

**OIL ANALYSIS REPORT** 

8775690 (S/N 1352)

Component

Compressor

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

# Sample Rating Trend **NORMAL**

### Recommendation

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 no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

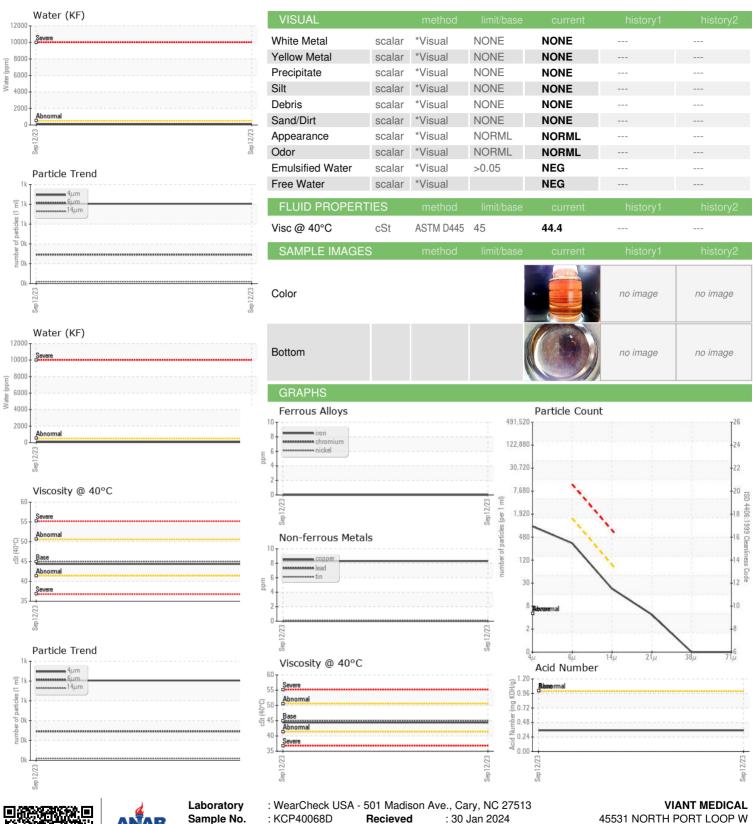
# **Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Sample Number			L		Sep 2023		
Sample Date	SAMPLE INFORM	//ATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         3500	Sample Number		Client Info		KCP40068D		
Oil Age         hrs         Client Info         3500	Sample Date		Client Info		12 Sep 2023		
Oil Changed Sample Status         Client Info         Changed NORMAL	Machine Age	hrs	Client Info		3500		
Sample Status	Oil Age	hrs	Client Info		3500		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         0	Oil Changed		Client Info		Changed		
Iron	Sample Status				NORMAL		
Chromium         ppm         ASTM D5185m         >10         0             Nickel         ppm         ASTM D5185m         >3         0             Titanium         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >10         0             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         0         0             Vanadium         ppm         ASTM D5185m         0         0             Vanadium         ppm         ASTM D5185m         0         0             Addium         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         0         0 <td>WEAR METALS</td> <td></td> <td>method</td> <td>limit/base</td> <td>current</td> <td>history1</td> <td>history2</td>	WEAR METALS		method	limit/base	current	history1	history2
Nickel   ppm   ASTM D5185m   >3   0         Titanium   ppm   ASTM D5185m   >3   0         Silver   ppm   ASTM D5185m   >2   0         Aluminum   ppm   ASTM D5185m   >10   0         Lead   ppm   ASTM D5185m   >10   0         Lead   ppm   ASTM D5185m   >10   0         Copper   ppm   ASTM D5185m   >50   8         Tin   ppm   ASTM D5185m   >10   0         Vanadium   ppm   ASTM D5185m   >0   0         Cadmium   ppm   ASTM D5185m   0         ADDITIVES   method   limit/base   current   history1   history2     Boron   ppm   ASTM D5185m   90   0         Molybdenum   ppm   ASTM D5185m   90   0         Manganese   ppm   ASTM D5185m   0   0         Manganese   ppm   ASTM D5185m   0   0         Calcium   ppm   ASTM D5185m   0   0         Phosphorus   ppm   ASTM D5185m   0   0         Calcium   ppm   ASTM D5185m   0   0         Phosphorus   ppm   ASTM D5185m   0   0         Sulfur   ppm   ASTM D5185m   0   0         CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   0         Vater   %   ASTM D5185m   >20   0         Vater   %   ASTM D5185m   >20   0         Vater   %   ASTM D6304   >500   99         FLUID CLEANLINESS   method   limit/base   current   history1   history2     Particles >4μm   ASTM D7647   >80   19         Particles >21μm   ASTM D7647   >4   0         Particles >21μm   ASTM D7647   >3   0   0         Particles >21μm   ASTM D7647   >4   0         Particles >21μm   ASTM D7647   >3   0   0         Particl	Iron	ppm	ASTM D5185m	>50	0		
Titanium   ppm   ASTM D5185m   >3   0	Chromium	ppm	ASTM D5185m	>10	0		
Stiver	Nickel	ppm	ASTM D5185m	>3	0		
Aluminum	Titanium	ppm	ASTM D5185m	>3	0		
Lead	Silver	ppm	ASTM D5185m	>2	0		
Copper         ppm         ASTM D5185m         >50         8             Tin         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         0         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         100         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Sulfur         ppm         ASTM D5185m         0         0 <td>Aluminum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;10</td> <td>0</td> <td></td> <td></td>	Aluminum	ppm	ASTM D5185m	>10	0		
Tin ppm ASTM D5185m	Lead	ppm	ASTM D5185m	>10	0		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Sulfur         ppm         ASTM D5185m         0         0          -	Copper	ppm	ASTM D5185m	>50	8		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         90         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         100         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Silico         ppm         ASTM D5185m         0         -1             Sulfur         ppm         ASTM D5185m         >25         0             Solicon         ppm         ASTM D5185m         >25         0	Tin	ppm	ASTM D5185m	>10	0		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Boron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0   0	Cadmium	ppm	ASTM D5185m		0		
Barium         ppm         ASTM D5185m         90         0             Molybdenum         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         100         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Zinc         ppm         ASTM D5185m         0         <-1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         100         0             Magnesium         ppm         ASTM D5185m         100         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Zinc         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m	0	0		
Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         100         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Zinc         ppm         ASTM D5185m         0         <-1	Barium	ppm	ASTM D5185m	90	0		
Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         1 0 0         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         0             Zinc         ppm         ASTM D5185m         0         <-1	Molybdenum	ppm	ASTM D5185m	0	0		
Magnesium         ppm         ASTM D5185m         1 0 0         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         -1             Zinc         ppm         ASTM D5185m         0         -1             Sulfur         ppm         ASTM D5185m         23500         16190             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             Particles > 4μm         ASTM D7647         805             Particles > 21μm         ASTM D7647         >80         19 <td>•</td> <td></td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td></td> <td></td>	•		ASTM D5185m		0		
Phosphorus         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0         <1	-		ASTM D5185m	100	0		
Phosphorus         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0         <1             Sulfur         ppm         ASTM D5185m         23500         16190             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >25         0             Potassium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D6185m         >20         0             Water         %         ASTM D6185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             Particles >4µm         ASTM D7647         >1300         292             Particles >21µm         ASTM D7647         >80         19	Calcium	ppm	ASTM D5185m	0	0		
Sulfur         ppm         ASTM D5185m         23500         16190             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D5185m         >20         0             Water         %         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             Particles >4µm         ASTM D6304         >500         99             FLUID DEGRADATION         ASTM D7647         >1300         292             Particles >4µm         ASTM D7647         >80         19             Particles >21µm         ASTM D7647         >4         0 <td< td=""><td>Phosphorus</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>0</td><td></td><td></td></td<>	Phosphorus	ppm	ASTM D5185m	0	0		
Sulfur         ppm         ASTM D5185m         23500         16190             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D5185m         >20         0             Water         %         ASTM D5185m         >20         0             ppm Water         %         ASTM D6304         >50.0         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >1300         292             Particles >21µm         ASTM D7647         >80         19             Particles >38µm         ASTM D7647         >4         0         -	Zinc		ASTM D5185m	0	<1		
Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >1300         292             Particles >6μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >3         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)        /17/13         17/15/11 <td>Sulfur</td> <td></td> <td>ASTM D5185m</td> <td>23500</td> <td>16190</td> <td></td> <td></td>	Sulfur		ASTM D5185m	23500	16190		
Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >1300         292             Particles >6μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >3         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)        /17/13         17/15/11 <th>CONTAMINANTS</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>historv1</th> <th>historv2</th>	CONTAMINANTS		method	limit/base	current	historv1	historv2
Sodium         ppm         ASTM D5185m         <1             Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         805             Particles >6μm         ASTM D7647         >80         19            Particles >1μm         ASTM D7647         >80         19            Particles >21μm         ASTM D7647         >20         4            Particles >71μm         ASTM D7647         >3         0            Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11            FLUID DEGRADATION         method         limit/base         current         history1         history2						· ·	,
Potassium         ppm         ASTM D5185m         >20         0             Water         %         ASTM D6304         >0.05         0.009             ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >1300         292             Particles >14μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2				>20	-		
Water         %         ASTM D6304         >0.05         0.009             ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         805             Particles >6μm         ASTM D7647         >80         19             Particles >14μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2				- 20			
ppm Water         ppm         ASTM D6304         >500         99             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         805             Particles >6μm         ASTM D7647         >1300         292             Particles >14μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2					_		
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         805             Particles >6μm         ASTM D7647         >1300         292            Particles >14μm         ASTM D7647         >80         19             Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2							
Particles >4μm       ASTM D7647       805           Particles >6μm       ASTM D7647       >1300       292           Particles >14μm       ASTM D7647       >80       19           Particles >21μm       ASTM D7647       >20       4           Particles >38μm       ASTM D7647       >4       0           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >/17/13       17/15/11           FLUID DEGRADATION       method       limit/base       current       history1       history2	• •					history1	history2
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$				>1300			
Particles >21μm         ASTM D7647         >20         4             Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2							
Particles >38μm         ASTM D7647         >4         0             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2							
Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >/17/13         17/15/11             FLUID DEGRADATION         method         limit/base         current         history1         history2	•						
Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11  FLUID DEGRADATION method limit/base current history1 history2	•						
	•						
	FLUID <u>DEGRADA</u>	ATION _				history1	history2
						,	•



# **OIL ANALYSIS REPORT**







Sample No. Lab Number **Unique Number** 

: KCP40068D : 06073955

Recieved : 10856046

Diagnosed Diagnostician : Angela Borella

: 31 Jan 2024

FREMONT, CA Contact: Service Manager

Test Package : IND 2 ( Additional Tests: KF, PrtCount ) Certificate L2367 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) US 94538

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