



QualiTest® Diagnostics

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Terry,

The following is a summary of findings from the April 2024 monthly vibration survey at the USG Greenville, MS Plant. Please note that we have added an abbreviated last measurement report which is at the end of this report.

QualiTest® uses a four-step rating system for defects.

Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

Class III: Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

Class IV: Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Hi-Speed Industrial Service tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

Defects

Perlite

#8 Combustion Blower

Fan data shows some high 1 x fan rpm vibration indicative of fan imbalance. Fan should be trim balanced as time allows. Rated as a **CLASS II** defect.

#5 Expander Dust Collector

Motor data suggests lubrication and or defective motor bearings. For now, ensure motor has an adequate amount of grease in the motor bearings. Rated as a **CLASS II** defect.

#6 Expander Dust Collector

Fan axial vibration has increased since the last collection. Axial data shows a dominant 2 x fan rpm vibration. 1-4 x rpm vibration that can still be seen in all fan spectral data is likely due to a combination of issues such as bent or worn fan shaft and internal fan bearing fit looseness/wear. Inspect fan bearings for looseness by performing a lift check of the fan shaft. Should not have more than .003" lift max. Inspect fan shaft for run-out as well. There is also deteriorated grout around the fan base. Base needs to be re-grouted in the near future. Rated as a **CLASS III** defect.

#7 Expander Dust Collector

Motor has a beat vibration that appears to be near motor/fan rpm. This may be sheave/belt related. Check sheaves and belts for wear and misalignment and check all base fasteners. Check angularity and offset alignment. Rated as a **CLASS II** defect.

#8 Expander Dust Collector

The motor was not running but the following may still apply: Fan vibration has increased quite a bit over the past few surveys. Dominant vibration is at 1 x fan rpm which indicates imbalance. It is recommended to check the fan for build-up soon. A trim balance may be needed. Rated as a **CLASS III** defect.

Hydropulper

Drive motor data shows some signs of bearing defect(s) in the motor and possible rotor issue. Gearbox also shows some signs of internal gear wear. We will continue to monitor closely. Rated as a **CLASS II** defect.

Mix-up/Reclaim

Ultra-Sorter Screen

Screen bearings are showing signs of wear. Screen bearings may need to be replaced in the near future. We will continue to monitor this issue closely. Rated as a **CLASS II** defect.

#1 White Water Loop Pump

Motor data shows signs of bearing defects on the ODE motor bearing. Motor will need attention in the next few months. Rated as a **CLASS II** defect.

White Water Mix-up Pump

Motor data indicates defects in motor bearings. Replace motor as scheduling allows. Ensure motor is outdoor duty. Rated as a **CLASS II** defect.

Beater Tank Transfer Pump

The motor data shows motor to have bearing defects. There are two pumps by the beater. This motor is the newer looking motor with the newer pump. Motor needs to be swapped out as time allows. Rated as a **CLASS II** defect.

Fiberglass

#1 Oven Circ. Fan

The motor and fan inboard side has high vibration at fan speed. This may be due to some type of sheave issue and/or structural flexibility. Inspect sheaves and belts soon. Ensure sheaves do not have face run-out and offset and angularity alignment is good. Ensure belts are tensioned properly. Rated as **CLASS II** defect.

#2 Oven Circ Fan

Data shows some 1, 2, and 3 x rpm vibrations present in the fan. The motor also has high vibration at 1 x fan rpm. Fan bearing fits may be bad and fan shaft may be bent and or worn. Fan may also have some imbalance due to build-up on fan blades. Rated as a **CLASS II** defect.

Board Line 3

Vacuum Pump MOTORS (1,2, and 3)

We are still seeing some mid to high frequency noise floor in the motor spectra on all three motors with Vac Pump Motor #1 being the highest amplitude of vibration. This issue appears to be stable; however, we suspect possible fluting of the motor bearings may be starting to develop. This is a common issue with AC motors being operated by VFD's that do not have grounding protection. We recommend installing an Aegis Grounding ring inside the motor at the drive end and installing an insulated bearing on the outboard end of the motor. **There are also signs of lubrication issue in #1 MOTOR. Ensure motors have adequate amounts of grease. Rated as CLASS I defect.**

NOTE that #1 Vacuum Motor is a CLASS II defect.

#3 Vacuum Pump

DE pump bearing spectral data continues to show defects are present in the DE pump bearing. We will continue to monitor this closely. Rated as a **CLASS III** defect.

Wet End Combustion Blower

Blower bearings are trending upward on defect frequency vibration. Acceleration has had a steady increase in amplitude. These are signs of bearing defects/wear. Bearings should be scheduled for replacement as soon as scheduling allows. Rated as a **CLASS II** defect.

White Water Pump (outside)

Motor/Pump base is loose to concrete and is causing a very high vertical vibration at 12 Hz (amplitude is 1.7 ips-pk) which appears to be pump speed. Base needs to be anchored soon. Rated as a **CLASS III** defect.

Wet End Circulation Fan

The motor is showing some slightly elevated 240 Hz. vibration which is a harmonic of line frequency (60 Hz.). This is an electrical vibration and may be due to ongoing issues in the motor. The fan bearings are also showing some higher than normal 1 x rpm vibration. This may be due to sleeve bearing wear and or imbalance of the fan. If 1 x rpm persists after repairs scheduled in late May, then a field balance may be needed. Rated as a **CLASS II** defect for now.

Finishing

Finish Grinder #4

Drive motor has some elevated 1 x rpm vibration at the ODE of the motor. Horizontal amplitude was 1.05 ips-pk. This may be due to the motor operating near or at a resonant (natural frequency of the structure. Motor rpm was 1575 during testing. Check all fasteners and drive components. Change speed on VFD if possible. Rated as a **CLASS II** defect.

Kiln Lube Oil Pump

The pump is showing signs of wear. Impacting can be seen in the vibration data along with pump vane harmonics. We will continue to monitor this closely. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 1

Fan end fan bearing (outboard) data is showing signs of defects/wear. Motor and fan also have some 1 x rpm vibrations. Fan bearings will need attention soon. Also, ensure sheaves are aligned properly and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 2

Fan end fan bearing (outboard) data is showing signs of defects/wear. Motor and fan also have some 1 x rpm vibrations. Fan bearings will need attention soon. Also, ensure sheaves are aligned properly and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 2 Circulation Fan 1 and 2

Motor and fan vibrations remain high at well over 1.2 inches/second peak velocity. Vibration is at fan speed in the motor and fan. This may be due to build-up on the fan. Inspect fan wheel for build- up and damage ASAP. Inspect sheaves and belts as well. Rated as a **CLASS III** defect.

#3 Finishing Baghouse Dust Collector

Vertical data of the motor and fan also indicate some possible drivetrain issues such as sheave misalignment and or belt issues. For now, inspect, sheaves and belts as scheduling allows. Ensure sheaves do not have face run-out and are aligned to spec. Check base springs to ensure they are in good shape and set properly. Rated as a **CLASS II** defect.

Hi-Pressure Water Pump

Motor data still shows signs of bearing defects and/or lube issue. Ensure motor bearings are getting adequate amount of grease. This will continue to be monitored closely. Rated as a **CLASS I** defect.

Abbreviated Last Measurement Summary

Database: USG.rbm
Area: PERLITE

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
B2EXD07FAN - #7 COMBUSTION BLOWER (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.088 In/Sec	.214 G-s
MOV	.520 In/Sec	.096 G-s
MIH	.089 In/Sec	.340 G-s
MIV	.432 In/Sec	.070 G-s
MIA	.269 In/Sec	.057 G-s
BIH	.312 In/Sec	1.471 G-s
BIV	.171 In/Sec	.202 G-s
BIA	.175 In/Sec	.267 G-s
BOH	.143 In/Sec	2.153 G-s
BOV	.087 In/Sec	.298 G-s
B2EXD02-5 - #5 EXPANDER DUST COLLECTOR (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.125 In/Sec	1.015 G-s
MOV	.233 In/Sec	.294 G-s
MIH	.137 In/Sec	4.073 G-s
MIV	.148 In/Sec	.755 G-s
MIA	.153 In/Sec	.756 G-s
FIH	.272 In/Sec	.932 G-s
FIV	.163 In/Sec	.378 G-s
FIA	.261 In/Sec	.216 G-s
FOH	.265 In/Sec	.473 G-s
FOV	.155 In/Sec	.183 G-s
B2EXD0306 - #6 EXPANDER DUST COLLECTOR (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.127 In/Sec	.392 G-s
MOV	.085 In/Sec	.153 G-s
MIH	.139 In/Sec	.601 G-s
MIV	.097 In/Sec	.259 G-s
MIA	.148 In/Sec	.232 G-s
FIH	.820 In/Sec	1.344 G-s
FIV	.405 In/Sec	.903 G-s
FIA	1.179 In/Sec	1.180 G-s
FOH	.470 In/Sec	.658 G-s
FOV	.274 In/Sec	.604 G-s
B2EXD04-7 - #7 EXPANDER DUST COLLECTOR (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.696 In/Sec	.391 G-s
MOV	.583 In/Sec	.135 G-s
MIH	.535 In/Sec	.436 G-s
MIV	.930 In/Sec	.127 G-s
MIA	.453 In/Sec	.086 G-s
FIH	.195 In/Sec	.728 G-s
FIV	.132 In/Sec	.240 G-s
FIA	.267 In/Sec	.165 G-s
FOH	.256 In/Sec	1.700 G-s
FOV	.170 In/Sec	.527 G-s
B2PUP02GEA - HYDRAPULPER (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.293 In/Sec	.473 G-s
MOV	.128 In/Sec	.023 G-s
MIH	.359 In/Sec	.353 G-s
MIV	.194 In/Sec	.432 G-s

MIA	.141 In/Sec	.593 G-s
GIH	.405 In/Sec	1.982 G-s
GIV	.191 In/Sec	2.084 G-s
GIA	.214 In/Sec	.405 G-s
GOH	.326 In/Sec	.980 G-s
GOV	.273 In/Sec	.806 G-s

Area: MIX UP/RECLAIM

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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B2PUP03AGT - DUMP CHEST AGITATOR		(17-Apr-24)
	OVERALL LEVEL	1K-20KHz
MOH	.156 In/Sec	.249 G-s
MOV	.127 In/Sec	.161 G-s
MIH	.094 In/Sec	.202 G-s
MIV	.207 In/Sec	.063 G-s
MIA	.118 In/Sec	.067 G-s
AIH	.036 In/Sec	.164 G-s
AIV	.034 In/Sec	.035 G-s
AIA	.040 In/Sec	.036 G-s
AOH	.051 In/Sec	.151 G-s
AOV	.023 In/Sec	.051 G-s

REFNCHSTAG - REFINED CHEST AGITATOR		(17-Apr-24)
	OVERALL LEVEL	1K-20KHz
MOH	.101 In/Sec	.243 G-s
MOV	.142 In/Sec	.044 G-s
MIH	.083 In/Sec	.242 G-s
MIV	.118 In/Sec	.057 G-s
MIA	.074 In/Sec	.054 G-s
AIH	.048 In/Sec	.157 G-s
AIV	.060 In/Sec	.052 G-s
AIA	.037 In/Sec	.037 G-s
AOH	.073 In/Sec	.131 G-s
AOV	.056 In/Sec	.065 G-s

1WWLOOPPMP - #1 WHITE WATER LOOP PUMP		(17-Apr-24)
	OVERALL LEVEL	1K-20KHz
MOH	.282 In/Sec	2.090 G-s
MOV	.456 In/Sec	.353 G-s
MIH	.438 In/Sec	1.185 G-s
MIV	.492 In/Sec	.238 G-s
MIA	.329 In/Sec	.188 G-s
PIH	.274 In/Sec	.235 G-s
PIV	.224 In/Sec	.104 G-s
PIA	.190 In/Sec	.058 G-s
POH	.169 In/Sec	.396 G-s
POV	.212 In/Sec	.143 G-s

WWMIXUPPMP - WHITE WATER MIX-UP PUMP		(17-Apr-24)
	OVERALL LEVEL	1K-20KHz
MOH	.577 In/Sec	4.183 G-s
MOV	.322 In/Sec	1.756 G-s
MIH	.667 In/Sec	3.324 G-s
MIV	.727 In/Sec	1.041 G-s
MIA	.474 In/Sec	.751 G-s
PIH	.181 In/Sec	.610 G-s
PIV	.216 In/Sec	.135 G-s
PIA	.267 In/Sec	.135 G-s
POH	.232 In/Sec	.562 G-s
POV	.237 In/Sec	.224 G-s

B2WEL1PMP1 - #1 EAST WELL WATER PUMP		(17-Apr-24)
	OVERALL LEVEL	1K-20KHz
MOH	.215 In/Sec	.499 G-s
MOV	.250 In/Sec	.284 G-s

MIH	.269 In/Sec	1.144 G-s
MIV	.338 In/Sec	.296 G-s
MIA	.357 In/Sec	.294 G-s
PIH	.053 In/Sec	.643 G-s
PIV	.072 In/Sec	.140 G-s
PIA	.165 In/Sec	.192 G-s
POH	.142 In/Sec	1.371 G-s
POV	.092 In/Sec	.278 G-s

B2BTR1AGIT - BEATER AGITATOR

(17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.223 In/Sec	.411 G-s
MOV	.134 In/Sec	.127 G-s
MIH	.226 In/Sec	.727 G-s
MIV	.127 In/Sec	.152 G-s
MIA	.078 In/Sec	.111 G-s
AIH	.112 In/Sec	.108 G-s
AIV	.046 In/Sec	.025 G-s
AIA	.132 In/Sec	.024 G-s
AOH	.049 In/Sec	.113 G-s
AOV	.037 In/Sec	.038 G-s

Area: FIBERGLASS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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F1-DCR - FIBERGLASS DC FAN OLD LINE

(17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.232 In/Sec	.980 G-s
MOV	.301 In/Sec	.243 G-s
MIH	.224 In/Sec	1.191 G-s
MIV	.370 In/Sec	.266 G-s
MIA	.348 In/Sec	.257 G-s
FIH	.250 In/Sec	1.144 G-s
FIV	.144 In/Sec	.378 G-s
FIA	.176 In/Sec	.091 G-s
FOH	.216 In/Sec	.443 G-s
FOV	.138 In/Sec	.131 G-s

1PPDEF - 1ST PASS PAINT DRY EXH FAN

(17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.057 In/Sec	.096 G-s
MOV	.047 In/Sec	.026 G-s
MIH	.050 In/Sec	.094 G-s
MIV	.053 In/Sec	.022 G-s
MIA	.041 In/Sec	.020 G-s
FIH	.074 In/Sec	.302 G-s
FIV	.054 In/Sec	.108 G-s
FIA	.251 In/Sec	.107 G-s
FOH	.062 In/Sec	.151 G-s
FOV	.074 In/Sec	.080 G-s

F1T1EDG41M - 2ND PASS PAINT DRYING EX FAN

(17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.123 In/Sec	.085 G-s
MOV	.219 In/Sec	.023 G-s
MIH	.148 In/Sec	.092 G-s
MIV	.286 In/Sec	.029 G-s
MIA	.047 In/Sec	.025 G-s
FIH	.056 In/Sec	.388 G-s
FIV	.082 In/Sec	.128 G-s
FIA	.249 In/Sec	.124 G-s
FOH	.077 In/Sec	.365 G-s
FOV	.096 In/Sec	.141 G-s

1FOCF - #1 OVEN CIRC FAN

(17-Apr-24)

	OVERALL LEVEL	1K-20KHz
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MOH	.141 In/Sec	.179 G-s
MOV	.964 In/Sec	.053 G-s
MIH	.262 In/Sec	.419 G-s
MIV	1.260 In/Sec	.177 G-s
MIA	.644 In/Sec	.098 G-s
FIH	.503 In/Sec	.610 G-s
FIV	.980 In/Sec	.156 G-s
FIA	.862 In/Sec	.116 G-s
FOH	.166 In/Sec	1.236 G-s
FOV	.395 In/Sec	.240 G-s

1FOEF - #1 OVEN EXH FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.084 In/Sec	.130 G-s
MOV	.043 In/Sec	.144 G-s
MIH	.079 In/Sec	.261 G-s
MIV	.046 In/Sec	.360 G-s
MIA	.073 In/Sec	.147 G-s
FIV	.062 In/Sec	.014 G-s
FOV	.106 In/Sec	.050 G-s

2FOCF - #2 OVEN CIRC FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.174 In/Sec	.259 G-s
MOV	.586 In/Sec	.044 G-s
MIH	.239 In/Sec	.394 G-s
MIV	.830 In/Sec	.160 G-s
MIA	.170 In/Sec	.114 G-s
FIH	.099 In/Sec	.610 G-s
FIV	.560 In/Sec	.129 G-s
FIA	.627 In/Sec	.090 G-s
FOH	.458 In/Sec	.531 G-s
FOV	.274 In/Sec	.135 G-s

2FOEF - #2 OVEN EXH FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.054 In/Sec	.139 G-s
MOV	.061 In/Sec	.041 G-s
MIH	.058 In/Sec	.195 G-s
MIV	.054 In/Sec	.023 G-s
MIA	.025 In/Sec	.044 G-s
FIH	.050 In/Sec	.046 G-s
FIV	.099 In/Sec	.013 G-s
FIA	.060 In/Sec	.012 G-s
FOH	.073 In/Sec	.094 G-s
FOV	.105 In/Sec	.038 G-s

Area: BOARD LINE 3

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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B3-VAC-01 - LINE 3 VACUUM PUMP #1 (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.132 In/Sec	2.721 G-s
MOV	.329 In/Sec	1.111 G-s
MIH	.105 In/Sec	2.106 G-s
MIV	.135 In/Sec	.558 G-s
MIA	.100 In/Sec	.509 G-s
PIH	.129 In/Sec	.222 G-s
PIV	.085 In/Sec	.093 G-s
PIA	.147 In/Sec	.040 G-s
POH	.154 In/Sec	1.035 G-s
POV	.189 In/Sec	.340 G-s

B3-VAC-02 - LINE 3 VACUUM PUMP #2 (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.089 In/Sec	1.688 G-s

MOV	.119 In/Sec	.345 G-s
MIH	.092 In/Sec	1.774 G-s
MIV	.137 In/Sec	.216 G-s
MIA	.052 In/Sec	.464 G-s
PIH	.110 In/Sec	.097 G-s
PIV	.161 In/Sec	.040 G-s
PIA	.159 In/Sec	.046 G-s
POH	.458 In/Sec	.065 G-s
POV	.143 In/Sec	.019 G-s

B3-VAC-03 - LINE 3 VACUUM PUMP #3 (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.149 In/Sec	1.523 G-s
MOV	.169 In/Sec	.938 G-s
MIH	.106 In/Sec	1.540 G-s
MIV	.129 In/Sec	.359 G-s
MIA	.066 In/Sec	.508 G-s
PIH	.143 In/Sec	.335 G-s
PIV	.127 In/Sec	.209 G-s
PIA	.218 In/Sec	.156 G-s
POH	.299 In/Sec	.069 G-s
POV	.122 In/Sec	.056 G-s

LOWVACFAN - LOW VACUUM FAN (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.249 In/Sec	.478 G-s
MOV	.398 In/Sec	.393 G-s
MIH	.129 In/Sec	.879 G-s
MIV	.235 In/Sec	.399 G-s
MIA	.070 In/Sec	.222 G-s
FIH	.197 In/Sec	.368 G-s
FIV	.311 In/Sec	.360 G-s
FIA	.075 In/Sec	.150 G-s
FOH	.053 In/Sec	.521 G-s
FOV	.136 In/Sec	.199 G-s

B3-VAC-06A - #2 FORMER WHITE WTR PIT PMP (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.319 In/Sec	.459 G-s
MOV	.333 In/Sec	.134 G-s
MIH	.379 In/Sec	.704 G-s
MIV	.250 In/Sec	.265 G-s
MIA	.294 In/Sec	.262 G-s
PIH	.147 In/Sec	.188 G-s
PIV	.326 In/Sec	.049 G-s
PIA	.097 In/Sec	.035 G-s
POH	.164 In/Sec	.091 G-s
POV	.190 In/Sec	.043 G-s

B3-VAC-10 - SEAL WATER RETURN PUMP (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.028 In/Sec	.727 G-s
MOV	.025 In/Sec	.085 G-s
MIH	.032 In/Sec	.638 G-s
MIV	.028 In/Sec	.056 G-s
MIA	.037 In/Sec	.053 G-s
PIH	.013 In/Sec	.044 G-s
PIV	.012 In/Sec	.022 G-s
PIA	.012 In/Sec	.0080 G-s
POH	.0092 In/Sec	.026 G-s
POV	.012 In/Sec	.0086 G-s

B3FRM7SHW - HIGH PRESSURE SHOWER PUMP (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.071 In/Sec	.537 G-s
MOV	.088 In/Sec	.213 G-s
MIH	.056 In/Sec	.535 G-s
MIV	.109 In/Sec	.112 G-s
MIA	.069 In/Sec	.185 G-s
PIH	.267 In/Sec	1.003 G-s

PIV	.212 In/Sec	.772 G-s
PIA	.155 In/Sec	.602 G-s
POH	.335 In/Sec	.826 G-s
POV	.280 In/Sec	.330 G-s

B2PUP03AGT - C Tank Agitator (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.090 In/Sec	.204 G-s
MOV	.038 In/Sec	.034 G-s
MIH	.063 In/Sec	.182 G-s
MIV	.062 In/Sec	.027 G-s
MIA	.060 In/Sec	.026 G-s
AIH	.022 In/Sec	.094 G-s
AIV	.017 In/Sec	.035 G-s
AIA	.021 In/Sec	.023 G-s
AOH	.019 In/Sec	.074 G-s
AOV	.019 In/Sec	.039 G-s

2 - Machine Stock Holding Agitat (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.031 In/Sec	.107 G-s
MOV	.061 In/Sec	.022 G-s
MIH	.027 In/Sec	.189 G-s
MIV	.055 In/Sec	.035 G-s
MIA	.036 In/Sec	.014 G-s
AIH	.015 In/Sec	.032 G-s
AIV	.013 In/Sec	.0086 G-s
AIA	.030 In/Sec	.0070 G-s
AOH	.017 In/Sec	.023 G-s
AOV	.016 In/Sec	.012 G-s

87 - White water agitator (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.110 In/Sec	.123 G-s
MOV	.194 In/Sec	.037 G-s
MIH	.097 In/Sec	.205 G-s
MIV	.136 In/Sec	.050 G-s
MIA	.052 In/Sec	.037 G-s
AIH	.020 In/Sec	.163 G-s
AIV	.021 In/Sec	.027 G-s
AIA	.021 In/Sec	.046 G-s
AOH	.021 In/Sec	.125 G-s
AOV	.029 In/Sec	.063 G-s

3 - #3 TOP PRESS ROLL DRIVE (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.098 In/Sec	.310 G-s
MOV	.145 In/Sec	.099 G-s
MIH	.048 In/Sec	.485 G-s
MIV	.076 In/Sec	.133 G-s
MIA	.186 In/Sec	.146 G-s
GIH	.055 In/Sec	.048 G-s
GIV	.138 In/Sec	.023 G-s
GIA	.024 In/Sec	.012 G-s
GOH	.029 In/Sec	.012 G-s
GOV	.104 In/Sec	.0068 G-s
GOA	.021 In/Sec	.0081 G-s

3b - #3 BOTTOM PRESS ROLL DRIVE (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.039 In/Sec	.459 G-s
MOV	.110 In/Sec	.075 G-s
MIH	.061 In/Sec	.421 G-s
MIV	.098 In/Sec	.197 G-s
MIA	.046 In/Sec	.159 G-s
GIH	.030 In/Sec	.031 G-s
GIV	.019 In/Sec	.0088 G-s
GIA	.018 In/Sec	.011 G-s
GOH	.023 In/Sec	.051 G-s
GOV	.016 In/Sec	.019 G-s

GOA	.023 In/Sec	.0078 G-s
B3FRM8ROLA - #2 TOP PRESS ROLL DRIVE (16-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.086 In/Sec	.383 G-s
MOV	.061 In/Sec	.069 G-s
MIH	.094 In/Sec	.235 G-s
MIV	.066 In/Sec	.083 G-s
MIA	.062 In/Sec	.067 G-s
GIH	.067 In/Sec	.042 G-s
GIV	.031 In/Sec	.020 G-s
GIA	.023 In/Sec	.031 G-s
GOH	.024 In/Sec	.033 G-s
GOV	.028 In/Sec	.010 G-s
GOA	.023 In/Sec	.032 G-s
B3FRM8ROLB - #2 BOTTOM PRESS ROLL DRIVE (16-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.035 In/Sec	.211 G-s
MOV	.101 In/Sec	.038 G-s
MIH	.043 In/Sec	.259 G-s
MIV	.099 In/Sec	.093 G-s
MIA	.042 In/Sec	.057 G-s
GIH	.026 In/Sec	.038 G-s
GIV	.037 In/Sec	.011 G-s
GIA	.011 In/Sec	.011 G-s
GOH	.037 In/Sec	.023 G-s
GOV	.026 In/Sec	.0062 G-s
GOA	.014 In/Sec	.0044 G-s
1 - #1 TOP PRESS ROLL DRIVE (16-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.080 In/Sec	.377 G-s
MOV	.067 In/Sec	.084 G-s
MIH	.047 In/Sec	.623 G-s
MIV	.075 In/Sec	.131 G-s
MIA	.092 In/Sec	.140 G-s
GIH	.030 In/Sec	.052 G-s
GIV	.031 In/Sec	.015 G-s
GIA	.018 In/Sec	.013 G-s
GOH	.023 In/Sec	.020 G-s
GOV	.022 In/Sec	.011 G-s
GOA	.015 In/Sec	.0092 G-s
1b - #1 BOTTOM PRESS ROLL DRIVE (16-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.071 In/Sec	.368 G-s
MOV	.072 In/Sec	.082 G-s
MIH	.038 In/Sec	.338 G-s
MIV	.074 In/Sec	.144 G-s
MIA	.131 In/Sec	.069 G-s
GIH	.017 In/Sec	.039 G-s
GIV	.025 In/Sec	.019 G-s
GIA	.020 In/Sec	.028 G-s
GOH	.019 In/Sec	.039 G-s
GOV	.018 In/Sec	.022 G-s
GOA	.023 In/Sec	.019 G-s
B3-FRM-11 - #3 BOARD LINE DRIVE (16-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.058 In/Sec	.662 G-s
MOV	.065 In/Sec	.267 G-s
MIH	.058 In/Sec	.457 G-s
MIV	.150 In/Sec	.185 G-s
MIA	.078 In/Sec	.235 G-s
G1I	.013 In/Sec	.091 G-s
GIV	.026 In/Sec	.039 G-s
G1A	.019 In/Sec	.024 G-s
G1O	.010 In/Sec	.084 G-s
G2O	.0082 In/Sec	.043 G-s

GOV	.031 In/Sec	.046 G-s
G2I	.012 In/Sec	.048 G-s
G2A	.026 In/Sec	.024 G-s

B3-KBS-02 - WET END CIRCULATION FAN (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.106 In/Sec	.220 G-s
MOV	.118 In/Sec	.081 G-s
MIH	.095 In/Sec	.503 G-s
MIV	.041 In/Sec	.055 G-s
MIA	.027 In/Sec	.170 G-s
FIH	.113 In/Sec	.023 G-s
FIV	.041 In/Sec	.012 G-s
FIA	.084 In/Sec	.014 G-s
FOH	.079 In/Sec	.014 G-s
FOV	.045 In/Sec	.0089 G-s
FOA	.061 In/Sec	.0087 G-s

B3KBS01BLW - WET END COMBUSTION BLOWER (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.061 In/Sec	.358 G-s
MOV	.063 In/Sec	.086 G-s
MIH	.079 In/Sec	.680 G-s
MIV	.258 In/Sec	.178 G-s
MIA	.047 In/Sec	.101 G-s
BIH	.097 In/Sec	1.009 G-s
BIV	.140 In/Sec	1.200 G-s
BIA	.103 In/Sec	.596 G-s
BOH	.095 In/Sec	2.016 G-s
BOV	.161 In/Sec	.736 G-s

B3-KBS-05 - DRY END CIRCULATION FAN (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.051 In/Sec	.493 G-s
MOV	.039 In/Sec	.180 G-s
MIH	.052 In/Sec	.930 G-s
MIV	.032 In/Sec	.222 G-s
MIA	.027 In/Sec	.177 G-s
FIH	.056 In/Sec	.145 G-s
FIV	.014 In/Sec	.141 G-s
FIA	.022 In/Sec	.170 G-s
FOH	.040 In/Sec	.054 G-s
FOV	.0090 In/Sec	.044 G-s
FOA	.014 In/Sec	.023 G-s

B3KBS04BLW - DRY END COMBUSTION BLOWER (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.057 In/Sec	.300 G-s
MOV	.116 In/Sec	.155 G-s
MIH	.057 In/Sec	.598 G-s
MIV	.087 In/Sec	.190 G-s
MIA	.061 In/Sec	.128 G-s
BIH	.112 In/Sec	.911 G-s
BIV	.062 In/Sec	.141 G-s
BIA	.200 In/Sec	.112 G-s
BOH	.094 In/Sec	.554 G-s
BOV	.136 In/Sec	.133 G-s

B3-KBS-07 - LINE 3 KILN EXHAUST FAN (16-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.029 In/Sec	.652 G-s
MOV	.066 In/Sec	.232 G-s
MIH	.036 In/Sec	.591 G-s
MIV	.058 In/Sec	.161 G-s
MIA	.046 In/Sec	.150 G-s
FIH	.0079 In/Sec	.0090 G-s
FIV	.0072 In/Sec	.0035 G-s
FIA	.015 In/Sec	.0029 G-s
FOH	.0071 In/Sec	.0018 G-s
FOV	.018 In/Sec	.0032 G-s

FOA .025 In/Sec .0028 G-s

Area: LINE 3 FINISHING

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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HIPRSWTRP - HI-PRESSURE WATER PUMP (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.145 In/Sec	2.330 G-s
MOV	.218 In/Sec	.237 G-s
MIH	.126 In/Sec	2.047 G-s
MIV	.437 In/Sec	.558 G-s
MIA	.156 In/Sec	.439 G-s
P1H	.243 In/Sec	.735 G-s
P1V	.370 In/Sec	.286 G-s
P1A	.174 In/Sec	.300 G-s
P2H	.210 In/Sec	1.431 G-s
P2V	.298 In/Sec	.636 G-s
P2A	.178 In/Sec	.330 G-s

FINSHSHRD - FINISHING SHEDDER (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.094 In/Sec	.442 G-s
MOV	.216 In/Sec	.241 G-s
MIH	.075 In/Sec	.674 G-s
MIV	.138 In/Sec	.102 G-s
MIA	.082 In/Sec	.085 G-s
GH	.067 In/Sec	.235 G-s
GV	.115 In/Sec	.057 G-s
GA	.066 In/Sec	.066 G-s
SH	.066 In/Sec	.270 G-s
SV	.080 In/Sec	.107 G-s
SA	.049 In/Sec	.179 G-s

F3-GRD-01 - LINE 3 FINISH GRINDER #1 (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.415 In/Sec	.289 G-s
MOV	.684 In/Sec	.137 G-s
MIH	.155 In/Sec	.279 G-s
MIV	.302 In/Sec	.093 G-s
MIA	.078 In/Sec	.106 G-s
GIH	.081 In/Sec	.189 G-s
GIV	.082 In/Sec	.066 G-s
GIA	.060 In/Sec	.046 G-s

F3-GRD-02 - LINE 3 FINISH GRINDER #2 (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	.755 In/Sec	.478 G-s
MOV	.393 In/Sec	.191 G-s
MIH	.336 In/Sec	.587 G-s
MIV	.189 In/Sec	.086 G-s
MIA	.272 In/Sec	.050 G-s
GIH	.144 In/Sec	.201 G-s
GIV	.109 In/Sec	.052 G-s
GIA	.155 In/Sec	.050 G-s

F3-GRD-04 - LINE 3 FINISH GRINDER #4 (17-Apr-24)		
	OVERALL LEVEL	1K-20KHz
MOH	1.050 In/Sec	.346 G-s
MOV	.627 In/Sec	.066 G-s
MIH	.506 In/Sec	.151 G-s
MIV	.181 In/Sec	.064 G-s
MIA	.191 In/Sec	.047 G-s
GIH	.097 In/Sec	.173 G-s
GIV	.157 In/Sec	.041 G-s
GIA	.198 In/Sec	.049 G-s

F3-GRD-05 - LINE 3 GRINDER DRIVE (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.045 In/Sec	.802 G-s
MOV	.071 In/Sec	.173 G-s
MIH	.065 In/Sec	.977 G-s
MIV	.072 In/Sec	.259 G-s
MIA	.076 In/Sec	.192 G-s
G1I	.073 In/Sec	.806 G-s
GIV	.088 In/Sec	.294 G-s
G1A	.073 In/Sec	.352 G-s
G2O	.078 In/Sec	.905 G-s
GOV	.109 In/Sec	.294 G-s
G2A	.073 In/Sec	.289 G-s

B3-KFS-04 - LINE 3 KILN DRIVE (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.032 In/Sec	.239 G-s
MIH	.027 In/Sec	.303 G-s
MIA	.045 In/Sec	.193 G-s
G1I	.062 In/Sec	.191 G-s
G1A	.050 In/Sec	.116 G-s
G2O	.061 In/Sec	.086 G-s
G2A	.061 In/Sec	.213 G-s

B3KFS4LUBP - L3 KILN GEARBOX LUBE OIL PMP (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.097 In/Sec	.398 G-s
MOV	.095 In/Sec	.162 G-s
MIH	.066 In/Sec	.561 G-s
MIV	.088 In/Sec	.090 G-s
MIA	.033 In/Sec	.168 G-s
GH	.071 In/Sec	.468 G-s
GV	.092 In/Sec	.095 G-s
GA	.065 In/Sec	.179 G-s
PH	.127 In/Sec	.305 G-s
PV	.070 In/Sec	.119 G-s
PA	.123 In/Sec	.225 G-s

F3-PAD-06 - BLUE OVEN 1 ZONE1 CIRC FAN 1 (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.263 In/Sec	.541 G-s
MOV	.203 In/Sec	.204 G-s
MIH	.552 In/Sec	.593 G-s
MIV	.290 In/Sec	.136 G-s
MIA	.392 In/Sec	.285 G-s
FIH	.438 In/Sec	2.379 G-s
FIV	.507 In/Sec	.431 G-s
FIA	.234 In/Sec	.492 G-s
FOH	.187 In/Sec	2.556 G-s
FOV	.197 In/Sec	.631 G-s

OVN1ZNE1F2 - BLUE OVEN 1 ZONE1 CIRC FAN 2 (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.204 In/Sec	.585 G-s
MOV	.225 In/Sec	.096 G-s
MIH	.116 In/Sec	.448 G-s
MIV	.364 In/Sec	.087 G-s
MIA	.264 In/Sec	.105 G-s
FIH	.109 In/Sec	1.002 G-s
FIV	.191 In/Sec	.143 G-s
FIA	.233 In/Sec	.198 G-s
FOH	.116 In/Sec	.721 G-s
FOV	.157 In/Sec	.189 G-s

OVN1ZNE2F1 - BLUE OVEN 1 ZONE2 CIRC FAN 1 (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.949 In/Sec	1.695 G-s
MOV	.755 In/Sec	.330 G-s
MIH	1.212 In/Sec	.597 G-s
MIV	1.264 In/Sec	.168 G-s

MIA	1.506 In/Sec	.181 G-s
FIH	1.092 In/Sec	2.379 G-s
FIV	1.089 In/Sec	.433 G-s
FIA	.449 In/Sec	.249 G-s
FOH	.246 In/Sec	1.315 G-s
FOV	.172 In/Sec	.261 G-s

OVN1ZNE2F2 - BLUE OVEN 1 ZONE2 CIRC FAN 2 (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.221 In/Sec	.465 G-s
MOV	.597 In/Sec	.148 G-s
MIH	.305 In/Sec	1.005 G-s
MIV	1.271 In/Sec	.278 G-s
MIA	.712 In/Sec	.314 G-s
FIH	.318 In/Sec	.780 G-s
FIV	1.248 In/Sec	.109 G-s
FIA	.475 In/Sec	.137 G-s
FOH	.224 In/Sec	4.850 G-s
FOV	.179 In/Sec	.520 G-s

OVEN2Z1FAN - BLUE OVEN 2 ZONE1 CIRC FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.261 In/Sec	.659 G-s
MOV	.432 In/Sec	.155 G-s
MIH	.146 In/Sec	2.077 G-s
MIV	.500 In/Sec	.286 G-s
MIA	.199 In/Sec	.768 G-s
FIH	.217 In/Sec	.872 G-s
FIV	.421 In/Sec	.240 G-s
FIA	.265 In/Sec	.171 G-s
FOH	.116 In/Sec	1.764 G-s
FOV	.200 In/Sec	.335 G-s

OVEN2Z2FAN - BLUE OVEN 2 ZONE2 CIRC FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.208 In/Sec	.861 G-s
MOV	.319 In/Sec	.378 G-s
MIH	.919 In/Sec	.714 G-s
MIV	.573 In/Sec	.199 G-s
MIA	.745 In/Sec	.270 G-s
FIH	.728 In/Sec	1.773 G-s
FIV	.602 In/Sec	.271 G-s
FIA	.366 In/Sec	.233 G-s
FOH	.155 In/Sec	.552 G-s
FOV	.114 In/Sec	.134 G-s

D1DCR02EXH - #1 GRINDER BAGHOUSE DC FAN (17-Apr-24)

	OVERALL LEVEL	1K-20KHz
MOH	.198 In/Sec	.208 G-s
MOV	.275 In/Sec	.104 G-s
MIH	.085 In/Sec	1.089 G-s
MIV	.427 In/Sec	.067 G-s
MIA	.188 In/Sec	.049 G-s
FIH	.501 In/Sec	1.249 G-s
FIV	.234 In/Sec	.465 G-s
FIA	.814 In/Sec	.196 G-s
FOH	.210 In/Sec	2.645 G-s
FOV	.311 In/Sec	.539 G-s

D1DCR01EXH - #3 FINISHING DUST COLLECTOR (17-Apr-24)

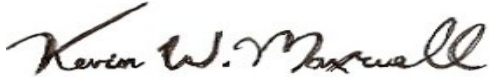
	OVERALL LEVEL	1K-20KHz
MOH	.244 In/Sec	1.156 G-s
MOV	.642 In/Sec	.765 G-s
MIH	.139 In/Sec	1.522 G-s
MIV	.661 In/Sec	.321 G-s
MIA	.175 In/Sec	.552 G-s
FIH	.389 In/Sec	.654 G-s
FIV	.288 In/Sec	.234 G-s
FIA	.301 In/Sec	.158 G-s
FOH	.337 In/Sec	1.008 G-s

Clarification Of Vibration Units:

Acc	-->	G-s	RMS
Vel	-->	In/Sec	PK

As always, it has been a pleasure to serve USG Greenville, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



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QualiTest® Diagnostics

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