



**QualiTest® Diagnostics**

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July 9, 2019

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The following is a summary of findings from the June 2019 monthly vibration survey at the USG Greenville, MS Plant. Please let us know if there are any questions or comments.

**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

### #5 Expander Dust Collector

High 1 x rpm vibration indicates imbalance of the fan wheel. **Fan wheel needs to be inspected and cleaned soon.** Rated as a **CLASS II** defect.

### #6 Expander Dust Collector

1 x fan rpm vibration remains above low alarm limit. This is most likely due to a combination of imbalance and deteriorated grout around the fan base. Inspect and clean fan wheel. Base needs to be re-grouted in the near future. Rated as a **CLASS II** defect.

### #7 Expander Dust Collector

Overall vibration is highest on record at .7 ips-pk. Data still shows some fan rpm vibration in the fan bearings. This is due to some imbalance of the fan wheel. **Fan wheel needs to be inspected and cleaned soon.** Rated as a **CLASS III** defect.

### #8 Expander Dust Collector

High 1 x rpm vibration indicates imbalance of the fan wheel. **Fan wheel needs to be inspected and cleaned soon.** Drive end fan bearing data also shows possible bearing looseness. Inspect fan bearings for excessive axial movement and perform a lift check of the shaft (belts should be loose while performing the lift check). Rated as a **CLASS II** defect.

## Hydropulper

Vibration data of the gearbox shows some gear mesh vibration along with input speed harmonics. Previous oil reports have also shown some metal contents which further indicates internal wear of the gearbox components. Unit should be inspected for wear as scheduling allows. Rated as a **CLASS II** defect.

## *Mix-up/Reclaim*

### Starch Blower

The high pressure blower still has an extreme amount of acceleration throughout the blower. There are several high amplitude harmonics of blower rpm present as well. This is a good indication of internal wear of the blower. Waveform data of the blower shows amplitude of 12 g's peak to peak which is excessive. It is recommend replacing the blower in the near future due to the high acceleration. Rated as a **CLASS II** defect.

### Beater (Broke) Agitator

Agitator bearings are showing signs of wear. Rated as a **CLASS II** defect for now.

### #1 White Water Loop Pump

Motor vibration data shows defects are present in the motor bearings and vibration is starting to get worse. Pump is also showing some signs of bearing wear as well. Motor will need attention soon. Rated as a **CLASS III** defect.

### **#2 White Water Loop Pump**

Pump bearing data shows extreme amount of acceleration and some non-synchronous peaks in the spectrum. These are good indications of defects in the pump. Pump should be swapped out in the near future. Rated as a **CLASS III** defect.

### **Dump Chest Agitator**

Motor vibration data shows defects are present in the motor bearings. It is recommended to change out the motor soon. Rated as a **CLASS III** defect for now.

### **Ultra-Sorter Screen**

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

## **Board Line 3**

### **#2 Top Press Roll Drive**

Motor data shows possible defects of the motor bearings. It is recommended to inspect the motor bearings for defects/wear soon. Electrical fluting of the bearing races may be present. Rated as a **CLASS III** defect.

### **Board Line Main Drive**

Motor data is showing some signs of bearing issue taking place. Possible electrical fluting of the bearings may be present. Rated as a **CLASS I** defect for now.

### **#1 Former White Water Pit Pump**

Vibration spectra of the motor signs of bearing defects of the drive end bearing. Inspect motor as scheduling allows. Rated as a **CLASS II** defect.

### **#2 Former White Water Pit Pump**

*Equipment was not in service this month; however, the following still applies:* Motor is showing some signs of bearing defects in the spectral data. We will monitor this closely. Rated as a **CLASS II** defect.

### **Vacuum Pump #2**

Motor vibration has increased this survey. This is likely due to the motor base not being secured properly to the concrete base. Motor base needs to be anchored properly. Rated as a **CLASS II** defect.

### **Low Vacuum Fan**

Motor axial is higher than usual. Data suggests misalignment of the sheaves. Sheaves should be checked for offset and angular misalignment. Ensure sheaves are not worn and that the belts are in good order as well. Rated as a **CLASS II** defect.

## **Finishing**

### **Finishing #1 Dust Collector**

Fan data still shows some imbalance. Fan wheel may still have some build up or fan wheel may need to be balanced. Rated as a **CLASS II** defect.

### **#3 Finishing Dust Collector**

Overall vibration has decreased some, but still remains to be an issue. Fan bearing data shows some signs of imbalance and looseness of the bearings. Inspect and clean fan wheel ASAP. Fan bearings, housings may need to be changed in the near future. 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 monitor this closely. Rated as a **CLASS II** defect.

### **Blue Oven 1 Zone 1 Circulation Fan 1**

Vibration data indicates that the fan is out of balance. It is recommended to inspect the fan wheel for build-up and damage. 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**

Vibration data of the fan bearing indicates bearing faults more so in the bottom fan bearing. It is recommended to replace fan bearings as scheduling allows. Rated as a **CLASS II** defect.

### **Blue Oven 1 Exhaust Fan**

Data shows imbalance of the fan. Fan shaft may also be bent. Sheaves misalignment may also influence this vibration. Sheaves should be checked for misalignment and wear and perform a field balance of the fan. Rated as a **CLASS II** defect.

### **Blue Oven 1 Zone 2 Circulation Fan 1**

Vibration data indicates a sheave/belts issue. There is a beat vibration at what appears to be 2 x belt frequency and 1 x fan rpm. This is generally due to a cocked or misaligned sheave, or belt issues. It is recommended to inspect the fan sheave face run out. Run-out should not exceed .002". Ensure sheaves are properly aligned and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

## ***Fiberglass***

### **New Dust Collector**

The fan bearing data is showing signs of bearing issue. Overall high frequency acceleration trend shows a significant increase in amplitude. Several non-synchronous peaks have also showed up in this month's spectral data. Bearings need attention soon. Rated as a **CLASS III** defect.

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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