

# Fugitive Dust Control Methods

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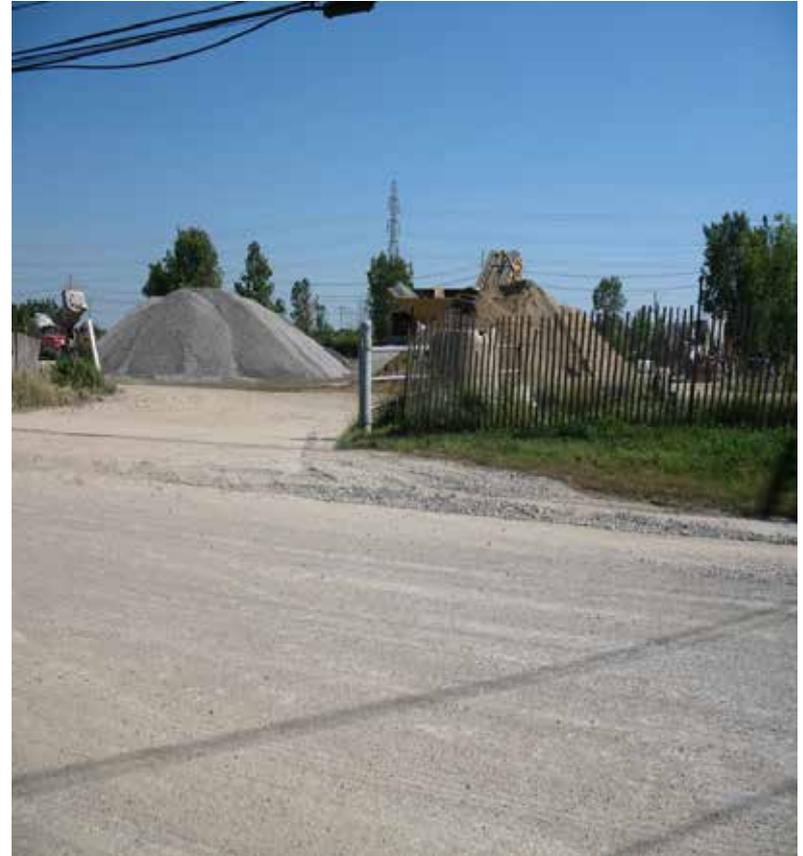


# Fugitive Dust Control Methods

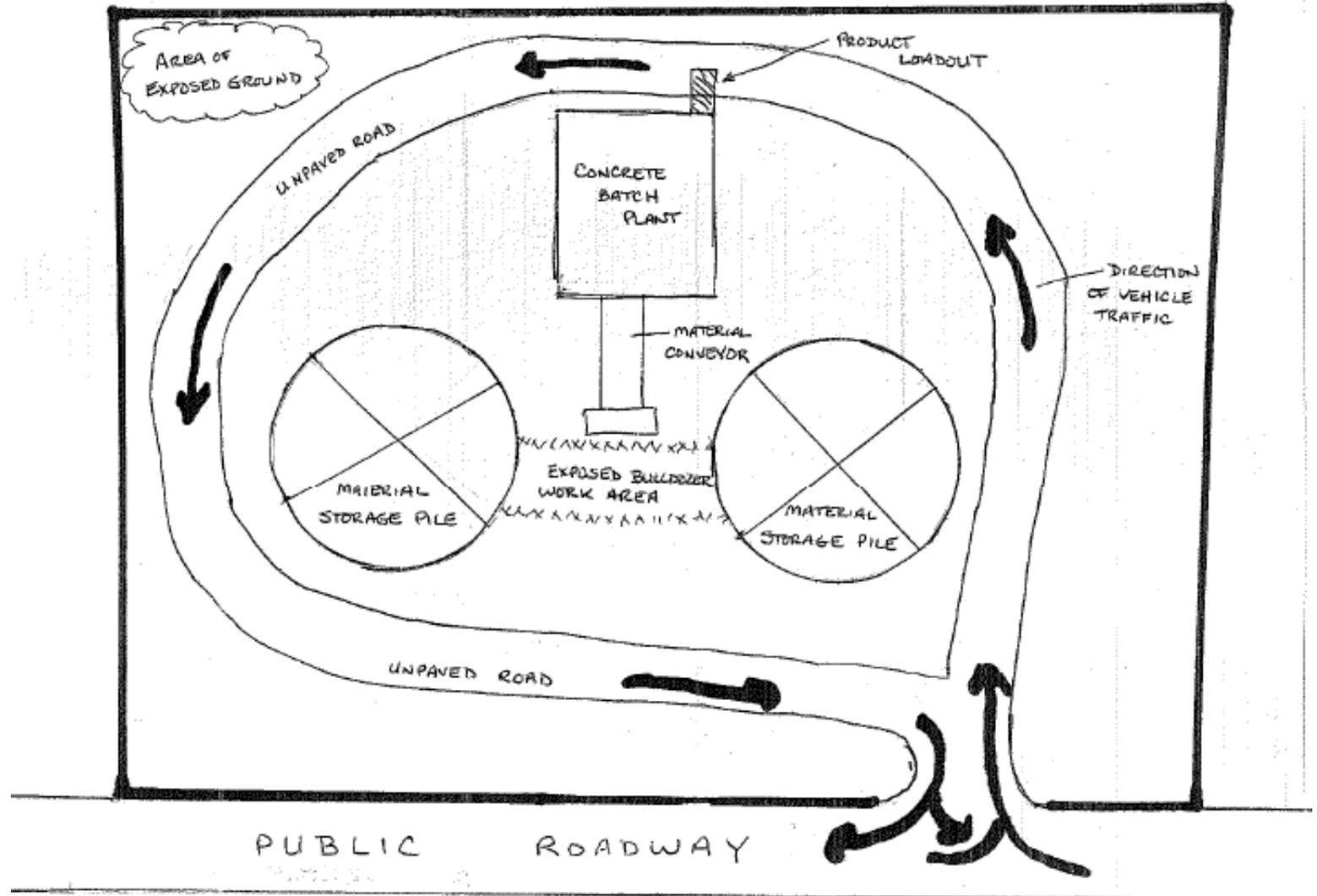
- Assess facility/site for areas w/ potential sources of fugitive dust
- Implement a fugitive dust control plan
  - Select control measure to use
  - Implement the plan
- Keep records of control measures

# Assess facility/site

- Create map
- Analyze traffic patterns
- Decide on dust control measures
- Determine frequency of dust control



# Facility Map



# Analyze Traffic Patterns

- Facility size
- Location of surroundings related to traffic flow
- Evaluate if change is needed

# Dust Control Measures

- Minimize size of disturbed/exposed area
- Adjust work schedule (limit dusty work on windy days)
- Clean up dusty spills
- Additional site specific measures

# Trackout



# Trackout



# Truck and Wheel Wash



# Control Speed Limit



# Addressing Trackout in Your Plan

## 2.0 ROADS AND TRUCK TRAFFIC

All limestone transport trucks will be tarped prior to leaving the facility and a 10 mile per hour speed limit will be posed at several locations along the plant road.

All limestone transport trucks will pass through a wheel wash system prior to leaving the facility.

A street sweeper will be operated as necessary to control the carry out that may be deposited by trucks leaving the quarry. The sweepings will occur a minimum of two times per month and records will be kept on file.

Appropriate measures will be taken when necessary to minimize the emission of water onto Two Stone Road from the trailers of trucks leaving the facility. This water may be present in the bottom of trailers and results from the stone processing and particulate emission control activities.

# Dust Control Measures for Conveyors

- Utilize spray system
- Telescopic chutes
- Limit drop heights
- Erect enclosures
- Periodically clean conveyor to remove residual material

# Dust Control Measures for Conveyors



# Addressing Conveyors in Your Plan

## 3.0 PROCESS POINTS

Material traveling on the conveyors will be wetted at several process points. Additionally, Conveyors Nos. 1, 3, and 4 will be covered.

Transfer points will be covered.

Drop heights from the conveyors to the storage piles will be maintained at approximately three feet once the storage piles have been established.

Although naturally wet, feed to the grizzly (primary) screen and primary crusher will be wetted prior to processing.

Emissions from Crushers Nos. 2, 3, and 4, the Screen No. 1, and associated drop points will be vented through a baghouse.

Emissions from the top decks of Screens No. 2 and 3 will be vented through a second baghouse. The bottom decks and associated drops will be controlled by washing the stone.

# Dust Control Measures for Occasional Use Areas

- Vegetative ground cover
- Wind erosion controls  
(e.g. bushes, fence, wind breaks)
- Apply dust suppressant

# Dust Control Measures for Frequent Use Areas

- Pave haul roads/lots (at least entrance/exit)
- Place a layer of stone or coarse aggregate
- Enclose material storage and handling
- Cover material storage piles

# Dust Control Measures for Frequent Use Areas

- Water/sweep surfaces often
- Reduce speed limits
- Rinse vehicles leaving facility
- Apply dust suppressant

# Fugitive Dust Control

## At the Entrance/Exit



- Can be used in conjunction with a wheel wash
- Provide an area of crushed gravel/stone to assist in dislodging PM
- Sweep street regularly

# Fugitive Dust Control

## Street Sweeping



# Fugitive Dust Control On-site Roadways

- Train workers- accountability
- Reduce vehicle speed on unpaved roads and lots to 10mph
- Apply dust suppressants



# Driveways



# Driveways



There's a sweeper here somewhere



# Truck Loading

- Empty bucket slowly
- Ensure drop height is minimized
- Install water spray bars on bucket
- Maintain vehicles to prevent leakage or spillage
- Do not overload!

# Addressing Traffic and Roads in Your Plan

## 2.0 ROADS AND TRUCK TRAFFIC

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# Fugitive Dust Control Storage Piles

- Enclose storage and handling areas
- Cover piles when not in use
- Use pneumatic conveying chutes and minimize drop distance



# Storage Pile Management





# Incorporating Storage Piles Into Your Plan

## 1.0 Storage Piles

As a limestone crushing operation, the facility will have storage piles of limestone of various sizes. There will be an average of six storage piles at the facility. The stone will be loaded into the piles from conveyors. The stone discharged to the piles will have been wetted in the process by the water mist sprays. Storage piles will be wetted when weather conditions are such that fugitive emissions are likely to occur, at a minimum of once per week. Wetting of the storage piles will take place through the use of a hose attached to the water tank truck. Water will be sprayed for approximately 10 to 15 minutes per pile. A log sheet will be kept that will record the pile wetting schedule. The actual moisture content of the piles is not known, but must be maintained at a level so that the product will meet the customer's specifications. Free fall from front end loaders will be minimized to 2 feet, where possible. Watering schedules will be adjusted if, after a site visit and written notification, the Michigan Department of Environmental Quality's (MDEQ) Air Quality Inspector determines that fugitive dust regulations are not being met utilizing the current schedule.

# Fugitive Dust Control Earth Moving

- Conduct activity on less windy days
- Reduce wind effects with windbreaks where practicable
- Require tarpaulins for all haul vehicles



# Dust Suppressants

Purpose: Attract moisture, bind dust particles, seal surface



# Common dust suppressants

- Water
- Chloride salts
- Lignin (pulp/paper by-product)
- Vegetable-based products (e.g. SBF)
- Polymer solutions
- Emulsified asphalt or resin solutions

# Watering

- Typically cheapest dust control method
- Only provides temporary control
- Weather conditions dictate reapplication frequency

# Effective Watering



# Watering – less effective method



# Watering controlling dust, but not runoff



# Watering controlling dust, but not runoff



# Dust Suppressants

- Chloride solutions
  - attract moisture, reduce evaporation
  - corrosive, negative impacts on aquatic/plant li
- Vegetable-based products
  - non-corrosive, typ. non-toxic, less trackout
  - can be odorous, sticky

# Dust Suppressants

- Polymer solutions, resins and emulsified asphalt, lignin
  - binds surface dust, less trackout, long lasting
  - potentially toxic effects on surface water

Don't apply to paved surfaces



# Avoid Contaminating Other Media





# Fugitive Dust Control Weather Log

## Self-Inspection Checklist: Weather Log

Date	Temperature	Wind Speed/Direction	Amt. of Rainfall	Comments
7/10/13	85 F	~15 WNW	0	Lignin app

# Addressing Accountability in Your Plan

## Everyone

1. Opacity levels cannot exceed 20%. If you can see it than it is over 20%.
2. Roads must be inspected 5 days a week and documented.
3. Roads must be swept 3 times a week, weather permitting.
4. City streets are swept twice a month
5. Do not track mud onto the city roads.
6. Crane tracks should be cleaned regularly
7. Keep the magnet as close to the load as possible when it is dropped into the pile or the trailer.
8. When handling or loading material, dust suppressant must be used.
9. Finished product must be sprayed when handled. Must keep the hose on it if the spraying is not enough.



# SUMMARY

- Conduct evaluation of site
- Be sure to address:
  - Traffic and Trackout
  - Conveyors
  - Storage Piles
  - Any activity that could generate dust
- Choose site specific control measure
- Document all activities for accountability

QUESTIONS?

Thank you