

## PLANNING & DEVELOPMENT

600 West Fourth Street

Davenport, Iowa 52801-1106

E-mail: [planning@scottcountyiaowa.com](mailto:planning@scottcountyiaowa.com)

Office: (563) 326-8643 Fax: (563) 326-8257



Item 5  
5/30/17

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Timothy Huey  
Director

To: Mahesh Sharma, County Administrator

From: Timothy Huey, Planning Director

Date: May 22, 2017

**Re: County Master Matrix review on the Construction Permit Application of Paustian Enterprises Ltd. in the NE $\frac{1}{4}$ SE $\frac{1}{4}$  Section 19, T79N, R2E (Hickory Grove Township) for an expansion of existing confined animal (hog) feeding operation located at 22444 70<sup>th</sup> Avenue.**

At the Board meeting on May 18<sup>th</sup> a public hearing was held on the above referenced application that was submitted to the Iowa DNR. Scott County has 30 days from the date the Iowa DNR notifies the County an application has been submitted. Notice of the receipt of this application has also been published as a public notice.

The State construction permit application submitted by Paustian Enterprises to the Iowa DNR is for a 60 foot by 92 foot addition on a farrowing barn at an existing hog confinement operation in Hickory Grove Township. The proposed project requires compliance with the standards of the Master Matrix because of the proposed building addition, even though it will not result in a net increase of the animal unit capacity of the operation. The existing confined animal feeding operation has a capacity of 1,836 animal unit (AU), include 808 head of gestating swine, 187 head of farrowing swine, 22 boars, 972 head of swine gilts and 2,600 head of swine finishers. The 5,520 square foot building addition will be constructed over an 2 foot deep formed concrete manure storage pit.

The applicant has submitted their scoring for the Master Matrix, which shows sufficient points to meet the requirements of the Iowa DNR. Staff has reviewed the Master Matrix scores and determined that they meet the requirements of the Iowa DNR.

Planning and Health Department Staff accompanied the IDNR inspector from the Washington, Iowa district office on his inspection on Friday May 19<sup>th</sup>.

Staff has not received any written comments and or calls on this request. There also were no comments made at the public hearing.

A resolution for the Board's consideration will be on the Board agenda on June 1<sup>st</sup>.

# Scott County Scoring of Master Matrix for Paustian Enterprises Ltd. 2017 Expansion

The Master Matrix has 44 possible scoring criteria:

The first 25 are listed under **Proposed Site Characteristics**,

The remaining 19 are listed under **Proposed Site Operation and Manure Management Practices**.

Applicants can choose amongst the various criteria in order to score points. Each criterion has a total point value which is then divided and weighted between any of the three subcategories of Air, Water, and Community.

The County can review each criterion upon which the applicant has scored and concur or not concur that the points are accurately taken. The County only reviews the criteria the applicant has used to score points, other criterion for which points are not taken are not evaluated, even though the application may meet that criterion. The selection of scoring criteria is the applicant's option. Evaluating that scoring is the County's option by adopting the Master Matrix.

## Proposed Site Characteristics

Scoring Criteria	Total Score	Air	Water	Community
#1 Additional separation distance to closest residence not owned by the owner of the operation (1,000 - 1,250 feet)	85	55.25	0.00	29.75
#2 Additional separation distance to the closest public use area (greater than 1,500 feet)	30	12.00	0.00	18.00
#3 Additional separation distance from closest school, church or business (greater than 1,500 feet)	30	12.00	0.00	18.00
#4 Additional separation distance, above 500 foot minimum, to closest water source (501 - 750 feet)	10	0.00	10.00	0.00
#5 Separation distance of 300 feet or more from the proposed confinement structure to the nearest thoroughfare (300 feet or greater)	30	9.00	0.00	21.00
#6 Additional separation distance, above minimum of 1,875 feet, from confinement to the closest critical public area (500 feet or greater)	10	4.00	0.00	6.00
#8 Additional separation distance over the minimum 1,000 feet from drainage well, known sink hole or major water source (greater than 2,500 feet)	50	5.00	25.00	20.00

<b>Scoring Criteria</b>	<b>Total Score</b>	<b>Air</b>	<b>Water</b>	<b>Community</b>
#10 Separation distance from closest high quality waters or protected water area (2x the minimum separation distance of 500 feet)	30	0.00	22.50	7.50
#12 Liquid manure storage structures are covered	30	27.00	0.00	3.00
#17 Proposed Manure Storage Structure is Formed	30	0.00	27.00	3.00
#19 Truck Turnaround	20	0.00	0.00	20.00
#20 No history of Administrative Orders in last five years	30	0.00	0.00	30.00
#22 Homestead Tax Exemption	25	0.00	0.00	25.00
#23 Family Farm Tax Credit	25	0.00	0.00	25.00
#24 Facility Size (1 - 2,000 Animal Unit Capacity)	20	0.00	20.00	0.00
#25 Construction permit application includes livestock feeding and watering systems that significantly reduce manure volume	25	0.00	12.50	12.50

### **Proposed Site Operation and Manure Management Practices**

<b>Scoring Criteria</b>	<b>Total Score</b>	<b>Air</b>	<b>Water</b>	<b>Community</b>
#26 Injection or incorporation of manure on the same date it is land applied	30	12.00	12.00	6.00
#35 Additional separation distance of 400 feet above minimum requirements for the land application of manure to closest high quality waters or protected water area	10	0.00	7.50	2.50
<b>Total Scoring by Paustian Enterprises Ltd.</b>	<b>495</b>	<b>136.25</b>	<b>104.00</b>	<b>254.75</b>
<b>Total Scoring by Scott County</b>	<b>495</b>	<b>136.25</b>	<b>104.00</b>	<b>254.75</b>
<i>Minimum Score required to Pass Master Matrix</i>	<b>440</b>	<b>53.38</b>	<b>67.75</b>	<b>101.13</b>

**Paustian Enterprises, Inc. Master Matrix Scores**

Question	Score	Air	Water	Community
1	85	55.25		29.75
2	30	12		18
3	30	12		18
4	10		10	
5	30	9		21
6	10	4		6
7				
8	50	5	25	20
9				
10	30		22.5	7.5
11				
12	30	27		3
13				
14				
15				
16				
17	30		27	3
18				
19	20			20
20	30			30
21				
22	25			25
23	25			25
24	20			20
25				
26	30	12	12	6
27				
28				
29				
30				
31				
32				
33				
34				
35	10		7.5	2.5
36				
37				
38				
39				
40				
41				
42				
43				
44				
<b>TOTALS</b>	<b>495</b>	<b>136.25</b>	<b>104</b>	<b>254.75</b>

440      53.38      67.75      101.13 scores to pass

# IOWA MASTER MATRIX SUPPLEMENT

## PAUSTIAN ENTERPRISES LTD. SOW UNIT SCOTT COUNTY

May 2017

This document will provide documentation, design information along with operation and maintenance (O&M) plans for items in the Master Matrix where points were gained.

Table 1. Summary table of matrix questions receiving points

Question #	Description	Actual
	<b>Site Separation Distances</b>	
1	Neighbor	2180 ft to SE
2	public use area	~10,800ft (St. of IA)
3	school, church, business	~4100 ft (I-80 Truck stop)
4	Closest water source > 500'	~1140 ft to N
5	Proposed structure to thoroughfare >300'	~950ft
6	critical public area	~4100 (I-80 Truck stop)
8	drainage wells, sinkholes, major water sources	~10,500ft (Hickory Creek)
10	high quality/protected waters	~37,600ft (Wapsi)
12	covered manure storage	design / O&M, CDS
17	formed manure storage structure	design / O&M, CDS
19	Truck turnaround	design / O&M
20	No administrative orders	personal statement
22	Homestead Tax Exemption	personal statement
23	Family Farm tax credit	personal statement
24	Facility Size	1836 au
25	Feed and watering for reduced waste	
26	Inject manure	see MMP
	<b>Land Application Separation Distances</b>	
35	HQW or PWA	>5 miles (Wapsi)

### 12. Covered Manure Storage

This facility has deep pits for manure storage which are formed manure storage structures directly beneath a floor where animals are housed in a confinement feeding operation. The design is based upon the attached building drawings and specs from the builder. The structure will be maintained to ensure its structural integrity for its useful life.

#### 17. Formed Manure Storage Structure

The deep pit manure storage is designed to be below floor storage. The concrete design for the structure will adhere to the specs outlined in the building plans to insure the integrity of the structure.

- The storage structure will be measured for manure volume monthly to monitor the amount of manure being produced.
- The volume of manure will be recorded and records maintained on site.
- A visual inspection of the outer above ground perimeter will be made on a semi-annual basis to check for any structural challenges to the storage structure.
- The perimeter tile outside of the storage structure will be monitored monthly over 3 years to determine the average amount of water present.
- The drainage tile outside of the storage structure will be visually checked on a monthly basis to monitor for potential manure contamination by checking color.
- A sample of the water will be taken during the monthly check if the depth is significantly higher than average (1.5 times the average for the month).
- Foreign materials will not be added to the manure storage structure purposefully.
- Durable lids and caution signs will be used to cover the manure pumpouts located along the sides of the structure.
- Proper fit and placement of lids will be checked monthly.

#### 19. Truck Turnaround

The truck turnaround has a diameter of at least 120 ft to allow for safe truck turnaround. The turnaround is located over 300 ft from the thoroughfare and therefore creates a safer environment for the truck driver and others on the road.

- When there has been significant snowfall, the snow will be removed from the drive and turnaround to allow for safe entrance and exit of trucks.
- The structure of the turnaround will be maintained with aggregate 2" to 5" thick.

20. I have no history of Administrative Orders in the last five years related to environmental and worker protection.

22. We are the closest residents to the site.

23. I can lawfully claim a Family Farm Tax Credit for agricultural land where the proposed confinement operation is to be located pursuant to Iowa Code chapter 425A.

I believe the statements here to be true and agree to adhere to the specifications.



Mike Paustian of Paustian Enterprises Ltd.

**Daily Checks**

Feeders: \_\_\_\_\_ Checked and working appropriately  
          \_\_\_\_\_ Checked and adjustments made

Waterers: \_\_\_\_\_ Checked and working appropriately  
           \_\_\_\_\_ Checked and adjustments made

**Monthly Checks**

Date \_\_\_\_\_

Manure Depth \_\_\_\_\_

Drain Tile: Is water present? YES or NO

                  Approximate depth? \_\_\_\_\_ inches

Pumpout lids: Condition? GOOD FAIR NEEDS ATTENTION

**Semi-annual Check**

The outer above ground perimeter of manure storage:

- \_\_\_\_\_ Normal as built
- \_\_\_\_\_ Normal aging no problems
- \_\_\_\_\_ Evidence of potential problems\*\*
- \_\_\_\_\_ Manure leakage\*\*

\*\*If either of these situations should occur, an engineer will be contacted to inspect for potential structural integrity issues. If there is evidence of manure leakage, DNR will be contacted.

PAUSTIAN ENTERPRISES LTD.

**APPENDIX C MASTER MATRIX**

**Proposed Site Characteristics**

The following scoring criteria apply to the site of the proposed confinement feeding operation. Mark one score under each criterion selected by the applicant. The proposed site must obtain a minimum overall score of 440 and a score of 53.38 in the "air" subcategory, a score of 67.75 in the "water" subcategory and a score of 101.13 in the "community impacts" subcategory.

1. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest:

- \* Residence not owned by the owner of the confinement feeding operation,
- \* Hospital,
- \* Nursing home, or
- \* Licensed or registered child care facility.

**House to SE 2180ft**

	Score	Air	Water	Community
250 feet to 500 feet	25	16.25		8.75
501 feet to 750 feet	45	29.25		17.50
751 feet to 1,000 feet	65	42.25		22.75
1,001 feet to 1,250 feet	85	55.25		29.75
1,251 feet or more	100	65.00		35.00

- (A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
- (B) The department will award points only for the single building, of the four listed above, closest to the proposed confinement feeding operation.
- (C) "Licensed child care center" – a facility licensed by the department of human services providing child care or preschool services for seven or more children, except when the facility is registered as a child care home.
- (D) "Registered child development homes" - child care providers certify that they comply with rules adopted by the department of human services. This process is voluntary for providers caring for five or fewer children and mandatory for providers caring for six or more children.
- (E) A full listing of licensed and registered child care facilities is available at county offices of the department of human services.

2. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest public use area.

**State of IA to NE**

	Score	Air	Water	Community
250 feet to 500 feet	5	2.00		3.00
501 feet to 750 feet	10	4.00		6.00
751 feet to 1,000 feet	15	6.00		9.00
1,001 feet to 1,250 feet	20	8.00		12.00
1,251 feet to 1,500	25	10.00		15.00
1,501 feet or more	30	12.00		18.00

- (A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
- (B) "Public use area" - a portion of land owned by the United States, the state, or a political subdivision with facilities which attract the public to congregate and remain in the area for significant periods of time. Facilities include, but are not limited to, picnic grounds, campgrounds, cemeteries, lodges, shelter houses, playground equipment, lakes as listed in Table 2 of 567--Chapter 65, and swimming beaches. It does not include a highway, road right-of-way, parking areas, recreational trails or other areas where the public passes through, but does not congregate or remain in the area for significant periods of time.

3. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest:

- \* Educational institution,
- \* Religious institution, or
- \* Commercial enterprise.

**WALCOTT TRUCKSTOP**

	Score	Air	Water	Community
250 feet to 500 feet	5	2.00		3.00



501 feet to 750 feet	10	4.00		6.00
751 feet to 1,000 feet	15	6.00		9.00
1,001 feet to 1,250 feet	20	8.00		12.00
1,251 feet to 1,500	25	10.00		15.00
1,501 feet or more	30	12.00		18.00

- (A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
- (B) The department will award points only for the single building, of the three listed above, closest to the proposed confinement feeding operation.
- (C) "Educational institution" - a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area educational agencies, community colleges, institutions of higher education under the control of the state board of regents, and accredited independent colleges and universities.
- (D) "Religious institution" - a building in which an active congregation is devoted to worship.
- (E) "Commercial enterprise" - a building which is used as a part of a business that manufactures goods, delivers services, or sells goods or services, which is customarily and regularly used by the general public during the entire calendar year and which is connected to electric, water, and sewer systems. A commercial enterprise does not include a farm operation.

4. Additional separation distance, above minimum requirement of 500 feet, from proposed confinement structure to the closest water source.

**Tributary of Hickory Creek**

	Score	Air	Water	Community
250 feet to 500 feet	5		5.00	
501 feet to 750 feet	10		10.00	
751 feet to 1,000 feet	15		15.00	
1,001 feet to 1,250 feet	20		20.00	
1,251 feet to 1,500	25		25.00	
1,501 feet or more	30		30.00	

"Water source" - a lake, river, reservoir, creek, stream, ditch, or other body of water or channel having definite banks and a bed with water flow, except lakes or ponds without an outlet to which only one landowner is riparian.

5. Separation distance of 300 feet or more from the proposed confinement structure to the nearest thoroughfare.

	Score	Air	Water	Community
300 feet or more	30	9.00		21.00

- (A) "Thoroughfare" - a road, street, bridge, or highway open to the public and constructed or maintained by the state or a political subdivision.
- (B) The 300-foot distance includes the 100-foot minimum setback plus additional 200 feet.

6. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest critical public area.

**WALCOTT TRUCKSTOP**

	Score	Air	Water	Community
500 feet or more	10	4.00		6.00

- (A) All critical public areas as defined in 567--65.1(455B), are public use areas, and therefore subject to public use area minimum separation distances.
- (B) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.

- X**7. Proposed confinement structure is at least two times the minimum required separation distance from all private and public water wells.

	Score	Air	Water	Community
Two times the minimum separation distance	30		24.00	6.00

Refer to Table 6 of 567--Chapter 65 for minimum required separation distances to wells.

8. Additional separation distance, above the minimum requirement of 1,000 feet, from proposed confinement structure to the closest:

- \* Agricultural drainage well,
- \* Known sinkhole, or
- \* Major water source.

	Score	Air	Water	Community
250 feet to 500 feet	5	0.50	2.50	2.00
501 feet to 750 feet	10	1.00	5.00	4.00
751 feet to 1,000 feet	15	1.50	7.50	6.00
1,001 feet to 1,250 feet	20	2.00	10.00	8.00
1,251 feet to 1,500 feet	25	2.50	12.50	10.00
1,501 feet to 1,750 feet	30	3.00	15.00	12.00
1,751 feet to 2,000 feet	35	3.50	17.50	14.00
2,001 feet to 2,250 feet	40	4.00	20.00	16.00
2,251 feet to 2,500 feet	45	4.50	22.50	18.00
2,501 feet or more	50	5.00	25.00	20.00

- (A) The department will award points only for the single item, of the three listed above, that is closest to the proposed confinement feeding operation.
- (B) "Agricultural drainage wells" - include surface intakes, cisterns and wellheads of agricultural drainage wells.
- (C) "Major water source" - a lake, reservoir, river or stream located within the territorial limits of the state, or any marginal river area adjacent to the state which can support a floating vessel capable of carrying one or more persons during a total of a six-month period in one out of ten years, excluding periods of flooding. Major water sources in the state are listed in Tables 1 and 2 in 567--Chapter 65.

- X9.** Distance between the proposed confinement structure and the nearest confinement facility that has a submitted department manure management plan.

	Score	Air	Water	Community
Three-quarter of a mile or more (3,960 feet)	25	7.50	7.50	10.00

Confinement facilities include swine, poultry, and dairy and beef cattle.

10. Separation distance from proposed confinement structure to closest:

- \* High quality (HQ) waters,
  - \* High quality resource (HQR) waters, or
  - \* Protected water areas (PWA)
- is at least two times the minimum required separation distance

	Score	Air	Water	Community
Two times the minimum separation distance	30		22.50	7.50

- (A) The department will award points only for the single item, of the three listed above, closest to the proposed confinement feeding operation.
- (B) HQ waters are identified in 567--Chapter 61.
- (C) HQR waters are identified in 567--Chapter 61.
- (D) A listing of PWAs is available at:

<http://www.iowadnr.gov/Recreation/CanoeingKayaking/StreamCare/ProtectedWaterAreas.aspx>

- X11.** Air quality modeling results demonstrating an annoyance level less than 2 percent of the time for residences within two times the minimum separation distance.

	Score	Air	Water	Community
University of Minnesota OFFSET model results demonstrating an annoyance level less than 2 percent of the time	10	6.00		4.00e

- (A) OFFSET can be found at <http://www.extension.umn.edu/agriculture/manure-management-and-air-quality/feedlots-and-manure-storage/offset-odor-from-feedlots/>. For more information, contact Dr. Larry Jacobson, University of Minnesota, (612) 625-8288, [jacob007@tc.umn.edu](mailto:jacob007@tc.umn.edu).
- (B) A residence that has a signed waiver for the minimum separation distance cannot be included in the model.
- (C) Only the OFFSET model is acceptable until the department recognizes other air quality models.

12. Liquid manure storage structure is covered.

	Score	Air	Water	Community
Covered liquid manure storage	30	27.00		3.00

- (A) "Covered" - organic or inorganic material, placed upon an animal feeding operation structure used to store manure, which significantly reduces the exchange of gases between the stored manure and the outside air.

Organic materials include, but are not limited to, a layer of chopped straw, other crop residue, or a naturally occurring crust on the surface of the stored manure. Inorganic materials include, but are not limited to, wood, steel, aluminum, rubber, plastic, or Styrofoam. The materials shall shield at least 90 percent of the surface area of the stored manure from the outside air. Cover shall include an organic or inorganic material which current scientific research shows reduces detectable odor by at least 75 percent. A formed manure storage structure directly beneath a floor where animals are housed in a confinement feeding operation is deemed to be covered.

- (B) The design, operation and maintenance plan for the manure cover must be in the construction permit application and made a condition in the approved construction permit.

- X** 13. Construction permit application contains design, construction, operation and maintenance plan for emergency containment area at manure storage structure pump-out area.

	Score	Air	Water	Community
Emergency containment area	20		18.00	2.00

- (A) The emergency containment area must be able to contain at least 5 percent of the total volume capacity of the manure storage structure.  
 (B) The emergency containment area must be constructed on soils that are fine-grained and have low permeability.  
 (C) If manure is spilled into the emergency containment area, the spill must be reported to the department within six hours of onset or discovery.  
 (D) The design, construction, operation and maintenance plan for the emergency containment area must be in the construction permit application and made a condition in the approved construction permit.

- X** 14. Installation of a filter(s) designed to reduce odors from confinement building(s) exhaust fan(s).

	Score	Air	Water	Community
Installation of filter(s)	10	8.00		2.00

The design, operation and maintenance plan for the filter(s) must be in the construction permit application and made a condition in the approved construction permit.

- X** 15. Utilization of landscaping around confinement structure.

	Score	Air	Water	Community
Utilization of Landscaping	20	10.00		10.00

The design, operation and maintenance plan for the landscaping must be in the construction permit application and made a condition in the approved construction permit. The design should contain at least three rows of trees and shrubs, of both fast and slow-growing species that are well suited for the site.

- X** 16. Enhancement, above minimum requirements, of structures used in stockpiling and composting activities, such as an impermeable pad and a roof or cover.

	Score	Air	Water	Community
Stockpile and compost facility enhancements	30	9.00	18.00	3.00

- (A) The design, operation and maintenance plan for the stockpile or compost structure enhancements must be in the construction permit application and made a condition in the approved construction permit.  
 (B) The stockpile or compost structures must be located on land adjacent or contiguous to the confinement building.

17. Proposed manure storage structure is formed

	Score	Air	Water	Community
Formed manure storage structure	30		27.00	3.00

- (A) "Formed manure storage structure" -a covered or uncovered impoundment used to store manure from an animal feeding operation, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Similar materials may include, but are not limited to, plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed manure storage structure shall have the structural integrity to withstand expected internal and external load pressures.  
 (B) The design, operation and maintenance plan for the formed manure storage structure must be in the construction permit application and made a condition in the approved construction permit.

- X** 18. Manure storage structure is aerated to meet departmental standards as an aerobic structure, if aeration is not already required by the department.

	Score	Air	Water	Community
Aerated manure storage structure	10	8.00		2.00

- (A) Aerobic structure - an animal feeding operation structure other than an egg wash water storage structure which relies on aerobic bacterial action which is maintained by the utilization of air or oxygen and which includes

aeration equipment to digest organic matter. Aeration equipment shall be used and shall be capable of providing oxygen at a rate sufficient to maintain an average of 2 milligrams per liter dissolved oxygen concentration in the upper 30 percent of the depth of manure in the structure at all times.

- (B) The design, operation and maintenance plan for the aeration equipment must be in the construction permit application and made a condition in the approved construction permit.

19. Proposed confinement site has a suitable truck turnaround area so that semitrailers do not have to back into the facility from the road

	Score	Air	Water	Community
Truck turnaround	20			20.00

- (A) The design, operation and maintenance plan for the truck turn around area must be in the construction permit application and made a condition in the approved construction permit.  
 (B) The turnaround area should be at least 120 feet in diameter and be adequately surfaced for traffic in inclement weather.

20. Construction permit applicant's animal feeding operation environmental and worker protection violation history for the last five years at all facilities in which the applicant has an interest.

	Score	Air	Water	Community
No history of Administrative Orders in last five years	30			30.00

- (A) "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.  
 (B) An environmental violation is a final Administrative Order (AO) from the department of natural resources or final court ruling against the construction permit applicant for environmental violations related to an animal feeding operation. A Notice of Violation (NOV) does not constitute a violation.

- X** 21. Construction permit applicant waives the right to claim a Pollution Control Tax Exemption for the life of the proposed confinement feeding operation structure.

	Score	Air	Water	Community
Permanent waiver of Pollution Control Tax Exemption	5			5.00

- (A) Waiver of Pollution Control Tax Exemption is limited to the proposed structure(s) in the construction permit application.  
 (B) The department and county assessor will maintain a record of this waiver, and it must be in the construction permit application and made a condition in the approved construction permit.

22. Construction permit applicant can lawfully claim a Homestead Tax Exemption on the site where the proposed confinement structure is to be constructed  
 - OR -  
 the construction permit applicant is the closest resident to the proposed confinement structure.

	Score	Air	Water	Community
Site qualifies for Homestead Tax Exemption or permit applicant is closest resident to proposed structure	25			25.00

- (A) Proof of Homestead Tax Exemption is required as part of the construction permit application.  
 (B) Applicant includes persons who have ownership interests. "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

23. Construction permit applicant can lawfully claim a Family Farm Tax Credit for agricultural land where the proposed confinement feeding operation is to be located pursuant to Iowa Code chapter 425A.

	Score	Air	Water	Community
Family Farm Tax Credit qualification	25			25.00

Applicant includes persons who have ownership interests. "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

24. Facility size.

	Score	Air	Water	Community
1 to 2,000 animal unit capacity	20			20.00
2,001 to 3,000 animal unit capacity	10			10.00
3,001 animal unit capacity or more	0			0.00

- (A) Refer to the construction permit application package to determine the animal unit capacity of the proposed confinement structure at the completion of construction.
- (B) If the proposed structure is part of an expansion, animal unit capacity (or animal weight capacity) must include all animals confined in adjacent confinement structures.
- (C) Two or more animal feeding operations under common ownership or management are deemed to be a single animal feeding operation if they are adjacent or utilize a common area or system for manure disposal. In addition, for purposes of determining whether two or more confinement feeding operations are adjacent, all of the following must apply:
- At least one confinement feeding operation structure must be constructed on and after May 21, 1998.
  - A confinement feeding operation structure which is part of one confinement feeding operation is separated by less than a minimum required distance from a confinement feeding operation structure which is part of the other confinement feeding operation. The minimum required distance shall be as follows:
    - 1,250 feet for confinement feeding operations having a combined animal unit capacity of less than 1,000 animal units.
    - 2,500 feet for confinement feeding operations having a combined animal unit capacity of 1,000 animal units or more.

- X** 25. Construction permit application includes livestock feeding and watering systems that significantly reduce manure volume.

	Score	Air	Water	Community
Wet/dry feeders or other feeding and watering systems that significantly reduce manure volume	25		12.50	12.50

The design, operation and maintenance plan for the feeding system must be in the construction permit application and made a condition in the approved construction permit.

**Proposed Site Operation and Manure Management Practices**

The following scoring criteria apply to the operation and manure management characteristics of the proposed confinement feeding operation. Mark one score under each criterion that best reflects the characteristics of the submitted manure management plan.

26. Liquid or dry manure (choose only one subsection from subsections "a" - "e" and mark one score in that subsection).

		Score	Air	Water	Community
a.	Bulk dry manure is sold under Iowa Code Chapter 200A and surface-applied	15		15.00	
	Bulk dry manure is sold under Iowa Code Chapter 200A and incorporated on the same date it is land-applied	30	12.00	12.00	6.00
b.	Dry manure is composted and land-applied under the requirements of an approved department manure management plan	10	4.00	4.00	2.00
	Dry manure is composted and sold so that no manure is applied under the requirements of an approved department manure management plan	30	12.00	12.00	6.00
c.	Methane digester is used to generate energy from manure and remaining manure is surface-applied under the requirements of an approved department manure management plan	10	3.00	3.00	4.00
	After methane digestion is complete, manure is injected or incorporated on the same date it is land-applied under the requirements of an approved department manure management plan	30	12.00	12.00	6.00
d.	Dry manure is completely burned to generate energy and no	30	9.00	9.00	12.00

	remaining manure is applied under the requirements of an approved department manure management plan				
	Some dry manure is burned to generate energy, but remaining manure is land-applied and incorporated on the same date it is land applied	30	12.00	12.00	6.00

e.	Injection or incorporation of manure on the same date it is land-applied	30	12.00	12.00	6.00
----	--	----	-------	-------	------

- (A) Choose only ONE line from subsection "a", "b," "c," "d," or "e" above and mark only one score in that subsection.
- (B) The injection or incorporation of manure must be in the construction permit application and made a condition in the approved construction permit.
- (C) If an emergency arises and injection or incorporation is not feasible, prior to land application of manure the applicant must receive a written approval for an emergency waiver from a department field office to surface-apply manure.
- (D) Requirements pertaining to the sale of bulk dry manure under pursuant to Iowa Code chapter 200A must be incorporated into the construction permit application and made a condition of the approved construction permit.
- (E) The design, operation and maintenance plan for utilization of manure as an energy source must be in the construction permit application and made a condition in the approved construction permit.
- (F) The design, operation and maintenance plan for composting facilities must be in the construction permit application and made a condition in the approved construction permit.

**X 27.** Land application of manure is based on a two-year crop rotation phosphorus uptake level.

	Score	Air	Water	Community
Two-year phosphorus crop uptake application rate	10		10.00	

- (A) Land application of manure cannot exceed phosphorus crop usage levels for a two-year crop rotation cycle.
- (B) The phosphorus uptake application rates must be in the construction permit application and made a condition in the approved construction permit.

**X 28.** Land application of manure to farmland that has USDA Natural Resources Conservation Service (NRCS) approved buffer strips contiguous to all water sources traversing or adjacent to the fields listed in the manure management plan.

	Score	Air	Water	Community
Manure application on farmland with buffer strips	10		8.00	2.00

- (A) The department may request NRCS maintenance agreements to ensure proper design, installation and maintenance of filter strips. If a filter strip is present but not designed by NRCS, it must meet NRCS standard specifications.
- (B) The application field does not need to be owned by the confinement facility owner to receive points.
- (C) On current and future manure management plans, the requirement for buffer strips on all land application areas must be in the construction permit application and made a condition in the approved construction permit.

**X 29.** Land application of manure does not occur on highly erodible land (HEL), as classified by the USDA NRCS.

	Score	Air	Water	Community
No manure application on HEL farmland	10		10.00	

Manure application on non-HEL farmland must be in the construction permit application and made a condition in the approved construction permit.

**X 30.** Additional separation distance, above minimum requirements (0 or 750 feet, see below), for the land application of manure to the closest:

- \* Residence not owned by the owner of the confinement feeding operation,
- \* Hospital,
- \* Nursing home, or
- \* Licensed or registered child care facility.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	3.25		1.75
Additional separation distance of 500 feet	10	6.50		3.50

- (A) The department will award points only for the single building, of the four listed above, closest to the proposed confinement feeding operation.
- (B) Minimum separation distance for land application of manure injected or incorporated on the same date as application: 0 feet.

- (C) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
- (D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.
- (E) "Licensed child care center" – a facility licensed by the department of human services providing child care or preschool services for seven or more children, except when the facility is registered as a child care home.
- (F) "Registered child development homes" - child care providers certify that they comply with rules adopted by the department of human services. This process is voluntary for providers caring for five or fewer children and mandatory for providers caring for six or more children.
- (G) A full listing of licensed and registered child care facilities is available at county offices of the Department of Human Services

**X 31.** Additional separation distance, above minimum requirements (0 or 750 feet, see below), for land application of manure to closest public use area.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	2.00		3.00

- (A) "Public use area" - a portion of land owned by the United States, the state, or a political subdivision with facilities which attract the public to congregate and remain in the area for significant periods of time. Facilities include, but are not limited to, picnic grounds, campgrounds, cemeteries, lodges, shelter houses, playground equipment, lakes as listed in Table 2 in 567--Chapter 65, and swimming beaches. It does not include a highway, road right-of-way, parking areas, recreational trails or other areas where the public passes through, but does not congregate or remain in the area for significant periods of time.
- (B) Minimum separation distance for land application of manure injected or incorporated on the same date as application: 0 feet.
- (C) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
- (D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.

**X 32.** Additional separation distance, above minimum requirements (0 or 750 feet, see below), for the land application of manure to the closest:

- \* Educational institution,
- \* Religious institution, or
- \* Commercial enterprise.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	2.00		3.00

- (A) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
- (B) Minimum separation distance for land application of manure injected or incorporated on same date as application: 0 feet.
- (C) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.
- (D) "Educational institution" - a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area educational agencies, community colleges, institutions of higher education under the control of the state board of regents, and accredited independent colleges and universities.
- (E) "Religious institution" - a building in which an active congregation is devoted to worship.
- (F) "Commercial enterprise" - a building which is used as a part of a business that manufactures goods, delivers services, or sells goods or services, which is customarily and regularly used by the general public during the entire calendar year and which is connected to electric, water, and sewer systems. A commercial enterprise does not include a farm operation.

**X 33.** Additional separation distance of 50 feet, above minimum requirements (0 or 200 feet, see below), for the land application of manure to the closest private drinking water well or public drinking water well - OR well is properly closed under supervision of county health officials.

	Score	Air	Water	Community
Additional separation distance of 50 feet or well is properly closed	10		8.00	2.00

- (A) Minimum separation distance for land application of manure injected or incorporated on the same date as application or 50-foot vegetation buffer exists around well and manure is not applied to the buffer: 0 feet.
- (B) Minimum separation distance for land application of manure broadcast on soil surface: 200 feet.
- (C) If applicant chooses to close the well; the well closure must be incorporated into the construction permit application and made a condition in the approved construction permit.

**X34.** Additional separation distance, above minimum requirements, for the land application of manure to the closest:

- \* Agricultural drainage well,
- \* Known sinkhole,
- \* Major water source, or
- \* Water source

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	0.50	2.50	2.00
Additional separation distance of 400 feet	10	1.00	5.00	4.00

- (A) "Agricultural drainage wells" - include surface intakes, cisterns and wellheads of agricultural drainage wells.  
 (B) "Major water source" - a lake, reservoir, river or stream located within the territorial limits of the state, or any marginal river area adjacent to the state, which can support a floating vessel capable of carrying one or more persons during a total of a six-month period in one out of ten years, excluding periods of flooding. Major water sources in the state are listed in Tables 1 and 2 in 567--Chapter 65.  
 (C) "Water source" - a lake, river, reservoir, creek, stream, ditch, or other body of water or channel having definite banks and a bed with water flow, except lakes or ponds without an outlet to which only one landowner is riparian.  
 (D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.

**35.** Additional separation distance above minimum requirements, for the land application of manure, to the closest:

- \* High quality (HQ) water,
- \* High quality resource (HQR) water, or
- \* Protected water area (PWA).

	Score	Air	Water	Community
Additional separation distance of 200 feet	5		3.75	1.25
Additional separation distance of 400 feet	10		7.50	2.50

- (A) HQ waters are identified in 567--Chapter 61.  
 (B) HQR waters are identified in 567--Chapter 61.  
 (C) A listing of PWAs is available at:  
<http://www.iowadnr.gov/Recreation/CanoeingKayaking/StreamCare/ProtectedWaterAreas.aspx>.

**X36.** Demonstrated community support.

	Score	Air	Water	Community
Written approval of 100% of the property owners within a one mile radius	20			20.00

**X37.** Worker safety and protection plan is submitted with the construction permit application.

	Score	Air	Water	Community
Submission of worker safety and protection plan	10			10.00

- (A) The worker safety and protection plan must be in the construction permit application and made a condition in the approved construction permit.  
 (B) The worker safety and protection plan and subsequent records must be kept on site with the manure management plan records.

**X38.** Applicant signs a waiver of confidentiality allowing public to view confidential manure management plan land application records

	Score	Air	Water	Community
Manure management plan confidentiality waiver	5			5.00

The waiver of confidentiality must be in the construction permit application and made a condition in the approved construction permit. The applicant may limit public inspection to reasonable times and places.

**X39.** Added economic value based on quality job development (number of full time equivalent (FTE) positions), and salary equal to or above Iowa department of workforce development median (45-2093)  
 -OR-  
 the proposed structure increases commercial property tax base in the county.

	Score	Air	Water	Community
Economic value to local community	10			10.00

The Iowa Department of Workforce Development regional profiles are available at <http://www.iowaworkforce.org/centers/regionalsites.htm>. Select the appropriate region and then select "Regional Profile."



**X40.** Construction permit application contains an emergency action plan.

	Score	Air	Water	Community
Emergency action plan	5		2.50	2.50

- (A) Iowa State University Extension publication PM 1859 lists the components of an emergency action plan. The emergency action plan submitted should parallel the components listed in the publication.
- (B) The posting and implementation of an emergency action plan must be in the construction permit application and made a condition in the approved construction permit.
- (C) The emergency action plan and subsequent records must be kept on site with the manure management plan records.

**X41.** Construction permit application contains a closure plan.

	Score	Air	Water	Community
Closure Plan	5		2.50	2.50

- (A) The closure plan must be in the construction permit application and made a condition in the approved construction permit.
- (B) The closure plan must be kept on site with the manure management plan records.

**X42.** Adoption and implementation of an environmental management system (EMS) recognized by the department.

	Score	Air	Water	Community
EMS	15	4.50	4.50	6.00

- (A) The EMS must be in the construction permit application and made a condition in the approved construction permit.
- (B) The EMS must be recognized by the department as an acceptable EMS for use with confinement operations.

**X43.** Adoption and implementation of NRCS approved Comprehensive Nutrient Management Plan (CNMP).

	Score	Air	Water	Community
CNMP	10	3.00	3.00	4.00

The implementation and continuation of a CNMP must be in the construction permit application and made a condition in the approved construction permit.

**X44.** Groundwater monitoring wells installed near manure storage structure, and applicant agrees to provide data to the department.

	Score	Air	Water	Community
Groundwater monitoring	15		10.50	4.50

- (A) Monitoring well location, sampling and data submission must meet department requirements.
- (B) The design, operation and maintenance plan for the groundwater monitoring wells, and data transfer to the department, must be in the construction permit application and made a condition in the approved construction permit.

Score to pass

Total Score	Air	Water	Community
880	213.50	271.00	404.50
440	53.38	67.75	101.13

PAUSTIAN ENTERPRISES LTD. MM SCORES

495	136.25	104	254.75
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# Iowa Department of Natural Resources

## Construction Permit Application Form Confinement Feeding Operations

### INSTRUCTIONS:

Prior to constructing, installing, modifying or expanding a confinement feeding operation structure<sup>1</sup>, answer questions 1-8 on Item 3, Section A (page 2), to determine if a construction permit is required. To calculate the animal unit capacity (AUC) of the operation, complete Table 1 (page 4.) If a construction permit is required, complete the rest of the form, have the applicant(s) sign it on pages 5 and 6. Mail to the DNR (see address on page 5) this application form, documents and fees requested in Checklist No. 1 or 2 (pages 10-15). See item 5 (page 5), to determine which checklist to use.

If a construction permit is not needed, some pre-construction requirements may still apply prior to the construction of a formed manure storage structure<sup>2</sup>. See page 5 for additional DNR contact information.

### THIS APPLICATION IS FOR:

1.  A new confinement feeding operation
2.  An existing confinement feeding operation (answer all of the following questions):
  - a) Facility ID No. (5 digit number): 62367
  - b) Date when the operation was first constructed: 1996
  - c) Date when the last construction, expansion or modification was completed: 2012

(Not needed if the confinement operation has previously received a construction permit from DNR.)

- d) Is this also an ownership change?  Yes  No If yes box is checked additional fees apply. See page 8

### ITEM 1 – LOCATION AND CONTACT INFORMATION (See page 17 for instructions and an example):

A) Name of operation: SOW UNIT

Location:	<u>NE</u>	<u>SE</u>	<u>19</u>	<u>79N &amp; 2E</u>	<u>HICKORY GROVE</u>	<u>SCOTT</u>
	(1/4 1/4)	(1/4)	(Section)	(Tier & Range)	(Name of Township)	(County)

B) Applicant information:

Name: PAUSTIAN ENTERPRISES LTD. Title: OWNER

Address: 6520 - 215TH ST., WALCOTT, IA 52773

Telephone: 563-284-6814 Fax: \_\_\_\_\_ Email: mike.paustian@gmail.com

C) Person to contact with questions about this application (if different than applicant):

Name: Mike Paustian Title: Owner

Address: 6520 - 215th St., Walcott, IA 52773

Telephone: 563-284-6814 Fax: \_\_\_\_\_ Email: mike.paustian@gmail.com

Enclose aerial photo or engineering drawing showing the proposed location of the confinement feeding operation structure<sup>1</sup> and all applicable separation distances, as requested in Attachment 1 (pages 11-12 or 14-15). See example of aerial photo on pages 18 to 19, at the end of this form.

I manage or am the majority owner of another confinement feeding operation located within 2,500 feet of the proposed site. Please contact the DNR AFO Program staff at (712) 262-4177 to verify site adjacency requirements.

<sup>1</sup> Confinement feeding operation structure = animal feeding operation structure (confinement building, manure storage structure or egg washwater storage structure) that is part of a confinement feeding operation. Manure storage structures include formed and unformed manure storage structures.

<sup>2</sup> Formed manure storage structure = covered or uncovered concrete or steel tanks, and concrete pits below the building.

## ITEM 2 – SITING INFORMATION:

A) Karst Determination: Go to DNR AFO Siting Atlas at <http://programs.iowadnr.gov/maps/afo/>. Agree to the disclaimer, then search for your site by either scrolling into your location or entering an address or legal description in the bottom search bar. Left click on the location of your proposed structure. Make sure the karst layer box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact the AFO Engineer at (712) 262-4177. Check one of the following:

- The site is not in karst or potential karst. Print and enclose the map with the name and location of the site clearly marked.
- The site is in karst. The upgraded concrete standards of 567 IAC 65.15(14)"c" must be used. Refer to "Applicant's submittal checklist" on page 10 for karst documentation.
- The site is within 1,000 feet of a known sinkhole, Secondary Containment Barrier is required in accordance with 567 IAC 65.15(17).

B) Alluvial Soils Determination: Go to the AFO Siting Atlas as described above. Make sure the alluvial layer box is checked on the map legend. If you cannot access the map, or if you have questions about this issue, contact DNR Flood Plain at (866) 849-0321. Check one of the following:

- The site is not in alluvial soils. Print and enclose the map with the name and location of the site clearly marked.
- The site is in alluvial soils. You will need to submit a request for a flood plain determination from DNR Flood Plain (866) 849-0321. After receiving determination submit one of the following:
  - Not in 100-year floodplain or does not require a flood plain permit. Include correspondence from the DNR Flood Plain Section.
  - Requires flood plain permit. Include flood plain permit.
  - Documentation has been submitted to determine site is not in alluvial soils. Refer to "Applicant's Submittal Checklist" on page 10 for alluvial soils documentation.

## ITEM 3 – OPERATION INFORMATION:

A) A construction permit is required prior to any of the following:

1.  Constructing or modifying any unformed manure storage structure<sup>3</sup>, or constructing or modifying a confinement building that uses an unformed manure storage structure<sup>3</sup>.
2.  Constructing, installing or modifying a confinement building or a formed manure storage structure<sup>2</sup> at a confinement feeding operation if, after construction, installation or expansion, the AUC of the operation is 1,000 animal units (AU) or more. This also applies to confinement feeding operations that store manure exclusively in a dry form.
3.  Initiating a change that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in any unformed manure storage structure<sup>3</sup>, even if no construction or physical alteration is necessary. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
4.  Initiating a change, even if no construction or physical alteration is necessary, that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in a formed manure storage structure<sup>2</sup> if, after the change, the AUC of the operation is 1,000 AU or more. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
5.  Constructing or modifying any egg washwater storage structure or a confinement building at a confinement feeding operation that includes an egg washwater storage structure.
6.  Initiating a change that would result in an increase in the volume of egg washwater or a modification in the manner in which egg washwater is stored, even if no construction or physical alteration is necessary. Increases in the volume of egg washwater due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
7.  Repopulating a confinement feeding operation if it was closed for 24 months or more and if any of the following apply:
  1.  The confinement feeding operation uses an unformed manure storage structure<sup>3</sup> or egg washwater storage structure;
  2.  The confinement feeding operation includes only confinement buildings and formed manure storage structures<sup>2</sup> and has an AUC of 1,000 AU or more.
8.  Installing a permanent manure transfer piping system, unless the department determines that a construction permit is not required.

<sup>3</sup> Unformed manure storage structure = covered or uncovered anaerobic lagoon, earthen manure storage basin, aerobic earthen structure.

- B) In your own words, describe in detail, the proposed construction, expansion, installation, modification or repair being proposed in this project. (Must be completed) Attach additional pages if necessary:

The proposed addition to the farrowing barn will be a 60'6" x 92'3" x 2'0" extension of the existing farrowing barn.

- C) **Master Matrix** (must check one). If any of boxes 1 to 3 are checked, the operation is required to be evaluated with the master matrix if the county, where the confinement feeding operation structure<sup>1</sup> is or would be located, has adopted a 'Construction Evaluation Resolution' (CER). Select the one that best describes your confinement feeding operation:

1.  A new confinement feeding operation proposed in a county that has adopted a CER.
2.  An existing operation constructed on or after April 1, 2002, in a county that has adopted a CER.
3.  An existing operation constructed prior to April 1, 2002, with a current or proposed AUC of 1,667 AU or more, in a county that has adopted a CER.
4.  None of the above. Therefore, the master matrix evaluation is not required.

- D) **Qualified Operation** (must check one). If any of boxes 1 to 4 are checked, the operation is also a 'qualified operation'. A qualified operation is required to use a manure storage structure that employs bacterial action which is maintained by the utilization of air or oxygen, and which shall include aeration equipment. However, this requirement does not apply if box 5 is checked. Select the one that best describes your confinement feeding operation:

1.  A swine farrowing and gestating operation with an AUC of 2,500 AU or more. If the replacement breeding swine are raised and used at the operation, the animal units for those replacement animals do not count in the operations total AUC.
2.  A swine farrow-to-finish operation with an AUC of 5,400 AU or more.
3.  A cattle confinement feeding operation (including dairies) with an AUC of 8,500 AU or more.
4.  Other confinement feeding operations with an AUC of 5,333 AU or more.
5.  This is not a qualified operation because:
  - a.  It is below the limits shown on boxes 1 to 4.
  - b.  It includes a confinement feeding operation structure<sup>1</sup> constructed prior to May 31, 1995.
  - c.  It handles manure exclusively in a dry form (poultry).

#### ITEM 4 – ANIMAL UNIT CAPACITY (AUC) and, if applicable, ANIMAL WEIGHT CAPACITY (AWC):

##### A) Calculating AUC – Required for all operations

For each animal species, multiply the maximum number of animals that you would ever confine at one time by the appropriate factor, then add all AU together on Table 1 (page 4). Use the maximum market weight for the appropriate animal species to select the AU factor.

You must complete all applicable columns in Table 1. Use column a) to calculate the existing AUC, before permit for existing operations only. Use column b) to calculate the 'Total proposed AUC' (after a permit is issued) including new operations. The number obtained in column b) is the AUC of the operation and must be used to determine permit requirements. Use column c) to calculate the 'New AU' to be added to an existing operation. To calculate the indemnity fee (see page 7), also use column c), however, if the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in the "New AU" (column c).

In calculating the AUC of a confinement feeding operation, you must include the AUC of all confinement buildings which are part of the confinement feeding operation, unless a confinement building has been abandoned. A confinement feeding operation structure<sup>1</sup> is abandoned if the confinement feeding operation structure<sup>1</sup> has been razed, removed from the site of a confinement feeding operation, filled in with earth, or converted to uses other than a confinement feeding operation structure<sup>1</sup> so that it cannot be used as a confinement feeding operation structure<sup>1</sup> without significant reconstruction. Therefore, in Table 1, enter the animal unit capacity of all the confinement buildings, including those that are from an "adjacent" operation located within 2,500 feet. For more information, contact the AFO Program at (712) 262-4177.

**Table 1. Animal Unit Capacity (AUC):** (No. HEAD) x (FACTOR) = AUC

Animal Species	a) Existing AUC (Before permit)			b) Total Proposed AUC (After permit)		
	(No. Head)	x (Factor)	= AUC	(No. Head)	x (Factor)	= AUC
Slaughter or feeder cattle		1.0			1.0	
Immature dairy cattle		1.0			1.0	
Mature dairy cattle		1.4			1.4	
Gestating sows	808	0.4	323	808	0.4	323
Farrowing sows & litter	187	0.4	75	187	0.4	75
Boars	22	0.4	9	22	0.4	9
Gilts	972	0.4	389	972	0.4	389
Finished (Market) hogs	2600	0.4	1040	2600	0.4	1040
Nursery pigs 15 lbs to 55 lbs		0.1			0.1	
Sheep and lambs		0.1			0.1	
Horses		2.0			2.0	
Turkeys 7lbs or more		0.018			0.018	
Turkeys less than 7 lbs		0.0085			0.0085	
Broiler/Layer chickens 3 lbs or more		0.01			0.01	
Broiler/Layer chickens less than 3 lbs		0.0025			0.0025	
Fish		0.001			0.001	
<b>TOTALS:</b>			<b>a) Existing AUC: 1836</b>			<b>b) Total proposed AUC: 1836</b>

Note: If the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in the "New AU" (column c)

c) New AU = b) - a):  
d)

0

(This is the AUC of the operation)

**B) Calculating AWC - Only for operations first constructed prior to March 1, 2003**

The AWC is needed for an operation that was first constructed prior to March 1, 2003, to determine some of the minimum separation distance requirements for construction or expansion.

The AWC is the product of multiplying the maximum number of animals that you would ever confine at any one time by their average weight (lbs) during the production cycle. Then add the AWC if more than one animal species is present (examples on how to determine the AWC are provided in 567 IAC 65.1(455B).)

If the operation was first constructed prior to March 1, 2003, you must complete all applicable columns in Table 2:

**Table 2. Animal Weight Capacity (AWC):** (No. head) \* (Avg. weight, lbs) = AWC, lbs

Animal Species	a) Existing AWC (Before Permit)			b) Proposed AWC (After permit)		
	(No. head) x	avg weight	= AWC	(No. head) x	avg weight	= AWC
Slaughter or feeder cattle						
Immature dairy cattle						
Mature dairy cattle						
Gestating sows	808	375	30300	808	375	3033
Farrowing sows & litter	187	375	70125	187	375	70125
Boars	22	350	7700	22	350	7700
Gilts	936	200	187200	936	200	187200
Finished (Market) hogs	2600	150	390000	2600	150	390000
Nursery pigs 15 lbs to 55 lbs						
Sheep and lambs						
Horses						
Turkeys 7lbs or more						
Turkeys less than 7 lbs						
Broiler/Layer chickens 3 lbs or more						
Broiler/Layer chickens less than 3 lbs						
Fish						
<b>TOTALS:</b>			<b>a) Existing AWC: 685325</b>			<b>b) Total proposed AWC: 685325</b>

c) New AWC = b) - a):

0

(This is the AWC of the operation)

**ITEM 5 – SUBMITTAL REQUIREMENTS** Checklists No. 1 or 2 (pages 10-15) describe the submittal requirements, which are based on the type of confinement feeding operation structure<sup>1</sup> and AUC proposed. To determine which checklist to use, choose the option that best describes your confinement feeding operation:

- A)  **Formed manure storage structures<sup>2</sup>**: The proposed confinement feeding operation structure<sup>1</sup> will be or will use a formed manure storage structure<sup>2</sup>. Check one of the following boxes:
- A swine farrowing and gestating operation with an AUC of 1,250 AU or more. Use Submittal Checklist No. 2 (page 13).
  - A swine farrow-to-finish operation with an AUC of 2,750 AU or more. Use Submittal Checklist No. 2 (page 13).
  - A cattle confinement feeding operation (including dairies) with an AUC of 4,000 AU or more. Use Submittal Checklist No. 2 (page 13).
  - Other confinement feeding operations with an AUC of 3,000 AU or more. Use Submittal Checklist No. 2 (page 13).
  - None of the above. Use Submittal Checklist No. 1 (page 10).

If any of boxes 1 to 4 are checked, the operation meets the threshold requirements for an engineer<sup>4</sup> and a Professional Engineer (PE), licensed in Iowa, is required. For these cases, use Submittal Checklist No. 2 (page 13).

If you checked box 5, your operation is below threshold requirements for an engineer<sup>4</sup> and a Professional Engineer (PE) is not required. Use Submittal Checklist No. 1 (page 10).

- B)  **Unformed manure storage structure<sup>3</sup>**: The proposed confinement feeding operation structure<sup>1</sup>, will be or will use an unformed manure storage structure<sup>3</sup> or an egg washwater storage structure. A Professional Engineer (PE) licensed in Iowa must design and sign the engineering documents for any size of operation. Use Submittal Checklist No. 2 (page 13) and Addendum "A" (page 16).

**ITEM 6 – SIGNATURE:**

I hereby certify that the information contained in this application is complete and accurate.

Signature of Applicant(s): Causton Enterprises Date: 05/02/17  
by Mike Causton

**MAILING INSTRUCTIONS:**

To expedite the application process, follow the submittal requirements explained in Checklist No. 1 or 2 (pages 10 to 16), whichever applies. Page 1 of this form should be the first page of the package. Mail all documents and fees to:

**Iowa DNR  
AFO Program  
1900 N Grand Ave  
Gateway North, Ste E17  
Spencer, IA 51301**

*(Note: Incomplete applications will be returned to the sender.)*

**Questions**

Questions about construction permit requirements or regarding this form should be directed to an engineer of the animal feeding operations (AFO) Program at (712) 262-4177 To contact the appropriate DNR Field Office, go to <http://www.iowadnr.gov/InsideDNR/DNRStaffOffices/EnvironmentalFieldOffices.aspx>.

<sup>4</sup> Threshold requirements for an engineer apply to the construction of a formed manure storage structure<sup>2</sup>. Operations that meet or exceed the threshold requirements for an engineer are required to submit engineering documents signed by a professional engineer licensed in the state of Iowa. Please refer to Checklist No. 2 (pages 13-15).

ITEM 7

**Interested Parties Form  
Confinement Feeding Operation**

**Interest** means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly or indirectly through a spouse or dependent child, or both.

**INSTRUCTIONS:**

Please list all persons (including corporations, partnerships, etc.) who have an interest in any part of the confinement feeding operation covered by this permit application.

Full Name	Address	City/State	Zip
Mike Paustian	22225 70th Ave.	Walcott/IA	52773
Amy Paustian	22225 70th Ave.	Walcott/IA	52773
Kent Paustian	6520 215th St.	Walcott/IA	52773
Marcia Paustian	6420 215th St.	Walcott/IA	52773
Ross Paustian	389 W. Parkview Dr.	Walcott/IA	52773
Carol Paustian	389 W. Parkview Dr.	Walcott/IA	52773
Carolyn Paustian	P.O. Box 459	Walcott/IA	52773

For each name above, please list below all other confinement feeding operations in Iowa in which that person has an interest. Check box "None", below, if there are no other confinement feeding operations in Iowa in which the above listed person(s) has or have an interest.

Operation Name	Location (1/4 1/4, 1/4, Section, Tier, Range, Township, County)	City
<input type="checkbox"/> None [There are no other confinements in Iowa in which the above listed person(s) has or have an interest].		
Home Farm	SW NE 30 79N 2E Hickory Grove, Scott	Walcott
Stender Farm	NW NE 20 79N 2E Hickory Grove, Scott	Walcott
Ralf Farm	SW SE 13 79N 1E Cleona, Scott	Walcott
Hein Farm	SE NE 34 79N 1E Cleona, Scott	Walcott

I hereby certify that the information provided on this form is complete and accurate.

Signature of Applicant(s): Paustian Enterprises Date: 05/02/17  
by Mike Paustian

ITEM 8

**Manure Storage Indemnity Fee Form  
for Construction Permits**

<p><b>CASHIER'S USE ONLY</b> 0474-542-474A-0431 Facility ID # County</p>
--

Credit fees to: Paustian Enterprises Ltd.  
Name of operation: Sow Unit/Ross

**INSTRUCTIONS:**

- 1) Use the 'Total Proposed AUC' from column b), Table 1 (page 4), to select the appropriate fee line in the table below. The 'Total Proposed AUC' is the AUC of the operation.
- 2) Select the animal specie and row number (see examples). Enter the 'New AU' from column c), Table 1 (page 4). The 'New AU' is the number of AU to be added to an existing operation or being proposed with a new operation. **Note:** If the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in "New AU" (column c).
- 3) Multiply the 'New AU' by the appropriate 'Fee per AU'. The resulting number is the indemnity fee due.

- **Example 1:** An existing swine operation is expanding from an 'Existing AUC' of 1,000 AU to a 'Total Proposed AUC' of 1,800 AU, and has previously paid an indemnity fee for the existing 1,000 AU. Calculate the indemnity fee as follows: The 'Total Proposed AUC' is between 1,000 AU and 3,000 AU; the animal specie is other than poultry; enter 800 AU in the 'New AU' column, row 4, and multiply it by \$ 0.15:  
 $(800 \text{ AU}) \times (\$ 0.15 \text{ per AU}) = \$ 120.00$
- **Example 2:** An existing poultry operation is expanding from an 'Existing AUC' of 250 AU to a 'Total Proposed AUC' of 2,000 AU and has not paid the indemnity fee for animals housed in the existing buildings. Calculate the indemnity fee as follows: The 'Total Proposed AUC' is between 1,000 AU and 3,000 AU; the animal specie is poultry and the indemnity fee has not previously been paid, enter 2,000 AU in the 'New AU' column on row 3, and multiply it by \$0.06:  
 $(2,000 \text{ AU}) \times (\$ 0.06 \text{ per AU}) = \$ 120.00$
- **Example 3:** If you are proposing a new swine confinement feeding operation with a 'Total Proposed AUC' of 3,500 AU, enter 3,500 AU in the 'New AU' column, row 6 and multiply it by \$ 0.20:  
 $(3,500 \text{ AU}) \times (\$ 0.20 \text{ per AU}) = \$ 700.00$
- **Example 4:** If you are applying for a construction permit but you are not increasing the AUC of the operation, and has previously paid the applicable indemnity for the animals housed in the existing buildings, there is no indemnity fee due (\$ 0.00). If no indemnity fee is due, do not submit this page.

**Indemnity Fee Table:**

Total Proposed AUC - (After permit) from column b), Table 1	Row	Animal species	New AU - from column c), Table 1	x	Fee per AU	Indemnity Fee
Less than 1,000 AU	1	Poultry		x	\$ 0.04 =	
	2	Other		x	\$ 0.10 =	
1,000 AU or more to less than 3,000 AU	3	Poultry		x	\$ 0.06 =	
	4	Other	0	x	\$ 0.15 =	0
3,000 AU or more	5	Poultry		x	\$ 0.08 =	
	6	Other		x	\$ 0.20 =	



ITEM 8 (Cont.)

Filing Fees Form  
for Construction Permits

CASHIER'S USE ONLY  
0473-542-473A-0431  
0474-542-474A-0431  
Facility ID #  
County

Credit fees to: Paustian Enterprises Ltd.  
Name of operation: Sow Unit/Ross

**INSTRUCTIONS:**

1. If the operation is applying for a construction permit enclose a payment for the following:  
 Construction application fee \$250.00.  
 (Note: This fee is non-refundable)
2. A manure management plan must be submitted with a filing fee.  
 Manure management plan filing fee \$250.00  
 (Note: This fee is non-refundable)
3. If this is a change in ownership then indemnity fees must also be paid on the current (existing) total AUC at the appropriate rate on page 7.  
 Indemnity fee due to ownership change \$ \_\_\_\_\_
4. Total filing fees: Add the fees paid in items 1, 2 and 3 (above): \$ 500.00

SUMMARY:	
- Manure Storage Indemnity Fee (see previous page) to be deposited in the Manure Storage Indemnity Fee Fund (474)	\$ <u>0</u>
- Total filing fees (see item 4 on this page) to be deposited in the Animal Agriculture Compliance Fund (473)	\$ <u>500.00</u>
<b>TOTAL DUE:</b>	<b>\$ <u>500.00</u></b>

Make check payable to: Iowa Department of Natural Resources or Iowa DNR; and send it along with the construction application documents (See Submittal Checklist No. 1 or 2, pages 10-15.) Note: Do not send this fee to the county.

## COUNTY VERIFICATION RECEIPT OF DNR CONSTRUCTION PERMIT APPLICATION

This form provides proof that the County Board of Supervisors has been provided with a complete copy of the construction permit application documents (everything except the fees) for the confinement feeding operation or a complete MMP has been provided to the County because manure will be applied in that county:

Applicant: Paustian Enterprises Ltd. Telephone: \_\_\_\_\_

Name of operation: Sow Unit/Ross

Location: NE SE 19 79N & 2E Hickory Grove Scott  
(1/4 1/4) (1/4) (Section) (Tier & Range) (Name of Township) (County)

Documents being submitted to the county:

- Construction permit application form: submit items 1 to 9 (see Submittal Checklist No. 1 or 2)
- Attachment 1 - Aerial photos: Must clearly show the location of the proposed confinement feeding operation structure<sup>1</sup> and that all the separation distances are met, including those claimed for points in the master matrix (if applicable).
- Attachment 2 - Statement of design certification, submit any of the following (see Checklist No. 1 or 2):
  - Construction Design Statement form
  - Professional Engineer (PE) Design Certification form
  - Engineering report, construction plans and technical specifications
  - In addition, if proposing an unformed manure storage structure<sup>3</sup> or an egg washwater storage structure submit documentation required in Addendum "A" of this construction application form.
- Attachment 3 - Manure management plan.
- Attachment 4 - Master Matrix (if required). You must include supporting documents (see Checklist No. 1 or 2)

**THIS SECTION IS RESERVED FOR THE COUNTY**

As soon as DNR receives a construction permit application, the DNR will fax your County Auditor a "Courtesy reminder letter" explaining what actions your County Board of Supervisors must complete and the deadlines.

Public Notice is required for **all** construction permit applications, including those applications not required to be evaluated with the master matrix and applications in counties not participating in the Master matrix.

Counties participating in the master matrix: the county's master matrix evaluation and county's recommendation is required for the following cases:

- A new confinement feeding operation that is applying for a construction permit
- An existing confinement feeding operation that was first constructed on or after April 1, 2002 that is applying for a construction permit.
- An existing confinement feeding operation that was first constructed prior to April 1, 2002 that is applying for a construction permit with an animal unit capacity (AUC) is 1,667 animal units (AU) or more.

I have read and acknowledge the county's duty with this construction permit application, as specified in 567 IAC 65.10 and Iowa Code 459.304. On behalf of the Board of Supervisors for:

COUNTY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

(Member of the County Board of Supervisors or its designated official/employee)

Date: \_\_\_\_\_, 20 \_\_\_\_\_.

If you do not receive the courtesy reminder letter within a reasonable time, or if you have any questions, please contact the animal feeding operations (AFO) Program at (712) 262-4177 or visit [www.iowaDNR.gov](http://www.iowaDNR.gov)

PAUSTIAN ENTERPRISES LTD.  
SOW UNIT

Proposed addition



4170 FEET TO STENDER FARM

1140 FEET TO SURFACE WATER

347 FEET TO WELL

950 FEET TO ROW

Existing farrowing barn

Proposed addition

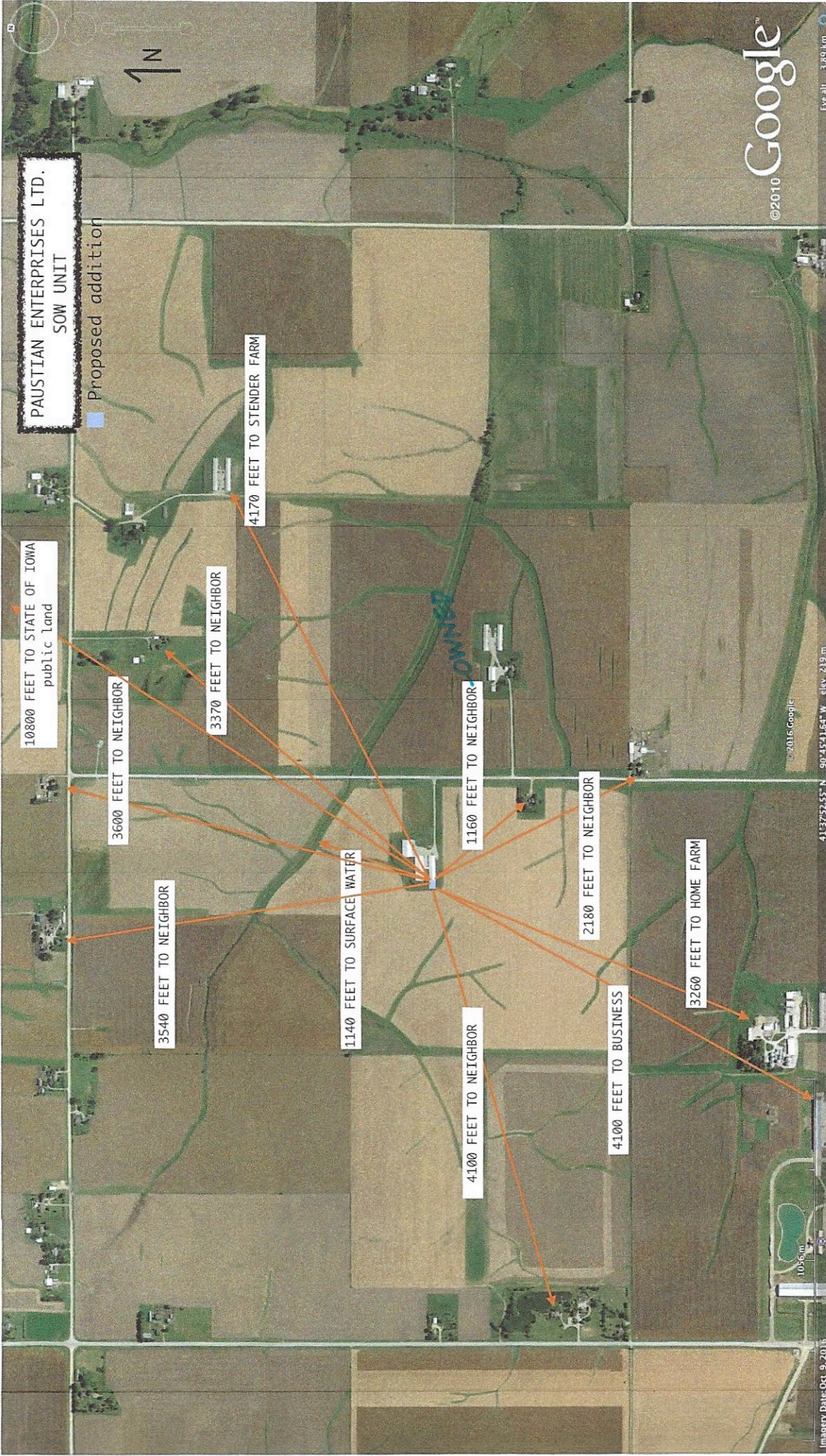
4100 FEET TO NEIGHBOR

3260 FEET TO HOME FARM

2180 FEET TO NEIGHBOR

1160 FEET TO NEIGHBOR

20 m



PAUSTIAN ENTERPRISES LTD.  
SOW UNIT

Proposed addition

10800 FEET TO STATE OF IOWA  
public land

3600 FEET TO NEIGHBOR

3540 FEET TO NEIGHBOR

3370 FEET TO NEIGHBOR

4170 FEET TO STENDER FARM

1140 FEET TO SURFACE WATER

4100 FEET TO NEIGHBOR

1160 FEET TO NEIGHBOR

2180 FEET TO NEIGHBOR

4100 FEET TO BUSINESS

3260 FEET TO HOME FARM

© 2016 Google

41°37'52.55" N 90°45'41.64" W elev: 219 m

Imagery Date: Oct 9, 2016

Eye alt: 389 km

©2010 Google



1000 m



IOWA

DEPARTMENT OF NATURAL RESOURCES

PAUSTIAN ENTERPRISES LTD - SOW UNIT  
KARST + ALLUVIAL SOILS MAP

Basemaps

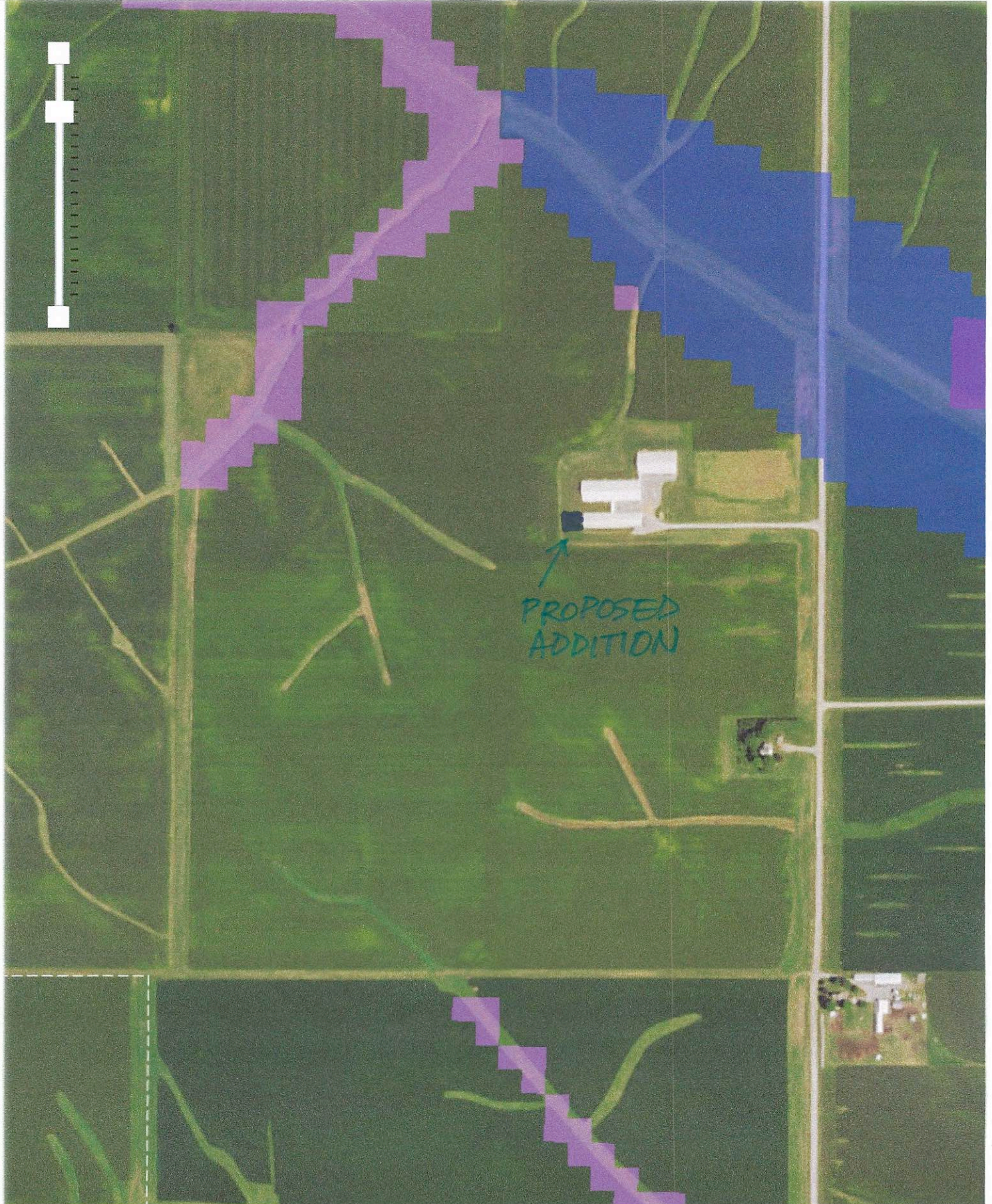
Measure

Bookmarks

Mail

Map Info

Soil





# Construction Design Statement (CDS)

## Instructions:

1. This form is for new or expanding confinement feeding operations with an AUC<sup>1</sup> of more than 500 AU, not required to have a professional engineer (PE)<sup>2</sup>, that are proposing to construct a formed manure storage structure<sup>3</sup>.
2. Complete and submit Sections 1, 2 and 3 (pages 1 to 5).
3. Complete and submit Section 4 (page 6) only if you are applying for a construction permit and are constructing three or more confinement feeding operation structures<sup>4</sup>.
4. Mail only pages 1 to 5, and page 6 (if applicable) as instructed on page 6. Do not mail the remainder of this form.
5. If the site-specific design is sealed by a PE<sup>2</sup>, do not use this CDS instead use DNR Form 542-8122.

## Section 1 - Information about the proposed formed manure storage structure<sup>3</sup>(s)

### A) Information about the operation:

Name of operation: Paustian Enterprises Ltd. Facility ID No. : 62367  
 Location: NE SE 19 T79R2E Hickory Grove Scott  
(¼ ¼) (¼) (Section) (Tier & Range) (Name of Township) (County)

### B) Description of the proposed formed manure storage structure<sup>3</sup>. Include dimensions (length, width, or diameter, depth). Indicate if it is aboveground or belowground; covered or uncovered, made of concrete or steel, address location of pit fans, if applicable, and address water line entry into buildings. If necessary attach more pages:

60'6" x 92'3" x 2'0" belowground concrete pit covered by a swine farrowing addition.

The water will come in through the gabled wall

The fans will sit on stainless steel transitions.

### C) Aerial photos: Aerial photos must be submitted that clearly show the location of all existing and proposed confinement feeding operation structures and show at least a one-mile radius around the structures. The photos must either show roads on the north and south or east and west sides of a section (so that a mile distance is apparent), or include a distance scale.

The photo(s) must show that the proposed structures comply with all statutory minimum required separation distances to the objects listed below:

- Residences (not owned by the permit applicant), churches, businesses, schools, public use areas
- Water wells (depends on type)
- Major water sources, wellhead or cistern of an agricultural drainage well or known sinkholes
- Water sources (other than major water sources) or surface intakes of an agricultural drainage well
- Designated wetlands
- Road right-of-way

The separation distance to each of the above objects must be noted with a straight line between the proposed structure(s) and the object. If any of the above objects is not located within one mile from the proposed structures, note the fact on the photo(s) or use additional pages. (Example: "No agricultural drainage wells within one mile.")

All separation distances that are not clearly in excess of the required minimum separation distance must be measured according to 567 IAC 65.11(5) using standard survey methods. Go to the DNR fact sheet page at <http://www.iowadnr.gov/Environment/LandStewardship/AnimalFeedingOperations/AFOResources/AFOFactsheets.aspx> and select DNR fact sheet "Distance Requirements for Construction" to find the required separation distances. Or, go directly to: <http://www.iowadnr.gov/Portals/idnr/uploads/forms/5421420.pdf>. An example aerial photo can be found on pages 18 to 19 of the AFO Construction Permit Application (DNR Form 542-1428). Or, go directly to: [http://www.iowadnr.gov/Portals/idnr/uploads/afo/fs\\_iemap.pdf](http://www.iowadnr.gov/Portals/idnr/uploads/afo/fs_iemap.pdf).

**Note:** If a master matrix is required, the photos must also show that the additional separation distances required for any points claimed in matrix criteria one through ten will be met for the objects listed above. Note the additional separation distance by drawing a straight line between the proposed structures and the matrix item.

<sup>1</sup> To determine the AUC see the 'Manure Storage Indemnity Fee' (Form 542-4021) or the 'Construction Permit Application' (Form 542-1428), or visit <http://www.iowadnr.gov>

<sup>2</sup> PE is a professional engineer licensed in the state of Iowa or a NRCS-Engineer working for the USDA-Natural Resources Conservation Service (NRCS).

<sup>3</sup> Formed manure storage structure means a covered or uncovered concrete or steel tank, including concrete pits below the floor.

<sup>4</sup> Confinement feeding operation structure = A confinement building, a formed or unformed manure storage structure, or an egg washwater storage structure.

D) **Karst Determination:** Go to DNR AFO Siting Atlas at <http://programs.iowadnr.gov/maps/af0/>. Search for your site by either scrolling into your location or entering an address or legal description in the bottom search bar. Left click on the location of your proposed structure. Make sure the karst layer box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact the AFO Engineer at 712-262-4177. Check one of the following:

- The site is not in karst or potential karst. Print and enclose the map with the name and location of the site clearly marked.
- The Siting Atlas has indicated that the site is in karst. The upgraded concrete standards of 567 IAC 65.15(14)"c" must be used. Complete and sign Section 3,H (page 5).

E) **Alluvial Soils Determination:** Go to the AFO Siting Atlas as described above. Make sure the alluvial box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact DNR Flood Plain at 1-866-849-0321. Check one of the following:

- The site is not in alluvial soils. Print and enclose the map with the name and location of the site clearly marked.
- If the site is in alluvial soils contact DNR Flood Plain at 866-849-0321. You will be required to submit a petition for a declaratory order if less than 1000 AU or request a flood plain determination if 1000 AU or greater. After receiving Flood Plain determination, submit one of the following:
  - Include correspondence from the DNR showing the site is not in 100-year flood plain or does not require a Flood Plain permit. .
  - Include copy of the Flood Plain permit if a Flood Plain permit is required.

**Section 2 - Manure management plan:**

An original manure management plan (MMP) is enclosed with this form, even if a MMP was previously filed.

Paustian Enterprises by Mike Paustian      *Mike Paustian*      05/02/17  
 Owner's Name (print)      Owner's Signature      Date

**Section 3 - Construction design standards:** The person responsible for constructing the formed manure storage structure(s)<sup>3</sup> must complete pages 2 to 5.

A) **Liquid and semi-liquid manure:** The proposed formed manure storage structure<sup>3</sup> will be (check one):

- A.1  A non-circular concrete tank, belowground, with walls laterally braced or below the building concrete pit designed according to 567 IAC Chapter 65, Appendix D.
- A.2  A non-circular concrete tank, belowground, walls designed according to MidWest Plan Service (MWPS), publication MWPS-36. Include design calculations.
- A.3  A circular concrete tank, walls designed according to MidWest Plan Service (MWPS), publication MWPS TR-9. Include design calculations.
- A.4  Will be made of steel, constructed aboveground according to the manufacturer's recommendations.

B) **Dry manure:** The proposed formed manure storage structure<sup>3</sup> will be (check one):

- B.1  An aboveground concrete tank, with walls designed according to MWPS-36. Include design calculations.
- B.2  Will be made of steel, constructed aboveground according to the manufacturer's recommendations.
- B.3  Will be a belowground or partially belowground concrete tank, with walls laterally braced designed according to 567 IAC Chapter 65, Appendix D or MWPS-36. Include design calculations.

C) **Details of the proposed design:** Submit an additional completed copy of this page 2 for each formed manure storage structure<sup>3</sup> that have different dimensions. Complete all of the following information:

**Number of buildings:** 1      **Building name:** Finisher

**Dimensions of proposed formed manure storage structure<sup>3</sup>**

	Length	Width	Height or depth	Wall thickness	Diameter (circular tanks only)
Feet	92	60	2	0	
Inches	3	6	0	6	

To determine the appropriate vertical steel in walls, first check one of the following boxes (must check one):

- a. To use Tables D-1 and D-2 (on pages 7-8), backfilling of walls shall be performed with gravel, sand, silt, and clay mixtures (less than 50 percent fines), with coarse sand with silt or clay (less than 50 percent fines), or cleaner granular material (see page 9 for the unified soils classification). You will need to submit a copy of a USDA soil survey map with the proposed location of the formed manure storage structures<sup>3</sup> clearly marked showing the unified soil classification; or a statement signed by a qualified organization or NRCS staff.

- b. Use Tables D-3 and D-4 (on pages 8-9) if backfilling of walls will be performed with soils that are unknown or with low plasticity silts and clays with some sand or gravel (50 percent or more fines); or fine sands with silt or clay (less than 50 percent fines); or low to medium plasticity silts and clays with little sand or gravel (50 percent or more fines); or high plasticity silts and clays (see page 9 for unified soils classification). You must use Tables D-3 and D-4 if you do not submit the soils information requested in box "a", above.

**Maximum spacing of steel, in inches**

Description of reinforcing steel in walls	Proposed vertical steel in walls [see boxes "a" and "b", above]				Proposed horizontal steel in walls (use Table D-5)
	Walls where vehicles are <b>not</b> allowed within 5 feet (use Table D-1) <sup>a</sup>	All walls with pumpout ports and walls where vehicles are allowed within 5 feet (use Table D-2) <sup>a</sup>	Walls where vehicles are <b>not</b> allowed within 5 feet (use Table D-3) <sup>b</sup>	All walls with pumpout ports and walls where vehicles are allowed within 5 feet (use Table D-4) <sup>b</sup>	
Grade 40, No. 4					
Grade 40, No. 5					
Grade 60, No. 4				18	18
Grade 60, No. 5					

- D) **Aboveground tanks or partially aboveground tanks:** Liquid and semi-liquid manure (check the following box):  
 If the proposed tank is to be constructed **aboveground or partially aboveground** and will have an external outlet or inlet below the liquid level, the tank will also be constructed according to the 567 IAC 65.15(20).

E) **Steel Tanks:** Certification that the tank will be constructed according to the tank manufacturer's specifications:

Name of tank manufacturer company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

F) **Additional construction design standards:**

To determine the additional requirements set forth in 567 IAC 65.15(14) that would apply to the proposed formed manure storage structure<sup>3</sup>, check any of the following 3 boxes based on the information entered on Sections 3.A or 3.B (page 2):

- If you checked boxes A.1, A.2, A.3 or B.3 (on page 2) **all** of the following 15 additional requirements apply. Complete the numbered items 1 to 15 (below).
- If you checked box B.1 (on page 2), only the requirements of numbered items 1, 3, 4, 5, 6, 8 and 12 apply and need to check those boxes (below).
- If you checked boxes A.4 or B.2 (on page 2) and the steel tank will have a concrete floor, only the requirements of numbered items 1, 2, 3, 4, 5, 8, 9, 12, apply and need to check those boxes (below).

**Additional Requirements that will be followed during construction of the formed manure storage structure(s)<sup>3</sup>:**

- Site preparation (check the following box):
  - The finished subgrade of a formed manure storage structure shall be graded and compacted to provide a uniform and level base and shall be free of vegetation, manure and debris. For the purpose of this subrule, "uniform" means a finished subgrade with similar soils.
- Groundwater separation requirements (check one of the following boxes):
  - When the groundwater table, as determined in 65.15(7) "c," is above the bottom of the formed structure, a drain tile shall be installed along the footings to artificially lower the groundwater table pursuant to 65.15(7) "b"(2). The drain tile shall be placed within 3 feet of the footings as indicated in Appendix D, Figure D-1, at the end of this chapter and shall be covered with a minimum of 2 inches of gravel, granular material, fabric or a combination of these materials to prevent plugging the drain tile. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed if the drainage tile lines do not have a surface outlet accessible on the property where the formed manure storage structure is located.
  - In lieu of the drain tile, a certification signed by a PE<sup>2</sup>, a groundwater professional certified pursuant to 567 Chapter 134, or a qualified staff from NRCS, is being submitted indicating that the groundwater elevation, according to 65.15(7) "c", is below the bottom of the formed structure.
- Minimum as-placed concrete compressive strength (check the following box):
  - All concrete shall have the following minimum as-placed compressive strengths and shall meet American Society for Testing and Materials (ASTM) standard ASTM C 94: 4,000 pounds per square inch (psi) for walls, floors, beams, columns



and pumpouts and 3,000 psi for the footings. The average concrete strength by testing shall not be below design strength. No single test result shall be more than 500 psi less than the minimum compressive strength.

4. Cement and aggregates specifications (check the following box):
  - Cementitious materials shall consist of Portland cement conforming to ASTM C 150. Aggregates shall conform to ASTM C 33. Blended cements in conformance with ASTM C 595 are allowed only for concrete placed between March 15 and October 15. Portland-pozzolan cement or Portland blast furnace slag blended cements shall contain at least 75 percent, by mass, of Portland cement.
5. Concrete consolidation and vibration requirements (check the following box):
  - All concrete placed for walls shall be consolidated or vibrated, by manual or mechanical means, or a combination, in a manner which meets ACI 309.
6. Minimum rebar specifications: (check the following box):
  - All rebar used shall be a minimum of grade 40 steel. All rebar, with the exception of rebar dowels connecting the walls to the floor or footings, shall be secured and tied in place prior to the placing of concrete.
7. Wall reinforcement placement specifications (check the following box):
  - All wall reinforcement shall be placed so as to have a rebar cover of 2 inches from the inside face of the wall for a belowground manure storage structure. Vertical wall reinforcement should be placed closest to the inside face. Rebar placement shall not exceed tolerances specified in ACI 318.
8. Minimum floor specifications. Complete part a) and b):
  - a) Floor thickness requirements (check the following box):
    - The floor slab shall be a minimum of 5 inches thick. Nondestructive methods to verify the floor slab thickness may be required by the department. The results shall indicate that at least 95 percent of the floor slab area meets the minimum required thickness. In no case shall the floor slab thickness be less than 4½ inches.
  - b) The floor slab reinforcement shall be located in the middle of the thickness of the floor slab (check one of the following boxes):
    - Formed manure storage structures with a depth of 4 feet or more shall have primary reinforcement consisting of a minimum of #4 rebar placed a maximum of 18 inches on center in each direction placed in a single mat.
    - Formed manure storage structure with a depth less than 4 feet shall have shrinkage reinforcement consisting of a minimum of 6 × 6-W1.4 × W1.4 welded wire fabric.
9. Minimum footing specifications (check the following box):
  - The footing or the area where the floor comes in contact with the walls and columns shall have a thickness equal to the wall thickness, but in no case be less than 8 inches, and the width shall be at least twice the thickness of the footing. All exterior walls shall have footings below the frostline. Tolerances shall not exceed -½ inch of the minimum footing dimensions.
10. Requirement to connect walls to footings (check one of the following boxes):
  - The vertical steel of all walls shall be extended into the footing, and be bent at 90°, **OR**
  - A separate dowel shall be installed as a #4 rebar that is bent at 90° with at least 20 inches of rebar in the wall and extended into the footing within 3 inches of the bottom of the footing and extended at least 3 inches horizontally, as indicated in Appendix D, Figure D-1 (page 10). Dowel spacing (bend or extended) shall be the same as the spacing for the vertical rebar.
  - As an alternative to the 90° bend, the dowel may be extended at least 12 inches into the footing, with a minimum concrete cover of 3 inches at the bottom, as indicated in Appendix D, Figure D-1 (page 10). Dowel spacing (bend or extended) shall be the same as the spacing for the vertical rebar.
  - In lieu of dowels, mechanical means or alternate methods may be used as anchorage of interior walls to footings. Please submit structural calculations and details of this proposal.
11. Concrete forms specifications (check the following box):
  - All walls shall be formed with rigid forming systems and shall not be earth-formed.
12. Curing of concrete requirements (check the following box):
  - All concrete shall be cured for at least seven days after placing, in a manner which meets ACI 308, by maintaining adequate moisture or preventing evaporation. Proper curing shall be done by ponding, spraying or fogging water; or by using a curing compound that meets ASTM C 309; or by using wet burlap, plastic sheets or similar materials.
13. Construction joints and waterstops specifications (check the following box):

All construction joints in exterior walls shall be constructed to prevent discontinuity of steel and have properly spliced rebar placed through the joint. Waterstops shall be installed in all areas where fresh concrete will meet hardened concrete as indicated in Appendix D, Figures D-1 and D-2, at the end of this chapter. The waterstops shall be made of plastic, rolled bentonite or similar materials approved by the department.

14. Backfilling of walls specifications (check the following box):

Backfilling of the walls shall not start until the floor slats or permanent bracing have been installed. Backfilling shall be performed with material free of vegetation, large rocks or debris.

15. Additional design requirements (check the following box, if applicable):

A formed manure storage structure with a depth greater than 12 feet shall be designed by a PE or an NRCS engineer.

**G) Construction Certification:** The person responsible for constructing the formed manure storage structure<sup>3</sup> must sign this page. Any change(s) to the specifications of the formed manure storage structure must be first approved by DNR:

"I hereby certify that I have read and understand the minimum design and construction standards of Iowa Code chapter 459, Subchapter III, and the 567 Iowa Administrative Code (IAC) 65.15(14) "Minimum concrete standards" or 567 IAC 65 (if other than concrete). The proposed formed manure storage structure(s)<sup>3</sup> at the operation:

Name of operation: Puastian Enterprises Ltd. County: Scott

Owner's name: Kent Paustian

will be constructed in accordance with these minimum requirements. Included with this certification are:

- Page 2, for each formed manure storage structure<sup>3</sup> that have different dimensions
- Pages 3 to 5 (applicable sections)
- Other documents (specify): \_\_\_\_\_

Doug Green



(Signature)

April 12, 2017  
(Date)

P.S.I.  
(Company)

1204 1<sup>st</sup> Ave. NE, Wellman, IA 52356  
(Address)

(319)646-2430  
(Phone No.)

(See page 6 for mailing instructions)



# Manure Management Plan Form

## Animal Feeding Operation Information

**Instructions:** Complete this form for your animal feeding operation. Footnotes are provided on page 4.

The information within this form, and the attachments, describes my animal feeding operation, my manure storage and handling system, and my planned manure management system. I (we) will manage the manure, and the nutrients it contains, as described withi

Signed: Paustian Enterprises by Mike Paustian (Signature) Mike Paustian (Print name) Date: 05/02/17

Name of operation: Sow Unit Facility ID No. 62367

Location of the operation: 22444 - 70th Ave  
(911 address)

Walcott Iowa 52773  
(Town) (State) (Zip)

NE 1/4 of the SE 1/4 of Sec 19 T 79N R 2E Hickory Grove Scott  
(1/4 1/4) (1/4) (Section) (Tier & Range) (Township Name) (County)

**Owner and contacts of the animal feeding operation:**

Owner Paustian Enterprises Ltd. Phone 563-284-6814

Address 6520 - 215th St., Walcott, IA 52773

E-mail address (optional) \_\_\_\_\_ Cell phone (optional) \_\_\_\_\_

Contact person (if different than owner) Kent Paustian Phone 563-284-6814

Address 6520 - 215th St., Walcott, IA 52773

E-mail address (optional) \_\_\_\_\_ Cell phone (optional) \_\_\_\_\_

Contract company (if applicable) \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

**This manure management plan is for:** (check one)

\_\_\_\_\_ existing operation, not expanding  existing operation, expanding \_\_\_\_\_ new operation

**Construction and Expansion Dates:** \_\_\_\_\_ 1998 \_\_\_\_\_ date of initial construction and all expansions

**Table 1. Information about livestock production and manure management system**

1	2	3	4	5	6	7	8
Animal type/ Production phase <sup>a</sup>	Max # of animals confined	Manure Storage Structure <sup>b</sup>	N <sup>c</sup>	P <sub>2</sub> O <sub>5</sub> <sup>c</sup>	gal/space/dy <sup>d</sup>	Days/yr Facility occupied	Annual Manure Produced <sup>e</sup>
Select production phas ▼			0	0	0.0		000
Select production phas ▼			0	0	0.0		000
Select production phas ▼			0	0	0.0		000
Brding, Gest. & Farrowing	1116	Deep pit	25	12	3.3	365	1,311,740
Developing Gilts	873	Deep pit	25	12	2.0	292	509,832
<b>Total Gallons</b>							<b>1,821,572</b>

Estimated annual animal production<sup>1</sup> ~18000 animals/year

Source of Manure Nutrient Content Data (standard tables, manure analysis, other): manure analysis



# Manure Management Plan Form

## Animal Feeding Operation Information

**Instructions:** Complete this form for your animal feeding operation. Footnotes are provided on page 4.

The information within this form, and the attachments, describes my animal feeding operation, my manure storage and handling system, and my planned manure management system. I (we) will manage the manure, and the nutrients it contains, as described within this manure management plan (MMP) and any revisions of the plan, individual field information, and field summary sheet, and in accordance with current rules and regulations. Deviations permitted by Iowa law will be documented and maintained in my records.

Signed: Paustian Enterprises by Mike Paustian (Signature) Mike Paustian (Print name) Date: 05/02/17

**Name of operation:** Ross Finishing **Facility ID No.** 62367

**Location of the operation:** 22225 - 70th Ave  
(911 address)

Walcott Iowa 52773  
(Town) (State) (Zip)

SE 1/4 of the SW 1/4 of Sec 20 T 79N R 2E Hickory Grove Scott  
(1/4 1/4) (1/4) (Section) (Tier & Range) (Township Name) (County)

**Owner and contacts of the animal feeding operation:**

Owner Paustian Enterprises Ltd. Phone 563-284-6814

Address 6520 - 215th St., Walcott, IA 52773

E-mail address (optional) \_\_\_\_\_ Cell phone (optional) \_\_\_\_\_

Contact person (if different than owner) Kent Paustian Phone 563-284-6814

Address 6520 - 215th St., Walcott, IA 52773

E-mail address (optional) \_\_\_\_\_ Cell phone (optional) \_\_\_\_\_

Contract company (if applicable) \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

**This manure management plan is for: (check one)**

existing operation, not expanding  existing operation, expanding  new operation

**Construction and Expansion Dates:** 1996 date of initial construction

1998 and all expansions

**Table 1. Information about livestock production and manure management system**

1	2	3	4	5	6	7	8
Animal type/ Production phase <sup>a</sup>	Max # of animals confined	Manure Storage Structure <sup>b</sup>	N <sup>c</sup>	P <sub>2</sub> O <sub>5</sub> <sup>c</sup>	gal/space/dy <sup>d</sup>	Days/yr Facility occupied	Annual Manure Produced <sup>e</sup>
Select production phas ▼			0	0	0.0		000
Select production phas ▼			0	0	0.0		000
Select production phas ▼			0	0	0.0		000
Grow - Finish	2600	Deep pits	54	34	0.8	365	759,038
<b>Total Gallons</b>							<b>759,038</b>

**Estimated annual animal production<sup>1</sup>** ~6500 animals/year

**Source of Manure Nutrient Content Data** (standard tables, manure analysis, other): manure analysis



# Manure Management Plan Form

## Determining Maximum Allowable Manure Application Rates

**Instructions:** Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

### Management Identification (Mgt ID)<sup>f</sup>

### F) Corn-Corn (finishing)

(identify this application scenario by letter)

Method to determine optimum crop yield<sup>g</sup> Soil survey interpretation records Timing of application Sp & Fall

Method of application Knifed in or soil injection of liquid manure Application loss factor 0.98

If spray irrigation is used, identify method<sup>i</sup>

**Table 2. Manure nutrient concentration**

Manure Nutrient Content (lbs/1000gal or lbs/ton) <sup>i</sup>					
Total N	54	P <sub>2</sub> O <sub>5</sub>	34		
%TN Available 1st year <sup>k</sup>	100%	2nd year	0%	3rd year	
Available N 1st year <sup>l</sup>	52.9	2nd year <sup>m</sup>	0.0	3rd year <sup>n</sup>	0.0

**Table 3. Crop usage rates<sup>o</sup>**

lb/bu or lb/ton	N	P <sub>2</sub> O <sub>5</sub>
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

\*Use blank space above to add crop not listed.

**Table 4. Calculations for rate based on nitrogen (always required)**

1	Applying Manure For (crop to be grown) <sup>p</sup>		Corn	Corn	Corn	Corn
2	Optimum Crop Yield <sup>g</sup>	bu or ton/acre	217	217	217	217
3	P <sub>2</sub> O <sub>5</sub> removed with crop by harvest <sup>q</sup>	lb/acre	69.4	69.4	69.4	69.4
4	Crop N utilization <sup>r</sup>	lb/acre	260	260	260	260
5a	Legume N credit <sup>s</sup>	lb/acre		0	0	0
5b	Commercial N planned <sup>t</sup>	lb/acre	25	25	25	25
5c	Manure N carryover credit <sup>u</sup>	lb/acre		0.0	0.0	0.0
6	Remaining crop N need <sup>v</sup>	lb/acre	235	235	235	235
7	Manure rate to supply remaining N <sup>w</sup>	gal/acre	4448	4448	4448	4448
8	P <sub>2</sub> O <sub>5</sub> applied with N-based rate <sup>x</sup>	lb/acre	151	151	151	151

**Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)**

9	Commercial P <sub>2</sub> O <sub>5</sub> planned <sup>y</sup>	lb/acre				
10	Manure rate to supply P removal <sup>z</sup>	gal/acre	2042	2042	2042	2042
11	Manure rate for P based plan <sup>aa</sup>	gal/acre	4084	4084	4084	4084
12	Manure N applied with P-based plan <sup>bb</sup>	lb/acre	216	216	216	216

**Table 6. Application rates that will be carried over to page 3**

13	Planned manure application rate <sup>cc</sup>	gal/acre	4448	4448	4448	4448
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When applicable, manure application rates must be based on the P index value as follows:

(0-2) N-based manure management.

(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.

(>5-15) No manure application until practices are adopted to reduce P index to 5 or below.



# Manure Management Plan Form

## Determining Maximum Allowable Manure Application Rates

**Instructions:** Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

### Management Identification (Mgt ID)<sup>f</sup>

### S) Corn-Corn (sow)

*(identify this application scenario by letter)*

Method to determine optimum crop yield<sup>g</sup> Soil survey interpretation records Timing of application Sp & Fall

Method of application Knifed in or soil injection of liquid manure Application loss factor 0.98

If spray irrigation is used, identify method<sup>i</sup> \_\_\_\_\_

**Table 2. Manure nutrient concentration**

Manure Nutrient Content (lbs/1000gal or lbs/ton) <sup>j</sup>					
Total N	25.6	P <sub>2</sub> O <sub>5</sub>		12	
%TN Available 1st year <sup>k</sup>	100%	2nd year	0%	3rd year	
Available N 1st year <sup>l</sup>	25.1	2nd year <sup>m</sup>	0.0	3rd year <sup>n</sup>	0.0

**Table 3. Crop usage rates<sup>o</sup>**

lb/bu or lb/ton	N	P <sub>2</sub> O <sub>5</sub>
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

\*Use blank space above to add crop not listed.

**Table 4. Calculations for rate based on nitrogen (always required)**

1	Applying Manure For (crop to be grown) <sup>p</sup>		Corn	Corn	Corn	Corn
2	Optimum Crop Yield <sup>g</sup>	bu or ton/acre	217	217	217	217
3	P <sub>2</sub> O <sub>5</sub> removed with crop by harvest <sup>q</sup>	lb/acre	69.4	69.4	69.4	69.4
4	Crop N utilization <sup>r</sup>	lb/acre	260	260	260	260
5a	Legume N credit <sup>s</sup>	lb/acre		0	0	0
5b	Commercial N planned <sup>t</sup>	lb/acre	75	75	75	75
5c	Manure N carryover credit <sup>u</sup>	lb/acre		0.0	0.0	0.0
6	Remaining crop N need <sup>v</sup>	lb/acre	185	185	185	185
7	Manure rate to supply remaining N <sup>w</sup>	gal/acre	7390	7390	7390	7390
8	P <sub>2</sub> O <sub>5</sub> applied with N-based rate <sup>x</sup>	lb/acre	89	89	89	89

**Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)**

9	Commercial P <sub>2</sub> O <sub>5</sub> planned <sup>y</sup>	lb/acre				
10	Manure rate to supply P removal <sup>z</sup>	gal/acre	5787	5787	5787	5787
11	Manure rate for P based plan <sup>aa</sup>	gal/acre				
12	Manure N applied with P-based plan <sup>bb</sup>	lb/acre	0	0	0	0

**Table 6. Application rates that will be carried over to page 3**

13	Planned manure application rate <sup>cc</sup>	gal/acre	7390	7390	7390	7390
----	---	----------	------	------	------	------

When applicable, manure application rates must be based on the P index value as follows:

(0-2) N-based manure management.

(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.

(>5-15) No manure application until practices are adopted to reduce P index to 5 or below.



# BADRICK'S SERVICE AND SALES

48600 Hwy. 64, P.O. Box 189  
Miles, Iowa 52064  
**(563) 682-7511**  
Grasshopper, Kinze, Woods

## WOODS



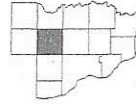
PAUSTIAN ENTERPRISES LTD.

Farm Location - Sow Unit

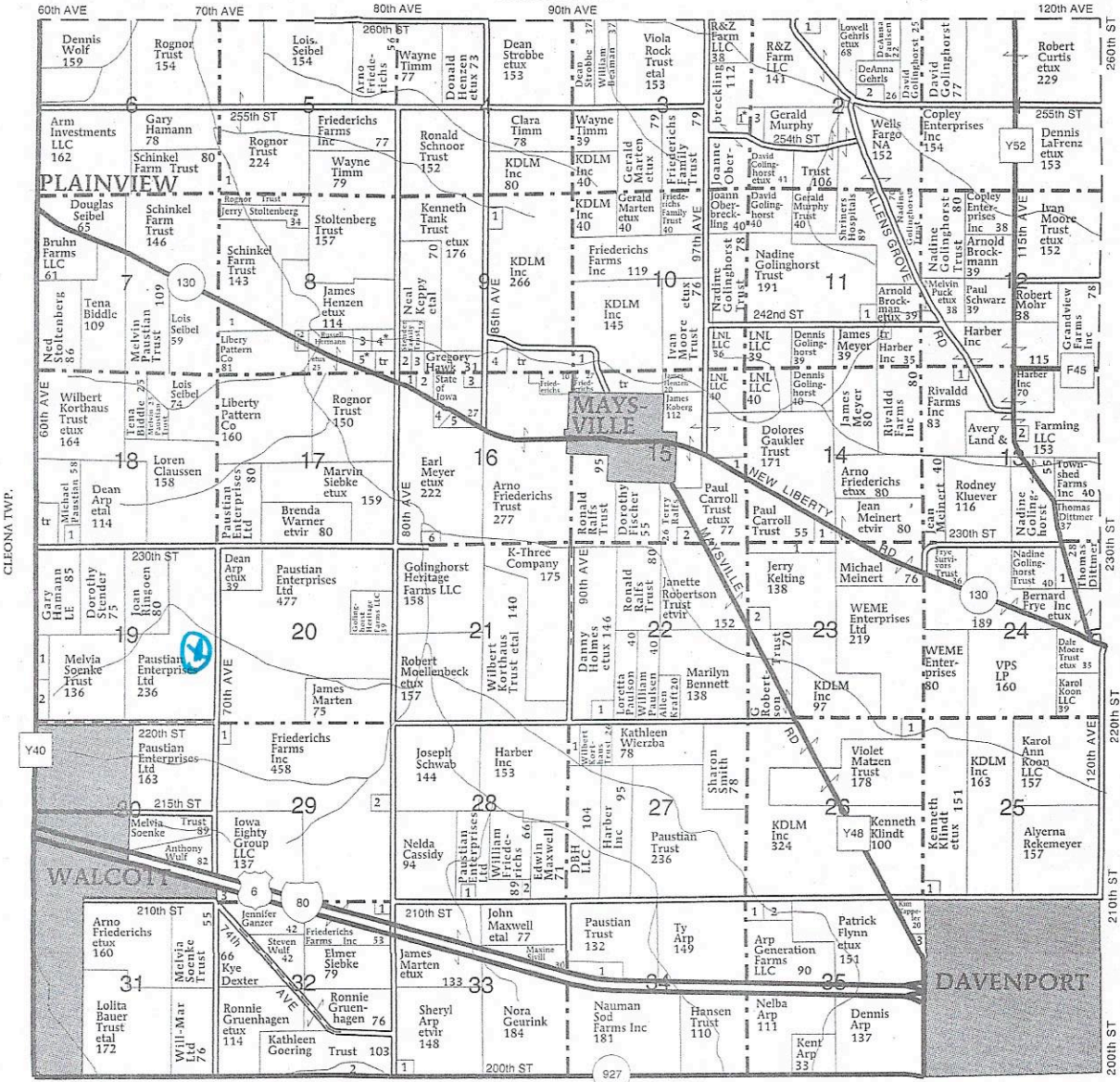
T-79-N

HICKORY GROVE PLAT

R-2-E



ALLENS GROVE TWP.



BLUE GRASS TWP.

**HICKORY GROVE TOWNSHIP**

- SECTION 2**
- 1. Watts, Jill 12
- 2. Decap, Michael 13
- 3. Schoenthaler, Jeremy 10
- SECTION 3**
- 1. Gevers, Andrew 6
- SECTION 5**
- 1. Schinkel Farm Trust 16
- SECTION 8**
- 1. Seibel, Lois 13
- 2. Schneider, Anthony 6

- 3. Williams, Joseph 7
- 4. Petersen, Robert 7
- 5. Negus, Julius 5
- SECTION 9**
- 1. Newmarch Trust, Paul 5
- 2. Kieffert, Sharon 5
- 3. Wulf, Robert 6
- 4. Friederichs, Arno 15
- SECTION 10**
- 1. Jewell, Kari 15
- SECTION 11**
- 1. Holtz, Donald 6
- SECTION 13**
- 1. Grandview Farms Inc 10

- 2. Adrian, Gary 6
- SECTION 14**
- 1. Jewell, Kari 10
- SECTION 15**
- 1. Sapp, Wayne 11
- 2. Friederichs, Loran 14
- SECTION 16**
- 1. Ehrecke, Kenneth 6
- 2. Schneckloth, Jeffrey 9
- 3. Robinson, Thomas 6
- 4. R&D Lossi Trust 6
- 5. Meyer, Paul 7
- 6. Golinghorst, Robert 5

- SECTION 18**
- 1. Miller, John 9
- SECTION 19**
- 1. Duncan, Arthur 11
- 2. August, Gary 9
- SECTION 22**
- 1. Paulsen, William 9
- SECTION 23**
- 1. Carroll Trust, Paul 15
- 2. Robertson Trust, Janette 7
- SECTION 24**
- 1. Kundel, Dorothy 9
- SECTION 25**
- 1. Congdon, Dennis 11

- SECTION 26**
- 1. WEME Enterprises Ltd 12
- SECTION 27**
- 1. Duffey Inc 13
- SECTION 28**
- 1. Duffey Trust, Mack 9
- 2. Keppy, Carl 5
- SECTION 29**
- 1. Friederichs, Earl 7
- 2. Friederichs, Earl 7
- 3. Iowa Eighty Group LLC 6
- SECTION 32**
- 1. Kraft, Scott 5

- 2. Allison, Grant 10
- SECTION 33**
- 1. Knickrehm, Dorothy 7
- SECTION 34**
- 1. Sivill, Maxine 12
- SECTION 35**
- 1. Roseman, Lysle 8
- 2. DeVault, Roy 10
- 3. Harris, Allen 9



2016  
info

Historical Corn Yields - last 5 years

Field	2011	2012	2013	2014	2015
Home	181	187	192	196	224
Goering	181	186	200	193	252
I-80	181	187	192	196	235
Puck/Shrine W	181	185	180	200	215
Mike	181	186	171	211	Beans
Ralfs	200	178	150	184	220
Shrine E	181	186	171	211	229

5500 acres  
other  
100 acres  
up

Manure test results - last 5 tests

Source						AVG
Mike N finisher	N	56	59	52	53	53
	P	33	33	36	45	29
	K	34	34	30	38	36
Mike S finisher	N	53	49	59	59	55
	P	46	41	23	28	24
	K	35	36	39	43	36
Sow gestation	N	22	17	16	19	29
	P	19	13	3	26	12
	K	11	11	10	11	21
Sow GDU	N				21	34
	P				6	9
	K				13	23
Home nursery	N	19	22	21	25	31
	P	8	10	7	4	14
	K	13	15	14	17	24

TKN P<sub>2</sub>O<sub>5</sub>  
54-34 average  
#/1000gal

TKN P<sub>2</sub>O<sub>5</sub>  
25-12 average  
#/1000gal

NOTE: Beginning last year, there are no longer any finishing hogs at the hom  
there will be from nursery pigs

Home finisher	N	46	59	54	46	57	52
	P	39	41	24	20	24	30
	K	28	34	29	25	27	29

Paustian Enterprises

	acres	YIELDS		total bu	
		CORN	SOYBEANS	C	S
Home & I80	206.1	213	62	43899	12778
Goering	132.8	206	60	27357	7968
Duffy	86	221	64	19006	5504
Puck/Shrine	213.3	220	64	46926	13651
Mike's Etc.	459.7	219	63	100674	28961
Reese	76.1	219	64	16666	4870
	1174	259.6	75.4	254528	73733
		Overall average		217	63

Home & I80	soil type yields		Total bu	
	corn	soybeans	corn	soybean
11b	10.5	221	2320.5	672
83d2	2.3	199	457.7	133.4
118	6.2	233	1444.6	421.6
119	5	240	1200	350
120b	48.6	235	11421	3304.8
120c2	35.6	221	7867.6	2278.4
160	3.2	180	576	166.4
442d2	4.9	177	867.3	249.9
920b	45.1	205	9245.5	2660.9
920c2	20	193	3860	1120
920d2	24.7	184	4544.8	1333.8
	206.1		43805	12691.2
		<b>Avg Yield</b>	<b>213</b>	<b>62</b>

Goering	soil type yields		Total bu	
	corn	soybeans	corn	soybean
11b	8.8	221	1944.8	563.2
20c2	6.3	215	1354.5	390.6
119	4.8	240	1152	336
120b	14.1	235	3313.5	958.8
442d2	5	177	885	255
450c2	6.6	196	1293.6	376.2
920b	51.1	205	10475.5	3014.9
920c2	36.1	193	6967.3	2021.6
	132.8		27386.2	7916.3
		<b>Avg Yield</b>	<b>206</b>	<b>60</b>

**Duffy**

	soil type yields		Total bu	
	corn	soybeans	corn	soybean
11b	16.1	221	64	3558.1
118	4	233	68	932
119	2.9	240	70	696
120b	39.8	235	68	9353
920b	1.7	205	59	348.5
920c2	21.5	193	56	4149.5
	86			19037.1
			<b>Avg Yield</b>	<b>221</b>
				<b>64</b>

**Puck/Shrine**

	soil type yields		Total bu	
	corn	soybeans	corn	soybean
20c2	16	215	62	3440
20c3	5.6	206	60	1153.6
20d3	4.3	197	57	847.1
83d2	6.1	199	58	1213.9
83d3	12.2	187	54	2281.4
119	4.2	240	70	1008
120b	68.3	235	68	16050.5
120c	36.8	228	66	8390.4
120c2	8.8	221	64	1944.8
120d2	0.1	212	61	21.2
377c2	31.4	217	63	6813.8
426d2	3.2	197	57	630.4
430b	16.3	194	56	3162.2
	213.3			46957.3
			<b>Avg Yield</b>	<b>220</b>
				<b>64</b>

	soil type yields		Total bu	
	corn	soybeans	corn	soybean
20c3	12.4	206	2554.4	744
20d3	21.8	197	4294.6	1242.6
83c2	4.3	208	894.4	258
83d2	13.8	199	2746.2	800.4
83d3	29.3	187	5479.1	1582.2
119	3.1	240	744	217
120b	73.9	235	17366.5	5025.2
120c	126.2	228	28773.6	8329.2
120c2	74.1	221	16376.1	4742.4
120d2	8.9	212	1886.8	542.9
133	2.6	210	546	158.6
420b	23.9	235	5616.5	1625.2
430b	26	194	5044	1456
442d2	19.8	177	3504.6	1009.8
1119	19.6	240	4704	1372
	459.7		100530.8	29105.5
		<b>Avg Yield</b>	<b>219</b>	<b>63</b>

	soil type yields		Total bu	
	corn	soybeans	corn	soybean
120b	13.4	235	3149	911.2
120c	1.6	228	364.8	105.6
120c2	43.1	221	9525.1	2758.4
120d2	0.2	212	42.4	12.2
133	9.7	210	2037	591.7
430b	8.1	194	1571.4	453.6
	76.1		16689.7	4832.7
		<b>Avg Yield</b>	<b>219</b>	<b>64</b>

Ralfs	soil type yields	Total bu
-------	------------------	----------

	corn	soybeans	corn	soybean
11b	12.5	221	64	2762.5
20c2	12	215	62	2580
119	4.5	240	70	1080
119b	2.9	235	68	681.5
120b	109.4	235	68	25709
120c	13.9	228	66	3169.2
120c2	82.4	221	64	18210.4
120d2	1.6	212	61	339.2
428b	4.6	235	68	1081
	243.8			55612.8
			<b>Avg Yield</b>	<b>228</b>
				<b>66</b>



## RUSLE2 Profile Erosion Calculation Record

PUCK - PAUSTIAN

**Inputs:**

Location: USA\Iowa\Scott County  
 Soil: Scott County, Iowa\377C2 Dinsdale silty clay loam, 5 to 9 percent slopes, moderately eroded\Dinsdale Silty clay loam moderately eroded 100%  
 Slope length (horiz): 200 ft  
 Avg. slope steepness: 7.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i># yield units, #/ac</i>
managements\CMZ 04\c.Other Local Mgt Records\PAUSTIANcorn grain;FC, st pt, disk, fcult, z4	vegetations\Corn, grain	bushels	217.00

Contouring: a. rows up-and-down hill  
 Strips/barriers: (none)  
 Diversion/terrace, sediment basin: (none)  
 Subsurface drainage: (none)  
 Adjust res. burial level: Normal res. burial

**Outputs:**

T value: 5.0 t/ac/yr  
 Soil loss erod. portion: 2.9 t/ac/yr  
 Detachment on slope: 2.9 t/ac/yr  
 Soil loss for cons. plan: 2.9 t/ac/yr  
 Sediment delivery: 2.9 t/ac/yr

Crit. slope length: 200 ft  
 Surf. cover after planting: 66 %  
 Avg. ann. forage harvest: 0 lb/ac

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert applic. surface broadcast		96
11/1/0	Manure injector, liquid low disturb.30 inch		96
11/7/0	Chisel, st. pt.		77
4/28/1	Cultivator, field 6-12 in sweeps		65
5/1/1	planter, double disk opnr	Corn, grain	66
5/3/1	Sprayer, pre-emergence		66
6/7/1	Sprayer, post emergence and fert. tank mix		57
10/20/1	Harvest, killing crop 50pct standing stubble		91



## RUSLE2 Profile Erosion Calculation Record

MIKE (ROSS) - PAUSTIAN

**Inputs:**

Location: USA\Iowa\Scott County  
 Soil: Scott County, Iowa\83D3 Kenyon loam, 9 to 14 percent slopes, severely eroded\Kenyon Loam severely eroded 100%  
 Slope length (horiz): 150 ft  
 Avg. slope steepness: 12 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i># yield units, #/ac</i>
managements\CMZ 04\c.Other Local Mgt Records\PAUSTIANcorn grain;FC, st pt, disk, fcult, z4	vegetations\Corn, grain	bushels	187.00

Contouring: b. absolute row grade 3 percent  
 Strips/barriers: (none)  
 Diversion/terrace, sediment basin: (none)  
 Subsurface drainage: (none)  
 Adjust res. burial level: Normal res. burial

**Outputs:**

T value: 4.0 t/ac/yr  
 Soil loss erod. portion: 4.0 t/ac/yr  
 Detachment on slope: 4.0 t/ac/yr  
 Soil loss for cons. plan: 4.0 t/ac/yr  
 Sediment delivery: 4.0 t/ac/yr

Crit. slope length: 150 ft  
 Surf. cover after planting: 61 %  
 Avg. ann. forage harvest: 0 lb/ac

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert applic. surface broadcast		94
11/1/0	Manure injector, liquid low disturb.30 inch		94
11/7/0	Chisel, st. pt.		72
4/28/1	Cultivator, field 6-12 in sweeps		60
5/1/1	planter, double disk opnr	Corn, grain	61
5/3/1	Sprayer, pre-emergence		60
6/7/1	Sprayer, post emergence and fert. tank mix		52
10/20/1	Harvest, killing crop 50pct standing stubble		88



## RUSLE2 Profile Erosion Calculation Record

I-80 - PAUSTIAN

**Inputs:**

Location: USA\Iowa\Scott County  
 Soil: Scott County, Iowa\120C2 Tama silty clay loam, 5 to 9 percent slopes, eroded\Tama Silty clay loam eroded 90%  
 Slope length (horiz): 200 ft  
 Avg. slope steepness: 7.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i># yield units, #/ac</i>
managements\CMZ 04\c.Other Local Mgt Records\PAUSTIAN\corn grain;FC, st pt, disk, fcult, z4	vegetations\Corn, grain	bushels	221.00

Contouring: a. rows up-and-down hill  
 Strips/barriers: (none)  
 Diversion/terrace, sediment basin: (none)  
 Subsurface drainage: (none)  
 Adjust res. burial level: Normal res. burial

**Outputs:**

T value: 5.0 t/ac/yr  
 Soil loss erod. portion: 2.8 t/ac/yr  
 Detachment on slope: 2.8 t/ac/yr  
 Soil loss for cons. plan: 2.8 t/ac/yr  
 Sediment delivery: 2.8 t/ac/yr

Crit. slope length: 200 ft  
 Surf. cover after planting: 67 %  
 Avg. ann. forage harvest: 0 lb/ac

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert applic. surface broadcast		96
11/1/0	Manure injector, liquid low disturb.30 inch		96
11/7/0	Chisel, st. pt.		77
4/28/1	Cultivator, field 6-12 in sweeps		66
5/1/1	planter, double disk opnr	Corn, grain	67
5/3/1	Sprayer, pre-emergence		66
6/7/1	Sprayer, post emergence and fert. tank mix		58
10/20/1	Harvest, killing crop 50pct standing stubble		91



## RUSLE2 Profile Erosion Calculation Record

GOERING - PAUSTIAN

**Inputs:**

Location: USA\Iowa\Scott County  
 Soil: Scott County, Iowa\920C2 Tama silty clay loam, sandy substratum, 5 to 9 percent slopes, eroded\Tama Silty clay loam sandy substratum, eroded 85%  
 Slope length (horiz): 200 ft  
 Avg. slope steepness: 7.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i># yield units, #/ac</i>
managements\CMZ 04\c.Other Local Mgt Records\PAUSTIAN\corn grain;FC, st pt, disk, fcult, z4	vegetations\Corn, grain	bushels	193.00

Contouring: a. rows up-and-down hill  
 Strips/barriers: (none)  
 Diversion/terrace, sediment basin: (none)  
 Subsurface drainage: (none)  
 Adjust res. burial level: Normal res. burial

**Outputs:**

T value: 5.0 t/ac/yr  
 Soil loss erod. portion: 3.4 t/ac/yr  
 Detachment on slope: 3.4 t/ac/yr  
 Soil loss for cons. plan: 3.4 t/ac/yr  
 Sediment delivery: 3.4 t/ac/yr

Crit. slope length: 200 ft  
 Surf. cover after planting: 62 %  
 Avg. ann. forage harvest: 0 lb/ac

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert applic. surface broadcast		94
11/1/0	Manure injector, liquid low disturb.30 inch		94
11/7/0	Chisel, st. pt.		73
4/28/1	Cultivator, field 6-12 in sweeps		61
5/1/1	planter, double disk opnr	Corn, grain	62
5/3/1	Sprayer, pre-emergence		61
6/7/1	Sprayer, post emergence and fert. tank mix		53
10/20/1	Harvest, killing crop 50pct standing stubble		88

## RUSLE2 Profile Erosion Calculation Record

HOME - PAUSTIAN

**Inputs:**

Location: USA\Iowa\Scott County  
 Soil: Scott County, Iowa\920D2 Tama silty clay loam, sandy substratum, 9 to 14 percent slopes, eroded\Tama Silty clay loam sandy substratum, eroded 85%  
 Slope length (horiz): 150 ft  
 Avg. slope steepness: 12 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i># yield units, #/ac</i>
managements\CMZ 04c.Other Local Mgt Records\PAUSTIANcorn grain;FC, st pt, disk, fcult, z4	vegetations\Corn, grain	bushels	184.00

Contouring: b. absolute row grade 3 percent  
 Strips/barriers: (none)  
 Diversion/terrace, sediment basin: (none)  
 Subsurface drainage: (none)  
 Adjust res. burial level: Normal res. burial

**Outputs:**

T value: 5.0 t/ac/yr  
 Soil loss erod. portion: 4.7 t/ac/yr  
 Detachment on slope: 4.7 t/ac/yr  
 Soil loss for cons. plan: 4.7 t/ac/yr  
 Sediment delivery: 4.7 t/ac/yr

Crit. slope length: 150 ft  
 Surf. cover after planting: 60 %  
 Avg. ann. forage harvest: 0 lb/ac

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert applic. surface broadcast		94
11/1/0	Manure injector, liquid low disturb.30 inch		94
11/7/0	Chisel, st. pt.		71
4/28/1	Cultivator, field 6-12 in sweeps		59
5/1/1	planter, double disk opnr	Corn, grain	60
5/3/1	Sprayer, pre-emergence		60
6/7/1	Sprayer, post emergence and fert. tank mix		51
10/20/1	Harvest, killing crop 50pct standing stubble		87

## RUSLE2 Profile Erosion Calculation Record

Duffy N & S - Paustian

**Inputs:**

Location	Soil	Slope length (horiz)	Avg. slope steepness, %
USA\Iowa\Scott County	Scott County, Iowa 920C2 Tama silty clay loam, sandy substratum, 5 to 9 percent slopes, moderately eroded Tama Silty clay loam sandy substratum, moderately eroded 100%	200	7.0

Management	Vegetation	Yield units	# yield units, #/ac
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	168.00
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	168.00

Contouring	Strips/barriers	Diversion/terrace, sediment basin	Subsurface drainage	Adjust res. burial level	General yield level	Rock cover, %
b. absolute row grade 3 percent	(none)	(none)	(none)	Normal res. burial	Set by user	0

**Outputs:**

T value	Soil loss erod. portion	Detachment on slope	Soil loss for cons. plan	Sediment delivery	Net C factor	Net K factor	Crit. slope length	Surf. cover after planting, %
4.0	4.0	4.0	4.0	4.0	0.075	0.37	200	

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid low disturb.30 inch		91
11/8/0	Chisel, st. pt.		66
4/9/1	Disk, single gang		48
4/9/1	Cultivator, field 6-12 in sweeps, coil tine har		48
4/9/1	Sprayer, pre-emergence		48
4/10/1	planter, double disk opnr	Corn, grain	48
5/29/1	Sprayer, post emergence and fert. tank mix		46
10/20/1	Harvest, killing crop 50pct standing stubble		84
10/22/1	Manure injector, liquid low disturb.30 inch		91
10/31/1	Chisel, st. pt.		67
3/30/2	Disk, single gang		49
3/30/2	Cultivator, field 6-12 in sweeps, coil tine har		49
4/15/2	Sprayer, pre-emergence		46
4/23/2	Planter, double disk opnr	Corn, grain	46
5/28/2	Sprayer, post emergence and fert. tank mix		46
10/20/2	Harvest, killing crop 50pct standing stubble		84

**FUEL USE EVALUATION:**

Fuel type for entire run	Equiv. diesel use for entire simulation	Energy use for entire simulation	Fuel cost for entire simulation, US\$/ac
(none)	13	1800000	0

**SCI and STIR Output**

Soil conditioning index (SCI)	SCI OM subfactor	SCI FO subfactor	SCI ER subfactor	Avg. annual slope STIR	Wind & irrigation-induced erosion for SCI, t/ac/yr
0.377	1.2	0.023	-0.57	98.7	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

## RUSLE2 Profile Erosion Calculation Record

Shrine E - Paustian

**Inputs:**

Location	Soil	Slope length (horiz)	Avg. slope steepness, %
USA\Iowa\Scott County	Scott County, Iowa\442D2 Tama, sandy substratum-Dickinson complex, 9 to 14 percent slopes, moderately eroded\Tama Silty clay loam moderately eroded 50%	150	12

Management	Vegetation	Yield units	# yield units, #/ac
managements\CMZ 04\c.Other Local Mgt Records\cc paustian 2015mt	vegetations\Corn, grain	bushels	107.00
managements\CMZ 04\c.Other Local Mgt Records\cc paustian 2015mt	vegetations\Corn, grain	bushels	107.00

Contouring	Strips/barriers	Diversion/terrace, sediment basin	Subsurface drainage	Adjust res. burial level	General yield level	Rock cover, %
b. absolute row grade 3 percent	(none)	(none)	(none)	Normal res. burial	Base yield	0

**Outputs:**

T value	Soil loss erod. portion	Detachment on slope	Soil loss for cons. plan	Sediment delivery	Net C factor	Net K factor	Crit. slope length	Surf. cover after planting, %
4.0	9.2	9.2	9.2	9.2	0.094	0.37	150	

Date	Operation	Vegetation	Surf. res. cov. after op, %
10/22/0	Manure injector, liquid low disturb.30 inch		82
4/8/1	Cultivator, field 6-12 in sweeps, coil tine har		62
4/15/1	Sprayer, pre-emergence		62
4/15/1	Planter, double disk opnr	Corn, grain	62
5/28/1	Sprayer, post emergence and fert. tank mix		59
10/20/1	Harvest, killing crop 50pct standing stubble		73
10/22/1	Manure injector, low disturb.30 inch		82
4/15/2	Cultivator, field 6-12 in sweeps, coil tine har		62
4/15/2	Sprayer, pre-emergence		62
4/15/2	Planter, double disk opnr	Corn, grain	62
5/28/2	Sprayer, post emergence and fert. tank mix		59
10/20/2	Harvest, killing crop 50pct standing stubble		73

**FUEL USE EVALUATION:**

Fuel type for entire run	Equiv. diesel use for entire simulation	Energy use for entire simulation	Fuel cost for entire simulation, US\$/ac
(none)	10	1400000	0

**SCI and STIR Output**

Soil conditioning index (SCI)	SCI OM subfactor	SCI FO subfactor	SCI ER subfactor	Avg. annual slope STIR	Wind & irrigation-induced erosion for SCI, t/ac/yr
-0.0415	0.55	0.67	-2.6	33.7	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

## RUSLE2 Profile Erosion Calculation Record

Reece N & S, Stender, I-80, Ralfs E & W - Paustian

**Inputs:**

Location	Soil	Slope length (horiz)	Avg. slope steepness, %
USA\Iowa\Scott County	Scott County, Iowa\120C2 Tama silty clay loam, 5 to 9 percent slopes, moderately eroded\Tama Silty clay loam moderately eroded 100%	200	7.0

Management	Vegetation	Yield units	# yield units, #/ac
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	195.00
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	195.00

Contouring	Strips/barriers	Diversion/terrace, sediment basin	Subsurface drainage	Adjust res. burial level	General yield level	Rock cover, %
b. absolute row grade 3 percent	(none)	(none)	(none)	Normal res. burial	Set by user	0

**Outputs:**

T value	Soil loss erod. portion	Detachment on slope	Soil loss for cons. plan	Sediment delivery	Net C factor	Net K factor	Crit. slope length	Surf. cover after planting, %
5.0	3.2	3.2	3.2	3.2	0.063	0.37	200	

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid low disturb.30 inch		93
11/8/0	Chisel, st. pt.		72
4/9/1	Disk, single gang		52
4/9/1	Cultivator, field 6-12 in sweeps, coil tine har		52
4/9/1	Sprayer, pre-emergence		52
4/10/1	planter, double disk opnr	Corn, grain	53
5/29/1	Sprayer, post emergence and fert. tank mix		50
10/20/1	Harvest, killing crop 50pct standing stubble		88
10/22/1	Manure injector, liquid low disturb.30 inch		94
10/31/1	Chisel, st. pt.		72
3/30/2	Disk, single gang		53
3/30/2	Cultivator, field 6-12 in sweeps, coil tine har		53
4/15/2	Sprayer, pre-emergence		51
4/23/2	Planter, double disk opnr	Corn, grain	51
5/28/2	Sprayer, post emergence and fert. tank mix		50
10/20/2	Harvest, killing crop 50pct standing stubble		88

**FUEL USE EVALUATION:**

Fuel type for entire run	Equiv. diesel use for entire simulation	Energy use for entire simulation	Fuel cost for entire simulation, US\$/ac
(none)	13	1800000	0

**SCI and STIR Output**

Soil conditioning index (SCI)	SCI OM subfactor	SCI FO subfactor	SCI ER subfactor	Avg. annual slope STIR	Wind & irrigation-induced erosion for SCI, t/ac/yr
0.558	1.5	0.023	-0.26	98.7	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

## RUSLE2 Profile Erosion Calculation Record

### Shrine W - Paustian

**Inputs:**

Location	Soil	Slope length (horiz)	Avg. slope steepness, %
USA\Iowa\Scott County	Scott County, Iowa\120C Tama silty clay loam, 5 to 9 percent slopes\Tama Silty clay loam 95%	200	7.0

Management	Vegetation	Yield units	# yield units, #/ac
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	200.00
managements\CMZ 04\c.Other Local Mgt Records\cc paustianb 2015	vegetations\Corn, grain	bushels	200.00

Contouring	Strips/barriers	Diversion/terrace, sediment basin	Subsurface drainage	Adjust res. burial level	General yield level	Rock cover, %
b. absolute row grade 3 percent	(none)	(none)	(none)	Normal res. burial	Set by user	0

**Outputs:**

T value	Soil loss erod. portion	Detachment on slope	Soil loss for cons. plan	Sediment delivery	Net C factor	Net K factor	Crit. slope length	Surf. cover after planting, %
5.0	2.7	2.7	2.7	2.7	0.060	0.32	200	

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid low disturb.30 inch		94
11/8/0	Chisel, st. pt.		72
4/9/1	Disk, single gang		53
4/9/1	Cultivator, field 6-12 in sweeps, coil tine har		53
4/9/1	Sprayer, pre-emergence		53
4/10/1	planter, double disk opnr	Corn, grain	54
5/29/1	Sprayer, post emergence and fert. tank mix		51
10/20/1	Harvest, killing crop 50pct standing stubble		89
10/22/1	Manure injector, liquid low disturb.30 inch		94
10/31/1	Chisel, st. pt.		73
3/30/2	Disk, single gang		54
3/30/2	Cultivator, field 6-12 in sweeps, coil tine har		54
4/15/2	Sprayer, pre-emergence		52
4/23/2	Planter, double disk opnr	Corn, grain	52
5/28/2	Sprayer, post emergence and fert. tank mix		51
10/20/2	Harvest, killing crop 50pct standing stubble		89

**FUEL USE EVALUATION:**

Fuel type for entire run	Equiv. diesel use for entire simulation	Energy use for entire simulation	Fuel cost for entire simulation, US\$/ac
(none)	13	1800000	0

**SCI and STIR Output**

Soil conditioning index (SCI)	SCI OM subfactor	SCI FO subfactor	SCI ER subfactor	Avg. annual slope STIR	Wind & irrigation-induced erosion for SCI, t/ac/yr
0.622	1.6	0.023	-0.052	98.7	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

N



230TH ST 230TH ST

60TH AVE

230TH ST

60TH AVE

70TH AVE

Paustian Enterprises Ltd.

Y40  
Y40

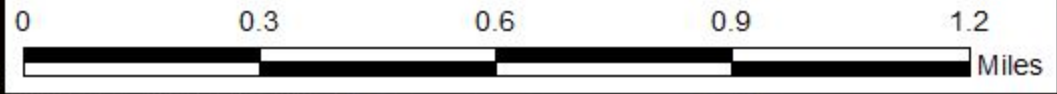
220TH ST

220TH ST

N PLAINVIEW RD

80TH AVE

215TH ST





Paustian Enterprises Ltd.

Maysville

Davenport

Walcott





# DETAILS OF SCORING THE MASTER MATRIX

ENVIRONMENTAL SERVICES DIVISION | [WWW.IOWADNR.GOV](http://WWW.IOWADNR.GOV)



*The DNR field office does a site inspection prior to approving or denying a construction permit application. Counties with a master matrix can accompany DNR staff on the inspection. Find more about construction permits and the master matrix on the DNR website: [www.iowadnr.gov/afol](http://www.iowadnr.gov/afol).*

## CONSTRUCTION PERMITS

### THE MASTER MATRIX

The master matrix is a process that the county can choose to participate in, which should result in a proposed confinement feeding operation adhering to higher standards than required by law. A confinement feeding operation required to use the master matrix will likely have increased separation distances to objects and a more conservative manure management plan (MMP). The master matrix is a tool for the county Board of Supervisors to provide input into a proposed confinement feeding operation.

Every year all counties in Iowa have the opportunity to enroll in the master matrix by adopting a Construction Evaluation Resolution. All counties are notified in December to enroll for the following calendar year. Counties that enroll have the responsibility to evaluate the completed master matrix by each construction permit applicant during that year.

Not all permit applications require a master matrix:

- If the county did not enroll for that year, then no master matrix is required.
- If an existing confinement facility is expanding, and the original construction on the site was before April 1, 2002, and the proposed total animal unit capacity after expansion is 1,667 AU or less, then no master matrix is required.

The master matrix consists of 44 criteria which further describe the potential site for the proposed confinement facility. The applicant may qualify for any or all criteria

and be awarded points for each criterion. An applicant chooses which criteria they would like to claim points on. An applicant must score an overall minimum point total of 440 points as well as one-fourth of the available point total in three subcategories (Air, Water and Community).

If a construction permit application containing a master matrix is received by the county and the instruction notice is received from the DNR, then the county is required to review and score the master matrix items where points were claimed by the applicant. Some of the criteria require documentation or proof that points can be claimed by the applicant. It is the duty of the county to examine the documentation while scoring the master matrix. The county Board of Supervisors may select a representative of the county (zoning official, sanitarian, county engineer or supervisor, etc.) to review and score the master matrix. The county may elect to review and score the master matrix as a group. Scoring the master matrix will require time and effort.

The county may elect to review the master matrix using the documentation (e.g. maps) submitted by the applicant or the county may choose to use computer mapping programs to verify distances claimed by the applicant or measure and confirm any distances at the site survey. The local DNR field office will notify the county representative prior to conducting the site survey. This usually occurs within 30 days of the DNR receiving the application. During the site visit, DNR staff will verify the separation distances required by state law for all construction permit applications.

The county designee may accompany the local DNR field office during the site survey to verify additional matrix separation distances claimed by the applicant.

It is the county's obligation to verify the additional distances claimed by applicant in the matrix and verify objects such as a business or residence. Some master matrix items may require the county to search websites for information while other items may simply require the county to review documentation provided by the applicant and either agree or disagree on the content.

It is the county's obligation to score the matrix in a professional manner. The scoring must be objective. Evaluate and score all matrix items where the applicant claimed points. Award appropriate points for each matrix item where the applicant claimed points. Conversely, deny or reduce points only when you have a reason, e.g., distance error, lack of sufficient documentation such as a design, operation and maintenance plan. The county should not award or deny points arbitrarily. The county cannot award points for items the applicant did not score.

Find a blank copy of the master matrix on the DNR website at [www.iowadnr.gov/Environment/LandStewardship/AnimalFeedingOperations/Confinements/ConstructionRequirements/Permitted/MasterMatrix.aspx](http://www.iowadnr.gov/Environment/LandStewardship/AnimalFeedingOperations/Confinements/ConstructionRequirements/Permitted/MasterMatrix.aspx)

Counties may print this copy, fill out the county's scores, submit it to the DNR. The county should also submit its recommendation, proof of publication and any documentation on specific master matrix items that are denied or challenged.

### COUNTY APPROVAL

If the county agrees with the master matrix scoring as submitted by the applicant or scores the matrix with a passing score, the county must still submit to the DNR a



recommendation to approve or disapprove the construction permit application.

The DNR shall preliminarily approve the construction permit application provided the application and siting of the building(s) comply with the requirements of Chapter 567 IAC 65 and Iowa Code Chapter 455B. If the construction application does not meet the requirements of Chapter 567 IAC 65 and Iowa Code Chapter 455B, regardless of the outcome of the master matrix, the DNR shall preliminarily disapprove the permit application.

### FAILING SCORE ON MATRIX

If the county's scoring results in a failing score of the master matrix then the county must still submit

to the DNR a recommendation to approve or disapprove the construction permit application.

The DNR shall preliminarily disapprove the application if the construction application does not meet the requirements of state law (Chapter 567 Iowa Administrative Code 65 and Iowa Code Chapter 455B, regardless of the county's scoring of the master matrix. If the application meets the requirements of state law, the DNR will conduct an independent evaluation of the master matrix points claimed by the applicant. If the DNR's evaluation shows an acceptable score, the DNR shall preliminarily approve the application. If the DNR's evaluation indicated the score is unacceptable, the DNR shall preliminarily disapprove the application.

### APPEALS

Both the applicant and county may contest a preliminary decision to approve or disapprove the construction permit application by demanding a hearing with the state Environmental Protection Commission. The preliminary permit and preliminary denial letter will contain specific instructions for appeal.

### FINAL DECISION

A preliminary approval or disapproval becomes final after 14 days if no appeal is submitted.

IMPORTANT LINKS	IOWA DNR FIELD OFFICES
<p>DNR Animal Feeding Operations <a href="http://www.iowadnr.gov/afo/">www.iowadnr.gov/afo/</a></p> <p>Iowa State Association of Counties <a href="http://www.iowacounties.org/News/Topics%20of%20Interest/Matrix%20Information/NewMasterMatrix.htm">www.iowacounties.org/News/Topics%20of%20Interest/Matrix%20Information/NewMasterMatrix.htm</a></p> <p>Questions: Call Gene Tinker at 563-927-2640 or 515-210-1593, or email Kristi Harshbarger at <a href="mailto:kharshbarter@iowacounties.org">kharshbarter@iowacounties.org</a>.</p>	<p><b>Northeast</b>   Manchester   563-927-2640</p> <p><b>North central</b>   Mason City   641-424-4073</p> <p><b>Northwest</b>   Spencer   712-262-4177</p> <p><b>Southwest</b>   Atlantic   712-243-1934</p> <p><b>South central</b>   Des Moines   515-725-0268</p> <p><b>Southeast</b>   Washington   319-653-2135</p>

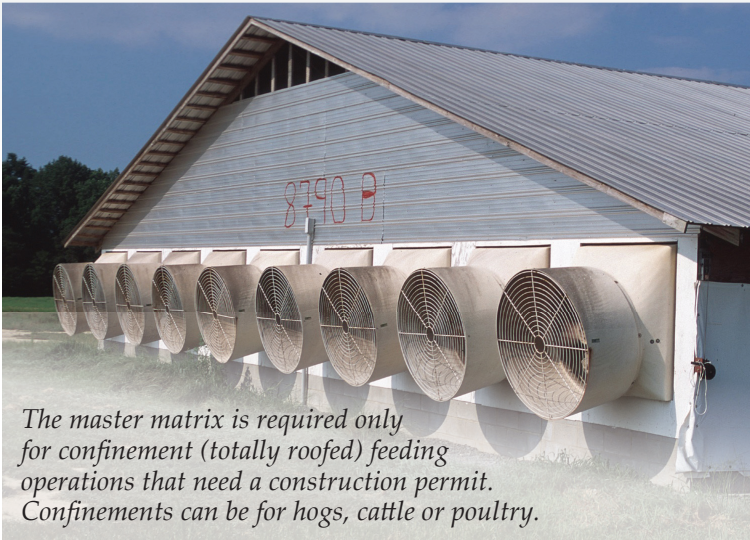


IOWA DEPARTMENT OF NATURAL RESOURCES

CAUTION: This document is only a summary of administrative rules contained in 567 IAC chapters 65; it is a guidance document and should not be used as replacement for the administrative rules. While every effort has been made to assure the accuracy of this information, the administrative rules will prevail in the event of a conflict between this document and the administrative rules.

# CONSTRUCTION PERMIT APPLICATIONS AND THE MASTER MATRIX

ENVIRONMENTAL SERVICES DIVISION | WWW.IOWADNR.GOV



*The master matrix is required only for confinement (totally roofed) feeding operations that need a construction permit. Confinements can be for hogs, cattle or poultry.*

## CONSTRUCTION PERMITS

### THE APPLICATION

This fact sheet is designed to assist county supervisors as they process construction permit applications for confinement feeding operations, especially those using the master matrix. The state of Iowa requires construction permits for confinement animal feeding operations of 1,000 animal units (AU) or more. As an example 1,000 AU is 2,500 head of finishing swine, 1,000 head of beef cattle or 100,000 broiler chickens. The construction permit applicant must deliver, either in person or by certified mail, a copy of the complete permit application to the county.

Counties are required by law to perform some actions regarding the proposed application. A complete permit application should include the construction permit application form, a construction design statement (CDS) or Professional Engineer (P.E.) certification form, a manure management plan (MMP) and master matrix, if applicable.

### COUNTY RESPONSIBILITIES

When the applicant delivers the application, the county needs to perform the following steps:

**1) DOCUMENT:** Review the application to be sure all the components of the application are included as checked off on the County Receipt form. Time and date stamp the application. Sign and date the County Verification of Receipt form. The applicant is responsible for sending this receipt along with their application to the Iowa Department of Natural Resources (DNR).

**2) PROVIDE PUBLIC NOTICE:** The DNR logs in the project after formally receiving the construction permit application and the completed County Verification of Receipt form. The DNR then sends a notice to the county by fax and email with instructions to the county. If the application is incomplete, the DNR will request additional material from the applicant.

If there are significant changes, the DNR will request a new county receipt. In this case, several weeks may pass before the DNR sends out the notice to the county. (See sample notice.)

All counties must publish a public notice in the paper, regardless if the master matrix was adopted or not. Publish the notice after the DNR sends an official instruction notice to the county. The DNR's notice will include a sample public notice and provide due dates for completing actions. The county will need to act quickly because public notice is required within 14 days of the county receiving the DNR's official instruction notice. The public notice must include all of the following:

- The name of the person applying to receive the construction permit.
- The name of the township where the confinement feeding operation structure is proposed.
- Each type of confinement feeding operation structure proposed.
- The animal unit capacity of the confinement feeding operation if the construction permit is approved.
- The time and place where the public may examine the application as provided in Iowa Code section 22.2 (the Public Records Law).
- Procedures for providing public comments to the board as provided by the board.

**3) SCORE THE MASTER MATRIX:** Each year every county has the opportunity to adopt a "construction evaluation resolution" allowing the county to actively participate in the construction permit application process. The resolution is commonly referred to as the master matrix. The

master matrix is a list of additional conditions that an applicant can choose from in order to receive points. The applicant must have 440 out of 880 available points, with one-fourth of the points in three categories in order to obtain a permit. The conditions are intended to lessen the potential impact of the confinement facility to the surrounding area.

The county is required to score the master matrix items claimed by the applicant to see if the claimed points appear acceptable. See the DNR fact sheet “Details of Scoring the Master Matrix “ for a more comprehensive master matrix discussion.

**4) VISIT THE SITE:** The local DNR field office will contact the county designee and invite them to the site survey at the proposed site. This usually occurs within 30 days of the DNR receiving the application. During the site visit, DNR staff will verify the required separation distances.

**5) KEEP A COPY FOR PUBLIC INSPECTION:** Keep a copy of the construction permit application on file for public inspection. The application includes the manure management plan and the master matrix.

**6) PROVIDE PROOF OF PUBLICATION:** If the proposed project does not require a master matrix, then only a proof of publication must be sent to the DNR.

Send a copy of the proof of publication to:

Paul Petitti  
Iowa DNR  
1900 N Grand Avenue  
Gateway N, Suite E17  
Spencer, IA 51301  
Phone: 712-262-4177  
Fax: 712-262-2901  
Paul.Petitti@dnr.iowa.gov

**7) PROVIDE A PUBLIC HEARING (OPTIONAL):** The county may hold a public hearing for any permit application (master matrix or non-master matrix project). The time and place should be on the public notice. The county may submit any comments from the public hearing to the DNR.

**8) MAKE A RECOMMENDATION:** On a master matrix project, the county must submit its recommendation to either approve or disapprove the permit application. This recommendation is independent of the county’s master matrix scoring. More information can be found in the DNR fact sheet “Details of Scoring the Master Matrix.”

**9) SUBMIT TO THE DNR:** The county must submit the following documents to the DNR’s Paul Petitti at the address listed above **within 30 days of the county receiving the DNR official instruction notice.** It must be received by the DNR (not just postmarked) within the 30-day time limit:

- a) The written county recommendation to approve or disapprove the permit application, regardless of the master matrix scoring.
- b) The board’s scoring of the matrix along with documentation and justification if points are denied. If the county agrees with the scoring submitted by the applicant, a sentence to that effect is acceptable and no matrix scoring needs to be submitted.
- c) The proof of publication.
- d) The county may also submit any other relevant documents, including those received by interested parties.

Once all materials are received, the DNR begins reviewing the construction permit application. Find more information on the DNR website.

IMPORTANT LINKS	IOWA DNR FIELD OFFICES
<p>DNR Animal Feeding Operations <a href="http://www.iowadnr.gov/afo/">www.iowadnr.gov/afo/</a></p> <p>Iowa State Association of Counties <a href="http://www.iowacounties.org/News/Topics%20of%20Interest/Matrix%20Information/NewMasterMatrix.htm">www.iowacounties.org/News/Topics%20of%20Interest/Matrix%20Information/NewMasterMatrix.htm</a></p> <p>Questions: Call Gene Tinker at 563-927-2640 or 515-210-1593, or email Kristi Harshbarger at <a href="mailto:kharshbarter@iowacounties.org">kharshbarter@iowacounties.org</a>.</p>	<p><b>Northeast</b>   Manchester   563-927-2640</p> <p><b>North central</b>   Mason City   641-424-4073</p> <p><b>Northwest</b>   Spencer   712-262-4177</p> <p><b>Southwest</b>   Atlantic   712-243-1934</p> <p><b>South central</b>   Des Moines   515-725-0268</p> <p><b>Southeast</b>   Washington   319-653-2135</p>



IOWA DEPARTMENT OF NATURAL RESOURCES

THE COUNTY AUDITOR'S SIGNATURE CERTIFIES THAT  
THIS RESOLUTION HAS BEEN FORMALLY APPROVED BY  
THE BOARD OF SUPERVISORS ON \_\_\_\_\_.  
DATE

\_\_\_\_\_  
SCOTT COUNTY AUDITOR

**RESOLUTION**  
**SCOTT COUNTY BOARD OF SUPERVISORS**  
**June 1, 2017**  
**ADOPTING A RECOMMENDATION TO THE IOWA DEPARTMENT OF NATURAL**  
**RESOURCES TO APPROVE THE CONSTRUCTION PERMIT APPLICATION OF**  
**PAUSTIAN ENTERPRISES LTD. FOR THE EXPANSION OF AN EXISTING CONFINED**  
**ANIMAL FEEDING OPERATION IN SECTION 19 OF HICKORY GROVE TOWNSHIP**

BE IT RESOLVED by the Scott County Board of Supervisors as follows:

- Section 1. Paustian Enterprises Ltd. in the NE ¼ SE ¼ of Section 19, T79N, R2E (Hickory Grove Township) has submitted an application to the Iowa Department of Natural Resources (IDNR) for a construction permit for the expansion of an existing confined animal feeding operation at 22444 70<sup>th</sup> Avenue in unincorporated Scott County.
- Section 2. The Scott County Health Department and the Scott County Planning and Development Department have reviewed the construction permit application and the manure management plan and determined that both appear to be in compliance with the requirements of the Master Matrix, Iowa Code Section 459 and Iowa DNR rules.
- Section 3. The Scott County Board of Supervisors has determined that there are not any additional objects or locations not included in the application that are within the required separation distances, the soils and hydrology of the site appear to be suitable for the proposed expansion, and the applicant has adequate land for the application of manure originating from this confinement feeding operation available.
- Section 4. The Scott County Board of Supervisors published public notice of the receipt of said application, accepted written and electronic comments on the application and held a public hearing on May 18, 2017 during its regularly scheduled meeting to receive public comments on the application.
- Section 5. The Scott County Board of Supervisors will submit to the Iowa DNR the written reports it received from the Scott County Planning and Development and Health Departments on which its determination is based, and the documentation of publication of the required public notices. The Board will also submit all the written or electronic comments from the general public it received on this application.
- Section 6. The Scott County Board of Supervisors would recommend that the construction permit application of Paustian Enterprises Ltd. be approved based on its compliance with the requirements of the Master Matrix, Iowa DNR rules and Iowa Code regulations for such applications.
- Section 7. This resolution shall take effect immediately.