



QualiTest® Diagnostics

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Cascades Tissue
Memphis, TN

The following is a summary of defects that were found during the August 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

Floataction Cell #2 MOTOR

Motor drive end bearing has had a significant increase in vibration amplitude. Data shows a lot of noise and high frequency vibration. Drive end bearing is mostly likely very near failure and needs immediate attention. The lower shaft drive end turbine bearing is also showing increased bearing related vibrations that may be influenced by the motor; however, an inspection of this bearing is recommended also. Inspect sheaves and belt also. Rated as a **CLASS IV** defect.

Washer DNT #1

Both back bearings (opposite drive side) on the DNT have an increased vibration. This type of vibration appears to have occurred a couple of years ago. Spectral data of bearing 3 (idle shaft back end) shows several rpm harmonics with some modulating low frequency vibration. This may be a rub or some other internal issue within the unit. It is recommended to perform a thorough internal inspection of the DNT as soon as practical. Rated as a **CLASS III** defect

Washer DNT #3

Equipment was not in service during this survey; however the following may still apply: Data shows some motor rpm harmonics which may indicate looseness. First inspect the sheave and bushing ensuring that they are not loose or cracked. If all checks good, then the motor may have an internal looseness issue. Rated as a **CLASS II** defect.

Disperger

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

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.

Thickener #1 Outlet Conveyor Drive

Motor/gearbox has excessive low frequency vibration and visible movement. Ensure frame, mounts, and base are secure with no cracks or loose fasteners. Rated as a **CLASS II** defect.

16 Ft. Pulper Oil Pump

Motor appears to have the higher vibration, but 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 SOON. Rated as a **CLASS III** defect.

16' Pulper GEARBOX

Equipment was not in service during this survey; however the following still applies: Gearbox vibration is higher than normal for a newly reconditioned gearbox. Spectral data shows sidebands of output speed around gear mesh frequencies. This may be due to gear backlash, gear eccentricity, or excessive bearing clearances. We will monitor this closely. Rated as a **CLASS II** defect.

De-Trasher Hydrapurge

Gear drive is showing some signs of internal wear. Gear drive unit should be inspected for signs of wear as scheduling allows. Ensure oil is in good condition and at proper level. We will monitor the gear drive wear closely. Rated as a **CLASS II** defect.

20' Pulper

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

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.

CLN 109 Tertiary Fine Screen MOTOR

Data is showing some defects present in the drive end motor bearing. The motor in place has a ball bearing in the drive end and because this is a belt application, it should have an NU series bearing. We will monitor this closely. Rated as a **CLASS II** defect.

AGIT113 Mixing Chest Agitator

ODE agitator data is starting to show signs of bearing issues. We will monitor this closely. Rated as a **CLASS II** defect.

Filtered Water Chest Pump

Data still shows signs of misalignment, coupling wear, and possible pump impeller issues. Inspect unit for these issues as scheduling allows. Rated as a **CLASS II** defect.

Poseipompe

Pump drive end data suggests possible sheave issue such as wear or misalignment. Belt may also be causing some of this vibration. Ensure sheaves are in good shape and aligned properly and inspect belt for wear. Rated as a **CLASS II** defect.

AGIT115 and AGIT 117 Hi Con. Bleach Tower Agitator

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.

Floatation Cell #1 Blower

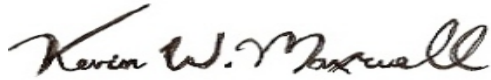
Acceleration in the blower has increased this survey. Data indicates internal wear/defects of the blower. Blower should be inspected soon. Ensure unit is operating properly and not causing an overload condition of the motor. Rated as a **CLASS III** defect.

Floatation Cell #1 Turbine

Idle shaft outboard (opposite drive end) bearing data is starting to show some issue taking place in the bearing. This issue will be monitored 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,

A handwritten signature in black ink that reads "Kevin W. Marshall". The signature is fluid and cursive, with the first name "Kevin" and last name "Marshall" clearly legible.

ISO Certified Vibration Analyst, Category III



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