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## **Best Management Practices (BMPs) for Grain Elevators**

(Adopted 12/4/07; Revisions adopted [insert effective date of adopted rules])

### **Applicability**

The BMPs listed in this document shall apply at all country grain elevators, country grain terminal elevators, and grain terminal elevators as defined below. This document has been adopted by reference in 567 Iowa Administrative Code (IAC) 22.10(455B) and can only be modified or updated after completion of an administrative rulemaking conducted in accordance with the Iowa Administrative Procedure Act (Iowa Code chapter 17A). Facility-wide and equipment specific BMPs are included that apply to both existing equipment and new equipment, unless specified otherwise.

Where requirements for BMPs in construction or operating permits exist that are more stringent than those specified in this document, the more stringent BMPs shall be implemented. The applicable requirements provided in 40 Code of Federal Regulations (CFR) Part 60, Subpart DD, “Standards of Performance for Grain Elevators,” as adopted in 567 IAC 23.1(2)“ooo,” shall apply for subject grain terminal elevators and grain storage elevators, in addition to the BMPs provided in this document.

As provided for in 567 IAC 23.3(2)“c,” the department may, upon notification to the grain elevator’s owner or operator, require the owner or operator to implement additional practices and measures not already being implemented as precautions to prevent the discharge of visible emissions of fugitive dust beyond the property line of the facility which the emissions originate on. Additionally, visible emissions from equipment or air pollution control equipment operating at a grain elevator shall not equal or exceed 40 percent opacity (567 IAC 23.3(2)“d”), or the opacity specified in a permit if the equipment is permitted, whichever is lower.

### **Definitions**

For the purposes of this document, the terms “country grain elevator,” “country grain terminal elevator,” and “grain terminal elevator” shall have the same meaning as defined in 567 IAC 22.10(1).

### **General Maintenance, Upkeep and Repair**

-Maintain and operate equipment and air pollution control equipment at all times in a manner consistent with good practice for minimizing emissions. Air pollution control equipment includes but is not limited to, quick closing doors, enclosures, air curtains, wind deflectors, grain oiling equipment, loadout socks and drop-down spouts or sleeves, baghouses and vent filters, and cyclones.

-Equipment and air pollution control equipment malfunctions shall be remedied in an expeditious manner so as to minimize the amount and duration of excess emissions.

-Air pollution control equipment shall be operated when the air emission source is in operation and shall be checked daily for proper operation. This requirement does not apply on days that the air emission source does not operate.

-Routine maintenance of equipment and air pollution control equipment shall be scheduled during periods of process shutdown to the maximum extent possible.

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-Clean internal and external areas, including floors, roofs and decks, as necessary to minimize dust to the atmosphere when the facility is receiving, transferring, or loading out grain.

-Clean the yard, ditches and curbs as necessary to minimize accumulation of grain, chaff, and grain dust.

### **Grain Handling Equipment**

Grain handling equipment includes but is not limited to bucket elevators or legs, scale hoppers, turn heads, scalpers, cleaners, trippers, and headhouse and other such structures.

-Grain handling equipment shall be cleaned, enclosed, or controlled as necessary to minimize visible dust emissions to the atmosphere to 5% or less opacity when the equipment is being operated.

-Operation of aeration fans shall be minimized during loading of grain into storage bins to the extent possible.

### **Grain Unloading Stations (Dump Pits) and Grain Loading Stations (Loadouts)**

-Dump pits with enclosures shall be maintained and operated so as to minimize the emissions of dust to the atmosphere resulting from the dumping and handling of grain.

-Dump pits with induced draft fans installed must use fans with a capacity of at least 50 cfm/sq. ft. of airflow at the effective grate surface, where the area of the effective grate surface is the area of the dump pit grate through which air passes, or would pass, when aspirated.

-If feasible, loadouts shall use socks and drop-down spouts or sleeves, or equivalent, which extend at least 6 inches below the sides of the receiving container to minimize grain free-fall distance, except for topping off.

-To the extent possible, the flow of the grain through the spout shall be regulated so as to minimize dust emissions from the receiving container when the container is empty to only partially full.

-If grain oiling is used, grain should be oiled after receipt at the grain unloading station and prior to transfer to bin storage to allow for the maximum control effectiveness. Grain oiling applied elsewhere in the process, instead of at the grain unloading station, will result in a lower control effectiveness and less credit for control in the PTE calculation tool.

### **Grain Dryers**

-Column dryers shall have screen perforations on replacement screens or new dryer screens no greater than 0.094 inch.

-Grain inlets and grain outlets to dryers shall be enclosed.

-Rack dryers shall have a maximum screen house filter size of 50 mesh on replacement screen house filters or new dryer screen house filters.

-The volume of grain passing through the dryer shall not exceed the manufacturer's recommended capacity.

-Dryer screens should be inspected before each dryer start-up.

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### **Grain Vacuuming (Grain Vac) Operations**

Grain vac operators must employ best management practices as necessary to reasonably prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property on which the grain vac is being operated. These BMP are examples of reasonable practices to minimize the generation of fugitive dust emissions from grain vac operations:

-For grain loadouts use socks and drop-down spouts or sleeves, or equivalent, which extend at least 6 inches below the sides of the receiving container to minimize grain free-fall distance, except for topping off.

-Operate the vac at times when the wind direction and speed would minimize offsite impact.

-Vary the speed of the vac operations to minimize dust emissions.

-Utilize directional discharge to minimize offsite impact.

-Evaluate the use of additional control measures, such as add on controls, if needed to comply with 567 IAC 23.3(2)"c".

### **Recordkeeping Requirements**

All grain elevators subject to these BMPs shall record BMPs used during times of grain vac operation. In addition, wind speed and direction and date and time of grain vac operation shall be noted.

~~While~~With the exception of grain vac operations, there are no other specific recordkeeping requirements associated with BMP for Group 1 facilities. However owners or operators of Group 1 facilities are encouraged to maintain records as appropriate to demonstrate that applicable BMP are being implemented.

## **ENVIRONMENTAL PROTECTION COMMISSION [567]**

### **Notice of Intended Action**

Pursuant to the authority of Iowa Code section 455B.133, the Environmental Protection Commission hereby gives Notice of Intended Action to amend Chapter 22, “Controlling Pollution,” Iowa Administrative Code.

The Commission proposes to amend the best management practices (BMPs) for grain elevators currently adopted by reference in administrative rules (**567—22.10 (455B)**). The BMPs for grain elevators are designed to reduce particulate matter emissions, especially dust that crosses the property line and may adversely affect air quality at nearby businesses or residences. The BMP document includes both facility-wide and equipment specific practices that apply to both new and existing equipment. The rule making will add to the current BMP document a list of management practices for grain vacuuming (grain vac) activities at grain storage bins. The proposed management practices were developed and recommended by a stakeholder workgroup jointly coordinated by the Department and the Agribusiness Association of Iowa (AAI).

#### **Background**

Prior to 2008, most grain facilities used sweep augers to extract the remaining grain from the bottom of storage bins. Beginning in late 2009, the U.S. Occupational Health and Safety Administration (OSHA) sent letters to grain elevators stating operators could not be inside a grain bin while an unguarded sweep auger operated inside the bin. The OSHA letters resulted in more facilities using grain vacuuming to remove the remaining grain from storage bins.

Although grain vacuuming results in more efficient and safer grain bin cleaning,

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Department's field offices started receiving dust complaints during grain vacuum operation from nearby residences and businesses. As a result of these complaints, the Department became concerned about particulate pollution and nuisance dust from increased use of grain vacuuming. The Department subsequently partnered with AAI to convene a stakeholder workgroup to gather information on grain bin vacuuming and to develop solutions that address complaints and ensure compliance with air quality regulations. The proposed amendments are the result of this collaborative effort.

### **Stakeholder Involvement**

The Grain Vac Workgroup convened in August 2011. The workgroup consisted of ten participants in addition to representatives from AAI, DNR and the Iowa Department of Agriculture and Land Stewardship. The facility/business participants included representatives from grain elevators and grain vac vendors. The workgroup met two times between August 2011 and June 2012. In addition, the DNR conducted three onsite visits to observe grain vacs in operation.

The proposed amendment revises the document, "Best Management Practices for Grain Elevators (December 2007)," adopted by reference in subparagraph 22.10(3)"a"(2). The revisions will incorporate management practices for vacuuming of grain bins. The BMPs for grain vac activities will become on the effective date of the adopted amendments.

Any person may make written suggestions or comments on the proposed amendments on or before TBD. Written comments should be directed to Christine Paulson, Department of Natural Resources, Air Quality Bureau, 7900 Hickman Road, Suite 1, Windsor Heights, Iowa 50324; fax (515)242-5094; or by e-mail to

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[christine.paulson@dnr.iowa.gov](mailto:christine.paulson@dnr.iowa.gov).

A public hearing will be held on TBD in the Conference Rooms, Air Quality Bureau Office, 7900 Hickman Road, Windsor Heights, Iowa. All comments must be received no later than TBD.

Any person who intends to attend the public hearing and has special requirements, such as those related to hearing or mobility impairments, should contact Christine Paulson at (515)242-5154, or by e-mail to [christine.paulson@dnr.iowa.gov](mailto:christine.paulson@dnr.iowa.gov) to advise of any specific needs.

### **Jobs Impact Statement**

The following is a summary of the jobs impact statement. The complete jobs impact statement is available from the Department upon request.

After analysis and review, the Department has determined that the proposed amendments will have no impact on private sector jobs and employment opportunities in the State. Grain elevator owners and operators will likely entail costs to control particulate emissions during grain vac operations. However, these costs should be minimal and should not negatively impact jobs at grain elevators. First, the activities listed in the BMP document are only examples. The grain elevator owner or operator may determine if management activities are necessary to reasonably prevent dust from grain vac operations from crossing the property line, and whether any of the examples included in the BMP document are appropriate for the facility. The owner or operator may choose to employ different management practices. Second, the management activities were developed by a stakeholder group consisting of representatives from both grain elevator and grain vac vendors. The workgroup developed practical, cost-effective practices that

are already being successfully implemented at some grain elevators. Third, the Department expects that grain elevator owners and operators will choose to implement management practices only as necessary, and will not implement practices at such a frequency or cost to adversely impact jobs at their facility.

This amendment is intended to implement Iowa Code section 455B.

The following amendment is proposed.

Amend subparagraph **22.10(3)"a"(2)**, as follows:

(2) Best management practices (BMP). The owner or operator of a Group 1 facility shall implement best management practices (BMP) for controlling air pollution at the facility and for limiting fugitive dust at the facility from crossing the property line. The owner or operator shall implement BMP according to the department manual, Best Management Practices (BMP) for Grain Elevators (December 2007; revised [insert date the revised manual is approved by the commission]), as adopted by the commission on January 15, 2008, and [insert date the revised manual is adopted by the commission] and adopted by reference herein (available from the department, upon request, and on the department's Internet Web site). No later than March 31, 2009, the owner or operator of an existing Group 1 facility shall fully implement applicable BMP, except that BMPs for grain vacuuming activities shall be fully implemented no later than [insert effective date of adopted amendment]. Upon startup of equipment at the facility, the owner or operator of a new Group 1 facility shall fully implement applicable BMP.

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Date

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Chuck Gipp, Director

**Administrative Rules  
JOBS IMPACT STATEMENT**

**1. BACKGROUND INFORMATION**

Agency:	Environmental Protection Commission/ Department of Natural Resources
IAC Citation:	567 IAC Chapter 22
Agency Contact:	Christine Paulson at (515) 242-5154
Statutory Authority:	Iowa Code section 455B.133

Objective:	<p>The Department of Natural Resources (Department) is proposing rule changes to amend the best management practices (BMPs) for grain elevators currently adopted by reference in administrative rules (567—22.10 (455B)). The BMPs for grain elevators are designed to reduce particulate matter emissions, especially dust that crosses the property line and may adversely affect air quality at nearby businesses or residences. The rule making will add to the current BMP document a list of management practices for grain vacuuming (grain vac) activities at grain storage bins. The proposed management practices were developed and recommended by a stakeholder workgroup jointly coordinated by the Department and the Agribusiness Association of Iowa (AAI).</p>
Summary:	<p>Prior to 2008, most grain facilities used sweep augers to extract the remaining grain from the bottom of storage bins. Beginning in late 2009, the U.S. Occupational Health and Safety Administration (OSHA) sent letters to grain elevators stating operators could not be inside a grain bin while an unguarded sweep auger operated inside the bin. The OSHA letters resulted in more facilities using grain vacuuming to remove the remaining grain from storage bins.</p> <p>Although grain vacuuming results in more efficient and safer grain bin cleaning, Department’s field offices started receiving dust complaints during grain vacuum operation from nearby residences and businesses. As a result of these complaints, the Department became concerned about particulate pollution and nuisance dust from increased use of grain vacuuming. The Department subsequently partnered with AAI to convene a stakeholder workgroup to gather information on grain bin vacuuming and to develop solutions that address complaints and ensure compliance with air quality regulations. The proposed amendments are the result of this collaborative effort.</p> <p>The rule making will amend the current BMPs for “Group 1” grain elevators. Group 1 grain elevators are specifically defined as facilities with potential particulate emissions less than 15 tons per year (567 IAC rule 22.10). Group 1 elevators are typically smaller grain elevators and are often “country grain elevators” that receive fifty percent or more of their</p>

	<p>grain from nearby farmers during harvest season. A Group 1 elevator may use the BMP document and the streamlined registration process provided in 22.10 rather than applying for an air construction permit.</p> <p>The rule making proposal will add management practices specific to grain vac activities to the current BMP document. Grain elevators that are not classified as Group 1 elevators are not covered under the proposed rule changes. Grain elevators classified as Groups 2, 3, or 4, in rule 22.10, as well as other grain elevators not covered under 22.10, must obtain air construction permits. Construction permits include requirements specific to the facility, and may require BMPs similar to those in the BMP document for Group 1 grain elevators.</p>
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**2. JOB IMPACT ANALYSIS**

x *Fill in this box if impact meets these criteria:*

x No Job Impact on private sector jobs and employment opportunities in the State.

   Job Impact cannot be determined.

After analysis and review, the Department has determined that the proposed amendments will have no impact on private sector jobs and employment opportunities in the State. Grain elevator owners and operators will likely entail costs to control particulate emissions during grain vac operations. However, these costs should be minimal and should not negatively impact jobs at grain elevators. First, the activities listed in the BMP document are only examples. The grain elevator owner or operator may determine if management activities are necessary to reasonably prevent dust from grain vac operations from crossing the property line, and whether any of the examples included in the BMP document are appropriate for the facility. The owner or operator may choose to employ different management practices. Second, the management activities were developed by a stakeholder group consisting of representatives from both grain elevator and grain vac vendors. The workgroup developed practical, cost-effective practices that are already being successfully implemented at some grain elevators. Third, the Department expects that grain elevator owners and operators will choose to implement management practices only as necessary, and will not implement practices at such a frequency or cost to adversely impact jobs at their facility.

   *Fill in this box if impact meets either of these criteria:*

       Positive Job Impact on private sector jobs and employment opportunities in the State.

       Negative Job Impact on private sector jobs and employment opportunities in the State.

*Description and quantification of the nature of the impact the proposed rule will have on private sector jobs and employment opportunities:*

<p><i>Categories of jobs and employment opportunities that are affected by the proposed rule:</i> Country grain elevators and other grain elevators that meet the criteria for Group 1 elevators under rule 22.10.</p>
<p><i>Number of jobs or potential job opportunities:</i> Cannot be determined at this time.</p>
<p><i>Regions of the state affected:</i> All regions of the state (except that Polk County and Linn County have their own state-approved air quality programs that do not include special permitting or BMPs for grain elevators).</p>
<p><i>Additional costs to the employer per employee due to the proposed rule: (if not possible to determine, write "Not Possible to Determine.")</i> Not possible to determine.</p>

### **3. COST-BENEFIT ANALYSIS**

The Agency has taken steps to minimize the adverse impact on jobs and the development of new employment opportunities before proposing a rule. See the following Cost-Benefit Analysis:

<p>No other less intrusive or expensive method exists for achieving the purpose of the rule change. The Department worked with stakeholders to determine the best way to address air quality concerns from grain vacuuming activities at grain elevators. The workgroup determined that revising the BMP manual for Group 1 grain elevators adopted by reference into state rules was the best method for achieving this goal.</p>
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## Administrative Rule Fiscal Impact Statement

Date: TBD

**Agency:** Environmental Protection Commission/Department of Natural Resources

**IAC Citation:** 567 IAC subparagraph 22.10(3)"a"(2)

**Agency Contact:** Christine Paulson

**Summary of the Rule:**

The Department of Natural Resources (Department) is proposing rule changes to amend the best management practices (BMPs) for grain elevators currently adopted by reference in administrative rules (567—22.10 (455B)). The BMPs for grain elevators are designed to reduce particulate matter emissions, especially dust that crosses the property line and may adversely affect air quality at nearby businesses or residences. The rule making will add to the current BMP document a list of management practices for grain vacuuming (grain vac) activities at grain storage bins. The proposed management practices were developed and recommended by a stakeholder workgroup jointly coordinated by the Department and the Agribusiness Association of Iowa (AAI).

The rule making will amend the current BMPs for “Group 1” grain elevators. Group 1 grain elevators are specifically defined as facilities with potential particulate emissions less than 15 tons per year (567 IAC rule 22.10). Group 1 elevators are typically smaller grain elevators and are often “country grain elevators” that receive fifty percent or more of their grain from nearby farmers during harvest season. A Group 1 elevator may use the BMP document and the streamlined registration process provided in 22.10 rather than applying for an air construction permit.

The rule making proposal will add management practices specific to grain vac activities to the current BMP document. Grain elevators that are not classified as Group 1 elevators are not covered under the proposed rule changes. Grain elevators classified as Groups 2, 3, or 4, in rule 22.10, as well as other grain elevators not covered under 22.10, must obtain air construction permits. Construction permits include requirements specific to the facility, and may require BMPs similar to those in the BMP document for Group 1 grain elevators.

*Fill in this box if the impact meets these criteria:*

No Fiscal Impact to the State.

Fiscal Impact of less than \$100,000 annually or \$500,000 over 5 years.

Fiscal Impact cannot be determined.

Brief Explanation: The Department will use existing budget and resources to implement the rule.

*Assumptions:*

*Describe how estimates were derived:*

*Estimated Impact to the State by Fiscal Year*

	<u>Year 1 (FY 2011)</u>	<u>Year 2 (FY 2012)</u>
<b>Revenue by Each Source:</b>		
GENERAL FUND	0\$	0\$
FEDERAL FUNDS	0\$	0\$
Other (specify)	0\$	0\$
	0\$	0\$
<b><i>TOTAL REVENUE</i></b>		
<b>Expenditures:</b>		
GENERAL FUND	0\$	0\$
FEDERAL FUNDS	0\$	0\$
Other (specify) Air Contaminant Fee	0\$	0\$
	0\$	0\$
<b><i>TOTAL EXPENDITURES</i></b>		

***NET IMPACT***

This rule is required by State law or Federal mandate.  
*Please identify the state or federal law:*  
 The rule change is not required. However, the rule changes are authorized under Iowa Code section 455B.133.

Funding has been provided for the rule change.  
*Please identify the amount provided and the funding source:*

Funding has not been provided for the rule.  
*Please explain how the agency will pay for the rule change:*

The Department will utilize existing resources at this time.

***Fiscal impact to persons affected by the rule):***

Grain elevator owners and operators will likely entail costs to control particulate emissions during grain vac operations. However, these costs should be minimal. First, the activities listed in the BMP document are only examples. The grain elevator owner or operator may determine if management activities are necessary to reasonably prevent dust from grain vac operations from crossing the property line, and whether any of the examples included in the BMP document are appropriate for the facility. The owner or operator may choose to employ different management practices. Second, the management activities were developed by a stakeholder group consisting of representatives from both grain elevator and grain vac vendors. The workgroup developed practical, cost-effective practices that are already being successfully implemented at some grain elevators. Third, the Department expects that grain elevator owners and operators will choose to implement management practices only as necessary, and will not implement practices at such a frequency or cost to overly burden their facility.

***Fiscal impact to Counties or other Local Governments (required by Iowa Code 25B.6):***

The Department expects minimal or no impact to counties or cities because local government entities typically do not operate grain elevators. Polk County and Linn County have their own state-approved air quality programs that do not include special permitting or BMPs for grain elevators. However, if a local government entity other than Polk or Linn County does operate a grain elevator, the fiscal impact will be the same as describe above for privately or cooperatively operated grain elevators.