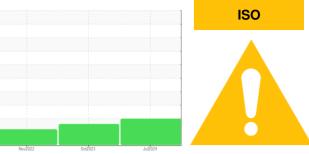


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

KAESER 6412159

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 high amount of particulates present in the oil.

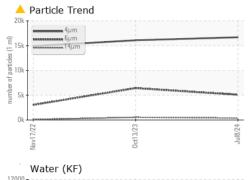
Fluid Condition

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

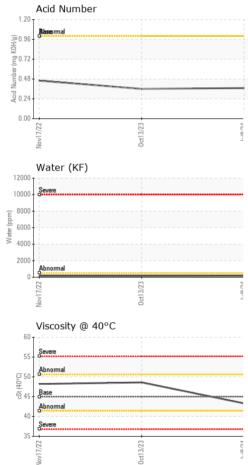
Sample Date Client Info 08 Jul 2024 13 Oct 2023 17 Nov 2 Machine Age hrs Client Info 35678 33916 29460 Oil Age hrs Client Info 0 0 6000 Oil Age hrs Client Info Changed N/A Changed Sample Status Imathematical Client Info Changed N/A Changed WEAR METALS method Imit/base current history1 history1 Iron ppm ASTM D5185m >50 0 0 0 Nickel ppm ASTM D5185m >30 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m >10 0 0 0 0 Adaminum ppm ASTM D5185m >10 0 0 0 0 0 0 0 0 0 0 0 0 0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
Machine Age Oil Age Oil Age AgehrsClient InfoImage Client InfoJ56783391629460Oil Age Age Sample StatusClient InfoChangedN/AChangedSample StatusImage PChangedN/AABNORMALWEAR METALSmethodImitbasecurrenthistory1history1WEAR METALSmethodImitbasecurrenthistory1history1WEAR METALSmethodImitbasecurrenthistory1history1VertamusppmASTM D5185m>30000NickelppmASTM D5185m>30000NickelppmASTM D5185m>30000AluminumppmASTM D5185m>10000AduminumppmASTM D5185m>10000AduatinumppmASTM D5185m>10000CadmiumppmASTM D5185m10000AduatinumppmASTM D5185m0000AduatinumppmASTM D5185m0000AduatinumppmASTM D5185m0000AduatinumppmASTM D5185m0000AduatinumppmASTM D5185m0000AduatinumppmASTM D5185m0000AduatinumppmAS	Sample Number		Client Info		KCPA017465	KCPA003589	KCP47972D	
Oil Age hrs Client Info 0 0 6000 Oil Changed Client Info Changed N/A Changed Sample Status Image Client Info Changed N/A Changed WEAR METALS method Imil/base current history1 history1 WeAR METALS method Imil/base current history1 history1 Iron ppm ASTM D5185m >50 0 0 0 Nickel ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m >10 0 0 <11 Copper ppm ASTM D5185m >10 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 <	Sample Date		Client Info		08 Jul 2024	13 Oct 2023	17 Nov 2022	
Oil Changed Sample StatusClient InfoChanged ABNORMALN/AChanged ABNORMALWEAR METALSmethodlimit/basecurrenthistory1history1IronppmASTM DS185m>50002ChromiumppmASTM DS185m>30000NickelppmASTM DS185m>33000SilverppmASTM DS185m>30000AluminumppmASTM DS185m>10000AluminumppmASTM DS185m>10000CopperppmASTM DS185m>50000CadmiumppmASTM DS185m>50000AdminumppmASTM DS185m>10000AdminumppmASTM DS185m>10000CadmiumppmASTM DS185m0000AdminumppmASTM DS185m0000AdminumppmASTM DS185m0000AdminumppmASTM DS185m0000AdminumppmASTM DS185m0000AdminumppmASTM DS185m0000AdminumppmASTM DS185m0101010AdminumppmASTM DS185m0101010Adminum <td>Machine Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>35678</th> <td>33916</td> <td>29460</td>	Machine Age	hrs	Client Info		35678	33916	29460	
Sample StatusImage of the statusABNORMALABNORMALABNORMALABNORMALABNORMALABNORMALABNORMALABNORMALABNORMALABNORMALMASNORMAL	Dil Age	hrs	Client Info		0	0	6000	
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >50 0 0 2 Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 -1 Lead ppm ASTM D5185m >10 0 0 0 0 Capper ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 -11 0 0 Maganesium ppm ASTM D518	Dil Changed		Client Info		Changed	N/A	Changed	
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Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 <1 Lead ppm ASTM D5185m >10 0 0 <1 Copper ppm ASTM D5185m >10 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0	WEAR METALS		method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >3 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >22 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 <1 Lead ppm ASTM D5185m >10 0 0 <1 Copper ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 10 0 0 0 Solon method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 2 9 <td>ron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>50</td> <th>0</th> <td>0</td> <td>2</td>	ron	ppm	ASTM D5185m	>50	0	0	2	
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Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 <11	Titanium		ASTM D5185m	>3	0	0	0	
Aluminum ppm ASTM D5185m >10 0 0 <1	Silver				0	0	0	
Lead ppm ASTM D5185m >10 0 0 <11	<11	Aluminum		ASTM D5185m	>10	0	0	<1
Copper ppm ASTM D5185m >50 0 3 11 Tin ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 histor Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 100 89 411 47 Calcium ppm ASTM D5185m 0 <10 18 <1 Sulfur ppm ASTM D5185m 0 <10 18 <1 Sulfur ppm ASTM D5185m >25	ead				0		<1	
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Barium ppm ASTM D5185m 90 55 14 38 Molybdenum ppm ASTM D5185m 0 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 0 Magnesium ppm ASTM D5185m 100 89 41 47 Calcium ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 0 0 0 0 < 1	Boron	ppm	ASTM D5185m	0	0	0	0	
Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 100 89 41 47 Calcium ppm ASTM D5185m 0 <1 0 0 Phosphorus ppm ASTM D5185m 0 <1 2 9 Zinc ppm ASTM D5185m 0 <10 18 <1 Sulfur ppm ASTM D5185m 0 23206 18322 22363 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 0 <1 4 Sodium ppm ASTM D5185m >20 0 0 0 Water ppm ASTM D5185m >20 0.017 0.017 0.017 ppm Water ppm ASTM D6304 >0.05 0.018 0.017 0.017 particles >4µm ASTM D7647 16700 1	Barium	ppm	ASTM D5185m	90	55	14	38	
Magnesium ppm ASTM D5185m 100 89 41 47 Calcium ppm ASTM D5185m 0 <1	Nolybdenum	ppm	ASTM D5185m	0	0	0	<1	
Calcium ppm ASTM D5185m 0 <1	Manganese	ppm	ASTM D5185m		0	0	0	
Phosphorus ppm ASTM D5185m 0 <1	Magnesium	ppm	ASTM D5185m	100	89	41	47	
Zinc ppm ASTM D5185m 0 10 18 <1	Calcium	ppm	ASTM D5185m	0	<1	0	0	
Sulfur ppm ASTM D5185m 23500 23206 18322 22363 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 0 <1	Phosphorus	ppm	ASTM D5185m	0	<1	2	9	
CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 0 <1 4 Sodium ppm ASTM D5185m >25 0 <1 4 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 0 Water % ASTM D6304 >0.05 0.018 0.017 0.017 ppm Water ppm ASTM D6304 >500 182 171.0 173.4 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >1300 5103 64333 3039 Particles >14µm ASTM D7647 >80 382 536 90 Particles >21µm ASTM D7647 >20 79 113 16 Particles >38µm ASTM D7647 >4 7	Zinc	ppm	ASTM D5185m	0	10	18	<1	
Silicon ppm ASTM D5185m >25 0 <1	Sulfur	ppm	ASTM D5185m	23500	23206	18322	22363	
Sodium ppm ASTM D5185m 6 10 1 Potassium ppm ASTM D5185m >20 0 0 0 Water % ASTM D6304 >0.05 0.018 0.017 0.017 ppm Water ppm ASTM D6304 >500 182 171.0 173.4 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >1300 5103 64333 3039 Particles >6µm ASTM D7647 >80 382 536 90 Particles >21µm ASTM D7647 >20 79 113 16 Particles >38µm ASTM D7647 >4 7 2 1	CONTAMINANTS		method	limit/base	current	history1	history2	
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Water % ASTM D6304 >0.05 0.018 0.017 0.017 ppm Water ppm ASTM D6304 >500 182 171.0 173.4 FLUID CLEANLINESS method limit/base current history1 histor Particles >4µm ASTM D7647 16700 16088 14919 Particles >6µm ASTM D7647 >1300 5103 A 6433 A 3039 Particles >14µm ASTM D7647 >80 382 536 90 Particles >21µm ASTM D7647 >20 79 113 16 Particles >38µm ASTM D7647 >4 7 2 1	Sodium	ppm	ASTM D5185m		6	10	1	
ppm Water ppm ASTM D6304 >500 182 171.0 173.4 FLUID CLEANLINESS method limit/base current history1 histor Particles >4µm ASTM D7647 16700 16088 14919 Particles >6µm ASTM D7647 >1300 ▲ 5103 ▲ 6433 ▲ 3039 Particles >14µm ASTM D7647 >80 ▲ 382 ▲ 536 90 Particles >21µm ASTM D7647 >20 ▲ 79 ▲ 113 16 Particles >38µm ASTM D7647 >4 ▲ 7 2 1	Potassium	ppm	ASTM D5185m	>20	0	0	0	
FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 16700 16088 14919 Particles >6µm ASTM D7647 >1300 5103 64333 3039 Particles >14µm ASTM D7647 >80 382 536 90 Particles >21µm ASTM D7647 >20 79 113 16 Particles >38µm ASTM D7647 >4 7 2 1	Nater	%	ASTM D6304	>0.05	0.018	0.017	0.017	
Particles >4μm ASTM D7647 16700 16088 14919 Particles >6μm ASTM D7647 >1300 ▲ 5103 ▲ 6433 ▲ 3039 Particles >14μm ASTM D7647 >80 ▲ 382 ▲ 536 90 Particles >21μm ASTM D7647 >20 ▲ 79 ▲ 113 16 Particles >38μm ASTM D7647 >4 ▲ 7 2 1	opm Water	ppm	ASTM D6304	>500	182	171.0	173.4	
Particles >6µm ASTM D7647 >1300 ▲ 5103 ▲ 6433 ▲ 3039 Particles >14µm ASTM D7647 >80 ▲ 382 ▲ 536 90 Particles >21µm ASTM D7647 >20 ▲ 79 ▲ 113 16 Particles >38µm ASTM D7647 >4 ▲ 7 2 1	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2	
Particles >14μm ASTM D7647 >80 ▲ 382 ▲ 536 90 Particles >21μm ASTM D7647 >20 ▲ 79 ▲ 113 16 Particles >38μm ASTM D7647 >4 ▲ 7 2 1			ASTM D7647			16088	14919	
Particles >21μm ASTM D7647 >20 ▲ 79 ▲ 113 16 Particles >38μm ASTM D7647 >4 ▲ 7 2 1			ASTM D7647	>1300	<u> </u>		A 3039	
Particles >38μm ASTM D7647 >4 A 7 2 1							90	
	articles >21μm			>20	<u> </u>	<u> </u>	16	
Particles 71um ASTM D7647 3 0 1			ASTM D7647	>4	<u> </u>	2	1	
	Particles >71µm		ASTM D7647	>3	0	1	0	
Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/20/16 ▲ 21/20/16 ▲ 21/20/16	Dil Cleanliness		ISO 4406 (c)	>/17/13	1/20/16	A 21/20/16	2 1/19/14	
FLUID DEGRADATION method limit/base current history1 histo	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
Acid Number (AN) mg KOH/g ASTM D8045 1.0 0.37 0.36 0.46	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.37	0.36	0.46	



OIL ANALYSIS REPORT

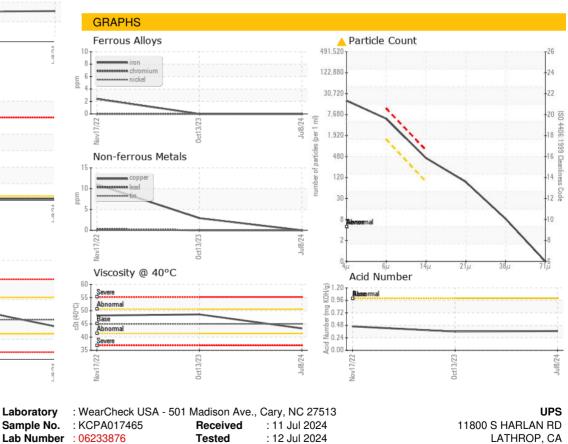






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	43.3	48.6	48.2
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color					•	

Bottom



: 13 Jul 2024 - Don Baldridge

Diagnosed





* - 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)

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

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Unique Number : 11122710

Certificate 12367

Contact/Location: J. BILAL - UPSLAT Page 2 of 2