

### **OIL ANALYSIS REPORT**

# Sample Rating Trend VISCOSITY

2590712 (S/N 1100) Component

Compressor

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 moderate amount of particulates present in the oil.

#### Fluid Condition

The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

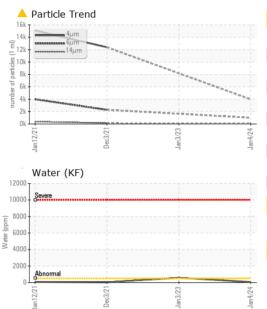
Sample Date     Client Info     04 Jan 2024     03 Jan 2023     03 Dec 20       Machine Age     hrs     Client Info     26723     25966     24759       Oil Age     hrs     Client Info     N/A     Changed     Changed       Sample Status     Client Info     N/A     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D585m     >10     <1     0     0       Nickel     ppm     ASTM D585m     >3     0     <1     0     0       Aluminum     ppm     ASTM D585m     >3     <1     0     0     0       Aluminum     ppm     ASTM D585m     >10     0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Date     Info     04 Jan 2024     03 Jan 2023     03 Dec 20       Machine Age     hrs     Client Info     26723     25966     24759       Oil Age     hrs     Client Info     N/A     Changed     Changed       Sample Status     Client Info     N/A     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     imit/base     current     history1     history1       Iron     ppm     ASTM D5185m     >50     0     0     3       Iron     ppm     ASTM D5185m     >3     -1     0     0       Nickel     ppm     ASTM D5185m     >3     -1     0     0       Aluminum     ppm     ASTM D5185m     >10     0     0     0       Capper     ppm     ASTM D5185m     >10     0     0     0       Autiminum     ppm     ASTM D5185m     0     0     0     0       Autiminum     ppm     ASTM D5185m     0     0     0     0 <t< td=""><td>Sample Number</td><td></td><td>Client Info</td><td></td><th>KCPA010679</th><td>KCP40354D</td><td>KCP39314</td></t<>	Sample Number		Client Info		KCPA010679	KCP40354D	KCP39314
Oil Age     hrs     Client Info     0     1207     20537       Oil Changed     Client Info     N/A     ABNORMAL     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     limibbase     current     history1     history1       Iron     ppm     ASTM D5185m     >50     0     0     3       Chromium     ppm     ASTM D5185m     >3     0     <1	Sample Date		Client Info		04 Jan 2024	03 Jan 2023	03 Dec 2021
Oil Changed     Client Info     N/A     Changed     Changed     Changed     ABNORMAL	Machine Age	hrs	Client Info		26723	25966	24759
Sample Status     method     limit/base     current     history1     ABNORMAL     ABNORMAL	Oil Age	hrs	Client Info		0	1207	20537
WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D5165m     >50     0     0     3       Chromium     ppm     ASTM D5165m     >3     <1	Oil Changed		Client Info		N/A	Changed	Changed
Iron     ppm     ASTM D5185m     >50     0     0     3       Chromium     ppm     ASTM D5185m     >3     0     <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium     ppm     ASTM D5185m     >10     <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >3     0     <1     0       Titanium     ppm     ASTM D5185m     >3     <1	Iron	ppm	ASTM D5185m	>50	0	0	3
Titanium     ppm     ASTM D5185m     >3     <1     0     0       Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >10     2     0     ▲     15       Lead     ppm     ASTM D5185m     >10     0     0     0     0       Copper     ppm     ASTM D5185m     >10     0     0     0     0       Antimony     ppm     ASTM D5185m     >10     0     0     0     0       Cadadium     ppm     ASTM D5185m     0     0     0     0     0       Addium     ppm     ASTM D5185m     0     0     0     0     0       Barium     ppm     ASTM D5185m     0	Chromium	ppm	ASTM D5185m	>10	<1	0	0
Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >10     2     0     ▲     15       Lead     ppm     ASTM D5185m     >10     0     0     0     0       Copper     ppm     ASTM D5185m     >10     0     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0     0       Actimony     ppm     ASTM D5185m     0     0     0     0     0       Additium     ppm     ASTM D5185m     90     0	Nickel	ppm	ASTM D5185m	>3	0	<1	0
Aluminum     ppm     ASTM D5185m     >10     2     0     ▲ 15       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     13     5     2       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Boron     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     90     <1	Titanium	ppm	ASTM D5185m	>3	<1	0	0
Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     13     5     2       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     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       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Maganese     ppm     ASTM D5185m     0     0     0     0       Slicon     ppm     ASTM D5185m     2     0     0     0       Slicon     ppm     ASTM D5185m     25     0     <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper     ppm     ASTM D5185m     >50     13     5     2       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Marganese     ppm     ASTM D5185m     90     0     0     0     0       Marganese     ppm     ASTM D5185m     90     <1	Aluminum	ppm	ASTM D5185m	>10	2	0	<b>1</b> 5
Copper     ppm     ASTM D5185m     >50     13     5     2       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Malydenum     ppm     ASTM D5185m     0     0     0     0       Magnese     ppm     ASTM D5185m     0     0     0     0       Magnese     ppm     ASTM D5185m     90     <1	Lead	ppm	ASTM D5185m	>10	0	0	0
Antimony     ppm     ASTM D5185m       0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Magnese     ppm     ASTM D5185m     90     <1	Copper	ppm	ASTM D5185m	>50	13	5	2
Vanadium     ppm     ASTM D5185m     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     90     <1     34     2       Calcium     ppm     ASTM D5185m     90     <1     34     2       Calcium     ppm     ASTM D5185m     2     0     0     0       Magnesium     ppm     ASTM D5185m     2     0     0     0       Sulfur     ppm     ASTM D5185m     2     0     0     0       Sulfur     ppm     ASTM D5185m     225     0     <1<<1     0       Sulfur     ppm     ASTM D5185m     >20     1     <1     0			ASTM D5185m	>10	0	0	0
Vanadium     ppm     ASTM D5185m     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Boron     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     90     <11     34     2       Magnesium     ppm     ASTM D5185m     90     <11     34     2       Calcium     ppm     ASTM D5185m     90     <11     34     2       Calcium     ppm     ASTM D5185m     22     0     0     0       Sulfur     ppm     ASTM D5185m     25     0     <1167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <11     1	Antimony	ppm	ASTM D5185m				0
ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     90     0     222     0       Molybdenum     ppm     ASTM D5185m     90     0     0     0     0       Magnesium     ppm     ASTM D5185m     90     <1	-	ppm	ASTM D5185m		0	0	0
Boron     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Manganese     ppm     ASTM D5185m     90     <1	Cadmium	ppm	ASTM D5185m		0	0	0
Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Marganese     ppm     ASTM D5185m     90     <1     34     2       Calcium     ppm     ASTM D5185m     90     <1     34     2       Calcium     ppm     ASTM D5185m     90     <1     34     2       Calcium     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     55     46     402       Zinc     ppm     ASTM D5185m     13620     17167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >20     1     <1     0       Sodium     ppm     ASTM D5185m     >20     1     <1     0	ADDITIVES		method	limit/base	current	history1	history2
Barium     ppm     ASTM D5185m     90     0     22     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Maganese     ppm     ASTM D5185m     90     <1	Boron	ppm	ASTM D5185m		0	0	0
Molybdenum     ppm     ASTM D5185m     0     0     0       Manganese     ppm     ASTM D5185m     90     <1	Barium		ASTM D5185m	90	0	22	0
Manganese     ppm     ASTM D5185m     0     <1     34     2       Calcium     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     25     46     402       Zinc     ppm     ASTM D5185m     3     4     329       Sulfur     ppm     ASTM D5185m     3     4     329       Sulfur     ppm     ASTM D5185m     3     4     329       Solicon     ppm     ASTM D5185m     25     0     <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     55     46     402       Zinc     ppm     ASTM D5185m     3     4     329       Sulfur     ppm     ASTM D5185m     13620     17167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <1	-		ASTM D5185m		0	0	0
Phosphorus     ppm     ASTM D5185m     55     46     402       Zinc     ppm     ASTM D5185m     3     4     329       Sulfur     ppm     ASTM D5185m     13620     17167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <1     3       Sodium     ppm     ASTM D5185m     >25     0     <1	Magnesium	ppm	ASTM D5185m	90	<1	34	2
Zinc     ppm     ASTM D5185m     3     4     329       Sulfur     ppm     ASTM D5185m     13620     17167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <1	Calcium	ppm	ASTM D5185m	2	0	0	0
Sulfur     ppm     ASTM D5185m     13620     17167     1392       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <1     <1       Sodium     ppm     ASTM D5185m     >20     1     <1     <1     0       Sodium     ppm     ASTM D5185m     >20     1     <1     0        Potassium     ppm     ASTM D5185m     >20     1     <1     0        Water     %     ASTM D6304     >0.05     0.0066     0.058     0.003       ppm Water     ppm     ASTM D6304     >500     62     585.3     32.5       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     >1300     1009      42881       Particles >14µm     ASTM D7647     >20     37      43       Particles >38µm     ASTM D7647	Phosphorus	ppm	ASTM D5185m		55	46	402
CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >25     0     <1	Zinc	ppm	ASTM D5185m		3	4	329
Silicon   ppm   ASTM D5185m   >25   0   <1	Sulfur	ppm	ASTM D5185m		13620	17167	1392
Sodium     ppm     ASTM D5185m     0     <1	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium     ppm     ASTM D5185m     0     <1     3       Potassium     ppm     ASTM D5185m     >20     1     <1	Silicon	ppm	ASTM D5185m	>25	0	<1	<1
Potassium     ppm     ASTM D5185m     >20     1     <1     0       Water     %     ASTM D6304     >0.05     0.006     ▲ 0.058     0.003       ppm Water     ppm     ASTM D6304     >500     62     ▲ 585.3     32.5       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     3979      12387       Particles >6µm     ASTM D7647     >1300     1009      2281       Particles >14µm     ASTM D7647     >80     101      ▲ 145       Particles >21µm     ASTM D7647     >20     ▲ 37      ▲ 43       Particles >38µm     ASTM D7647     >4      3       Particles >71µm     ASTM D7647     >3     0      0       Oil Cleanliness     ISO 4406 (c)     >/17/13     19/17/14      18/14	Sodium		ASTM D5185m			<1	3
Water   %   ASTM D6304   >0.05   0.006   ▲   0.058   0.003     ppm Water   ppm   ASTM D6304   >500   62   ▲   585.3   32.5     FLUID CLEANLINESS   method   limit/base   current   history1   history1     Particles >4µm   ASTM D7647   3979    12387     Particles >6µm   ASTM D7647   >1300   1009    4   2281     Particles >14µm   ASTM D7647   >80   ▲   101    ▲   145     Particles >21µm   ASTM D7647   >20   ▲   37    ▲   43     Particles >38µm   ASTM D7647   >4   4    3     Particles >71µm   ASTM D7647   >3   0    0     Oil Cleanliness   ISO 4406 (c)   >/17/13   ▲   19/17/14    ▲   18/14				>20	-		
ppm Water     ppm     ASTM D6304     >500     62     ▲ 585.3     32.5       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     3979      12387       Particles >6µm     ASTM D7647     >1300     1009      4 2281       Particles >14µm     ASTM D7647     >80     101      4 43       Particles >21µm     ASTM D7647     >20     377      4 43       Particles >38µm     ASTM D7647     >4     4      3       Particles >38µm     ASTM D7647     >4     4      3       Particles >71µm     ASTM D7647     >3     0      4     18/14       FLUID DEGRADATION     method     limit/base     current     history1     history1	Water		ASTM D6304	>0.05			0.003
Particles >4μm   ASTM D7647   3979    12387     Particles >6μm   ASTM D7647   >1300   1009    2281     Particles >14μm   ASTM D7647   >80   101    145     Particles >21μm   ASTM D7647   >20   37    43     Particles >21μm   ASTM D7647   >4   4    3     Particles >38μm   ASTM D7647   >4   4    3     Particles >71μm   ASTM D7647   >3   0    0     Oil Cleanliness   ISO 4406 (c)   >/17/13   19/17/14    18/14							
Particles >6µm   ASTM D7647   >1300   1009    2281     Particles >14µm   ASTM D7647   >80   ▲ 101    ▲ 145     Particles >21µm   ASTM D7647   >20   ▲ 37    ▲ 43     Particles >38µm   ASTM D7647   >4   4    3     Particles >38µm   ASTM D7647   >3   0    0     Oil Cleanliness   ISO 4406 (c)   >/17/13   ▲ 19/17/14    ▲ 18/14     FLUID DEGRADATION   method   limit/base   current   history1   history1	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14µm   ASTM D7647   >80   ▲ 101    ▲ 145     Particles >21µm   ASTM D7647   >20   ▲ 37    ▲ 43     Particles >38µm   ASTM D7647   >4   4    3     Particles >71µm   ASTM D7647   >3   0    0     Oil Cleanliness   ISO 4406 (c)   >/17/13   ▲ 19/17/14    ▲ 18/14     FLUID DEGRADATION   method   limit/base   current   history1   history1	Particles >4µm		ASTM D7647		3979		12387
Particles >14µm   ASTM D7647   >80   ▲ 101    ▲ 145     Particles >21µm   ASTM D7647   >20   ▲ 37    ▲ 43     Particles >38µm   ASTM D7647   >4   4    3     Particles >71µm   ASTM D7647   >3   0    0     Oil Cleanliness   ISO 4406 (c)   >/17/13   ▲ 19/17/14    ▲ 18/14     FLUID DEGRADATION   method   limit/base   current   history1   history1	Particles >6µm		ASTM D7647	>1300	1009		<b>2281</b>
Particles >38μm     ASTM D7647     >4     4      3       Particles >71μm     ASTM D7647     >3     0      0       Oil Cleanliness     ISO 4406 (c)     >/17/13     ▲ 19/17/14      ▲ 18/14       FLUID DEGRADATION     method     limit/base     current     history1     history1			ASTM D7647	>80	<b>1</b> 01		<b>1</b> 45
Particles >38μm     ASTM D7647     >4     4      3       Particles >71μm     ASTM D7647     >3     0      0       Oil Cleanliness     ISO 4406 (c)     >/17/13     ▲ 19/17/14      ▲ 18/14       FLUID DEGRADATION     method     limit/base     current     history1     history1	Particles >21µm		ASTM D7647	>20	<b>3</b> 7		<b>4</b> 3
Oil Cleanliness   ISO 4406 (c) >/17/13 ▲ 19/17/14    ▲ 18/14     FLUID DEGRADATION   method   limit/base   current   history1   history1	Particles >38µm		ASTM D7647	>4	4		3
FLUID DEGRADATION method limit/base current history1 history			ASTM D7647	>3	0		0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	<b>19/17/14</b>		▲ 18/14
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.35 0.36 0.898	Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	0.35	0.36	0.898

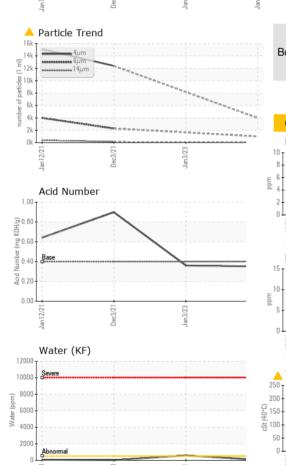
Report Id: BLANEWNC [WUSCAR] 06058733 (Generated: 01/16/2024 14:43:47) Rev: 1

Contact/Location: AMBER ? - BLANEWNC

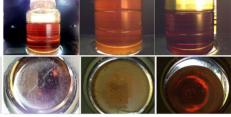


## **OIL ANALYSIS REPORT**





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	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	A MODER	LIGHT
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	<b>4</b> 54.51	50.8	▲ 75.3
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				a.		



Bottom

