

OIL ANALYSIS REPORT

ISO

Sample Rating Trend

Machine Id KAESER DSD 200 3312506 (S/N 1025)

Component Compressor

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

DIAGNOSIS

Recommendation

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.

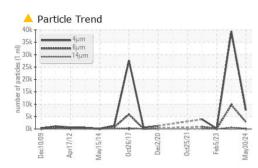
Fluid Condition

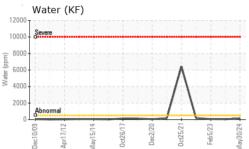
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

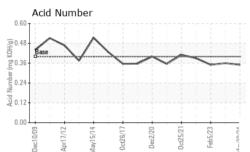
Sample Date Client Info 30 May 2024 04 Dec 2023 05 Feb 24 Machine Age hrs Client Info 48054 0 42684 Oil Age hrs Client Info 8000 0 5832 Oil Changed Client Info Not Changd ABNORMAL ABNORMAL NORMAL WEAR METALS method limit/base current history1 history1 Iron ppm ASTM 05185n >50 0 0 0 Nickel ppm ASTM 05185n >33 0 0 0 Nickel ppm ASTM 05185n >3 0 0 0 Silver ppm ASTM 05185n >10 0 0 0 Copper ppm ASTM 05185n >10 0 0 0 Copper ppm ASTM 05185n >10 0 0 0 Copper ppm ASTM 05185n 0 0 0 0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age Oil Age Oil Age Age Oil ChangedrsClient Info Client Info Client Info Mot ChangdN/A42684 S832Oil ChangedClient Info ABNORMALNot Changed ABNORMALN/AAbnormal ABNORMALWEAR METALSmethodlimi/base CurrentABNORMALNormal ABNORMALWEAR METALSmethodlimi/basecurrenthistory1history1IronppmASTM D5185m>50000NickelppmASTM D5185m>330-110NickelppmASTM D5185m>33000SilverppmASTM D5185m>10000LeadppmASTM D5185m>10000CopperppmASTM D5185m>10000VanadiumppmASTM D5185m>10000AdminumppmASTM D5185m0000AdminumppmASTM D5185m0000AdminumppmASTM D5185m0000AdminumppmASTM D5185m0000AdminumppmASTM D5185m0000ManganeseppmASTM D5185m0000ManganeseppmASTM D5185m0000ManganeseppmASTM D5185m22c1c1c1 <td< th=""><td>Sample Number</td><td></td><td>Client Info</td><td></td><th>KCPA018021</th><td>KCPA011829</td><td>KCP55054</td></td<>	Sample Number		Client Info		KCPA018021	KCPA011829	KCP55054
Oil Age hrs Client Info 8000 0 5832 Oil Changed Client Info Not Changed N/A Changed Sample Status Image Imit/base current history1 history1 WEAR METALS method Imit/base current history1 history1 Iron ppm ASTM D5185m >50 0 0 0 Chronium ppm ASTM D5185m >33 0 0 0 Nickel ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m >10 0 0 0 Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >10 0 0 0 Cadmium ppm ASTM D5185m >0 0 0 0 Admotium ppm ASTM D5185m 90 12 1 1 1	Sample Date		Client Info		30 May 2024	04 Dec 2023	05 Feb 2023
Oil Changed Sample StatusClient InfoNot Changed ABNORMALN/AChanged ABNORMALWEAR METALSmethodlimit/basecurrenthistory1history1IronppmASTM D5185m>50000NickelppmASTM D5185m>330<100NickelppmASTM D5185m>33000SilverppmASTM D5185m>32000AluminumppmASTM D5185m>10000LeadppmASTM D5185m>10000CopperppmASTM D5185m>10000CopperppmASTM D5185m>10000CadmiumppmASTM D5185m>10000ADDITIVESmethodlimi/basecurrenthistory1history1BariumppmASTM D5185m0000MolybdenumppmASTM D5185m9012<1<1CalciumppmASTM D5185m20000MagnesiumppmASTM D5185m901637015974ContamineppmASTM D5185m22<1<1<1CurrentppmASTM D5185m22<1<1<1ContamineppmASTM D5185m22<1<1<1ContamineppmASTM D5185m22<1<1	Machine Age	hrs	Client Info		48054	0	42684
Sample StatusImage StatusmethodImit/baseCurrentMBNORMALNORMALWEAR METALSmethodlimi/basecurrenthistory1history1IronppmASTM D5185m>50000NickelppmASTM D5185m>330<10NickelppmASTM D5185m>330000SilverppmASTM D5185m>300000AluminumppmASTM D5185m>1000000LeadppmASTM D5185m>1000	Oil Age	hrs	Client Info		8000	0	5832
WEAR METALS method limit/base current history1 histo Iron ppm ASTM D5185m >50 0 0 0 Ohromium ppm ASTM D5185m >30 <1 0 Nickel ppm ASTM D5185m >30 0 <1 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m >10 0 <td>Oil Changed</td> <td></td> <td>Client Info</td> <td></td> <th>Not Changd</th> <td>N/A</td> <td>Changed</td>	Oil Changed		Client Info		Not Changd	N/A	Changed
Iron ppm ASTM D5185m >50 0 0 0 Chromium ppm ASTM D5185m >3 0 <1 0 Nickel ppm ASTM D5185m >3 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 0 Lead ppm ASTM D5185m >50 4 12 9 Tin ppm ASTM D5185m >50 4 12 9 Tin ppm ASTM D5185m 50 4 12 9 Tin ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 <1 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 0 Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 0 0 0 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 <1	Iron	ppm	ASTM D5185m	>50	0	0	0
Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 0 0 Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >50 4 12 9 Tin ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Maganesium ppm ASTM D5185m 0 12 <1 <1 Calcium ppm ASTM D5185m 2 0 0 0	Chromium	ppm	ASTM D5185m	>10	0	0	0
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Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >50 4 12 9 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 90 0 0 0 0 Magnanese ppm ASTM D5185m 90 12 <1 <1 0 Magnanese ppm ASTM D5185m 2 0 0 0 0 Magnanese ppm ASTM D5185m 21 <1 <1 4 4 2 Calcium ppm ASTM D5185m 25 <1 <1< <1 1 0 0 <td< th=""><td>Aluminum</td><td></td><td>ASTM D5185m</td><td>>10</td><th>0</th><td>0</td><td>0</td></td<>	Aluminum		ASTM D5185m	>10	0	0	0
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Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m 90 0 0 0 Manganese ppm ASTM D5185m 90 12 <1 <1 Magnesium ppm ASTM D5185m 90 12 <1 <1 Calcium ppm ASTM D5185m 90 12 <1 <1 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m <1 <1 <1 4 Zinc ppm ASTM D5185m 19310 16370 15974 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 <1 2 <1 Vater % ASTM D5045 0.0015 0.004 0.005 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Barium ppm ASTM D5185m 90 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 90 12 <1 0 Magnesium ppm ASTM D5185m 90 12 <1 <1 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 2 0 0 0 Sulfur ppm ASTM D5185m 2 0 0 0 Sulfur ppm ASTM D5185m 2 13 0 0 Sulfur ppm ASTM D5185m 19310 16370 15974 CONTAMINANTS method limit/base current history1 history1 Sodium ppm ASTM D5185m >25 <1 <1 <1 Vater % ASTM D5185m >20 <1 2	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 90 12 <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	90	0	0	0
Magnesium ppm ASTM D5185m 90 12 <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m <1 <1 4 Zinc ppm ASTM D5185m 13 0 0 Sulfur ppm ASTM D5185m 19310 16370 15974 CONTAMINANTS method limit/base current history1 histor Solium ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 <1 0 <0.05 Potassium ppm ASTM D5185m >20 <1 2 <1 Water % ASTM D5185m >20 <1 2 <1 Water ppm ASTM D6304 >0.05 0.015 0.004 0.005 particles >4µm ASTM D7647 >1300 2798 9731	Manganese	ppm	ASTM D5185m		0	<1	0
Phosphorus ppm ASTM D5185m <1	Magnesium	ppm	ASTM D5185m	90	12	<1	<1
Zinc ppm ASTM D5185m 13 0 0 Sulfur ppm ASTM D5185m 19310 16370 15974 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 2 <1 Potassium ppm ASTM D5185m >20 <1 2 <1 Water % ASTM D6304 >0.05 0.015 0.004 0.005 ppm Water ppm ASTM D6304 >500 155 44 58.9 FLUID CLEANLINESS method limit/base current history1 histor Particles >4µm ASTM D7647 >1300 2798 9731 70 Particles >14µm ASTM D7647 >80 249 595 14 Particles >21µm ASTM D7647 >20 49 121 5	Calcium	ppm	ASTM D5185m	2	0	0	0
Sulfur ppm ASTM D5185m 19310 16370 15974 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 <1 0 Potassium ppm ASTM D5185m >20 <1 2 <1 Water % ASTM D6304 >0.05 0.015 0.004 0.005 ppm Water ppm ASTM D6304 >500 155 44 58.9 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >1300 2798 9731 70 Particles >14µm ASTM D7647 >80 249 595 14 Particles >21µm ASTM D7647 >20 49 121 5 Particles >38µm ASTM D7647 >4 3 1	Phosphorus	ppm	ASTM D5185m		<1	<1	4
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 2 <1 Potassium ppm ASTM D5185m >20 <1 2 <1 Water % ASTM D6304 >0.05 0.015 0.004 0.005 ppm Water ppm ASTM D6304 >500 155 44 58.9 FLUID CLEANLINESS method limit/base current history1 histor Particles >4µm ASTM D7647 >1300 2798 9731 70 Particles >6µm ASTM D7647 >20 49 595 14 Particles >21µm ASTM D7647 >20 49 121 5 Particles >38µm ASTM D7647 3 1 1 <t< th=""><td>Zinc</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>13</th><td>0</td><td>0</td></t<>	Zinc	ppm	ASTM D5185m		13	0	0
Silicon ppm ASTM D5185m >25 <1	Sulfur	ppm	ASTM D5185m		19310	16370	15974
Sodium ppm ASTM D5185m 10 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>25	<1	<1	<1
Water % ASTM D6304 >0.05 0.015 0.004 0.005 ppm Water ppm ASTM D6304 >500 155 44 58.9 FLUID CLEANLINESS method limit/base current history1 histor Particles >4µm ASTM D7647 7558 39379 175 Particles >6µm ASTM D7647 >1300 2798 9731 70 Particles >14µm ASTM D7647 >80 249 595 14 Particles >21µm ASTM D7647 >20 49 121 5 Particles >38µm ASTM D7647 >3 0 0 0	Sodium	ppm	ASTM D5185m		10	<1	0
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FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 7558 39379 175 Particles >6µm ASTM D7647 >1300 2798 9731 70 Particles >14µm ASTM D7647 >80 249 595 14 Particles >21µm ASTM D7647 >20 49 121 5 Particles >38µm ASTM D7647 >4 3 1 1 Particles >71µm ASTM D7647 >3 0 0 0	Water	%	ASTM D6304	>0.05	0.015	0.004	0.005
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Particles >6µm ASTM D7647 >1300 ▲ 2798 ▲ 9731 70 Particles >14µm ASTM D7647 >80 ▲ 249 ▲ 595 14 Particles >21µm ASTM D7647 >20 ▲ 49 ▲ 121 5 Particles >38µm ASTM D7647 >4 3 1 1 Particles >71µm ASTM D7647 >3 0 0 0	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 ▲ 249 ▲ 595 14 Particles >21μm ASTM D7647 >20 ▲ 49 ▲ 121 5 Particles >38μm ASTM D7647 >4 3 1 1 Particles >71μm ASTM D7647 >3 0 0 0							
Particles >21μm ASTM D7647 >20 ▲ 49 ▲ 121 5 Particles >38μm ASTM D7647 >4 3 1 1 Particles >71μm ASTM D7647 >3 0 0 0				>1300	<u> </u>	A 9731	70
Particles >38μm ASTM D7647 >4 3 1 1 Particles >71μm ASTM D7647 >3 0 0 0							
Particles >71μm ASTM D7647 >3 0 0 0	•		ASTM D7647	>20	<u> </u>	<u>▲</u> 121	5
					3	1	1
Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 20/19/15 ▲ 22/20/16 15/13/			ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	A 20/19/15	2 2/20/16	15/13/11
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 0.4 0.35 0.36 0.35	Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	0.35	0.36	0.35

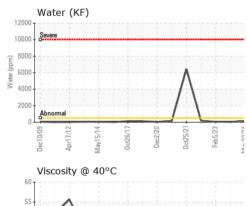


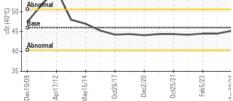
OIL ANALYSIS REPORT







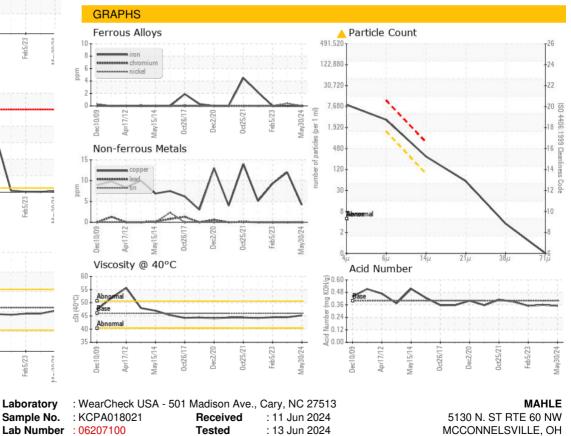






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	46	45.2	44.5	44.5
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						

Bottom



: 13 Jun 2024 - Angela Borella

Test Package : IND 2 (Additional Tests: KF, PrtCount) To discuss this sample report, contact Customer Service at 1-800-237-1369.

Unique Number : 11074561

* - 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)

Diagnosed

Certificate 12367

Contact/Location: GEORGE MAXWELL - MAHMCC

US 43756

T:

F:

Contact: GEORGE MAXWELL