



QualiTest® Diagnostics

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May 29, 2020

Cascades Tissue
Memphis, TN

The following is a summary of defects that were found during the May vibration survey of the **Deinking Area**. 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

Disperger

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: There seems to be some non-synchronous vibration peaks that are becoming apparent in the motor spectra. There are also several gearbox related peaks being transferred across the coupling which makes this difficult to analyze. Gearbox is also starting to show some gear related vibration in the gearbox. We will continue to monitor this closely. Rated as a **CLASS I** defect.

TWPO Conveyor 104A UPPER LEVEL

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: The unit is still physically rocking back and forth. Data of this unit indicates a possible bent or bowed conveyor drive shaft. The shaft has visible vertical movement. It is recommended to inspect the shaft for excessive run-out soon. This is rated as a **CLASS II** defect.

Dump Chest #2 Pump

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Motor has significant amount of noise and non-synchronous impacting which is likely due to bearing defects. Motor needs attention SOON. Rated as a **CLASS III** defect.

16 Ft. Pulper Oil Pump

Both motor and pump have numerous rpm harmonics with the MIH having the highest vibration. This type of vibration suggest internal wear of the pump and or drive components. Inspect unit as time allows. Rated as a **CLASS II** defect.

16' Pulper GEARBOX

Gearbox has high vibration and noise. Spectral data shows sidebands of output speed around gear mesh frequencies. This may be due to gear backlash, gear eccentricity/wear, or excessive bearing clearances. We will monitor this closely. Rated as a **CLASS II** defect.

20' Pulper

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Data of the gearbox is showing some low-level amplitude non-synchronous peaks along with a slightly elevated Gear Mesh input shaft vibration. We will monitor this closely. Rated as a **CLASS I** defect for now.

Grey Water Chest #1 Pump

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Spectral data indicates an issue with the pump. This could be a combination of process flow and internal pump defects. The impeller could be worn along with other pump internals. It is recommended to inspect the pump soon. Pump may need to be replaced during the next major downtime. Rated as a **CLASS II** defect for now.

AGIT113 Mixing Chest Agitator

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: ODE agitator data is showing rapid deterioration of the bearings. Agitator bearings need attention very soon. Rated as a **CLASS III** defect.

Poseipompe

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Motor seems ok after changing out, but pump remains to have a vibration issue. This could be an internal issue with the pump such as impeller wear or clearance issue. We will monitor closely. Rated as a **CLASS II** defect.

AGIT116 and AGIT 117 Hi Con. Bleach Tower Agitator

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: MOH has some high 1 x rpm vibration. This could be due to some heavy process or possible bent shaft of the agitator, or structural issues such as cracks, loose fasteners. Inspect the unit as scheduling allows. Rated as a **CLASS II** defect.

Krofta Clarified Tank Pump

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Motor vibration has decreased since replacing motor: however, data still shows an issue with the couplings. Data indicates coupling wear. Couplings should be inspected and replaced if needed. Rated as a **CLASS II** defect.

Floataction Cell #1 Blower

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Data indicates internal wear/defects of the blower. Blower should be inspected as time allows. Ensure unit is operating properly and not causing an overload condition of the motor. Rated as a **CLASS II** defect.

Floataction Cell #1 Turbine

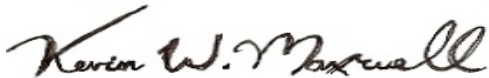
Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Lower (idle) shaft outboard (opposite drive end) bearing data is showing some defects in the bearing. Replace bearing as scheduling allows. Rated as a **CLASS II** defect.

Floataction Cell #2 Turbine (Drive end upper shaft)

Unit was not in operation during this survey; however, the following likely still applies if no actions have been taken: Data indicates bearing issue taking place in this bearing which most likely will need attention in the next few months. Will continue to monitor closely. Rated as a **CLASS II** defect.

As always, it has been a pleasure to serve the Cascades Tissue Memphis, TN Plant. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



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