

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id 7386289 (S/N 1087) Component

Compressor

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

DIAGNOSIS

Recommendation

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.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

Fluid Condition

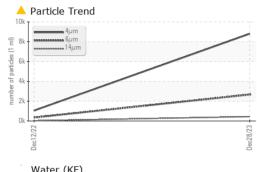
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

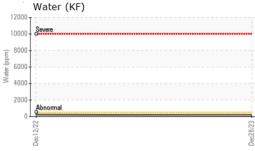
Sample Number Client Info KCPA009215 KCP52886 Sample Date In Client Info 28 Dec 2023 12 Dec 2022 Machine Age hrs Client Info 0 899 Oil Age hrs Client Info 0 899 Sample Status Imathine Client Info 0 899 WEAR METALS method Imit/base current history1 Nickel ppm ASTM D5185m >50 0 Nickel ppm ASTM D5185m >10 0 0 Auminum ppm ASTM D5185m >10 0 0 Auminum ppm ASTM D5185m >10 0 0 Auminum ppm ASTM D5185m >10 0				Dec2022	Dec2023		
Sample Date Client Info 28 Dec 2023 12 Dec 2022 Machine Age hrs Client Info 4523 3058 Oil Age hrs Client Info 0 899 Sample Status Client Info N/A Changed WEAR METALS method imit/base current history1 history1 Iron ppm ASTM D5185m >10 0 0 Nickel ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Adminum ppm ASTM D5185m 0 0 Adminum ppm ASTM D5185m 0 0 Adminum	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4523 3058 Oil Age hrs Client Info 0 899 Oil Age hrs Client Info N/A Changed Sample Status Client Info N/A Changed ABNORMAL NORMAL WEAR METALS method Imit/base current history1 history1 Iron ppm ASTM D5185m >50 0 <1	Sample Number		Client Info		KCPA009215	KCP52886	
Machine Age hrs Client Info 4523 3058 Oil Age hrs Client Info 0 899 Sample Status Client Info N/A Changed WEAR METALS method imit/base current NORMAL WEAR METALS method imit/base current history1 Iron ppm ASTM D5165m >50 0 Iranium ppm ASTM D5165m >10 0 0 Silver ppm ASTM D5165m >2 0 0 Copper ppm ASTM D5165m >10 0 Cadmium ppm ASTM D5165m >10 0 Addium ppm ASTM D5165m >10 0 Addium ppm ASTM D5165m 90 10 Addium ppm ASTM D5165m 90 10 <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>28 Dec 2023</td> <td>12 Dec 2022</td> <td></td>	Sample Date		Client Info		28 Dec 2023	12 Dec 2022	
Dil Age hrs Client Info 0 899 Sample Status Client Info N/A Changed WEAR METALS method limit/base current history1 history1 ron ppm ASTM 05165m >50 0 <1		hrs	Client Info		4523	3058	
Dil Changed Client Info N/A Changed Sample Status Imit Ditson ABNORMAL NORMAL WEAR METALS method limit/base current history1 history1 Ton ppm ASTM D5185m >50 0 <1	•	hrs	Client Info		0	899	
Sample Status Image ABNORMAL NORMAL WEAR METALS method limit/base current history1 history1 ron ppm ASTM D5185m >50 0 <1	-		Client Info		N/A	Changed	
Iron ppm ASTM D5185m >50 0 <1	-				ABNORMAL	0	
ppm ASTM D5185m >10 0 0 Nickel ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >2 0 0 Aduminum ppm ASTM D5185m >10 0 1 Lead ppm ASTM D5185m >10 0 0 Adaminum ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Adaminum ppm ASTM D5185m 0 0 0 Adaminum ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Barium ppm ASTM D5185m 90 14 73 Coldeium ppm ASTM D5185m 2 0 1	WEAR METALS		method	limit/base	current	history1	history2
Nickel pp ASTM D5185m >3 0 0 Titanium ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 0 1 Copper ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDTIVES method limit/base current history1 history1 Barium ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 0 41 Magnesium ppm ASTM D5185m 0 14 73 Sulfur ppm ASTM D5185m 0 14	ron	ppm	ASTM D5185m	>50	0	<1	
Titanium ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 10 4 Tin ppm ASTM D5185m >50 10 4 Yanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 90 14 73 Magnesium ppm ASTM D5185m 0 1 Magnesium ppm ASTM D5185m 0 14 73	Chromium	ppm	ASTM D5185m	>10	0	0	
Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 0 1 Copper ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Additium ppm ASTM D5185m >10 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 0 1 Calcium ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m >22 0 4	Nickel	ppm	ASTM D5185m	>3	0	0	
Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 0 1 Copper ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 Additium ppm ASTM D5185m >10 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 90 14 73 Maganesium ppm ASTM D5185m 9 14 73 Calcium ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m 2	Titanium	ppm	ASTM D5185m	>3	0	0	
Aluminum ppm ASTM D5185m >10 0 1 Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 10 4 Vanadium ppm ASTM D5185m >10 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Maganese ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m 2	Silver				0	0	
Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 10 4 Vanadium ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 0 Maggnesium ppm ASTM D5185m 0 <11	Aluminum		ASTM D5185m	>10	0	1	
Copper ppm ASTM D5185m >50 10 4 Vanadium ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m >10 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 90 2 13 Maganese ppm ASTM D5185m 90 14 73 Magnesium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m 2 0 4 Sulfur ppm ASTM D5185m 2 0 4 Sulfur ppm ASTM D5185m >25 0<					-	0	
Tin ppm ASTM D5185m >10 0 0 Vanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 90 14 73 Galcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 20 <1 Sulfur ppm ASTM D5185m >20 <1 Sulfur ppm					-		
Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 90 2 13 Magnese ppm ASTM D5185m 90 14 73 Magnese ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 2 0 1 Sulfur ppm ASTM D5185m 2 0 4 Sulfur ppm ASTM D5185m 22 0 <17396 21594 Solicon ppm ASTM D5185m >20 0 8 <td>••</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td>	••				-		
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 90 2 13 Magnesium ppm ASTM D5185m 0 0 <1 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 0 4 Contramino ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 22 0 <1 Solition ppm ASTM D5185m >20 0 8 Sulfur ppm ASTM D5185m >20 0 8 Sod							
ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 0 0 0 Magnese ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 0 41 Sodium ppm ASTM D5185m >20 0 8					-		
Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 90 14 73 Magnesium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 4 Sulfur ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m >25 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 90 2 13 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 0 4 Zinc ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 8 11 Sodium ppm ASTM D5185m 25 0 <1	Boron	mag	ASTM D5185m		0		
Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 <1				90			
Maganese ppm ASTW D5185m 0 <1 Magnesium ppm ASTW D5185m 90 14 73 Calcium ppm ASTW D5185m 2 0 1 Phosphorus ppm ASTW D5185m 0 4 Zinc ppm ASTM D5185m 8 11 Sulfur ppm ASTM D5185m 8 11 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 0 <1				00			
Magnesium ppm ASTM D5185m 90 14 73 Calcium ppm ASTM D5185m 2 0 1 Phosphorus ppm ASTM D5185m 2 0 4 Zinc ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 8 11 SUlfur ppm ASTM D5185m 17396 21594 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 0 <1	-						
Calcium ppm ASTM D5185m 2 0 1 Phosphorus ppm ASTM D5185m 0 4 Zinc ppm ASTM D5185m 0 4 Sulfur ppm ASTM D5185m 17396 21594 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 0 <1	•			90	-		
Phosphorus ppm ASTM D5185m 0 4 Zinc ppm ASTM D5185m 8 11 Sulfur ppm ASTM D5185m 17396 21594 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 0 <1	•						
Zinc ppm ASTM D5185m 8 11 Sulfur ppm ASTM D5185m 17396 21594 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 0 <1				L			
SulfurppmASTM D5185m1739621594CONTAMINANTSmethodlimit/basecurrenthistory1historySiliconppmASTM D5185m>250<1	•						
CONTAMINANTSmethodlimit/basecurrenthistory1historySiliconppmASTM D5185m>250<1	-				-		
Silicon ppm ASTM D5185m >25 0 <1 Sodium ppm ASTM D5185m >20 0 8 Potassium ppm ASTM D5185m >20 0 8 Potassium ppm ASTM D5185m >20 0 8 Water % ASTM D6304 >0.05 0.016 0.023 ppm Water ppm ASTM D6304 >500 167 231.2 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >1300 2670 347 Particles >6µm ASTM D7647 >80 439 22 Particles >1µm ASTM D7647 >20 193 6 Particles >38µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12				Para la /la ana a			
Sodium ppm ASTM D5185m 6 7 Potassium ppm ASTM D5185m >20 0 8 Water % ASTM D5185m >20 0 8 Water % ASTM D5185m >20 0 8 opm Water ppm ASTM D6304 >0.05 0.016 0.023 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >14µm ASTM D7647 >80 439 22 Particles >21µm ASTM D7647 >20 193 6 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12 <							
Potassium ppm ASTM D5185m >20 0 8 Water % ASTM D6304 >0.05 0.016 0.023 ppm ASTM D6304 >500 167 231.2 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >14µm ASTM D7647 >80 439 22 Particles >21µm ASTM D7647 >20 193 6 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history1				>25			
Water % ASTM D6304 >0.05 0.016 0.023 ppm Water ppm ASTM D6304 >500 167 231.2 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >14µm ASTM D7647 >80 439 22 Particles >21µm ASTM D7647 >20 193 6 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history1							
ppm Water ppm ASTM D6304 >500 167 231.2 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >14µm ASTM D7647 >80 439 22 Particles >14µm ASTM D7647 >20 193 6 Particles >21µm ASTM D7647 >4 13 0 Particles >38µm ASTM D7647 >3 0 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) /17/13 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history					-		
FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >6µm ASTM D7647 >80 439 22 Particles >14µm ASTM D7647 >20 193 6 Particles >21µm ASTM D7647 >20 193 6 Particles >38µm ASTM D7647 >4 13 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history1		%					
Particles >4µm ASTM D7647 8803 1051 Particles >6µm ASTM D7647 >1300 2670 347 Particles >14µm ASTM D7647 >80 439 22 Particles >14µm ASTM D7647 >20 193 6 Particles >21µm ASTM D7647 >20 193 6 Particles >38µm ASTM D7647 >4 13 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history	ppm Water	ppm	ASTM D6304	>500	167	231.2	
Particles >6µm ASTM D7647 >1300 ▲ 2670 347 Particles >14µm ASTM D7647 >80 ▲ 439 22 Particles >21µm ASTM D7647 >20 ▲ 193 6 Particles >38µm ASTM D7647 >4 ▲ 13 0 Particles >38µm ASTM D7647 >3 0 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 ▲ 439 22 Particles >21μm ASTM D7647 >20 ▲ 193 6 Particles >21μm ASTM D7647 >4 ▲ 13 0 Particles >38μm ASTM D7647 >4 ▲ 13 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history	•						
Particles >21μm ASTM D7647 >20 ▲ 193 6 Particles >38μm ASTM D7647 >4 ▲ 13 0 Particles >37μm ASTM D7647 >3 0 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history							
Particles >38μm ASTM D7647 >4 ▲ 13 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history	•						
Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history				>20		6	
Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/16 17/16/12 FLUID DEGRADATION method limit/base current history1 history	Particles >38µm						
FLUID DEGRADATION method limit/base current history1 history	Particles >71µm		ASTM D7647	>3	0	0	
	Oil Cleanliness		ISO 4406 (c)	>/17/13	A 20/19/16	17/16/12	
Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.27 0.42	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	0.27	0.42	

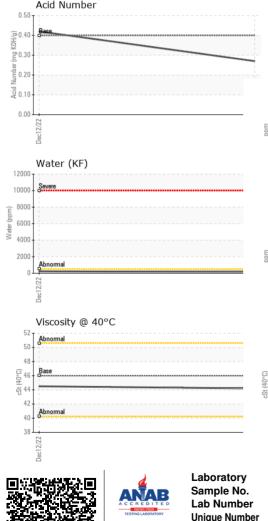


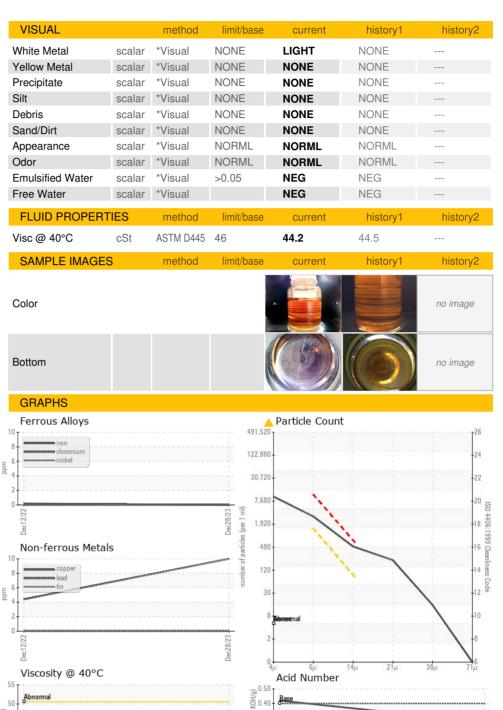
Built for a lifetime

OIL ANALYSIS REPORT









Ē 0.30

· 문 0.20

Acid

0.10

0.00

Dec28/23 Dec1 **CLAUSSEN INC** : WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 12 Jan 2024 1303 MCLEAN ST : 15 Jan 2024 LAMPASAS, TX Diagnostician : Doug Bogart US 76550 Test Package : IND 2 (Additional Tests: KF, PrtCount) Contact: Service Manager 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)

Recieved

Diagnosed

50

45

40

35

Dec12/22

Abnorma

: KCPA009215

: 06059302

: 10830684

Certificate L2367

Contact/Location: Service Manager - CLALAM

T:

F: