

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 7693948 (S/N 1091) Component

Compressor

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

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

Sample Number Client Into KC98217 KC93690 Sample Date Into 20 Feb 2023 17 Feb 2022 Machine Age hrs Client Info 1400 1305 Oil Age hrs Client Info 1400 1305 Sample Status Image Client Info Changed Changed WEAR METALS method Imit/base current history1 history1 Iron ppm ASTM D5185m >3 0 0 Nickel ppm ASTM D5185m >3 0 0 Aluminum ppm ASTM D5185m >3 0 0 Lead ppm ASTM D5185m >10 0 0 Antimomy ppm ASTM D5185m >10 0 0 Antimomy ppm ASTM D5185m 0 0 Antimomy				Feb2022	Feb2023		
Sample Date Client Info 20 Feb 2023 17 Feb 2022 Machine Age hrs Client Info 2778 1305 Oil Age hrs Client Info 1400 1305 Oil Changed Client Info Changed Changed Sample Status Client Info Changed Changed WEAR METALS method imit/base current history1 history1 Iron ppm ASTM 05185m >10 0 Nickel ppm ASTM 05185m >3 0 0 Silver ppm ASTM 05185m >10 3 0 Copper ppm ASTM 05185m >10 0 0 Antimomy ppm ASTM 05185m 0 0 0 Antimomy ppm ASTM 05185m 0 0	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 2778 1305 Oil Age hrs Client Info 1400 1305 Oil Changed Client Info 1400 1305 O Sample Status Imit/base Current history1 NoRMAL WEAR METALS method Imit/base current history1 Nickel ppm ASTM D5185m >50 <1 1 Silver ppm ASTM D5185m >3 0 0 Aluminum ppm ASTM D5185m >3 0 0 Aluminum ppm ASTM D5185m >10 3 7 Autimony ppm ASTM D5185m >10 <1 0 Copper ppm ASTM D5185m 0 0 0 Copper ppm ASTM D5185m 0 0	Sample Number		Client Info		KC98217	KC93690	
Machine Age hrs Client Info 2778 1305 Oil Age hrs Client Info 1400 1305 Sample Status Imit/base Current NoRMAL ABNORMAL WEAR METALS method Imit/base current history1 WEAR METALS method Imit/base current history1 Chromium ppm ASTM D5185m >50 <1 1 Silver ppm ASTM D5185m >3 0 0 Aluminum ppm ASTM D5185m >10 0 0 Auminum ppm ASTM D5185m >10 0 Auminum ppm ASTM D5185m 50 4 Auminum ppm ASTM D5185m 0 0 Copper ppm ASTM D5185m 0	Sample Date		Client Info		20 Feb 2023	17 Feb 2022	
Oil Changed Sample Status Client Info Changed NORMAL Changed ABNORMAL WEAR METALS method limit/base current history1 history1 WeAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >50 <11 1 Chromium ppm ASTM D5185m >30 0 0 Nickel ppm ASTM D5185m >33 0 0 Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Antimony ppm ASTM D5185m 0 0 Bar	Machine Age	hrs	Client Info		2778	1305	
Oil Changed Sample Status Client Info Changed NORMAL Changed ABNORMAL 	•	hrs	Client Info		1400	1305	
Sample Status method Imit/base current history1 history1 Iron ppm ASTM D5165m >50 <1 1 Chromium ppm ASTM D5165m >3 0 0 Nickel ppm ASTM D5165m >3 0 0 Silver ppm ASTM D5165m >3 0 0 Aluminum ppm ASTM D5165m >10 3 7 Aluminum ppm ASTM D5165m >10 0 0 Copper ppm ASTM D5165m >10 0 0 Antimony ppm ASTM D5165m 0 0 0 Cadmium ppm ASTM D5165m 0 0 0 ADDITIVES method Imit/base current history1 history1 Barium ppm ASTM D5165m 0 <t< th=""><th>-</th><td></td><td>Client Info</td><td></td><th>Changed</th><td>Changed</td><td></td></t<>	-		Client Info		Changed	Changed	
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5165m >50 <1 1 Chromium ppm ASTM D5165m >3 0 0 Nickel ppm ASTM D5165m >3 0 0 Silver ppm ASTM D5165m >3 0 0 Auminum ppm ASTM D5165m >10 3 7 Lead ppm ASTM D5165m >10 0 0 Copper ppm ASTM D5165m >10 1 0 Antimony ppm ASTM D5165m 0 1 0 Vanadium ppm ASTM D5165m 0 0 0 Antimony ppm ASTM D5165m 0 0 Addmium ppm ASTM D5165m 90 0 0<					-	÷	
Iron ppm ASTM D5185m >50 <1			method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >10 0 0 Nickel ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >3 0 0 Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Aduminum ppm ASTM D5185m >10 3 7 Copper ppm ASTM D5185m >10 1 0 Vanadium ppm ASTM D5185m 0 0 0 Addium ppm ASTM D5185m 0 0 Addium ppm ASTM D5185m 0 -1 Addium ppm ASTM D5185m 0 0 Addium ppm ASTM D5185m 0 11		nom	ASTM D5185m	>50	<i>c</i> 1		
Nickel ppm ASTM D5185m >3 0 0 Titanium ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 4 4 Tin ppm ASTM D5185m >50 4 4 Cadmium ppm ASTM D5185m 0 0 0 ADDTIVES method Imit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 Magnaese ppm ASTM D5185m 0 11 Magnesium pm ASTM D5185m 0 111	-						
Titanium ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 4 4 Antimony ppm ASTM D5185m >10 <1 0 Antimony ppm ASTM D5185m 0 <1 0 Antimony ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history Magnesium pm ASTM D5185m 0					-		
Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 4 4 Antimony 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 history1 Boron ppm ASTM D5185m 0 0 0 Magneseum ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 2 0 0 Silicon ppm ASTM D5185m 2<							
Aluminum ppm ASTM D5185m >10 3 7 Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 4 4 Antimony ppm ASTM D5185m >10 <1 0 Antimony 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 Magnesium ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 22 27 Calcium ppm ASTM D5185m 0 111 201 Zinc ppm ASTM D5185m 25 <1					-		
Lead ppm ASTM D5185m >10 0 0 Copper ppm ASTM D5185m >50 4 4 Tin ppm ASTM D5185m >10 <1 0 Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 Marganese ppm ASTM D5185m 0 -11 0 Calcium ppm ASTM D5185m 90 22 27 21 21 21 21 21 21 21 21 2							
Copper ppm ASTM D5185m >50 4 4 Tin ppm ASTM D5185m >10 <1 0 Antimony 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 history1 Boron ppm ASTM D5185m 0 <1 Barium ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 0 22 27 Magnesium ppm ASTM D5185m 0 111 Zinc ppm ASTM D5185m 22 36 Silicon ppm ASTM D5185m 20 5 4 <					-		
Tin ppm ASTM D5185m >10 <1					-		
Antimony ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Barium ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 90 0 0 Magnesium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 2 0 0 Zinc ppm ASTM D5185m 52 36 Sodium ppm ASTM D5185m >20 5 4					-		
Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 <1				>10			
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 <1 Barium ppm ASTM D5185m 90 0 0 Molybdenum ppm ASTM D5185m 90 0 <1 Magnesium ppm ASTM D5185m 0 0 <1 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 36 Zinc ppm ASTM D5185m 0 11 1 Solium ppm ASTM D5185m >25 <1 <1 Solium ppm ASTM D5185m >20 5 4 Solium ppm ASTM D6304 >0.05 0.008 0.021	•	ppm	ASTM D5185m				
ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 <1 Barium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 <1 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 21 Zinc ppm ASTM D5185m 0 111 Sodium ppm ASTM D5185m 52 36 Sodium ppm ASTM D5185m >20 5 4 Sodium ppm ASTM D5185m >20 5 4 Potassium	Vanadium	ppm	ASTM D5185m		-		
Boron ppm ASTM D5185m 0 <1	Cadmium	ppm	ASTM D5185m		0	0	
Barium ppm ASTM D5185m 90 0 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 11 Zinc ppm ASTM D5185m 0 111 Sodium ppm ASTM D5185m 52 36 Sodium ppm ASTM D5185m 10 5 Sodium ppm ASTM D5185m 20 5 4 Sodium ppm ASTM D5185m 20 5 4	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 2 0 0 Zinc ppm ASTM D5185m 52 36 Sodium ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >20 5 4 Sodium ppm ASTM D6304 >0.05 0.008 0.021 Potassium ppm ASTM D6304 >500 84.1 211.8 Particles >4µm ASTM D7647 1233 13084 Particles >4µm ASTM D7647 >1300 291 41153	Boron	ppm	ASTM D5185m		0	<1	
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	90	0	0	
Magnesium ppm ASTM D5185m 90 22 27 Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 2 0 11 Zinc ppm ASTM D5185m 0 11 7 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >20 5 4 Vater % ASTM D5185m >20 5 4 ppm Water ppm ASTM D6304 >0.05 0.008 0.021 Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >20 2 27	Molybdenum	ppm	ASTM D5185m		0	0	
Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 0 11 Zinc ppm ASTM D5185m 0 11 Zinc ppm ASTM D5185m 52 36 Zinc ppm ASTM D5185m 52 36 Zinc Nistory Nistory Nistory Silicon ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >20 5 4 Sodium ppm ASTM D5185m >20 5 4 Sodium Partial ASTM D5185m >20 5 4 Sodium Silicon	Manganese	ppm	ASTM D5185m		0	<1	
Phosphorus ppm ASTM D5185m 0 11 Zinc ppm ASTM D5185m 52 36 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 <1	Magnesium	ppm	ASTM D5185m	90	22	27	
Zinc ppm ASTM D5185m 52 36 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >20 5 4 Potassium ppm ASTM D5185m >20 5 4 Water % ASTM D50304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 >1300 291 4153 Particles >6µm ASTM D7647 >80 21 207 Particles >1µm ASTM D7647 >20 2 27 Particles >38µm ASTM D7647 3 0 1 <th>Calcium</th> <td>ppm</td> <td>ASTM D5185m</td> <td>2</td> <th>0</th> <td>0</td> <td></td>	Calcium	ppm	ASTM D5185m	2	0	0	
Zinc ppm ASTM D5185m 52 36 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 Potassium ppm ASTM D5185m >20 5 4 Water % ASTM D50304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 4153 Particles >1µm ASTM D7647 >20 2 27 Particles >21µm ASTM D7647 >3 0 1	Phosphorus	ppm	ASTM D5185m		0	11	
Silicon ppm ASTM D5185m >25 <1	Zinc	ppm	ASTM D5185m		52	36	
Sodium ppm ASTM D5185m 10 5 Potassium ppm ASTM D5185m >20 5 4 Water % ASTM D6304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >6µm ASTM D7647 >80 21 ▲ 207 Particles >14µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history </th <th>CONTAMINANT</th> <th>S</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 5 4 Water % ASTM D6304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 4153 Particles >6µm ASTM D7647 >80 21 207 Particles >14µm ASTM D7647 >20 2 27 Particles >21µm ASTM D7647 >4 0 3 Particles >38µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history </th <th>Silicon</th> <td>ppm</td> <td>ASTM D5185m</td> <td>>25</td> <th><1</th> <td><1</td> <td></td>	Silicon	ppm	ASTM D5185m	>25	<1	<1	
Water % ASTM D6304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >3 0 1 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history	Sodium	ppm	ASTM D5185m		10	5	
Water % ASTM D6304 >0.05 0.008 0.021 ppm Water ppm ASTM D6304 >500 84.1 211.8 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >3 0 1 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history	Potassium	ppm	ASTM D5185m	>20	5	4	
FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >4 0 3 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history1	Water	%	ASTM D6304	>0.05	0.008	0.021	
Particles >4µm ASTM D7647 1233 13084 Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >14µm ASTM D7647 >20 2 ▲ 27 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >4 0 3 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history1	ppm Water	ppm	ASTM D6304	>500	84.1	211.8	
Particles >6µm ASTM D7647 >1300 291 ▲ 4153 Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >4 0 3 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history1	FLUID CLEANLI	NESS	method	limit/base	current	history1	history2
Particles >6μm ASTM D7647 >1300 291 ▲ 4153 Particles >14μm ASTM D7647 >80 21 ▲ 207 Particles >21μm ASTM D7647 >20 2 ▲ 27 Particles >38μm ASTM D7647 >4 0 3 Particles >38μm ASTM D7647 >4 0 3 Particles >71μm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history1	Particles >4µm		ASTM D7647		1233	13084	
Particles >14µm ASTM D7647 >80 21 ▲ 207 Particles >21µm ASTM D7647 >20 2 ▲ 27 Particles >38µm ASTM D7647 >4 0 3 Particles >38µm ASTM D7647 >4 0 3 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history			ASTM D7647	>1300	291	4 153	
Particles >21μm ASTM D7647 >20 2 27 Particles >38μm ASTM D7647 >4 0 3 Particles >38μm ASTM D7647 >4 0 3 Particles >71μm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history							
Particles >38μm ASTM D7647 >4 0 3 Particles >71μm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 19/15 FLUID DEGRADATION method limit/base current history1 history							
Particles >71μm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history1							
Oil Cleanliness ISO 4406 (c) >/17/13 17/15/12 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history							
· · · · · · · · · · · · · · · · · · ·							
· · · · · · · · · · · · · · · · · · ·	FLUID DEGRAD	ATION_	method	limit/base	current	historv1	history2
	AGG NUMBER (AN)	ing NOT/9	AG INI DOU43	0.4	0.70	0.40	



Feb 1

52

50

48

ري 44

47

14

of particles (1 ml) 10

8k

6

4

2

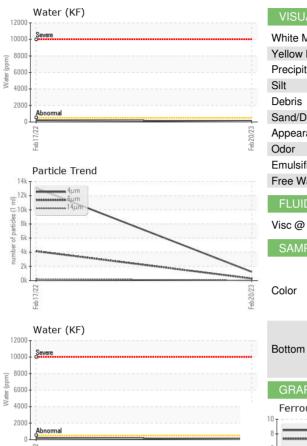
0

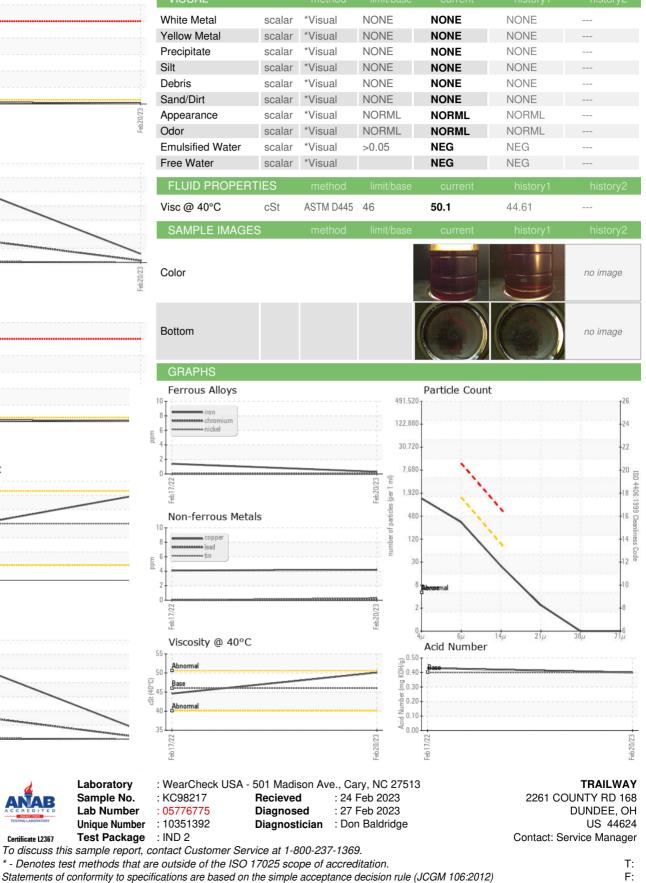
Abnorm 40 38 Feb17/22

Particle Trend

Viscosity @ 40°C

OIL ANALYSIS REPORT





Certificate L2367

Contact/Location: Service Manager - TRADUN