VOC Emissions from Rotary Dryer Systems

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Agenda

- Rotary Dryer Technology
  - Flight Design
  - Heating Zone
- Product Introduction
- Dryer Flights
- Process Results
- Questions

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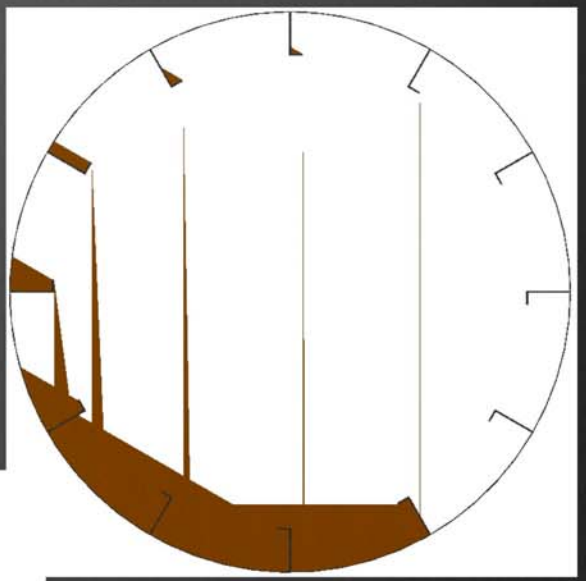
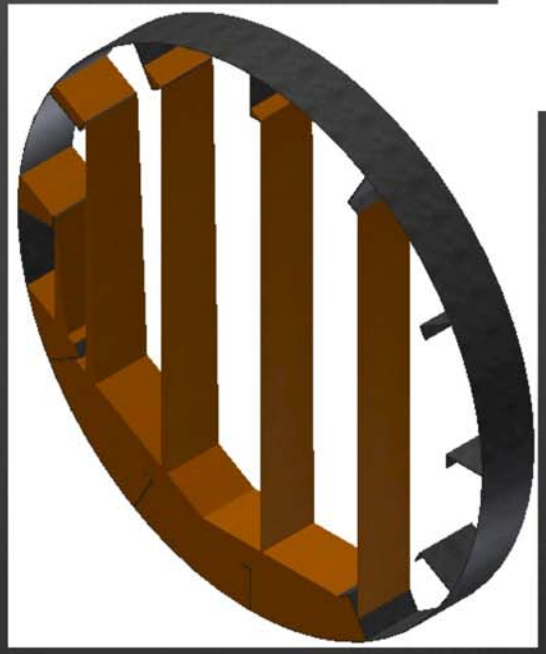
Flight Design

- Flight Design has dramatic impact on drying efficiency
- Different styles yielded very different efficiency and emissions data
- Proper flights allowed for correct drying gradient





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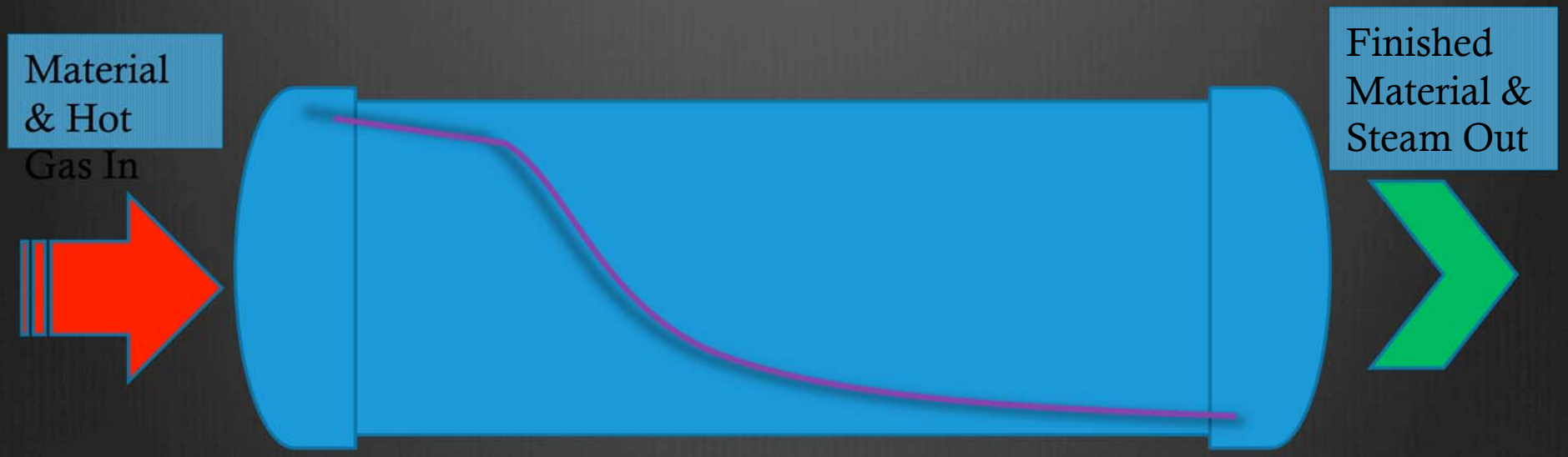
Temperature Gradient



As the hot air and material move past 1/3 of the drum distance, the heating drops off dramatically allowing the fine materials to exit without overheating & wet materials to finish drying in a more gentle manner

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Test Case

- 100% Southern Yellow Pine
- Shavings, Sawdust, Chips
- Replace 3 dryers & dust furnace
- New green fuel combustion system
- New single pass process technology
- Currently running 30,000 OD PPH
- No VOC Control, tested <100TPY
- No formal PM Control

Test Case #2

- Mixed Eastern White Pine, Spruce and Fir
- Shavings, Sawdust, Chips
- Replace 2 dryers & dust furnace
- New green fuel combustion system
- New single pass process technology
- Currently running 35,000 OD PPH
- No VOC Control, tested <100TPY
- No formal PM Control

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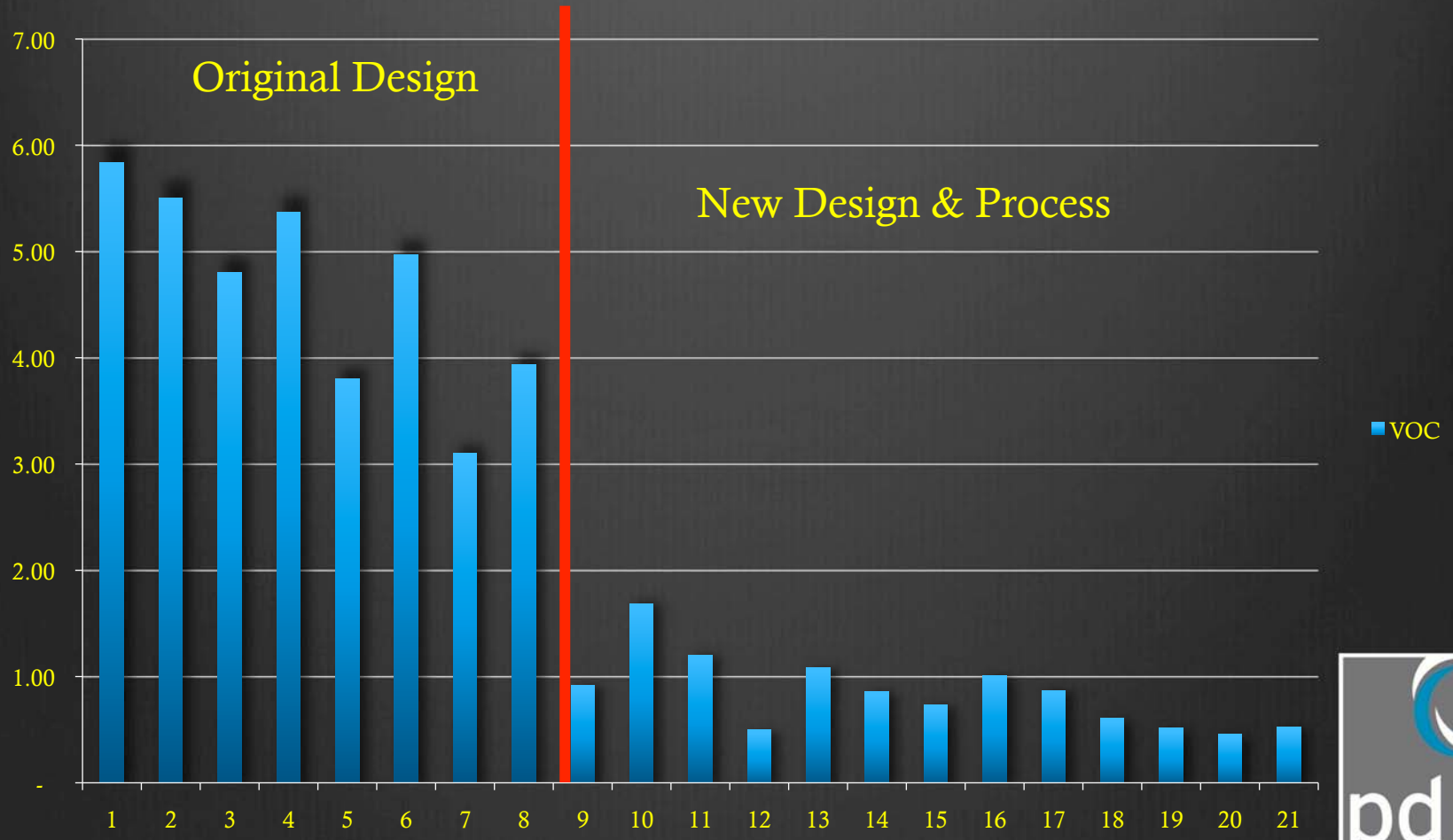
VOC Emissions
All Wood Species Combined



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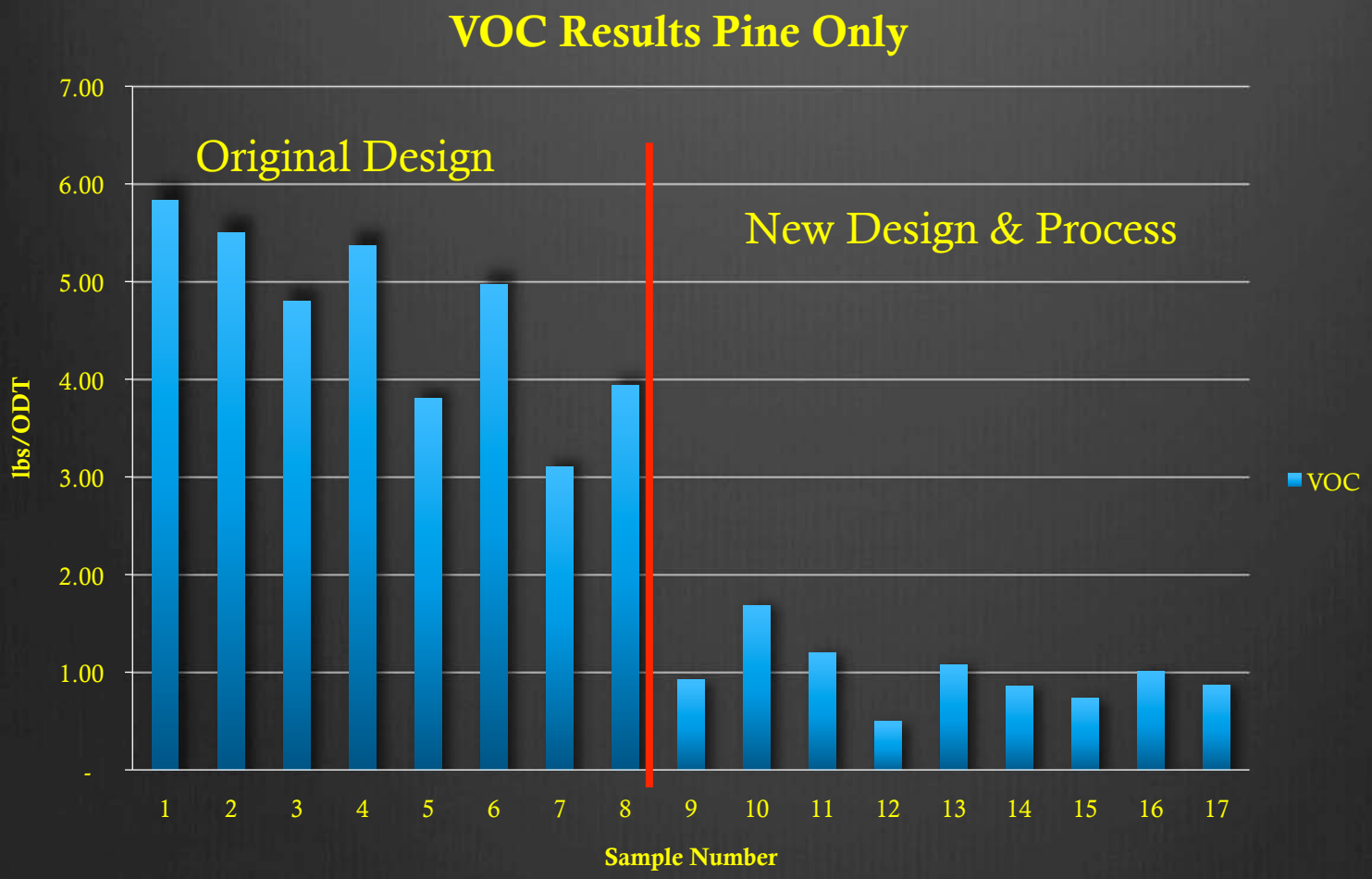
VOC Emissions Pine Only



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CO Emissions

- Unexpected Benefit of process redesign
- Stability in furnace and efficiency of combustion
- Lower CO emissions by over 50%
- Less sparking
- Better drying control

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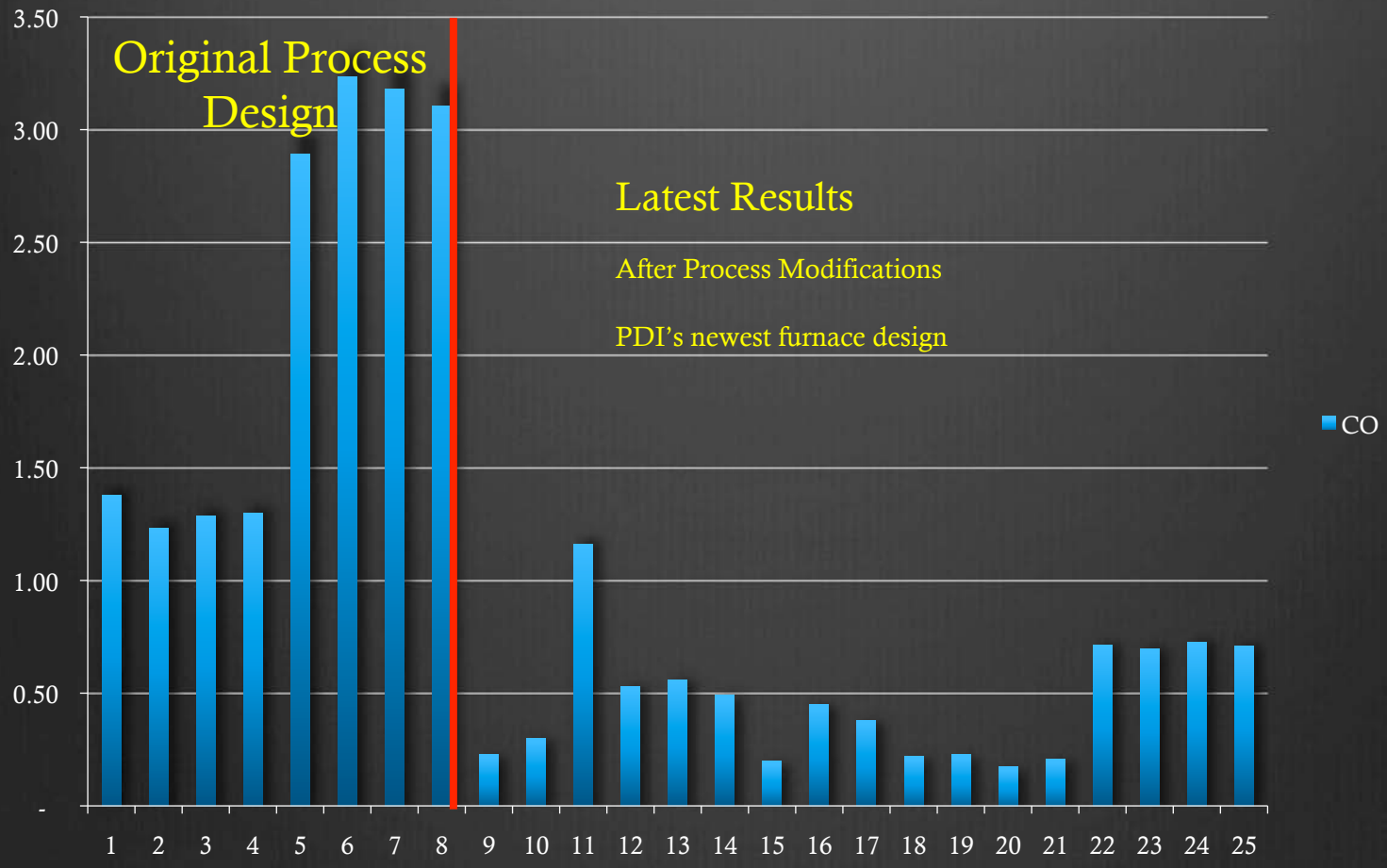
CO Emissions



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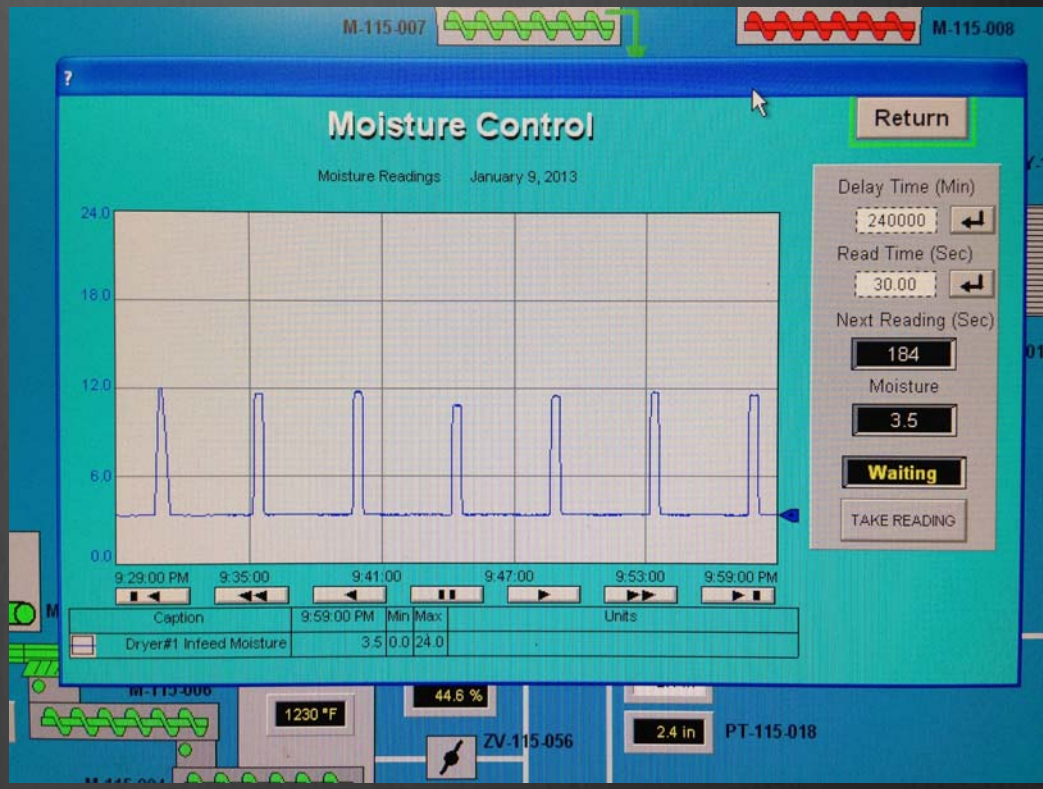
Moisture Control

- Moisture stabilized in this new process
- +/- 1% variation in 24 hours
- Stability in process also reduced swings over time created by operator adjustments



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Questions

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