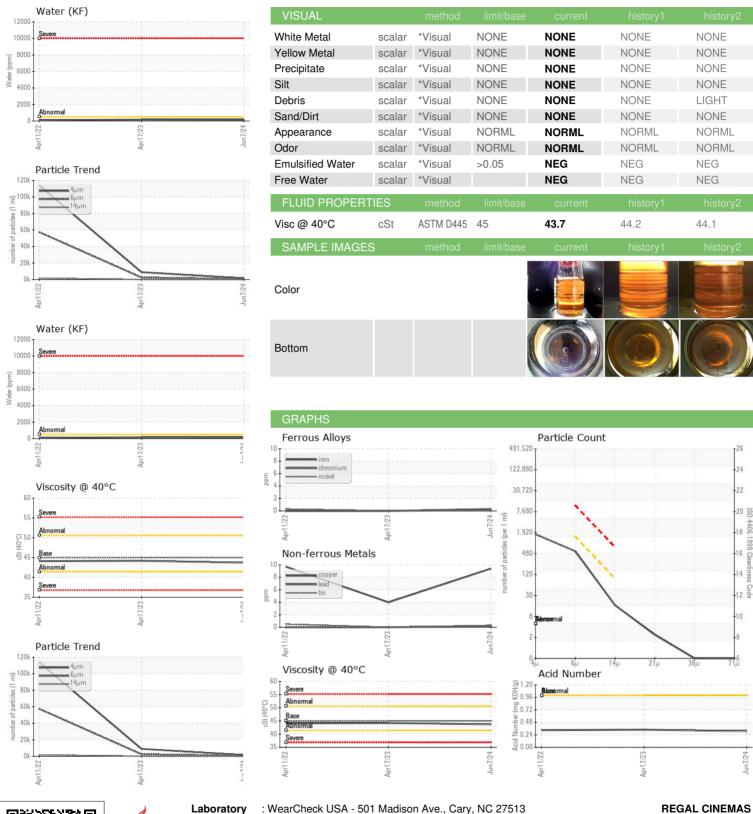
Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

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 >2 0 0 0 Silver ppm ASTM D5185m >10 2 6 4 Lead ppm ASTM D5185m >10 <1 0 0 Copper ppm ASTM D5185m >50 9 4 10 Tin ppm ASTM D5185m >10 <1 0 <1 Vanadium ppm ASTM D5185m 0 0 0			Ap	r2022	Apr2023 Jun20.	24	
Sample Number Client Info KCPA018019 KCP53014 KCP44247 Sample Date Client Info O7 Jun 2024 17 Apr 2023 11 Apr 2023 12 A	SAMPLE INFORM	MATION	method	limit/base	current	historv1	historv2
Sample Date							
Machine Age hrs Client Info Dil Age hrs Client Info Dil Age hrs Client Info Dil Changed Not Changed N							
Dil Changed Dil Changed Client Info Changed C	•	hrs					
Client Info Changed NoRMAL ATTENTION ABNORMAL							
Sample Status NORMAL ATTENTION ABNORMAL WEAR METALS method limit/base current history1 history2 fron ppm ASTM D5185m >50 <1	•	1110			-		
Chromium	-					_	ABNORMAL
Chromium ppm ASTM D5185m >10 <1 0 0 Nickel ppm ASTM D5185m >3 0 0 <1 Silver ppm ASTM D5185m >3 <1 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >10 2 6 4 Lead ppm ASTM D5185m >10 <1 0 0 Copper ppm ASTM D5185m >10 <1 0 0 Tin ppm ASTM D5185m >10 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 1 Barium ppm ASTM D5185m 0 0 0 0 1 Barium ppm ASTM D5185m 0 1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >3	ron	ppm	ASTM D5185m	>50	<1	0	0
Silver	Chromium	ppm	ASTM D5185m	>10	<1	0	0
Description	Nickel	ppm	ASTM D5185m	>3	0	0	<1
Silver	Titanium		ASTM D5185m	>3	<1	0	0
Astronomega	Silver		ASTM D5185m	>2	0	0	0
Lead	Aluminum			>10			4
Copper ppm ASTM D5185m >50 9 4 10 Fin ppm ASTM D5185m >10 <1	Lead			>10			0
Tin							
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 0 <1 Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 100 38 61 31 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 0 12 1 Sulfur ppm ASTM D5185m 23500 19165 21486 16199 <	• • •						
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 <1							
Boron ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 100 38 61 31 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 0 19165 21486 16199 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 0 <1 CONTAMINANTS method limit/base current histo							
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 100 38 61 31 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 0 19165 21486 16199 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current hist	Boron	ppm	ASTM D5185m	0	0	0	<1
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 100 38 61 31 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 23500 19165 21486 16199 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m 25 <1	Barium	ppm	ASTM D5185m	90	0	0	0
Magnesium ppm ASTM D5185m 100 38 61 31 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 0 15 3 24 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history3 CONTAMINANTS method limit/base current history1 history3 Goldium ppm ASTM D5185m >25 <1 0 <1 Goldium ppm ASTM D5185m >20 7 6 7 Water % ASTM D5185m >20 7 6 7 Water % ASTM D6304 >50.0 145 <th< td=""><td>Molybdenum</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td><1</td><td>0</td><td>0</td></th<>	Molybdenum	ppm	ASTM D5185m	0	<1	0	0
Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 23500 19165 21486 16199 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Manganese	ppm	ASTM D5185m		0	0	<1
Phosphorus ppm ASTM D5185m 0 0 12 1 Zinc ppm ASTM D5185m 0 15 3 24 Sulfur ppm ASTM D5185m 23500 19165 21486 16199 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 0 <1 Sodium ppm ASTM D5185m >20 7 6 7 Water % ASTM D5185m >20 7 6 7 Water % ASTM D6304 >0.05 0.014 0.016 0.011 opm Water ppm ASTM D6304 >500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 492 2466 57477 Particles >21µm ASTM D7647 >80 14 <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>100</td> <td>38</td> <td>61</td> <td>31</td>	Magnesium	ppm	ASTM D5185m	100	38	61	31
Zinc ppm ASTM D5185m 0 15 3 24 16199	Calcium	ppm	ASTM D5185m	0	0	0	0
Sulfur ppm ASTM D5185m 23500 19165 21486 16199 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 0 <1 Sodium ppm ASTM D5185m >20 7 6 7 Water % ASTM D6304 >0.05 0.014 0.016 0.011 opm Water ppm ASTM D6304 >500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/1	Phosphorus	ppm	ASTM D5185m	0	0	12	1
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Zinc	ppm	ASTM D5185m	0	15	3	24
Silicon ppm ASTM D5185m >25 <1 0 <1 6 Sodium ppm ASTM D5185m 10 12 6 Potassium ppm ASTM D5185m >20 7 6 7 Water % ASTM D6304 >0.05 0.014 0.016 0.011 ppm Water ppm ASTM D6304 >500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 1502 8976 113932 Particles >6μm ASTM D7647 >1502 8976 113932 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	Sulfur		ASTM D5185m	23500	19165	21486	16199
Sodium ppm ASTM D5185m 10 12 6	CONTAMINANTS	8	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 7 6 7 Water % ASTM D6304 >0.05 0.014 0.016 0.011 opm Water ppm ASTM D6304 >500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 Δ 24/23/18	Silicon	ppm	ASTM D5185m	>25	<1		<1
Water % ASTM D6304 > 0.05 0.014 0.016 0.011 opm Water ppm ASTM D6304 > 500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 Particles >4μm ASTM D7647 1502 8976 113932 Particles >6μm ASTM D7647 > 1300 492 2466 57477 Particles >14μm ASTM D7647 > 80 14 93 1634 Particles >21μm ASTM D7647 > 20 2 11 127 Particles >38μm ASTM D7647 > 4 0 1 6 Particles >71μm ASTM D7647 > 3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		10	12	6
Opm Water ppm ASTM D6304 >500 145 169.3 116.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 1502 8976 113932 Particles >6μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	7	6	7
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 1502 8976 113932 Particles >6μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.05	0.014	0.016	0.011
Particles >4μm ASTM D7647 1502 8976 113932 Particles >6μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	opm Water	ppm	ASTM D6304	>500	145	169.3	116.9
Particles >6μm ASTM D7647 >1300 492 2466 57477 Particles >14μm ASTM D7647 >80 14 93 1634 Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 14 93 ▲ 1634 Particles >21μm ASTM D7647 >20 2 11 ▲ 127 Particles >38μm ASTM D7647 >4 0 1 ▲ 6 Particles >71μm ASTM D7647 >3 0 0 0 Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 ▲ 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	·						
Particles >21μm ASTM D7647 >20 2 11 127 Particles >38μm ASTM D7647 >4 0 1 6 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 20/18/14 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>1300	492	2466	<u></u> 57477
Particles >38μm ASTM D7647 >4 0 1 ▲ 6 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 18/16/11 ≥0/18/14 ▲ 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	•						
Particles >71μm ASTM D7647 >3 0 0 0 Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 ≥ 20/18/14 ▲ 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	•			>20	2	11	
Dil Cleanliness ISO 4406 (c) >/17/13 18/16/11 ■ 20/18/14 ▲ 24/23/18 FLUID DEGRADATION method limit/base current history1 history2	•						
FLUID DEGRADATION method limit/base current history1 history2	Particles >71μm		ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	18/16/11	20/18/14	<u>4</u> 24/23/18
Acid Number (AN) mg KOH/g ASTM D8045 1.0 0.31 0.34 0.33	FLUID DEGRAD	NOITA	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.31	0.34	0.33



OIL ANALYSIS REPORT







Laboratory Sample No.

: KCPA018019 Lab Number : 06209244 Unique Number : 11076705

Test Package : IND 2 (Additional Tests: KF, PrtCount)

Received Tested : 16 Jun 2024 Diagnosed : 16 Jun 2024 - Doug Bogart

: 13 Jun 2024 300 GODARD DR KING OF PRUSSIA, PA Contact: Service Manager

Certificate 12367 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)

US 19406

T:

F: