

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

6320174 (S/N 1117)

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

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We were unable to perform a particle count due to a high concentration of particles present in this sample. We advise that you stop the unit and follow the water drain-off procedure for this component. We recommend an early resample in 500 hours to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of visible silt present in the sample. There is a light concentration of water present in the oil.

Fluid Condition

The AN level is acceptable for this fluid.

Iron ppm ASTM D5185m >50 <1	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4754 3193 Oil Ago hrs Client Info Not Changd N/A Sample Status Client Info Not Changd ABNORMAL ABNORMAL WEAR METALS method Imit/base current history history Nickel ppm ASTM DS185m >50 <1	Sample Number		Client Info		KCPA017124	KCPA001320	
Oil Age hrs Client Info 1561 0 Oil Changed Client Info Not Changd N/A Sample Status Imit Diffsm >50 <1	Sample Date		Client Info		02 Apr 2024	04 Apr 2023	
Oil Changed Client Info Not Changd N/A Sample Status method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1 0 Chromium ppm ASTM D5185m >30 0 0 Nickel ppm ASTM D5185m >30 0 0 Silver ppm ASTM D5185m >10 21 0 Cadmium ppm ASTM D5185m >10 21 0 Cadmium ppm ASTM D5185m >10 21 0 Cadmium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Molydenum ppm ASTM D5185m 0 0 0	Machine Age	hrs	Client Info		4754	3193	
Oil Changed Client Info Not Changd ABNORMAL N/A WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1	Oil Age	hrs	Client Info		1561	0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >50 <1	Oil Changed		Client Info		Not Changd	N/A	
Iron ppm ASTM D5185m >50 <1 0 Chromium ppm ASTM D5185m >10 <1	Sample Status				ABNORMAL	ABNORMAL	
Chromium ppm ASTM D5185m >10 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >3 0 0	Iron	ppm	ASTM D5185m	>50	<1	0	
Titanium ppm ASTM D5185m >3 <1 0 Silver ppm ASTM D5185m >2 <1	Chromium	ppm	ASTM D5185m	>10	<1	0	
Silver ppm ASTM D5185m >2 <1 0 Aluminum ppm ASTM D5185m >10 2 0 Lead ppm ASTM D5185m >10 <1	Nickel	ppm	ASTM D5185m	>3	0	0	
Atuminum ppm ASTM D5185m >10 2 0 Lead ppm ASTM D5185m >10 <1	Titanium	ppm	ASTM D5185m	>3	<1	0	
Lead ppm ASTM D5185m >10 <1 0 Copper ppm ASTM D5185m >50 11 22 Tin ppm ASTM D5185m >10 <1	Silver	ppm	ASTM D5185m	>2	<1	0	
Copper ppm ASTM D5185m >50 11 22 Tin ppm ASTM D5185m >10 <1	Aluminum	ppm	ASTM D5185m	>10	2	0	
Tin ppm ASTM D5185m >10 <1 0 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 Barium ppm ASTM D5185m 0 0 0 Maganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 3 1 Calcium ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 23500 21388 20486 Sulfur ppm ASTM D5185m >20 3 0	Lead		ASTM D5185m	>10	<1	0	
Tin ppm ASTM D5185m >10 <1 0 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 Barium ppm ASTM D5185m 0 0 0 Maganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 3 1 Calcium ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 23500 21388 20486 Sulfur ppm ASTM D5185m >20 3 0	Copper	ppm	ASTM D5185m	>50	11	22	
Vanadium ppm ASTM D5185m <1 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <-1 Magnesium ppm ASTM D5185m 0 3 1 Galcium ppm ASTM D5185m 0 3 1 Magnesium ppm ASTM D5185m 0 3 1 Calcium ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 0 3 0 Sulfur ppm ASTM D5185m 225 0					<1	0	
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 90 3 0 Marganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 100 34 25 Calcium ppm ASTM D5185m 0 3 1 Calcium ppm ASTM D5185m 0 3 1 Galcium ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 0 3 1 Sulfur ppm ASTM D5185m 225 0 0 Sodium ppm ASTM D5185m 220 3 <	Vanadium		ASTM D5185m		<1	0	
Boron ppm ASTM D5185m 0 0 0	Cadmium		ASTM D5185m		0	0	
Barium ppm ASTM D5185m 90 3 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 100 34 25 Magnesium ppm ASTM D5185m 100 34 25 Calcium ppm ASTM D5185m 0 7 0 Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Sodium ppm ASTM D5185m >20 3 0 Potassium ppm ASTM D5185m >20	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 100 34 25 Magnesium ppm ASTM D5185m 100 34 25 Calcium ppm ASTM D5185m 0 7 0 Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 166 7 Sulfur ppm ASTM D5185m 23500 21388 20486 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Vater % ASTM D5185m >20 3 0 Putassium ppm ASTM D6304 >0.05 0.3299 0.018 Patticles >4µm ASTM D7647 >1300	Boron	ppm	ASTM D5185m	0	0	0	
Magnesse ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 100 34 25 Calcium ppm ASTM D5185m 0 7 0 Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 Solicon ppm ASTM D5185m 23500 21388 20486 Solicon ppm ASTM D5185m >25 0 0 Solicon ppm ASTM D5185m >20 3 0 Solicon ppm ASTM D5185m >20 3 0 Solicon ppm ASTM D5185m >20 3 0 Vater % ASTM D6304 >0.05 A 0.329 0.018 FLUID CLEANLINESS method limit/base	Barium	ppm	ASTM D5185m	90	3	0	
Magnesium ppm ASTM D5185m 100 34 25 Calcium ppm ASTM D5185m 0 7 0 Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 Solicon ppm ASTM D5185m 23500 21388 20486 Solicon ppm ASTM D5185m 25 0 0 Solium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Vater % ASTM D5185m >20 3 0 Putter ppm ASTM D5185m >20 3 0.018 FLUID CLEANLINES method limit/base <	Molybdenum	ppm	ASTM D5185m	0	0	0	
Calcium ppm ASTM D5185m 0 7 0 Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Sodium ppm ASTM D5185m >20 3 0 Vater % ASTM D5185m >20 3 0 ppm Water ppm ASTM D6304 >0.05 A 3290 182.9 Particles >4µm ASTM D7647 >1300	Manganese	ppm	ASTM D5185m		0	<1	
Phosphorus ppm ASTM D5185m 0 3 1 Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Vater % ASTM D5185m >20 3 0 PutliD CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 4 4997 Particles >1µm ASTM D7647 >20 <	Magnesium	ppm	ASTM D5185m	100	34	25	
Zinc ppm ASTM D5185m 0 16 7 Sulfur ppm ASTM D5185m 23500 21388 20486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Potassium ppm ASTM D5185m >20 3 0 Water % ASTM D6304 >0.05 0.329 0.018 ppm Water ppm ASTM D7647 >1300 19841 Particles >4µm ASTM D7647 >1300 4997 Particles >6µm ASTM D7647 >80 4997 Particles >1µm ASTM D7647 >80 4997 Particles >21µm ASTM D7647 >80	Calcium	ppm	ASTM D5185m	0	7	0	
Sulfur ppm ASTM D5185m 23500 21388 20486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Potassium ppm ASTM D5185m >20 3 0 Water % ASTM D5185m >20 3 0.018 ppm Water ppm ASTM D6304 >0.05 A 0.329 0.018 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 19841 Particles >6µm ASTM D7647 >1300 4 4997 Particles >1µm ASTM D7647 >20 4 193 Particles >21µm ASTM D7647 >3	Phosphorus	ppm	ASTM D5185m	0	3	1	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m >20 3 0 Potassium ppm ASTM D6304 >0.05 ▲ 0.329 0.018 Water % ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 4 4997 Particles >4µm ASTM D7647 >20 4 193 Particles >38µm ASTM D7647 >20 4 47 Particles >38µm ASTM D7647<	Zinc	ppm	ASTM D5185m	0	16	7	
Silicon ppm ASTM D5185m >25 0 0 Sodium ppm ASTM D5185m 4 7 Potassium ppm ASTM D5185m >20 3 0 Water % ASTM D6304 >0.05 ▲ 0.329 0.018 ppm Water ppm ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >80 4 4997 Particles >14µm ASTM D7647 >20 4 47 Particles >21µm ASTM D7647 >3 2 Particles >38µm ASTM D7647 >3 2 Particles >71µm ASTM D7647 >3 2 Oil Cleanliness ISO 4406 (c) /17/13	Sulfur	ppm	ASTM D5185m	23500	21388	20486	
Sodium ppm ASTM D5185m 4 7 Potassium ppm ASTM D5185m >20 3 0 Water % ASTM D6304 >0.05 ▲ 0.329 0.018 ppm Water ppm ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 4 4997 Particles >6µm ASTM D7647 >80 4 193 Particles >14µm ASTM D7647 >20 4 47 Particles >38µm ASTM D7647 2 Particles >71µm ASTM D7647 -3 0 Oil Cleanliness ISO 4406 (c) >/17/13	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 0 Water % ASTM D6304 >0.05 ▲ 0.329 0.018 ppm Water ppm ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 4 4997 Particles >14µm ASTM D7647 >20 4 193 Particles >21µm ASTM D7647 >20 4 47 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 2 Gli Cleanliness ISO 4406 (c) >/17/13 2 2 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>25	0	0	
Water % ASTM D6304 >0.05 ▲ 0.329 0.018 ppm Water ppm ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 ▲ 4997 Particles >6µm ASTM D7647 >20 ▲ 193 Particles >21µm ASTM D7647 >20 ▲ 47 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		4	7	
ppm Water ppm ASTM D6304 >500 ▲ 3290 182.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 ▲ 4997 Particles >14µm ASTM D7647 >80 ▲ 193 Particles >21µm ASTM D7647 >20 ▲ 477 Particles >38µm ASTM D7647 >4 2 Particles >71µm ASTM D7647 >3 2 Oil Cleanliness ISO 4406 (c) >/17/13 2 21/19/15	Potassium	ppm	ASTM D5185m	>20	3	0	
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 4997 Particles >6µm ASTM D7647 >80 ▲ 193 Particles >14µm ASTM D7647 >20 ▲ 477 Particles >21µm ASTM D7647 >20 ▲ 477 Particles >38µm ASTM D7647 >4 2 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.05	A 0.329	0.018	
Particles >4µm ASTM D7647 19841 Particles >6µm ASTM D7647 >1300 ▲ 4997 Particles >14µm ASTM D7647 >80 ▲ 193 Particles >21µm ASTM D7647 >20 ▲ 47 Particles >21µm ASTM D7647 >20 ▲ 47 Particles >38µm ASTM D7647 >4 2 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>500	A 3290	182.9	
Particles >6µm ASTM D7647 >1300 ▲ 4997 Particles >14µm ASTM D7647 >80 ▲ 193 Particles >21µm ASTM D7647 >20 ▲ 47 Particles >38µm ASTM D7647 >4 2 Particles >38µm ASTM D7647 >4 2 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 ▲ 193 Particles >21μm ASTM D7647 >20 ▲ 47 Particles >38μm ASTM D7647 >4 2 Particles >38μm ASTM D7647 >4 2 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647			19841	
Particles >21μm ASTM D7647 >20 ▲ 47 Particles >38μm ASTM D7647 >4 2 Particles >37μm ASTM D7647 >3 0 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>1300		4 997	
Particles >38μm ASTM D7647 >4 2 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>80			
Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm			>20		4 7	
Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>4		2	
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3		0	
	Oil Cleanliness		ISO 4406 (c)	>/17/13		A 21/19/15	
Acid Number (AN) mg KOH/g ASTM D8045 1.0 0.34 0.28	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.34	0.28	

Contact/Location: Service Manager - VEOCLATN Page 1 of 2



OIL ANALYSIS REPORT

method

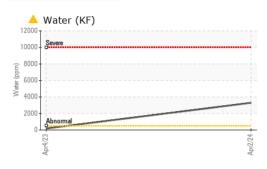
limit/base

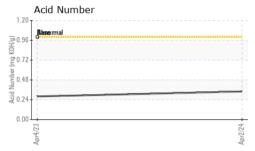
current

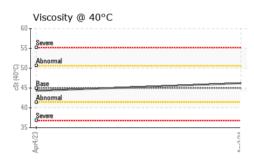
historv1

historv2

VISUAL







Yellow Metal				e current	history1	history
	scalar	*Visual	NONE	NONE	NONE	
	scalar	*Visual	NONE	NONE	NONE	
		*Visual	NONE	NONE	NONE	
	scalar	*Visual	NONE	🔺 HEAVY	NONE	
Debris		*Visual	NONE	NONE	A MODER	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.05	 0.2%	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPERTIE	ES	method	limit/base	e current	history1	history
		ASTM D445	45	46.2	44.3	
SAMPLE IMAGES		method	limit/base	e current	history1	history
Color						no image
20101				108710		no inag
Bottom				-a		no imag
GRAPHS						
Ferrous Alloys						
iron						
2 2			24			
Apr4/23			Apr2/24			
Non-ferrous Metals			Apr2/			
Non-ferrous Metals			Apr2/			
Non-ferrous Metals			Apr2/			
Non-ferrous Metals			Apr2/			
Non-ferrous Metals						
Non-ferrous Metals			Apri2/24			
Non-ferrous Metals				Acid Numer		
Non-ferrous Metals			Apr2/24	Acid Number		
Non-ferrous Metals			Apr2/24			
Non-ferrous Metals			Apr2/24			
Non-ferrous Metals			Apr2/24			
Non-ferrous Metals			Apr2/24	20 96 72 48 24		
Non-ferrous Metals			Apri2/24 Apri2/24 Acid Number (mg KOH(g)	20 96 84555 mmal 172 48 24 24		
Non-ferrous Metals			Apr2/24	20 96 72 48 24		
Non-ferrous Metals			Apri2/24 Apri2/24 Acid Number (mg KOH(g)	20 96 84555 mmal 172 48 24 24		
Non-ferrous Metals	Madison	Ave Carv	Apri2/24 Apri2/22 Apri2/24 Apr	20 96 72 48 224		
Non-ferrous Metals	Madison		4912734 4912734 4912734 WC 277513	20 96 72 48 224	VEOLIA NOR	
Non-ferrous Metals	Receiv Tested	red : 08 I : 11	b727/dW b72	20 96 72 48 .24 .24 .24 .24	VEOLIA NOR 101 LIFES	S GOOD V
Non-ferrous Metals	Receiv Tested Diagno	ved : 08 I : 11 osed : 11	http://www.pipersonality.com/ http:/	20 96 72 48 .24 .24 .24 .24	VEOLIA NOR 101 LIFES	S GOOD V RKSVILLE US 37
Non-ferrous Metals			Apr2/24	20 96 72 48 24		

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)

Т:

F:

Certificate L2367

Contact/Location: Service Manager - VEOCLATN