Minimizing Microbes and Maximizing Profits

Basic Troubleshooting Techniques

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RETHINK PAPER:
Lean and Green

Basic MB Troubleshooting Techniques Examples

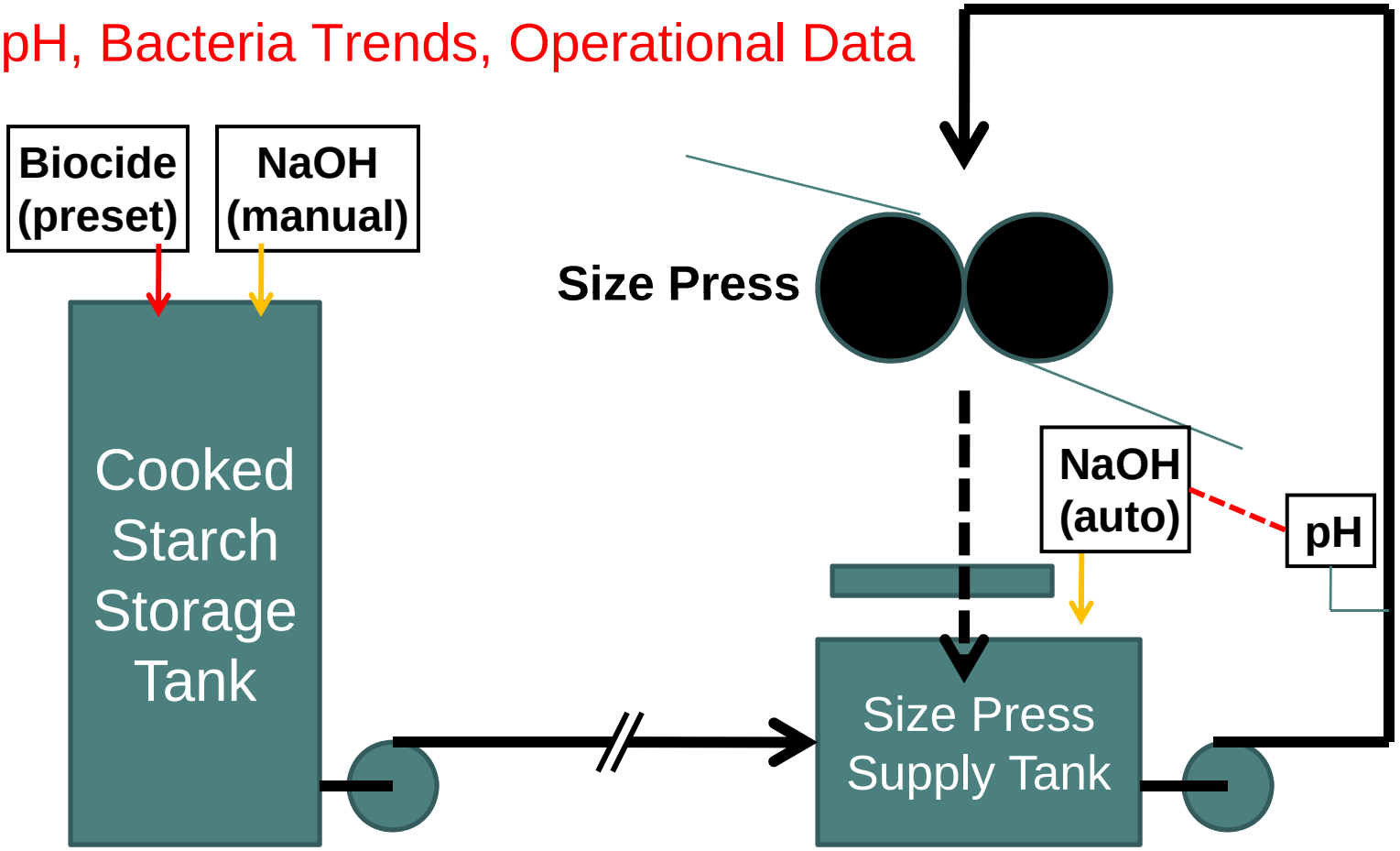
- Degraded Size Press Starch-Alkaline Fine Paper
- MB Contamination from Uncoated Broke-Alkaline LWC
- MB Contamination from Broke-Alkaline Fine Paper

Basic MB Troubleshooting Tools

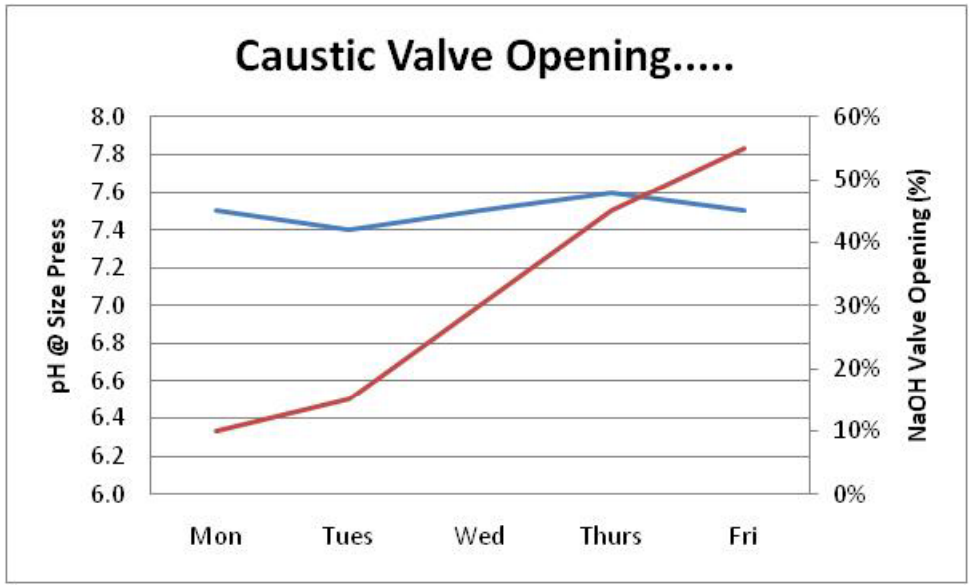
- "Plating"
  - Total Aerobic Bacteria
  - Fungi/Yeast/Molds
  - Anaerobic Bacteria/SRBs
- ORP
  - On Line
  - Portable Meter
- pH
  - On Line
  - Portable Meter
- ATP
- Chlorine
  - Total
  - Free
- Deposit Monitoring
  - On Line
  - Observations
  - Digital Photos
- Operational Data

Troubleshooting Techniques-Degraded Starch PM Size Press Starch Example

Tools: pH, Bacteria Trends, Operational Data



Troubleshooting Techniques
Degraded Starch Example



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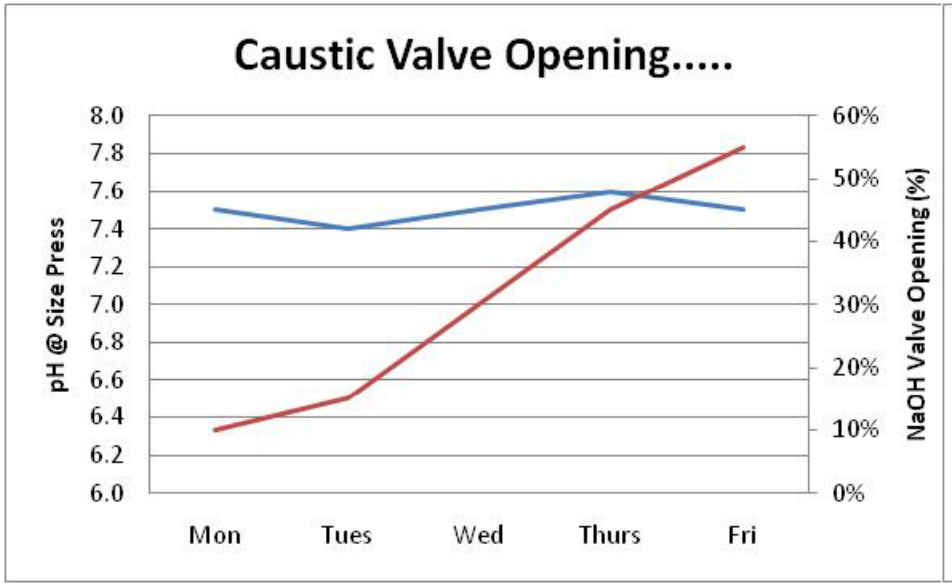
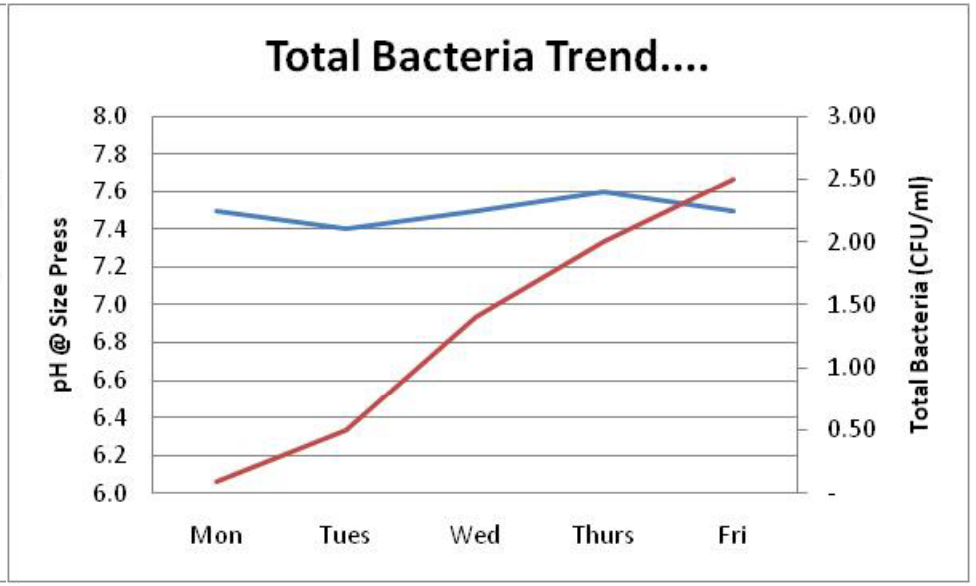
Degraded Starch Example

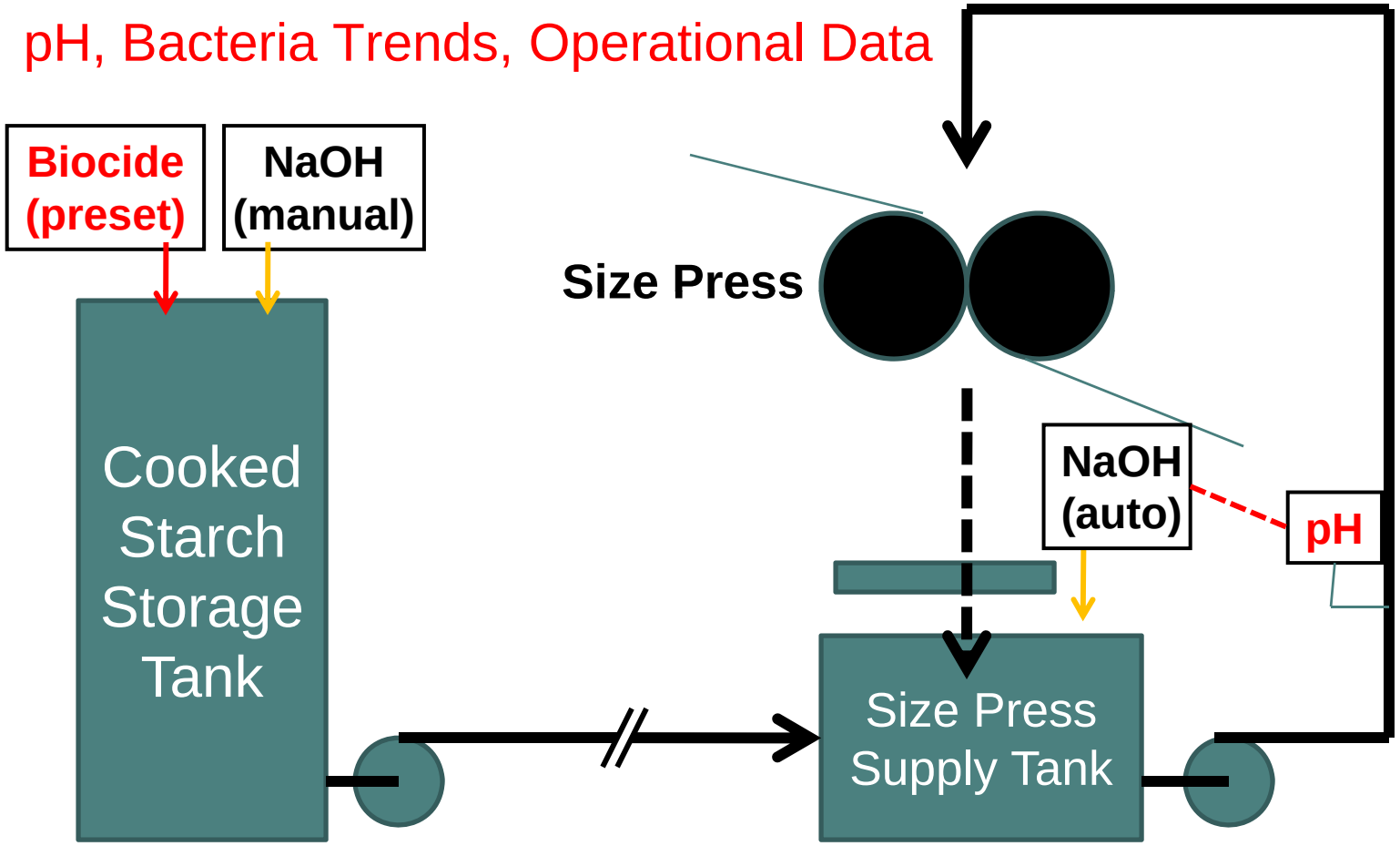




→Use pH & caustic use trends to troubleshoot MB issues

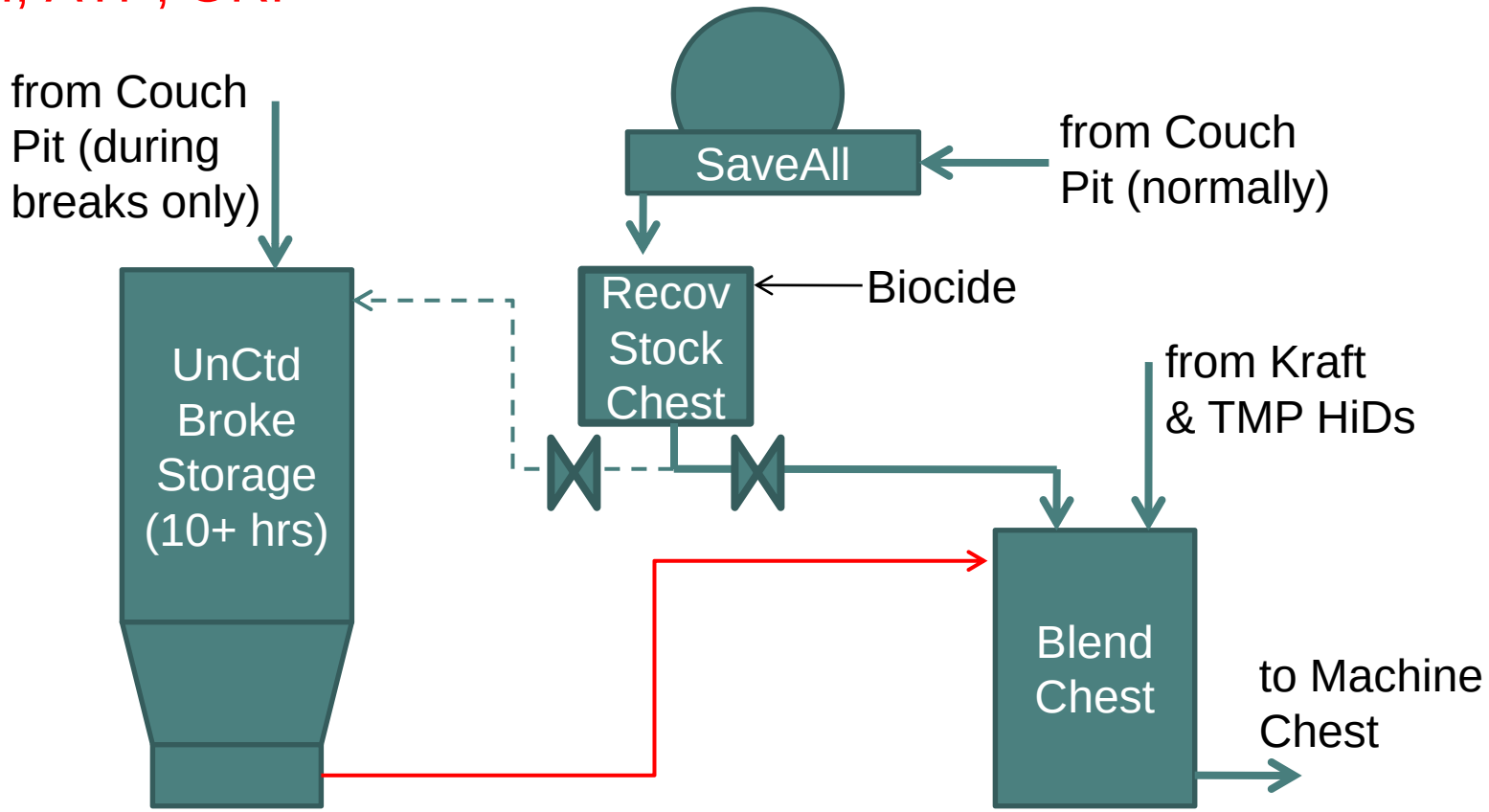
Troubleshooting Tools-Degraded Starch Example PM Size Press Starch

Tools: pH, Bacteria Trends, Operational Data



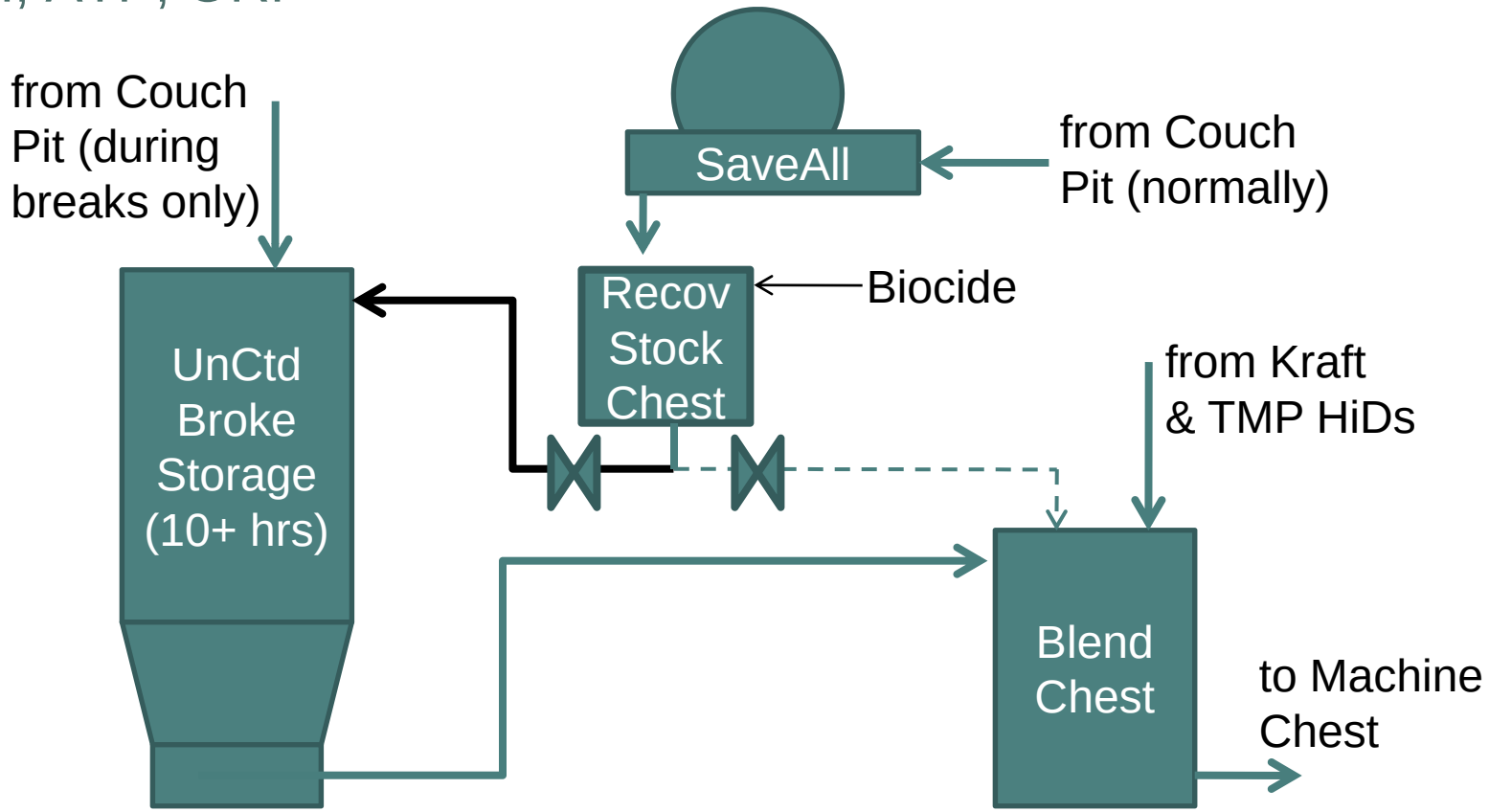
Troubleshooting Techniques - Uncoated Broke Alkaline LWC – the "Problem"- Intermittent Control

- pH, ATP, ORP



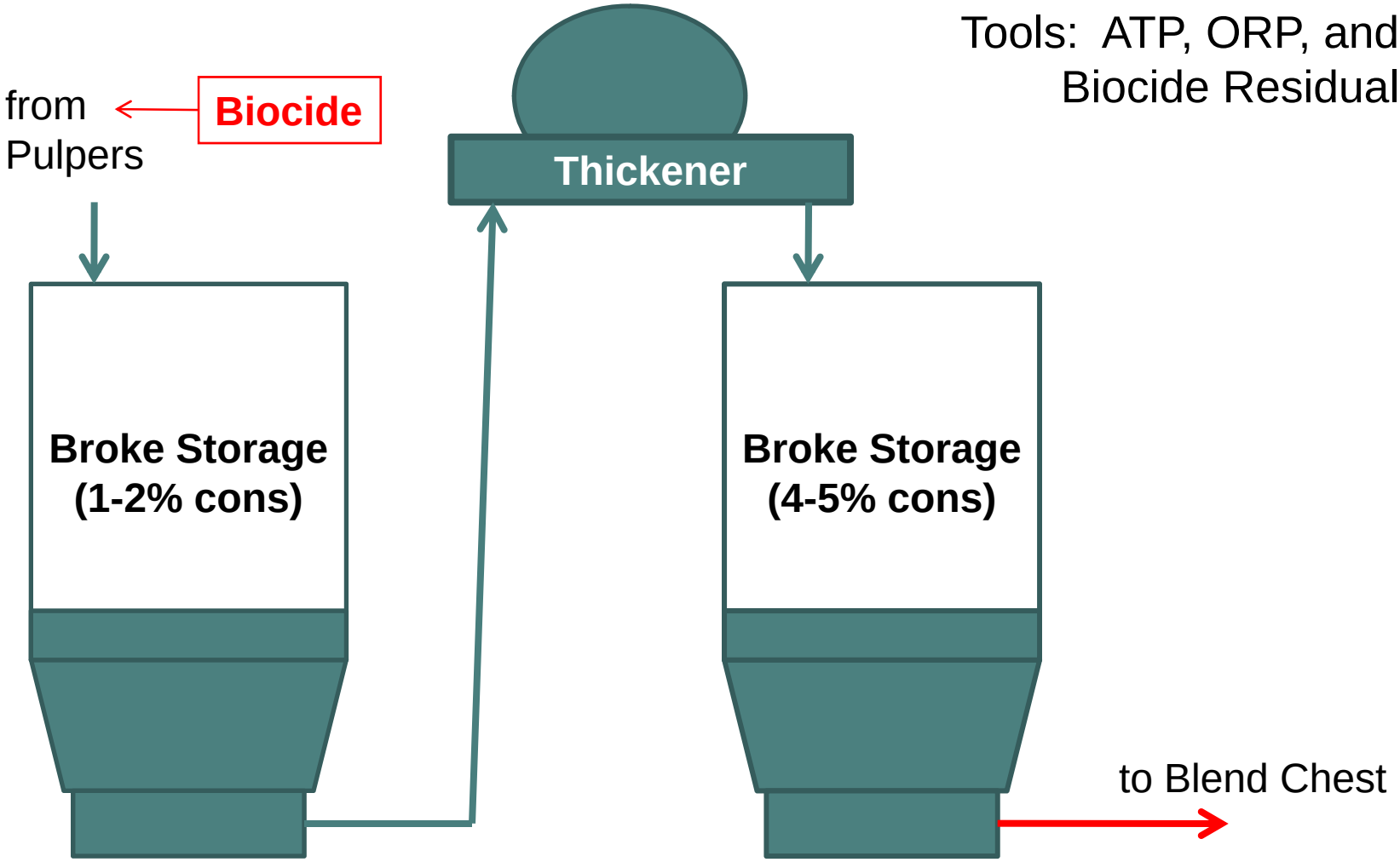
Troubleshooting Techniques - Uncoated Broke Alkaline LWC– the "Cure" – Better Mixing

- pH, ATP, ORP



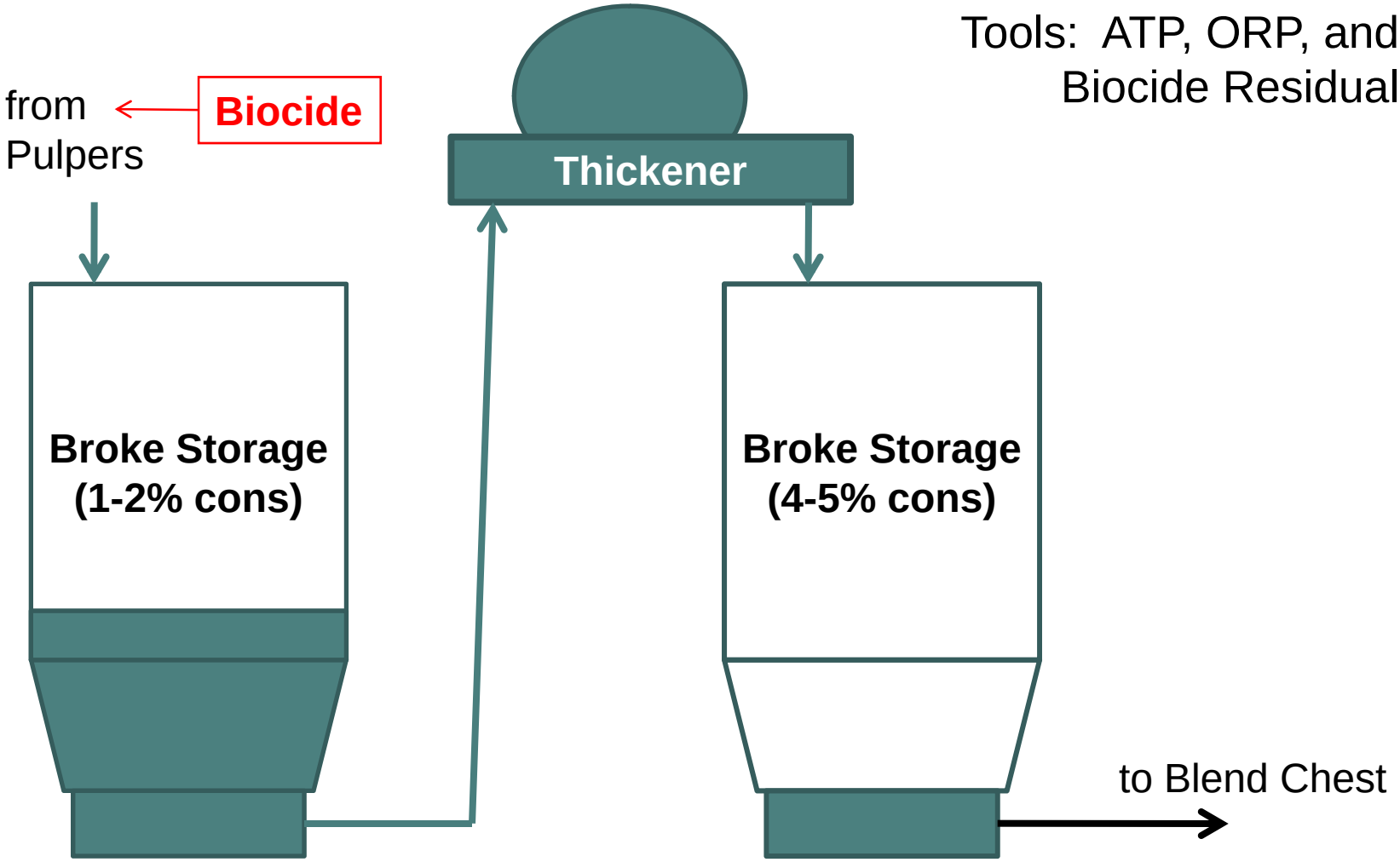
Troubleshooting Techniques – Broke Alkaline Fine Paper -- "Low Grade Infection"

Tools: ATP, ORP, and Biocide Residual



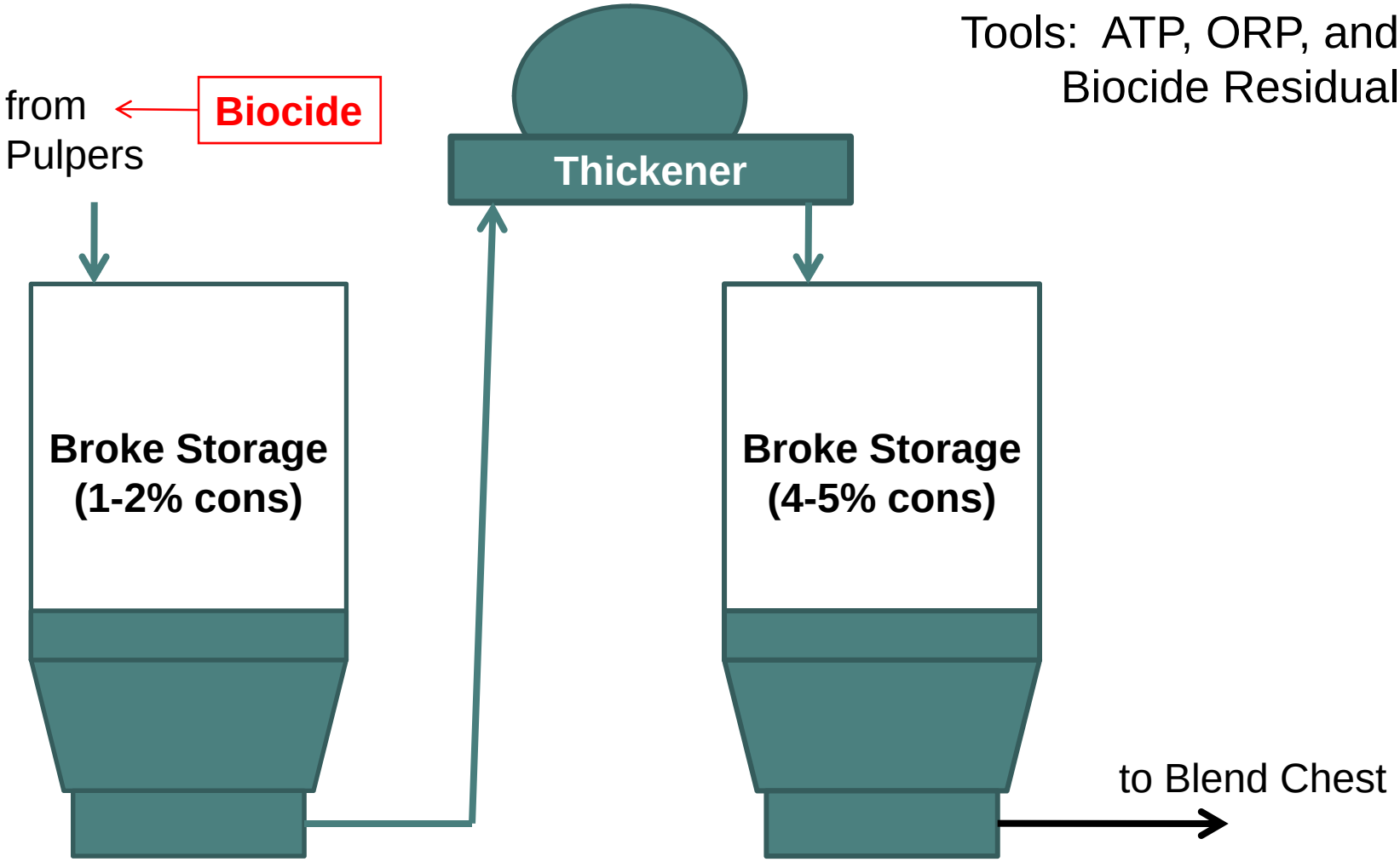
Troubleshooting Techniques – Broke Alkaline Fine Paper -- "Fresh Broke"

Tools: ATP, ORP, and Biocide Residual



Troubleshooting Techniques – Broke Alkaline Fine Paper -- "Fresh Broke"

Tools: ATP, ORP, and Biocide Residual



Basic MB Troubleshooting Techniques

- Understand the customer's Papermaking Process
- Application Knowledge
  - Biocide Concentration
  - Flow (WW & Stock)
  - Mixing (or lack of….)
    - Consistency
    - Agitation
  - Nutrients/pH/Temperature
- Tools:
  - Plate Counts
  - ORP
  - pH
  - ATP
  - Chlorine
  - Deposit Monitoring
  - Operational Data

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