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Project Deliverables/ Expectations:

- Complete a survey of the existing dust control system and facility grain handling equipment
- Determine if additional dust control system or enclosed system would be more adequate and cost-effective in means of keeping the facility in compliance.
- Develop a plan/system to reintroduce dust back into the grain stream from the collection system



Impact of Dust:

- Explosive
- Loss of weight
- Environmental
- Storage Issues



Data and Analysis:

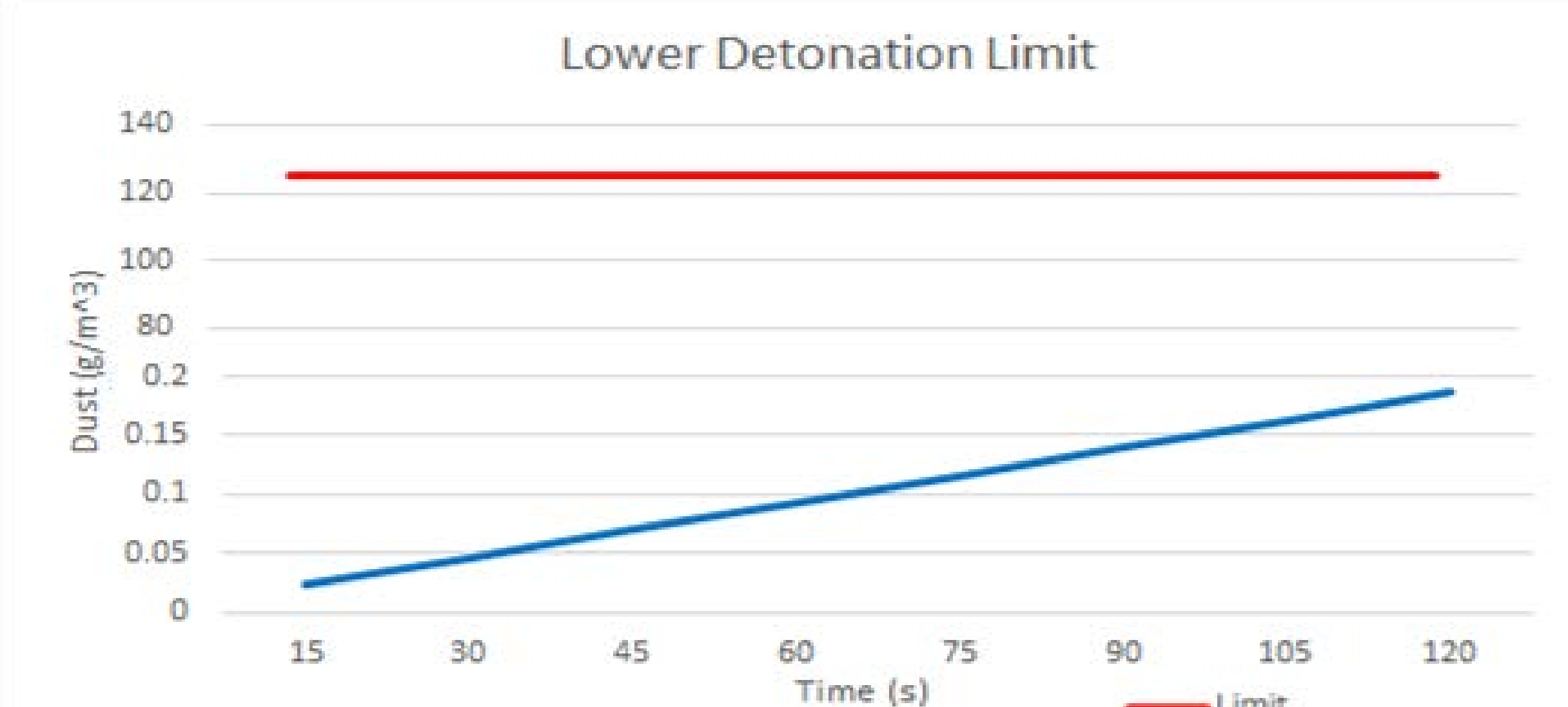
- The team collected the amount of dust produced in one basement while a train was being loaded out.
- The floors were swept in approximately one hour intervals.
- The rate of dust produced came to be 62.8 lbs. per hour within the basement that measured 9015 square foot.

Background and Problem Statement:

The ADM facility located in Beech Grove, IN currently has open belt conveyers located in the basements underneath the grain bins. They want to collect the dust that comes off of the conveyor and potentially put it back into the grain stream.

Lower Detonation Limit:

After thorough calculations the team has determined that the dust produced would not be suspended long enough or dense enough to cause an explosion



Economics & Sustainability:

Projected Losses

- 2015 – Corn loss of \$382.82, Labor cost of \$6,591.00
- 50 year – Corn loss of \$25,546.71, Labor cost of \$1,215,687.65

Projected Pay Back Year

- 2047 – Corn loss of \$15,388.27, Labor cost of \$467,981.03

Conveyor Costs

- Two enclosed conveyers - \$500,000

Projected Use

- Estimated lifespan – 50 + years
- Current Conveyor Age- 58 years



**Conclusion:
Enclosed conveyers**

- Safety
- Dust Containment
- Low Labor Cost
- Limited Corn Spillage
- Efficiency
- ADM Compliant

Alternative Solutions:

- Additional vacuum lines
- Partially enclosed conveyers