

TO: Local Emergency Planning Committee:

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Method of Delivery and Tracking No.:

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State Emergency Response Commission:

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\_\_\_\_\_  
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Method of Delivery and Tracking No.:

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FROM:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RE: Continuous Release Report

Dear Sir or Madam:

This continuous release report is submitted pursuant to 40 CFR 355.32 and the final rule published on December 18, 2008, 73 Fed. Reg. 76948 (EPA Final Rule). This final rule exempted our facility from reporting hazardous substance releases under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), but did not provide such an exemption for reporting under the Emergency Planning and Community Right to Know Act of 1986 (EPCRA). The attached reporting information reflects our good faith estimate of ammonia emissions from our operations, in accordance with the EPA Final Rule.

Thank you,

*Signed:*

## Swine – Continuous Release Report Emergency Planning and Community Right-to-Know Act

Complete and sign this form.

Call the Local Emergency Planning Committee (LEPC) and State Emergency Response Commission (SERC).

Mail this one-page form to the LEPC and SERC (certified mail—return receipt or other verifiable means).

<b>TYPE OF REPORT:</b>		Initial written notification	Written notification of a change to initial notification
<b>SECTION 1. LOCATION</b>		<b>SECTION 2. INITIAL PHONE REPORTS</b>	
Operation name:		LEPC Location:	
Person in charge:		Person contacted:	
Physical address:		Date:	
Mailing address:		Signature:	
City:			
State:		SERC Location:	
Zip:		Person contacted:	
Office phone:		Date:	
Cell phone:		Signature:	
Latitude:			
Longitude:		Dun and Bradstreet Number, if available:	

SECTION 3. SOURCE AND RELEASE DESCRIPTION				
Description:	This location is a swine operation. This report is being submitted in response to a clarification of EPCRA provided by EPA in a final rule effective January 20, 2009. Ammonia and hydrogen sulfide emissions are naturally-occurring and are emitted from the cattle digestive process and decomposition of manure.			
Type of release:	Air		Health effects:	None
Time & duration:	Continuous, low level		Precautions:	None
Select one of the following estimated population densities within 1 mi. radius:				
	0-50 persons	101-500 persons	greater than 1,000 persons	
	51-100 persons	501-1,000 persons	Other:	
Give names of sensitive populations (if any) or ecosystems (if any) within 1 mi. radius:				
	Elementary school: _____		Hospital: _____	
	Retirement community: _____		Wetland: _____	
	Other: _____			
SECTION 4. SUBSTANCES CONTINUOUSLY RELEASED (ESTIMATES)				
	Chemical name	CASRN#	Lower Bound (pounds/day)	Upper Bound (pounds/day)
Substance No. 1:	Ammonia (NH <sub>3</sub> )*	7664-41-7		
*Good faith estimates of ammonia emission rates are provided based on available air quality research data. Research is on-going and these good faith estimates could be revised if better estimates become available.				

**SECTION 5. SIGNED STATEMENT**

The hazardous substance releases described above are continuous and stable in quantity and rate as determined by EPA in its final rule, 73 FR 76948 (Dec. 18, 2008). To the best of my knowledge, I certify that all information submitted in this report is a good faith estimate of air emissions based on currently available scientific information. I reserve the right to raise any objections to the application of these laws and regulations to the facility listed.

Name (printed):		Title:	
Signature:		Date:	

(KEEP THIS WORKSHEET FOR RECORDS!)

Ammonia Emissions Estimator

Rick Koelsch and Rick Stowell, University of Nebraska

Caution: This worksheet provides an approximation of ammonia emission based upon currently available information. There is likely to be significant variations with region of the country, climate, and management of the production or storage system. These values are also likely to change with additional research on ammonia emissions.

Farm Name: \_\_\_\_\_

Table with 2 columns: Animal species and production stage, Average capacity (number of animals)

Step 1: Estimate % ammonia loss from:

Animal housing: \_\_\_\_\_% (Table 1) Describe housing: \_\_\_\_\_
Manure storage: \_\_\_\_\_% (Table 2) Describe storage: \_\_\_\_\_

Step 2. Estimate % ammonia loss from the animal housing and storage system

Ammonia Loss (%) = Housing % Loss + [(100 - Housing % Loss) X Storage % Loss / 100]
Ammonia Loss (%) = \_\_\_\_\_ + [(100 - \_\_\_\_\_) X \_\_\_\_\_ / 100]
Ammonia Loss (%) = \_\_\_\_\_%

Step 3. Identify the animal species row in Table 3 (along left side) that is most relevant to this estimation, and the ammonia loss (%) column (across the top) that best matches the estimated ammonia loss from Step 2. Find where this row (appropriate species) and this column (appropriate ammonia loss) intersect and record this value:

Unit ammonia loss = \_\_\_\_\_ lbs / animal / day.

Step 4. Estimate daily herd/flock ammonia loss

Daily herd ammonia loss = Average capacity X Unit ammonia loss (Step 3)
Daily herd ammonia loss = \_\_\_\_\_ animals X \_\_\_\_\_ lbs / animal / day
Daily herd ammonia loss = \_\_\_\_\_ lbs ammonia per day

Step 5. Estimate annual herd/flock ammonia loss

Annual herd ammonia loss = Daily herd ammonia loss X Days per year facility is occupied
Annual herd ammonia loss = \_\_\_\_\_ lbs/day X \_\_\_\_\_ days/year
Annual herd ammonia loss = \_\_\_\_\_ lbs ammonia per year

Table 1. Typical ammonia losses from animal housing facilities expressed as a percentage of excreted manure nitrogen.

Table with 6 columns: Facility Description, Applicable Species, % Loss, Facility Description, Applicable Species, % Loss

1 If more than one species, production stage, housing system or manure handling system is present on a given site, perform Steps 1-5 for each species, stage and/or system and sum resulting emissions.

2 If an ammonia loss range is given, you may want to estimate loss for low and high values.

3 Most estimates are from USDA NRCS Agricultural Waste Management Field Handbook and LPES Lesson 21: Manure Storage Structures.

Table 2. Typical ammonia losses from manure storage as a percentage of nitrogen entering facility.<sup>2</sup>

Facility Description	% Loss	Facility Description	% Loss
Temporary stacked manure (no turning)	10-20	Pit below slatted floor (included in Table 1 values)	0
Composted manure (no carbon amendment)	30 to 40	Earthen storage pit (minimal treatment)	20 – 35
Composted manure (significant carbon amendment)	5 to 10	Formed manure storage (bottom loaded)	10
Bedded Pack Manure (included in Table 1 values)	0	Formed manure storage (top loaded)	30
Runoff holding pond (precipitation runoff only) <sup>3</sup>	2 - 3	Anaerobic Lagoon (significant treatment)*	65-75

\* Much of the lagoon loss can be due to denitrification (N<sub>2</sub> and N<sub>2</sub>O), so the ammonia loss may only be half of what is shown.

Table 3. Estimates of ammonia nitrogen losses. Excretion estimates based upon 2005 ASAE Standard (proposal) for typical animals.

Livestock and Poultry Species	Typical Nitrogen Excretion (lbs per animal per day)	Ammonia Loss (% of excreted nitrogen)								
		10%	20%	30%	40%	50%	60%	70%	80%	90%
--Estimated Ammonia Loss (lbs per animal per day)...converts N to NH <sub>3</sub> by multiplying by 1.21--										
Beef-Finishing Cattle	0.36	0.044	0.087	0.13	0.18	0.22	0.26	0.31	0.35	0.39
Beef – Cow (confinement)	0.42	0.051	0.10	0.15	0.20	0.26	0.31	0.367	0.41	0.46
Beef - Growing Calf (confinement)	0.29	0.035	0.070	0.11	0.14	0.18	0.21	0.25	0.28	0.32
Dairy – Lactating cow – 100 lbs milk/day	1.04	0.13	0.25	0.38	0.51	0.63	0.76	0.88	1.0	1.1
Dairy – Lactating cow – 88 lbs milk/day	0.99	0.12	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.1
Dairy – Lactating cow – 70 lbs milk/day	0.83	0.10	0.20	0.30	0.40	0.50	0.60	0.71	0.81	0.91
Dairy – Lactating cow – 50 lbs milk/day	0.66	0.080	0.16	0.24	0.32	0.40	0.48	0.56	0.64	0.72
Dairy – Dry cow	0.5	0.061	0.12	0.18	0.24	0.30	0.36	0.43	0.49	0.55
Dairy – Milk fed calves	0.017	0.0021	0.0041	0.0062	0.0083	0.010	0.012	0.014	0.017	0.019
Dairy - Calf	0.14	0.017	0.034	0.051	0.068	0.085	0.10	0.12	0.14	0.15
Dairy – Heifer	0.26	0.032	0.063	0.095	0.13	0.16	0.19	0.22	0.25	0.28
Dairy - Veal	0.033	0.0040	0.0080	0.012	0.016	0.020	0.024	0.028	0.032	0.036
Horse - Sedentary	0.2	0.024	0.049	0.073	0.097	0.12	0.15	0.17	0.19	0.22
Horse – Intense exercise	0.34	0.041	0.083	0.12	0.17	0.21	0.25	0.29	0.33	0.37
Poultry-Broiler	0.0025	0.00031	0.00061	0.00092	0.0012	0.0015	0.0018	0.0021	0.0024	0.0027
Poultry-Turkey (male)	0.0090	0.0011	0.0022	0.0033	0.0044	0.0055	0.0066	0.0077	0.0088	0.0099
Poultry-Turkey (females)	0.0054	0.00066	0.0013	0.0020	0.0026	0.0033	0.0040	0.0046	0.0053	0.0059
Poultry-Duck	0.0036	0.00044	0.00087	0.0013	0.0017	0.0022	0.0026	0.0031	0.0035	0.0039
Poultry - Layer	0.0035	0.00043	0.00085	0.0013	0.0017	0.0021	0.0026	0.0030	0.0034	0.0038
Swine-Nursery Pig(27.5 lb)	0.025	0.0031	0.0061	0.0092	0.012	0.015	0.018	0.021	0.025	0.028
Swine-Grow-finish (154 lb)	0.083	0.010	0.020	0.030	0.040	0.051	0.061	0.071	0.081	0.091
Swine – Gestating sow	0.071	0.0086	0.017	0.026	0.034	0.043	0.052	0.060	0.069	0.078
Swine – Lactating sow	0.19	0.023	0.046	0.069	0.092	0.12	0.14	0.16	0.18	0.21
Swine – Boar	0.061	0.0074	0.015	0.022	0.030	0.037	0.044	0.052	0.059	0.067

My sincere appreciation to the reviewers of this fact sheet: Al Rotz, USDA Agricultural Research Service, Wendy Powers, Iowa State University, Charles Fulhage and Amy Schmidt, Univ. of Missouri, Phil Westerman, North Carolina State University, and Joe Harrison, Washington State University.