

MINUTES OF THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES.

The meeting was called to order by Chairperson David Corbin at 8:00 a.m. on March 24, 1998 in Room 254-E of the Capitol.

All members were present except:

Committee staff present: Raney Gilliland, Legislative Research Department  
Mary Ann Torrence, Revisor of Statutes  
Lila McClaflin, Committee Secretary

Conferees appearing before the committee:  
Representative Sharon Schwartz  
Daniel J. Thalmann, National Audubon Society  
Charles Benjamin, The Sierra Club

Others attending: See attached list

A motion was made by Senator Schraad with a second from Senator Goodwin to adopt the minutes of March 16, 17, 18 and 19. The motion carried.

**Sub for HB 2950 - Regulation and permitting of swine facilities.**

A fiscal note for **SB 685** was distributed.

Chairperson Corbin said he intended to finish the hearing on **Sub for HB 2950**. He called on Representative Schwartz.

Representative Schwartz appeared as a neutral conferee on the bill. She said she served on the subcommittee that spent several weeks on the issue and many hours. She hoped that as a legislature they would be able to send a positive message to the people of Kansas and future generations. And in doing so that they could promote growth of animal agriculture while protecting the state's resources (Attachment 1).

Daniel J. Thalmann, National Audubon Society, thought it was crucial to protect Cheyenne Bottoms State Wildlife Refuge and Quivira National Wildlife Refuge. He supported the amendments added on the floor of the house. He thought an amendment was needed to add mega packing plants to the definition of hog production facilities, thereby including them in the moratorium, and this should be added to the definitions session of the bill. The 3800 animal units is too high and needs to be lower. A "time-out" is crucial and would provide Kansas the opportunity to fully study the effects of mega-facilities on the environment and society. Attached to his testimony was a letter from Chris Collier, Executive Director, Convention and Visitors Bureau, Great Bend, Ks discussing the economic impact from travel and tourism to the Cheyenne Bottoms Wildlife Area (Attachment 2).

Charles M. Benjamin, Kansas Sierra Club and Kansas Natural Resource Council, pointed out what he thought was some serious defects in the proposed legislation. He pointed out the three fundamental environmental problems associated with large scale swine production are air quality impacts, water pollution and soil contamination. He made recommendations to amend the bill in these areas. Attached to his testimony is a letter from Lelia and Don George from Plains, KS opposing the large hog facilities and relating how it has adversely impacted their lives (Attachment 3). Mr. Benjamin also distributed a pamphlet titled Confined Animal Feeding Operations: A Threat to Our Health and Our Environment, it was paid for by the Southern Plains Regional Conservation Committee of the Sierra Club. Mr. Benjamin also, distributed a handout titled Permeability of Soils and Liner Seepage Calculations prepared by Kathy J. Martin, Martin Environmental Services of Norman, OK (Attachment 4).

Mr. Benjamin responding to questions noted that the permeability and seepage were a possible problem

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES, Room 254-E Statehouse, at 8:00 a.m. on March 24, 1998.

because of the large number of animals in a small geographic area. The swine and chickens seem to caused the major problems. Cattle did not seem to create the same problems. He said that swine waste is different from that of cattle. He encouraged an amendment to the bill changing the pick up time of dead animals from 48 hours to 24 hours.

Testimony opposing HB 2950 was distributed from:

John Carter, Topeka, KS., representing citizens from Western Kansas (Attachment 5)

Mike Knobloch, Great Bend, KS. (Attachment 6)

Mary Fund, Kansas Rural Center, Whiting, KS (Attachment 7)

The hearing on Sub for HB 2950 was closed.

Staff was called on for a briefing of the bill. The committee time expired. Staff will continue the briefing at the next meeting on 3/25.

The next meeting is scheduled for March 25, 1998.

The meeting adjourned at 9:00 a.m.

# SENATE ENERGY & NATURAL RESOURCES COMMITTEE GUEST LIST

DATE: 3-24-98

NAME	REPRESENTING
Rep Sharon Schwartz	106th District
Brook Behrke	Intern for Laura McClure
Laura McClure	119th Dist
Darrenda J. Mitchell	Ks. Dept of Agriculture
Laura Cole	Intern Sen. Tyson
Bill Hargrove	K-state / KCARE
Bill Henry	Ks Society of Prof. Engineers
Marty Vanier	KS Ag Alliance
JOHN C. BOTTENBERG	KPPC
Rich McKee	KLA
<del>John C. Bottenberg</del>	<del>KPPC</del>
Mary Jane Stattelmaier	KBA
Den Tralmann	KS Audubon Council
Amy C. Leggett	#P
Bill Fuller	Kansas Farm Bureau
Mike Jensen	Ks Pork
Tom Bruno	Seaboard
Dennis Grass, Intern	Sen Huelskamp



HARON SCHWARTZ  
REPRESENTATIVE, 106TH DISTRICT  
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TOPEKA

HOUSE OF  
REPRESENTATIVES

COMMITTEE ASSIGNMENTS

AGRICULTURE  
ENVIRONMENT  
TRANSPORTATION

Mr. Chairman and committee members -

I appreciate the opportunity to appear as a neutral conferee in regard to HB2950. As a member of the subcommittee appointed to consider drafting legislation in answer to concerns being aired about Confined Animal Feeding Operations (pork specific), I would like to bring you a realistic overview of the intensive effort undertaken by this subcommittee the last several weeks. The committee did spend many days searching out and listening to experts in areas of concern. Using the Environmental Framework developed by Clean Water Foundation, EPA, NRCS, and in coordination with industry representatives to address the areas of odor, lagoon design, water quality, set-backs, nutrient management, closure, dead animal disposal, etc. was very helpful in drafting this legislation. Incidentally Carol Browner, Administrator of the Environmental Protection Agency has commended the industry for participating in the dialogue and proactively addressing environmental concerns.

This bill, **as originally drafted**, does address environment issues of concerned citizens and at the same time would allow the pork industry to grow and uphold high environmental standards in the process. However, the constraints of amendments added during House Floor debate are very damaging to the industry and to the state of Kansas as they limit growth of the existing industry by moratoriums and possibilities of every two years changes in business structure. In fact, U.S. Secretary of Agriculture Dan Glickman stated in his address to the Governors Conference on Agriculture that "if you don't grow you die".

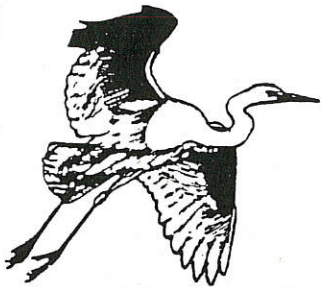
Larger more specialized pork operations have emerged for several reasons. Structural changes in pork have created opportunities for young family-size operators to specialize in one phase of production and collaborate with others who handle a different stage. The result is consistent quality animals. The variety of choices available in a modern, decentralized pork industry gives farmers new and viable options to remain on the farm. That is the new frontier of the pork industry. It is the new frontier of agriculture.

I would hope that as a legislature, we can send a positive message to the people of Kansas today as well as future generations that would promote growth of animal agriculture while protecting the state's resources.

Senate Energy & Natural Resources

Attachment: 1

Date: 3-24-98



# Kansas Audubon Council

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Testimony on HB2950 submitted by Kansas Audubon Council

Others here today will be speaking to various technical and political points related both to HB2950 and to the controversy over corporate hog farms. From Audubon's perspective, an important aspect of this issue involves public perceptions as it relates to some constituencies whose perspectives seem not to have been considered so far.

We note that the continued controversy over large confined animal feeding operations takes place within a context that is less than favorable for Kansas. The EPA recently criticized the state on several points concerning its water quality standards. An audit last year of KDHE found that in more than 90 percent of the cases revised the agency's own procedures were not followed. These facts sadden Kansas conservationists.

Now, the legislature is grappling with corporate hog operations, which is an issue, at least in part, about the future of water and the environment in Kansas. For us the possibility of a Seaboard Farms operation in the same county as Cheyenne Bottoms State Wildlife Refuge throws these matters into dramatic relief. As a state-owned wetlands refuge of international importance and as a part of the Western Hemisphere Shorebird Reserve Network, Cheyenne Bottoms belongs to all Kansans. Its neighboring wetland, Quivira National Wildlife Refuge, belongs to all Americans. The many bird species that use these wetlands as migratory stopovers and as home during nesting season are creatures so important to America and the hemisphere that they have received various protections under state and Federal law and under international treaty. Some of these bird species are threatened or endangered- - the whooping crane, the peregrine falcon, the least tern... and our national symbol, the bald eagle.

On behalf of the some 5,000 members of the National Audubon Society in Kansas, I wish to express our deep concern over and opposition to the possible placement by Seaboard Farms of a large hog processing plant less than a half-mile from the Arkansas River, in the vicinity of Cheyenne Bottoms. The Kansas Audubon Council also opposes

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Recycled Paper

Seaboard's plans to contract with area farmers to raise from between about two to eight million hogs in a 100-mile radius around the plant - - in part because of the apparently unresolved problem of odor, which Seaboard executives themselves have noted in some press reports as an ongoing problem. I will speak briefly about the odor provisions in HB2950 in a moment.

Hunters and birders have long contributed to the economies of communities around the Bottoms and Quivira. Please note the attached table of contents from The Travelling Birder, listing Cheyenne Bottoms as an internationally recognized birding destination. If approved, this proposal likely will dissuade many hunters and birders from utilizing these wetlands for recreation. Terrible smell associated with massive hog-raising and processing will keep many of us home or send us to other areas in which to hunt and to bird... and to spend our hard-earned dollars. These dollars are often coming from outside the region, from people who normally aren't exposed to hog odor and as a result, would be even more affected by this problem.

I would note here that KAC is concerned that the provisions in HB2950 concerning odor seem not to require any enforced, technically proven means to control, if not eliminate, odor associated with CAFOs. If our interpretations of these provisions are not correct, we'd welcome further clarification on behalf of our membership. For example, mega operations need to submit an odor control plan but this is not enforceable, at least according to our reading of the legislation. Is enforcement a concern for this committee? If so, the bill needs further amending.

Wastewater treatments, which could control odor, are not specified, though planting of windbreaks for facilities larger than 1000 animal units is a possibility. What are the data for showing that vegetative barriers will effectively control odor? This is a question some of our members have asked. Personally, my father-in-law's dairy farm, in Washington County, is located over a mile from a medium-sized hog operation. During a south wind, the hog odor travels over a tall hill and through a forested area and even overpowers the smell of the dairy farm odor.

In relation to the potential operations around Cheyenne Bottoms and Quivira National Wildlife Refuge, we are concerned that HB2950 won't adequately address the odor problem, should CAFOs locate in that area. We hope that you will consider the

concerns of hunters and birders in Kansas and across the country who wish to continue to utilize these important habitat areas.

After going through the House, this bill has received some improvements, but not enough. We feel that an amendment should be added to this bill that would add mega packing plants to the definition of hog production facilities, thereby including them in the moratorium. It is an obvious fact, that slaughter is a part of a hog's life cycle. One mega packing plant could have approximately 16,000 live hogs at the facility every day. This is far more than the 3800 animal units (9500 adult hogs) per farm covered by the moratorium. Therefore, they should be considered part of hog production and added to the definition.

We would like to see the present amendments, which have been attached to the bill, preserved. We believe that the moratorium on 3800 animal units is too high, though, and needs to apply to some smaller facilities, that can still cause major problems with the environment. This "time-out" is crucial and would provide Kansas the opportunity to fully study the effects of mega-facilities on the environment and society. Our belief is that most Kansans also want this moratorium. Please pay attention to what the citizens of Kansas are asking for.

Thank you.





Convention and Visitors Bureau  
1307 Williams, P.O. Box 100  
Great Bend, KS 67530  
Phone: (316) 792-2402  
Fax: (316) 792-2404

March 18, 1998

TO: Kansas Audubon Society

The economic impact of travel and tourism on the Great Bend community for 1997 is estimated to be \$8.2 million. The figures are based on a formula provided by the International Association of Convention & Visitors Burueas using transient guest tax collections. Exactly how much of this comes from visitors to Cheyenne Bottoms is impossible to calculate.

Cheyenne Bottoms Wildlife Area staff estimate the number of visitors with vehicle counters at all entrances. From these total estimates, an estimate for construction and staff traffic is subtracted. During 1996, Cheyenne Bottoms staff noted the activities of all visitors seen while driving through the Bottoms. Monthly estimates of the percentage of visitors engaging in three categories of activity: hunting, fishing, and birdwatching, sightseeing, or driving through were then calculated. The estimates below for 1996 and 1997 are higher than the estimates from the K.U. study done in 1985-1986 probably because the estimates are from an entire year and perhaps because habitat conditions in 1996 and 1997 were more conducive to better birdwatching and hunting than in 1985-1986.

During 1996, there were an estimated 44,540 visitors. Of these, approximately 19,117 were hunting, 5,891 fishing and 19,532 birdwatching, sightseeing or passing through.

During 1997 there were an estimated 52,782 visitors. Of these, approximately 16,520 were hunting, 7,582 were fishing and 28,680 were birdwatching.

During 1985 through January 1986, K.U. estimated approximately 23,862 visitors. Of these approximately 7,079 were hunting, 785 fishing and 15,568 birdwatching. From these visitor numbers and other data, they generated economic impact to Barton County and the state. For the State of Kansas, Cheyenne Bottoms generated \$2.8 million. For Barton County, Cheyenne Bottoms generated \$1.6 million.

The economic impact of Cheyenne Bottoms today should be even greater given that there are more visitors.

A handwritten signature in cursive script, appearing to read "Cris Collier".

Cris Collier  
Executive Director

**Testimony in Opposition to Substitute for H.B. 2950**  
**Senate Energy and Natural Resource Committee**  
March 24, 1998

Charles M. Benjamin, Ph.D., J.D.  
Attorney at Law  
Legislative Coordinator  
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Kansas Natural Resource Council  
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***Introduction***

Thank you for the opportunity to testify in opposition to Substitute for H.B. 2950. I come to you today not in opposition to improved environmental regulations on swine production facilities, but rather to point out serious defects in this proposed legislation. The vast majority of Kansans who have voted in county-wide referenda (in accordance with K.S.A. 17-5908) on the subject of having swine production facilities (as defined in K.S.A. 17-5903(s)) in county wide referenda have serious reservations about having these facilities come to their communities. As environmental organizations we share these concerns. Unfortunately, this legislation, as it appears before you, will do little to alleviate those concerns.

***General Criticisms***

There are three fundamental environmental problems associated with large scale swine production: air quality impacts, water pollution and soil contamination. (see attached article "Hog Tied by Feedlots" in the October 1996 Zoning News) The cause of these problems can be traced directly to two practices used by the mega-swine producers: 1) placing so many hogs in a geographic area that the soil and water cannot absorb the waste and 2) using anaerobic lagoon technology, essentially digging a hole in the ground, to process the hog waste. It is inappropriate to use a low-tech wastewater treatment system for a high concentration waste of millions of gallons. In addition, the practice of spraying untreated waste onto nearby fields, as practiced by Seaboard Corporation facilities, exacerbates the problem of air and surface water pollution. The result is considerable degradation in the quality of life to those living next to these mega-hog factories. (see attached letter from Lelia and Don George of Plains, Kansas to Governor Graves)

Seaboard's apparent plans to build a slaughterhouse in the Great Bend area raises very serious concerns about the integrity of environmental quality in central Kansas. (see attached article "Proposed hog plant opposed as threat to wetlands" in K.C. Star article) If Seaboard locates in Great Bend they want to contract with area farmers to raise over 4 million hogs per year in a 150 mile radius of Great Bend. The Great Bend area is environmentally sensitive because of the nearby location of Cheyenne Bottoms and Quivira National Wildlife Refuge. Also, a 150 mile radius includes areas of Reno, McPherson and Harvey counties that lie above the Equus Beds aquifer. This aquifer

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provides all the water for those counties as well as approximately half the water for the City of Wichita. The separation distances and the seepage standards contained in H.B. 2950 are not stringent enough to ensure the integrity of these precious natural resources. The approach taken in H.B. 2950 is to regulate facility by facility. There is no provision for the KDHE secretary or anyone else to conduct an overall environmental impact assessment of 4 million hogs and their waste year after year on the watersheds that supply Cheyenne Bottoms and Quivira and the aquifer that supplies drinking and irrigation needs. Having potentially hundreds of hog waste lagoons in the Arkansas River valley raises very serious questions of pollution from those lagoons making their way into the Arkansas River. In addition there is no assessment of the potential impact on air quality and precipitation from air pollution coming off waste lagoons and from aerial spraying of effluent onto nearby fields.

The combination of placing too many hogs in one geographic area and using a primitive wastewater treatment practice is exactly what has caused so much environmental damage and turmoil in North Carolina, Indiana, Illinois, Missouri, Iowa, Minnesota, Oklahoma, and now Kansas. Our concern is that H.B. 2950 is simply window dressing and allows the mega-swine production industry to give false assurances to the people of Kansas that the environmental issues are solved so that this industry, that has done so much damage to people's lives elsewhere, can now invade Kansas.

**General Recommendation: If the legislature is serious about addressing the environmental problems associated with mega-hog factories then amend H.B. 2950 in two ways: 1) prohibit the use of anaerobic earthen lagoons in swine production facilities and encourage the use of dry manure systems and above ground slurry store systems; and 2) adopt provisions of proposed H.B. 2673 that would explicitly grant Kansas counties the authority to limit the number of aggregate animal units allowed in the county. (see attached copy of the legislation)**

### *Specific Criticisms*

**Section 1(i) (2)(A)(B)(C), p. 5-6:** As this language currently exists, the KDHE Secretary has the authority to reduce a separation distance over the refusal of a property owner to sign a written waiver. This is a very serious responsibility to give to the Secretary without any standard to determine when such a reduction should occur. Furthermore, there is no mechanism in the current law or proposed statute for the affected property owner to seek relief from the KDHE Secretary's decision. There is the very real possibility that the KDHE Secretary will reduce a separation distance and the subsequent expansion of a neighboring swine facility will cause odors and other environmental impacts to degrade the value of the affected property owner. Should the affected property owner see a decrease in his property value or be unable to sell his property due to the undesirability of a swine expansion, the KDHE Secretary has potentially been put in the position of effecting a property taking. Is the state prepared to compensate that property owner for losses he has suffered due to a decision by the KDHE Secretary to reduce separation distances? Is the state prepared for the possibility of class action lawsuits that

seek to remedy injuries suffered by potential plaintiff landowners injured by the decision of the KDHE Secretary to override their refusal to sign a waiver?

**Recommendation: Strike all of Section 1(i)(2)(A)(B)(C). If you chose to continue to allow the KDHE Secretary to reduce separation distances over the objection of affected property owners then insert language requiring the KDHE Secretary to find “no substantial harm” to a property owner from a reduction of a separation distance and give the affected property owner access to state district court if the property owner wishes to challenge the KDHE Secretary’s decision.**

**New Section 11, pp. 19-20.** Facilities with an animal unit capacity of 1,000 or more are required to submit a plan for odor control. While this is a laudable goal the statute does not specify what “odor control” means and there are no enforceable provisions specified. This provision is particularly troublesome given that under the provisions of New Section 6(f)(1)(A), p. 17, lines 9-11, facilities of 1,000 a.u. or more are exempt from nutrient utilization plans if “The manure or wastewater have been subjected to physical, biological or biochemical treatment or other treatment method for odor reduction approved by the department of health and environment.” This provision could mean anything. Even an anaerobic lagoon can be considered biological treatment. Currently KDHE has authority at K.S.A. 65-3001 et seq., the Kansas Air Quality Act, to protect the State’s air quality from pollution, which is defined under the statutes to include such things as smoke, fumes, vapor, dust and odorous substances. KDHE has refused to apply these statutes to confined feeding operations because they claim there are no objective standards to measure dust and odors and determine when they are offensive. The lack of demonstrated odor control technology is a serious problem. Dr. Zahn of Iowa State University told the House Environment Committee that lagoon additives do not work well and that odor solutions are two years or more away. Murphy Farms, Inc. said their new digester technology had been in operation less than three months and had “experienced setbacks.” Rich Hoffman of Seaboard Farms, Inc. called this technology “experimental.”

**Recommendation: Prohibit new permits until the odor problem is solved, or extend the setback distance from habitable structures to 10,000 feet and from a city or town to four miles, for facilities above 1,000 animal units. Order KDHE to carry out the 1997 Legislative Post Audit recommendation that KDHE “should further study whether it needs to issue regulations governing dust and odors generated by confined-feeding operations. In doing so, it should consider such things as the number of complaints it receives about these issues, lawsuits filed against confined feeding operations in which dust and odors were an issue, and any other relevant issues.”** (Division of Legislative Post Audit Report No. 97-39, p. 33)

**New Section 13 (c) (1), p. 22, lines 7-12:** This language does not accomplish the goal of ensuring that taxpayers do not get stuck with the clean-up of a swine production facility that has closed. First of all this section takes effect “on or after July 1, 2000.” Too many facilities can come into existence in two years that may cause problems in the future.

**Recommendation: Kansas should follow the lead of Missouri and impose a ten cent per head fee on large swine production facilities that would go into a permanent**

**clean-up fund for abandoned swine production facilities of any size.** (see attached summary of Missouri's law)

**New Section (5)(i)(5), p. 14, lines 7-10:** This language would allow the KDHE Secretary, after January 1, 2000, to increase the animal unit capacity of facilities covered in subsection (i)(1), (2) and (3), the liner requirements for waste lagoons for facilities above 3,725 a.u., if the Secretary determines "based on scientific evidence" that the standards imposed in those sections "are not required to protect the groundwater." This means that in a little over a year and a half the KDHE Secretary may "increase the animal unit capacity at which such standards apply."

**Recommendation: Eliminate this section to insure a "belt and suspenders" approach to protecting groundwater quality from swine effluent pollution or, in the alternative, stretch the date to January 1, 2003, to give at least five years of scientific studies on which the KDHE Secretary can make a decision.**

**New Section 17(a)(3), p. 24, lines 4-5:** The proposed language requires swine carcasses to be picked up within 48 hours under normal circumstances. Seaboard Corporation, in its settlement of fines imposed by the state of Oklahoma for the improper disposal of dead animals, agreed to have swine carcasses picked up within 24 hours.

**Recommendation: Change the required pick-up time to 24 hours.**

**5903. Swine production facilities; establishment in county, procedure.**

(a) (1) The board of county commissioners, by resolution, may permit a swine production facility, as defined in K.S.A. 17-5903, and amendments thereto, to be established within the county. Such resolution shall be published once each week for two consecutive weeks in the official county newspaper. The resolution shall take effect 60 days after final publication unless a valid petition in opposition to the same is filed.

(2) If within 60 days of the final publication of the resolution, a valid protest petition to submit the resolution to the qualified voters of the county is signed by qualified electors of the county equal in number to not less than 5% of the electors of the county who voted for the office of secretary of state at the last preceding general election at which such office was elected and is filed with the county election officer, the county election officer shall submit the question of whether a swine production facility shall be allowed to be established in such county at the next state or county-wide regular or special election.

(b) (1) The board of county commissioners, upon a petition filed in accordance with paragraph (b)(2), shall submit to the qualified electors of the county a proposition to permit a swine production

facility, as defined in K.S.A. 17-5903, and amendments thereto, to be established within the county.

(2) A petition to submit a proposition to the qualified voters of a county pursuant to this section shall be filed with the county election officer. The petition shall be signed by qualified electors of the county equal in number to not less than 5% of the electors of the county who voted for the office of secretary of state at the last preceding general election at which such office was elected. The following shall appear on the petition:

"We request an election to determine whether a corporate swine production facility shall be allowed to be established in \_\_\_\_\_ county, pursuant to K.S.A. 17-5904."

(3) Upon the submission of a valid petition calling for an election pursuant to this subsection, the county election officer shall submit the question of whether a swine production facility shall be allowed to be established in such county at the next state or county-wide regular or special election which occurs more than 60 days after the petition is filed with the county election officer.

(c) If a majority of the votes cast and counted are in opposition to allowing swine production facilities to be established in such county, the county election officer shall transmit a copy of the result to the secretary of state who shall publish in the Kansas register the result of such election and that swine production facilities are not allowed to be established in such county.

(d) If a majority of the votes cast and counted is in favor of the proposition, the county election officer shall transmit a copy of the result to the secretary of state who shall publish in the Kansas register the result of such election and that swine production facilities are allowed to be established in such county.

**17-5903. Definitions.**

(s) "Swine production facility" means the land, structures and related equipment owned or leased by a corporation or limited liability company and used for housing, breeding, farrowing or feeding of swine. The term includes within its meaning only such agricultural land as is necessary for proper disposal of liquid and solid wastes in environmentally sound amounts for crop production and to avoid nitrate buildup and for isolation of the facility to reasonably protect the confined animals from exposure to disease.

**17-5904. Restrictions; exceptions; penalties.** (a) No corporation, trust, limited liability company, limited partnership or corporate partnership, other than a family farm corporation, authorized farm corporation, limited liability agricultural company, family farm limited liability agricultural company, limited agricultural partnership, family trust, authorized trust or testamentary trust shall, either directly or indirectly, own, acquire or otherwise obtain or lease any agricultural land in this state. The restrictions provided in this section do not apply to the following:



Judy Spencer

## Hog-Tied by Feedlots

By Michael Barrette

Terry Spence spent a recent August evening working on his lawn. "Mowing the yard used to be a relaxing thing," he says, "but I was just out there tonight, and there wasn't much pleasure in it." His farm is near a large, two-year-old hog-confinement operation just outside Unionville, Missouri, that has transformed the community.

"We have 80,000 hogs within two miles of Unionville," he says. "Depending on the weather, the odor carries two to five miles. There is nowhere to go to get away from the smell." Spence says the odor itself is just the tip of the iceberg. "The fact is, hydrogen sulfide is a dangerous gas. Even when you get accustomed to the smell, you still keep wondering about the effect of breathing in that air."

### What Is a CAFO?

Concentrated Animal Feeding Operations (CAFOs), the latest trend in hog farming, are corporate-owned or contracted facilities that aim to produce pork as efficiently and inexpensively as possible. Facilities usually house several thousand hogs, but operations in excess of 17,000 are not unusual. By comparison, the typical family farm usually has fewer than 500 hogs. CAFOs also differ from family-sized operations in that the hogs are raised indoors in tightly packed swine houses, producing a much higher

concentration of hogs per acre than most independent farms and a commensurate amount of manure. The waste is disposed by flushing it from the swine houses and collecting it in outdoor lagoons, the largest holding more than 30 million gallons of liquid animal waste. The waste is spread onsite or injected into the soil. Fescue or similar feed crops are then planted with the expectation that the soil and the crop will safely absorb the contents.

CAFOs generally fall into two categories, corporate and contract operations. Corporate operations house the hogs at enormous company-owned facilities where hogs are bred and fed a regimented diet until ready for slaughter. Contract operators are hired by the company to handle one aspect of the growth process. Hogs are shipped in and fed until they attain a certain growth level following a strictly administered corporate plan. When the hogs reach a certain size, they are shipped to another contract operator, which handles that growth level. The process continues until they reach the market. The company supplies contract farmers with specially formulated grain, antibiotics, veterinary supplies, and other necessities. Farmers take the financial risk by building the necessary buildings and signing the contract.

Many rural citizens have found themselves powerless to do anything about a CAFO being sited next door. Most agricultural states have legislated agricultural exemptions to protect family farms from zoning. Industrial hogging companies hide behind these exemptions, and communities cannot implement zoning until the state passes new legislation. Most major hogging states are hotly debating the regulation of CAFOs in their legislatures, with the corporate lobby actively participating. Even state farm bureaus, traditionally the advocate for independent farmers, have become dominated by industrial hoggers. The industry has repeatedly challenged attempts at home rule over CAFOs, and several important cases are pending across the country.

The debate's volatility has not stopped rural citizens from trying to protect their homes. More communities are adopting comprehensive plans and zoning for the first time, hoping to discourage CAFO development or expansion in spite of exemptions. It is important to note that these advocates include independent hog producers, rural citizens, merchants, and farmers who are trying to protect their way of life from the detrimental effects of hog production at an unprecedented scale.

Some jurisdictions in Iowa, Minnesota, Missouri, and North Carolina have successfully avoided the agricultural land-use exemption by writing CAFO ordinances into their local health code or general ordinance. Because the legality of those approaches varies from state to state, this article simply describes the developmental impacts of CAFOs and presents the specific techniques being used to counter them.

These ordinances usually distinguish family farms from commercial or industrial facilities. Specific language differentiates agriculture from feedlot operations or common farm buildings from typical CAFO buildings. Some also classify operations by size, described in terms of an animal unit (AU). Beef feeders usually set the standard of one AU. All other livestock is compared to that standard. Usually, 2.5 hogs equal one AU. From that point on, classification varies according to

the local standard. For example, a class 1D CAFO has a capacity of 300 to 1,100 AU; class 1C includes 1,101 to 1,650 AU; class 1B has 1,651 to 2,000 AU; and class 1A covers 2,001 AU and greater. Communities that have the power to zone may make CAFOs a conditional use. They have the option of classifying them separately or simply setting a threshold. Watonwan County, Minnesota, requires a conditional use permit for new or expanding facilities that exceed 800 AU.

### Air Quality Impacts

Air quality has received the most media attention because it is easy to understand that the stench of industrial-scale hogging creates a serious blight. Terry Spence says families that can afford to move away from the smell do so. Most people cannot afford to move because no one will buy their houses. The manure emits hydrogen sulfide, ammonia, and methane. The dangers of concentrated exposures to these gases are well documented, but the long-term effects of lower exposure are unknown.

Not everyone has the luxury of low-level exposure. Many rural residents are exposed to toxic levels of gases every time the wind blows their way. Julie Jansen of Renville County, Minnesota, did not expect a problem when a CAFO set up next door. After a couple of months, in which the family had constant bouts with influenza, she began to notice a pattern. Headaches, dizziness, nausea, and vomiting arrived only when the wind blew from the south. Jansen called the state poison control center. "We had every symptom of hydrogen sulfide poisoning except seizures, convulsions, and death," she says.

She began a long battle with local authorities, trying to convince them that her family was endangered by the gases blowing off the lagoons. Tests in her backyard have indicated hydrogen sulfide gas levels three times above those considered safe, and her family's symptoms are consistent with those of people living next to CAFOs all over the country. The county health department concurs with the diagnosis of hydrogen sulfide poisoning but is powerless to act. The CAFO operator and the local environmental authorities dispute the tests. "Watching your kids get sick and not being able to do anything about it is hell," Jansen says, but moving is not an answer. "There's no place safe anymore. What should you do: file bankruptcy, move away, and just pray that one of these things doesn't move in next door?"

Several techniques are used to combat air quality problems. Watonwan County has eliminated the use of open liquid waste lagoons. New CAFOs must construct covered cement basins and meet a half-mile setback. This does not eliminate odor or exposure to gases, but it can lessen air quality problems. Most CAFO regulations require setbacks from populated areas. Pettis County, Missouri, requires class 1A CAFOs to be set back three-fourths of a mile from an occupied dwelling not owned by the CAFO, with an additional quarter-mile for each 500 AU in excess of 2,000, and a two-mile setback between a 1A CAFO and a populated area, with a quarter-mile increase for each 500 AU in excess of 2,000.

In Lincoln Township, Missouri, the lagoons themselves are set back from dwellings. The distance is determined by the aggregate capacity of all the lagoons on the site. Lagoons holding 10 acre-feet or less are set back 1,400 feet. Those with more than 10 but less than 20 acre-feet are set back 2,800 feet. Lagoons larger than 20 acre-feet must be set back one mile.

---

*Michael Barrette is a former APA research associate currently in graduate school at DePaul University.*

Pettis County also includes a buffer area for the application of liquid manure in order to keep it from being spread too close to residences. A quarter-mile buffer is required for surface application, and 500 feet for subsurface injection. Dry manure may not be used within 500 feet of a dwelling. To protect downhill residences on hilly terrain, the ordinance includes a clause that prohibits manure application on a slope exceeding 10 percent. Spacing requirements are used to disperse the cumulative effect of multiple CAFOs. Class 1A CAFOs may not exist within a mile of each other, measured between the nearest points of the confinement facilities or waste containment. Smaller class CAFOs have shorter spacing requirements.

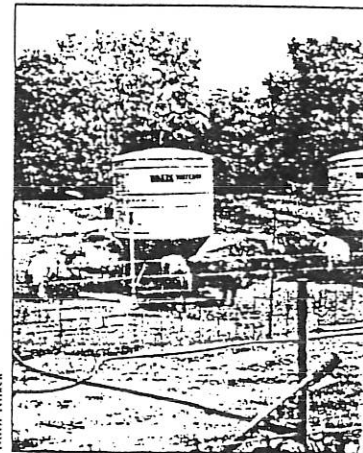
Lincoln Township requires operators to design their facilities "in such a manner as to avoid the unlawful degradation of air quality." The ordinance includes a table of gases and their maximum allowable concentration. Such ordinances should set forth guidelines for measurement methods in order to avoid disputes over monitoring techniques.

### Water Pollution

CAFOs also threaten water quality. Animal waste contains dangerously high concentrations of bacteria, nutrients, and heavy metals. The constant application of effluent may endanger drinking water unless done properly. A Missouri study found 150 sites where manure was being overapplied. In one case, manure had been applied at 150 times the appropriate level. The study also found that, while the corporate pork producers projected a hay yield of four tons per effluent-applied acre, the actual yield was half that, indicating that the crops are not absorbing the nutrients as expected. Instead, the high concentration accumulated in the soil is gradually released into the watershed, threatening water supplies and promoting algae growth downstream, which can have deadly consequences. In the fall of 1995, an estimated 10 million fish were found dead in the lower Neuse River in southeastern North Carolina. State officials closed the river to swimming and commercial fishing. Investigators determined that algae growth had so depleted oxygen levels that the river could no longer support fish. The state subsequently recommended the maintenance of a 50-foot-wide wooded buffer between all streams and CAFOs.

Despite industry claims about state-of-the-art technology, lagoon failures and effluent spills are common. The worst spill occurred in June 1995 on a 12,000-hog CAFO in Onslow County, North Carolina, where 25 million gallons of hog waste burst through a lagoon wall and flooded the countryside knee-deep. *Progressive Farmer* reported that a wall of excrement "swept across crop fields and swamped a rural highway before spilling into the headwaters of the New River." A 20-mile stretch of the river lost thousands of fish, and communities lost income when the fishing, tourist, and recreation trade collapsed.

A subsequent investigation determined that the lagoon had been overfilled. Once the effluent topped the lagoon, it quickly eroded a section of the surrounding earthen embankment. North Carolina is the second-largest pork producer in the nation, but, like most states, does not require routine



Terry Spence

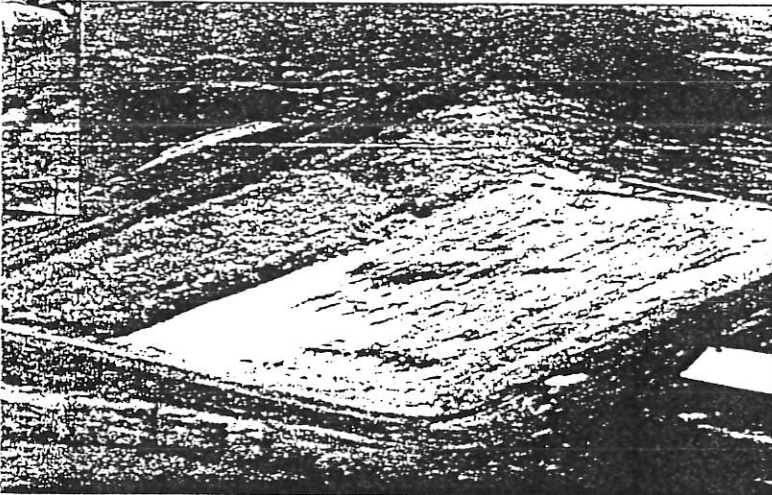


inspections of animal waste lagoons. However, when five spills of a million gallons or more occurred in the summer of 1995, the governor called for the immediate inspection of all lagoons. The state examined over 4,600 and issued 200 citations, 145 for willful discharge of effluent. Inspectors found 124 full or overtopped lagoons and another 526 filled to undesirable levels.

The first step in dealing with a threat against water quality is to make sure the operation has enough surface area to absorb the application of waste. Pettis County's ordinance sets minimum acreage requirements: one acre for every four AU of capacity for the application of liquid waste and one for every eight AU of capacity for dry manure. The CAFO permitting process should also require a detailed description of the type of waste application, the size of the application area, the expected nutrient levels in the waste, the type of crop to be planted, the expected yield, and the resulting expected absorption rate. This approach may be backed up with guidelines for soil testing and annual inspection to ensure the site meets acceptable standards.

Communities can enact further measures to safeguard drinking water. Lincoln Township's ordinance stipulates that a

*Concentrated Animal Feeding Operations are the latest trend in hog farming. Below, a newly built manure lagoon, an inherent feature of CAFOs.*



waste lagoon must be set back at least 300 feet from any water source that draws from a bedrock formation with a sealed casing and at least 1,000 feet from any water source that draws from an unconsolidated formation of the watershed. It also requires the installation of monitoring wells upgrade and downgrade from each lagoon and waste application area.

The rash of lagoon failures has prompted new regulations. Some places like Watonwan County now require cement lagoon basins. Others have demanded that new and existing CAFOs install containment barriers or earthen dams around each lagoon as a failsafe. Missouri requires automatic shutoff valves on lagoon pipes to prevent overfilling, and CAFO operators must visually inspect each lagoon every 12 hours and keep inspection records. The state follows up with quarterly inspections.

Ironically, CAFOs rely heavily on the water they imperil. Several cases pending before the U.S. Environmental Protection Agency allege that CAFOs have illegally diverted streams and deprived the farmers downstream. The enormous demand for

water puts stress on groundwater as well. Across the country, communities have reported serious drawdowns since CAFOs began operating. Well inspectors recorded a 130-foot drop in the water table in a CAFO-heavy area of northwestern Missouri.

### **Soil Contamination**

Corporations provide their facilities with specially formulated grain that contains everything the hogs need, including trace elements of copper, zinc, and magnesium. Small amounts of these heavy metals are passed into the hog manure and applied to the soil. After years of highly concentrated manure application, the accumulation of heavy metals in the soil permanently damages the land's ability to support crops. In many cases, the soil cannot be used to grow food for human consumption. No technology available can remove heavy metals from soil, so a CAFO can become the rural equivalent of the abandoned industrial lots that blight urban areas.

This possibility recently gained credence when one of the nation's leading industrial hogging corporations, Premium Standard Farms (PSF), filed bankruptcy despite its state-of-the-art practices and the efficiencies of corporate farming. This danger has prompted the state of Missouri to create a CAFO indemnity fund to help pay for the closure and cleanup of abandoned and foreclosed sites. CAFO operators must pay a one-time fee of 10 cents per AU of capacity. Since the maximum expenditure for each site is limited to \$100,000, local communities are setting up backup systems. Lincoln Township requires operators to post a bond commensurate with their operation's lagoon capacity. Any aggregate capacity greater than 10 acre-feet requires a bond of \$25,000 for each additional acre-foot.

### **Economic Development?**

Most states have rolled out the red carpet for commercial hogging companies, expecting them to provide jobs and revitalize rural communities. "These corporations always promise the job creation opportunity of the century," says Rhonda Perry, program director of the Missouri Rural Crisis Center in Columbia. "They promise good-paying jobs. They say they will buy everything locally, including grain, and even say that it won't smell. The reality is that they usually target a poor area where there is some desperation, and they play on that."

In their eagerness to attract CAFOs, rural communities often overlook the cost of the development impacts. "Large confinement operations have big feed trucks and hog trucks coming and going constantly," Perry says. "The roads aren't built for that, so the county usually agrees to put in new roads, expecting that the new development will pay for it by pumping money into the local economy. Unfortunately, that never happens. The money that does come in does not cover the actual cost of improving roads and bridges that were perfectly adequate before the company arrived."

Perry says many rural communities have learned the hard way that hogging companies do not live up to their economic forecasts. "One place in Missouri saw a one percent increase in employment after the PSF plant opened, but they also had an 89 percent increase in the use of food stamps. Most of their own employees are eligible for assistance. And, in fact, PSF has never purchased grain in Missouri. None of those economic opportunities materialized." So, while Unionville may be producing more hogs than ever, the local merchants are going out of business.

Kendall Thu, associate director of Iowa's Center for Agricultural Safety and Health, says the actual economic

contributions of CAFOs never measure up to their projections because they never consider the displacement of local farmers. "Making more with less makes them profitable," he says, "so they displace jobs by their very nature. If you could have 10,000 pigs raised by a single individual at a corporate facility or raised by 50 farmers, there is no question that 50 farms are better for the local economy."

The University of Minnesota Extension Service found that traditional independent hog producers create three times as many local jobs as their corporate counterparts. Small operations make 79 percent of their business expenditures locally compared with 49.5 percent for large-scale facilities. Virginia Polytechnic Institute compared the economic impact of 5,000 hogs raised by independent producers versus commercial operators and found that independent farmers produced 10 percent more permanent local jobs, 20 percent more local retail spending, and 37 percent more local per capita income.

For generations, farming families have raised hogs in small quantities, calling them "mortgage lifters" because they have been a stable investment that pays the bills even in hard times. The rise of commercial hogging has increased hog production but dramatically decreased the number of independent hog farmers. Last year, Iowa, the nation's largest producer, lost 12 percent of its hog farmers. In Missouri, 19 percent went out of business; one-fourth were family farms with 100 to 500 hogs. Long-term figures are even more telling. In 1982, Missouri raised 3.5 million hogs on 27,000 farms. Last year, the state produced 3.6 million on 8,500 farms.

### Social Impacts

The greatest impact may be the most difficult to measure. "There are also many costs that cannot be counted in a financial forecast," Thu says. "Social disruption is certainly one. The facilities are so controversial that people on opposite sides of the issue become enemies, even people who have known each other all their lives. I know of cases where people won't even talk to each other in church; where people cease doing business with certain local people because of their opinions, and even cases where children are taunted in school."

Rhonda Perry believes industrial hogging concerns cultivate this disruption. "The corporations have learned that you can set the farmers against each other," she says. "It has taken the farmers a long time to realize what's happening and see that the people that are putting them out of business are companies hiding behind the family farm label."

Thu says the emotional scars and widespread disillusionment change the nature of a community. "At the core of all this is the fundamental fear that there is nothing that people can do about

what happens in their own backyard," he notes. "The total loss of control that people experience often changes their fundamental understanding of democracy."

"When PSF moved in," Spence notes, "it was a quiet process. There was no public notice until the deal was cut and dried. You just kind of heard about it." Once local farmers realized what was happening, they organized a petition. "In about two hours one afternoon, we surveyed 156 voters out of the 250 people here. Half to three-quarters of those people objected to the siting. We presented it to PSF, and they held a public meeting. One hundred people showed up to oppose PSF's plans. Right there at the meeting, PSF's chairman stood up and said, 'It's our decision. If we want to come, we'll come.' They thought they were welcome here because they had been invited by bankers and realtors who thought this was a good idea."

Perry suggests that demoralization often marks the beginning of a rural community's decline into a company town. She fears that rural communities are being deskilled and underemployed. "These communities are loaded with people who have skills and knowledge which is passed from generation to generation," she says. "When those people are reduced to hosing out buildings and setting timers for feeders, these skills get lost. In the long term, it really takes away the sustainability of the community."

If there is a bright side, it is that communities are beginning to unite and organize. "One of the beneficial things that happen when people fight this is that they discover that it is not about odor, it's not about pigs, or even about farming," says Thu. "It is about a whole constellation of issues that determine how we lead our lives. It is a cathartic, revelatory experience for some people. They are able to make the connection between their situation and larger issues, see how these issues are interrelated, and sometimes even learn to understand or embrace an idea that they have always rejected."

Terry Spence has found this to be true. His township is among the rural communities that have embraced zoning after years of opposing it. "Zoning has always been distrusted in rural parts because no one wants more regulations in our lives," he says. "But when you look at the reality here, it's easy to see that zoning is to protect us, not to harm us. You've got to make plans and provide for the control of the situation before it occurs. Otherwise, by the time you realize you need zoning, it's too late, and they've set the hook."

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## ZONING Reports

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### Site Planning for Urban Stream Protection

Tom Schueler. *Metropolitan Washington Council of Governments, 777 N. Capitol St., Suite 300, Washington, DC 20002. December 1995. 232 pp. \$35.*

This document, prepared by the Center for Watershed Protection for Metro Washington COG, is full of challenges to conventional zoning and land-use regulation techniques as they relate to the protection of water quality in urban areas. Population density and impervious surface cover are only loosely related, the report notes in a chapter on watershed-based zoning. Zoning's reliance on the former as its primary indicator thus can lead to perverse results in stream protection. The report includes numerous illustrations of new performance criteria and innovative solutions.

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~~23121 3 Road~~  
Plains KS 67869

January 30, 1998

The Hon. Bill Graves  
State House  
Topeka KS 66612

Dear Governor Graves:

My grandparents, James K. and Lula Pope, homesteaded our farm (SE 1/4-30-33-30) in Meade County, KS in 1906. We are the third generation to live on the farm and we would love to pass it on to further generations. Now we are faced with the possibility of water contamination and depletion and poor air quality.

We are surrounded by DeKalb Swine Breeder farms in every direction. Within a five mile radius of our home we have twelve huge DeKalb farms; this includes approximately 375-400 barns and would accommodate thousands and thousands of pigs. There is also a large feed mill plus several isolation farms with pigs and many other buildings.

Many of the fields we farm are adjacent to DeKalb lagoons. It is very difficult to work next to a lagoon and put up with the foul odors--it literally makes a person sick. It is especially bad when DeKalb or our neighbors are spraying effluent on fields. That simply takes your breath away and you cannot breathe. In some cases the effluent comes within 500-600 feet of a home!

When it gets so bad, you can't have a family cook-out, hang clothes on a line or open your windows. It is BAD! Flies and mosquitoes are a continuous battle; mice and rats are taking over. Rats are eating battery cables, fuel lines, etc., on vehicles. We have increased traffic problems. Their big trucks keep the roads torn up constantly. Where are our rights? We believe we are abused and taken advantage of. We tend our farm and try to respect our neighbors.

These hog facilities have adversely impacted our lives and livelihood in all areas: living and working conditions, health, finances, and lowered property values. Who would want to invest in a farm in the middle of hog corporations? Our air is polluted with gases. Our water is in danger of depletion and pollution. What price can one put on clean air and water?

Since 1973 Plains has been home to DeKalb Swine Breeders who fell under a grandfather clause in the state's old corporate farming law. DeKalb received industrial revenue bonds worth several million dollars to locate near Plains. Now that it

has continued to grow and spread roots, people have had second thoughts, including those who had originally testified in favor of bringing DeKalb to the area. On November 12, 1997 Meade County residents voted by a nearly 2-1 margin to rescind the corporate hog law.. As of now, our Commissioners have NOT rescinded the 1994 law and have also let our moratorium expire. How can three Commissioners represent the tax-paying citizens and not respect the wishes of a majority?

Our taxes have increased because of increased enrollment in the schools. It has become necessary to build additions to accommodate the influx of legals and illegals moving in. We are left in the position to teach the children English; the parents of the children pay very little in taxes. Why should we have to pay for their education? Why can't the employer (DeKalb) be required to pay a certain amount for each one of their employees' children to attend school? Any person who employs migrant workers should have to pay tuition for educating the workers' children.

I ask you to please consider at least a 2-year moratorium, if not 5 years, on any corporate hog farms or any large-scale "family" hog farms coming into Kansas. Please take steps to stop the expansion of those who have been here for years and continue to pollute. These corporations are like cancer; once they get started, they just keep spreading. I realize we cannot shut down DeKalb, but we could stop their expansion, if you will help us. We must consider the fact that Oklahoma's moratorium will drive the hog corporations north to Kansas. Let's control it before it's too late.

Water contamination, water depletion and air quality are a legitimate concern, created by large-scale hog facilities in rural communities. Please examine environmental regulations and take a common sense approach. We realize there can be testing of lagoons and of soil; but why do that when PREVENTION would be a much cheaper and wiser decision?

Thank you for your consideration.

Sincerely,

*Lelia George & Don George*  
Lelia and Don George

cc: Members of Legislature

# Proposed hog plant opposed as threat to wetlands

By MICHAEL MANSUR  
Environment Writer

National environmental leaders want to stop a Merriam-based company from building a large hog-processing plant near two of Kansas' cherished natural wonders.

The National Audubon Society, Defenders of Wildlife and Kansas environmental groups fear that the plant, processing up to 4 million hogs a year, would pollute and deplete water in the area and create a stench that would repel tourists and hunters.

Seaboard Corp. is considering Barton County in central Kansas, not far from Cheyenne Bottoms and the Quivira National Wildlife Refuge, as a possible site for its \$110 million plant.

Both wetlands are two of the world's top spots for bird watching,

attracting each year migrating birds by the hundreds of thousands. They're also prime duck-hunting territories.

Seaboard officials acknowledged Friday that a site outside Great Bend is among the leading contenders for its slaughter plant.

To supply the plant, the company would need to raise or buy 4 million hogs a year. It already produces 2 million hogs on farms in southwest Kansas.

Steve Lathan, Seaboard's director of development and environmental affairs, said the company's operations would have no adverse effect on Cheyenne Bottoms or the Quivira refuge.

Any site would be downstream of Cheyenne Bottoms and also would pose no harm to Quivira, Lathan said.

"The water that's going to come

out of the plant will be treated, so even if it got into these (wetlands), which it won't, it wouldn't provide any contamination," he said.

Environmental leaders say pollution from the large hog farms that should develop in that area to supply the plant would be more of a threat than the plant's waste discharges.

"It will be the production of 2 million or more hogs in the Great Bend area that will be a problem," said Charles Benjamin, a lobbyist for the Sierra Club's chapter in Kansas.

"No one has done any assessment of the environmental impact of placing that many hogs in that area," he said.

John Flicker, president of the National Audubon Society, sent a letter last week to Gov. Bill Graves, urging Graves to speak out against

any threat to the wetlands.

"We are gravely concerned about the possible impact of the operation of these facilities on the quality of both surface and ground water," Flicker wrote.

"Of even greater significance, the quality of life of local residents — farm and ranch families, residents of rural areas and nearby communities — may in some instances be irrevocably diminished, along with the property values of their homes and businesses."

Graves has yet to respond, a spokesman for the governor said.

The Kansas House endured a six-hour debate Thursday in passing legislation that sets environmental standards for hog farms. An amendment also placed a moratorium on farms of more than 3,800 animal units in counties that have voted against corporate

hog farms.

But the moratorium may face a test in the Senate.

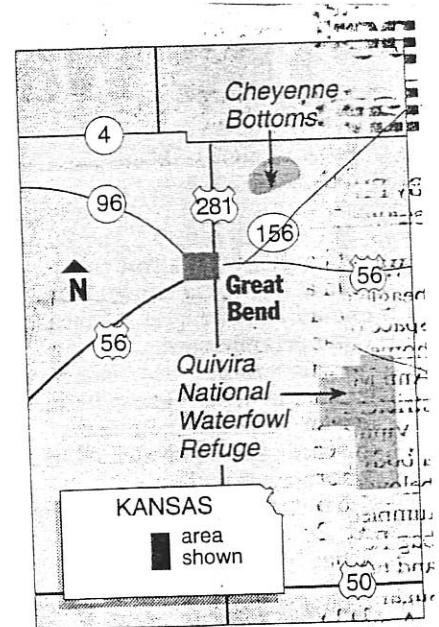
Seaboard officials say the moratorium may threaten their plans for a plant in Kansas because they must be assured that they can supply it with 4 million hogs a year.

The proposed plant has split many in Great Bend, said Rep. John Edmonds, a Great Bend Republican.

"We're talking a plant that would employ 2,200 and dropping that into a community of 15,000 people," Edmonds said. "That will change forevermore the nature of that town, for better or worse."

Something that carries that much potential for change should be put to a public vote, Edmonds said.

Seaboard officials say they will announce a decision within the next two to four weeks.



KAREN SCOTT/The Star

## HOUSE BILL No. 2673

By Committee on Environment

1-20

9 AN ACT concerning certain confined feeding facilities for hogs; author-  
10 izing counties to impose certain limitations on such facilities.  
11

12 *Be it enacted by the Legislature of the State of Kansas:*

13 Section 1. (a) As used in this section, terms have the meanings pro-  
14 vided by K.S.A. 65-171d and amendments thereto.

15 (b) The board of county commissioners of any county may adopt by  
16 resolution one of the following limitations on confined feeding facilities  
17 for hogs that are located within the county:

18 (1) A maximum aggregate animal unit limit for the county for hogs  
19 located in such facilities required by law to be permitted or registered;

20 (2) a maximum aggregate animal unit limit for any township in the  
21 county for hogs located in such facilities required by law to be permitted  
22 or registered;

23 (3) a maximum aggregate number of acres for all waste lagoons for  
24 all such facilities that are located within the county and are required by  
25 law to be permitted or registered; or

26 (4) a maximum aggregate number of acres for all waste lagoons for  
27 all such facilities that are located within any township within the county  
28 and are required by law to be permitted or registered.

29 (c) A resolution adopted pursuant to this section may provide for the  
30 imposition of a civil or criminal penalty on the owner or operator of a  
31 confined feeding facility for hogs that is constructed or expanded in vio-  
32 lation of the limit established by such resolution.

33 (d) Before registering or issuing a permit for new construction or  
34 expansion of a confined feeding facility for hogs in any county, the sec-  
35 retary of health and environment shall obtain from the county commission  
36 certification that any limit established pursuant to this section will not be  
37 exceeded by such construction or expansion.

38 (e) Nothing in this section shall be construed to prevent continued  
39 operation of a confined feeding facility for hogs that, before the effective  
40 date of the resolution adopted pursuant to this section, was in existence  
41 and, if required by law, was registered or permitted by the secretary of  
42 health and environment.

640.745. Fee--expenditures

1. The owner or operator of each class IA concentrated animal feeding operation utilizing flush systems shall remit to the department of natural resources a fee of ten cents per animal unit permitted to be deposited in the fund. The fee is due and payable to the department on the first anniversary of issuance of each owner or operator permit to operate such a facility and for nine years thereafter on the same date. The department of natural resources shall provide forms which such owner or operator shall use to file and pay this fee.

2. The fund shall be administered by the department for the purpose of carrying out the provisions of sections 640.700 to 640.755, relating to closure of class IA, class IB, class IC and class II concentrated animal feeding operation wastewater lagoons.

3. The fund administrators may only expend moneys for animal waste lagoon closure activities on real property which:

(1) Has been placed in the control of the state, a county, or municipal government, or an agency thereof, through donation, purchase, tax delinquency, foreclosure, default or settlement, including conveyance by deed in lieu of foreclosure, and pose a threat to human health, the environment, or a threat to groundwater; and

(2) The state, county, or municipal government, or an agency thereof, has made reasonable and prudent efforts to sell said property to a qualifying purchaser.

4. The fund administrators shall expend no more than one hundred thousand dollars per lagoon for animal waste lagoon closure activities. The fund administrators shall only expend those moneys necessary to achieve a minimum level of closure and still protect human health and the environment. Closure activities shall include lagoon dewatering and removal of animal waste sludge, if any, both of which shall be land applied at a nutrient management application rate based on the most limiting nutrient as determined by Missouri clean water commission regulation. After dewatering, lagoons which are located in a drainage basin and are capable of meeting all applicable pond requirements of the Natural Resources Conservation Service (NRCS) with minimal additional expense should be maintained as a pond. Otherwise, the lagoon berms should be breached and graded in such a manner to reasonably conform to the surrounding land contours.

640.703. Definitions

For the purposes of sections 640.700 to 640.755, the following terms mean:

(1) "**Animal units**", shall be defined by rules of the department in effect as of January 30, 1996;

(2) "**Animal waste wet handling facility**", includes all gravity outfall lines, recycle pump stations, recycle force mains and appurtenances;

(3) "**Class IA**", any concentrated animal feeding operation with a capacity of seven thousand animal units or more;

(4) "**Class IB**", any concentrated animal feeding operation with a capacity between three thousand animal units and six thousand nine hundred and ninety-nine animal units inclusive;

(5) "**Class IC**", any concentrated animal feeding operation with a capacity between one thousand animal units and two thousand nine hundred and ninety-nine animal units inclusive;

(6) "**Class II**", any concentrated animal feeding operation with a capacity of at least three hundred animal units, but less than one thousand animal units;

(7) "**Department**", the department of natural resources;

(8) "**Facility**", any class IA concentrated animal feeding operation which uses a flush system;

(9) "**Flush system**", a system of moving or removing manure utilizing liquid as the primary agent as opposed to a primarily mechanical or automatic device;

(10) "**Sensitive areas**", areas in the watershed located within five miles upstream of any stream or river drinking water intake structure, other than those intake structures on the Missouri and Mississippi rivers.

## MARTIN ENVIRONMENTAL SERVICES

3122 Tall Oaks Circle, Norman, Oklahoma 73072  
(405) 321-3176

### Permeability of Soils and Liner Seepage Calculations

Prepared by Kathy J. Martin, PE

The concept of seepage through a soil liner is important to understand with respect to theory and practice. The theory of seepage is described by Darcy's Law, which is a simple relationship between the volume rate of seepage as it relates to properties of the material through which the liquid flows and the driving force or hydraulic gradient of the liquid.

Darcy's Law:  $v = k (dh/dl)$  Equation 1

where,  
 $v$  = seepage rate  
 $k$  = permeability  
 $(dh/dl)$  = hydraulic gradient

Simply put Darcy described the liquid seepage rate as equal to the permeability of the material multiplied times the hydraulic gradient. Darcy assumed homogenous materials, which means the soil is the same throughout the liner and no areas of higher or lower permeability are taken into consideration. Darcy also assumed that no interaction of liquid will occur with materials through which the liquid flows other than that described by the permeability of the material. The permeability of a particular material is a function of porosity, flow paths, pore throat dimensions, and other aspects of the rock or soil. The permeability is also related to the standard liquid, in this case, water as the "permeant".

In summary, Darcy developed a model for flow through porous media that takes into account some basic features of the system: the soil material and the liquid of concern. It is an "ideal" system because it assumes homogeneous materials and water as the liquid. Most materials in the field are not homogeneous and most wastewaters have properties different than pure water. However, it is a very useful relationship for estimating behavior in the field.

#### The Difference Between Permeability and Seepage:

Darcy's law has three unknowns: seepage, permeability, and hydraulic gradient. The appropriate manner to discuss these values in terms of environmental protection would be to determine a maximum seepage rate, a maximum permeability and a maximum hydraulic gradient. The limit by stating maximums will in effect be protective.

The most common error is to list permeability as a "minimum" because the values expressed in centimeters per second seem so small. The appropriate units for permeability are length per unit time (inches per day, centimeters per second, gallons per acre per day, etc).



The following table is provided to compare permeability in different units.

Units of Permeability		
Inches per Day	Centimeters per Second	Gallons per Acre per Day
one inch/day (1.0 inch/day)	$2.9 \times 10^{-5}$ cm/sec	2668 gal/acre/day
1/4 inch/day (0.25 inch/day)	$7.2 \times 10^{-6}$ cm/sec	667 gal/acre/day
1/8 inch/day (0.125 inch/day)	$3.6 \times 10^{-6}$ cm/sec	334 gal/acre/day
1/29 inch/day (0.034 inch/day)	$1.0 \times 10^{-7}$ cm/sec	92 gal/acre/day
Centimeters per Second	Inches per Day	Gallons per Acre per Day
$1.0 \times 10^{-7}$ cm/sec	0.034 inch/day	92 gal/acre/day

**From the table, it is clear that the Kansas permeability of  $3.6 \times 10^{-6}$  cm/sec is 36 times the value of permeability allowed in Oklahoma.**

Permeability by itself is meaningless because Darcy's Law states that the seepage rate is equal to the permeability multiplied times the hydraulic gradient. The impact of hydraulic gradient can be explained as the "driving force" that forces the liquid through the soil materials. The hydraulic gradient is the total depth of liquid plus liner thickness divided by the liner thickness:

$$\text{Hydraulic gradient} = (dh/dl) = (h + d)/d \quad \text{Equation 2}$$

where,  $h$  = maximum depth of liquid in lagoon  
 $d$  = thickness of liner

For a given permeability, the seepage rate will increase as the hydraulic gradient is increased. The following table is provided to illustrate this relationship.

Effect of Hydraulic Gradient on Seepage Rate Assuming a permeability of $3.6 \times 10^{-6}$ cm/sec (Kansas HB 2950)		
Application	Hydraulic Gradient	Seepage Rate
Municipal lagoon maximum value	6	$21.6 \times 10^{-6}$ cm/sec
NRCS recommended maximum value	8	$28.8 \times 10^{-6}$ cm/sec
As constructed in Oklahoma	14.33	$51.6 \times 10^{-6}$ cm/sec

Note: Oklahoma hydraulic gradient of 14.33 was calculated using a typical maximum liquid level of 20 feet and soil liner thickness of 18 inches (1.5 ft) as follows:  $HG = (20 + 1.5)/1.5 = 14.33$

In Oklahoma, the regulations stipulate a maximum permeability of  $1.0 \times 10^{-7}$  cm/sec, but does not state a specific hydraulic gradient. It is implied, however, that the maximum gradient as stated by NRCS in Technical Note 716 should be used. The review of over 20 lagoon designs proposed to the Oklahoma Department of Agriculture shows that the typical hydraulic gradient is much more than the NRCS maximum recommendation. The protestants to the license application have brought this to the attention of agency staff, but staff has not yet taken action to correct this problem.

When given the freedom to choose construction limits in Oklahoma, the swine facility designers (corporate and "family farm") have taken advantage of this particular loop hole in the regulations. Oklahoma must correct this problem by either stipulating a maximum hydraulic gradient or a maximum seepage rate. Kansas HB2950 does stipulate both a permeability and a maximum seepage rate, but the values are so high they become meaningless with respect to environmental protection.

If the law stipulates only a seepage rate, then there are still two unknowns left in the Darcy Equation that must be determined. Therefore, the Kansas licensee would be allowed to use any combination of permeability and hydraulic gradient that multiplied together would result in the regulatory value for seepage.

One problem that comes up when discussing Darcy's Law, is the use of the terms permeability rate and seepage rate as interchangeable values. As long as the word "rate" is included, the two terms are the same. However, seepage rate and permeability should not be confused (ie., permeability rate is not the permeability). It is not appropriate to compare a value of permeability to that of seepage. The two terms are not interchangeable even though they have the same units of length per time (ie., inches per day, centimeters per second, etc.). The best way to avoid confusion is to use seepage rate to describe the amount of liquid seeping through the liner and permeability as the descriptor for the liner material. Do not use permeability "rate".

#### **Comparison of Kansas Law to Oklahoma Law with respect to seepage:**

Oklahoma CAFO regulations stipulates a maximum permeability of  $1 \times 10^{-7}$  cm/sec  
Kansas HB2950 stipulates a soil permeability of  $3.6 \times 10^{-6}$  cm/sec

By comparing these to numbers, it is clear that Kansas will allow a permeability 36 times greater than that allowed in Oklahoma. This is a significant difference. This is not a seepage rate, it is a permeability, which is a proportionality constant that reflects the physical properties of the soil. The higher permeability value is more closely representative of natural soil values than that of a manipulated liner material. In other words, the permeability required by law will be reflective of an excavated lagoon rather than a "lined" lagoon. It means nothing and is not restrictive if the value can be achieved by merely digging a hole. The purpose of a liner system is to physically manipulate a soil high in clays to produce a low permeability zone that will reduce the speed in

which liquid passes through it. In effect, the higher permeability listed in the proposed legislation will allow construction of lagoons throughout Kansas with little or no manipulation of the soil.

Comparison of Seepage between Kansas and Oklahoma				
State	Hydraulic Gradient	Permeability	Seepage Rate	Seepage Rate ( $10^{-7}$ cm/sec)
<b>As proposed in HB2950 that states both seepage rate and permeability</b>				
Kansas	not defined (implied = 2)	$3.6 \times 10^{-6}$ cm/sec	$7.2 \times 10^{-5}$ cm/sec (1/4 inch/day)	$72 \times 10^{-7}$ cm/sec
	not defined (implied = 1)		$3.6 \times 10^{-5}$ cm/sec (1/8 inch/day)	$36 \times 10^{-7}$ cm/sec
<b>If using typical hydraulic gradients and proposed permeability only</b>				
Kansas	NRCS value = 8	$3.6 \times 10^{-6}$ cm/sec	if not defined, then $28.8 \times 10^{-5}$ cm/sec	$288 \times 10^{-7}$ cm/sec
	Oklahoma as built = 14.33		if not defined, then $51.6 \times 10^{-5}$ cm/sec	$516 \times 10^{-7}$ cm/sec
<b>Using regulatory permeability only</b>				
Oklahoma	not defined (implied = 8)	$1.0 \times 10^{-7}$ cm/sec	not defined	$8 \times 10^{-7}$ cm/sec
	as built = 14.33		calculated as: $1.4 \times 10^{-5}$ cm/sec	$14.33 \times 10^{-7}$ cm/sec

The importance of the above table is to understand that if both the seepage rate and the permeability is stipulated in the Kansas law, then the hydraulic gradient can only be equal to the seepage rate divided by the permeability. In the case of seepage rate equal to 1/4 inch per day, the hydraulic gradient would be equal to 2.

$$\begin{aligned} \text{Hydraulic gradient} &= 2 = (h + d)/d \\ 2d &= h + d \\ (2d - d) &= d = h \end{aligned}$$

therefore, depth of liquid equals thickness of liner which is illogical

$$\begin{aligned} \text{Hydraulic gradient} &= 1 = (h + d)/d \\ d &= h + d \\ (d - d) &= 0 = h \end{aligned}$$

definitely illogical

**The values proposed in HB2950 do not make sense mathematically**

The reason for stipulating construction guidelines for liner permeability, hydraulic gradient, and/or seepage is to limit the amount of wastewater that seeps through the liner (breakthrough) and enters the subsurface and, ultimately, the groundwater. The breakthrough time is estimated as the thickness of the liner divided by the seepage rate.

If the goal is to protect the groundwater, then it is important to know how long it will take for the liner to become saturated (ie., breakthrough time) and the volume of wastewater that will seep from the saturated liner. The following table shows estimated breakthrough times for a variety of seepage rates and liner thicknesses:

Comparison of Breakthrough Time		
Seepage Rate	Liner Thickness	Breakthrough Time
7.2 x 10 <sup>-5</sup> cm/sec (1/4 inch/day)	12 inches	48 days
	18 inches	72 days
	36 inches	144 days
3.6 x 10 <sup>-5</sup> cm/sec (1/8 inch/day)	12 inches	96 days
	18 inches	144 days
	36 inches	288 days

The following table shows the volume of wastewater that will seep through a liner at breakthrough for various hydraulic gradients and regulatory permeability values. Assume lagoon dimensions of 500 feet by 500 feet (equals 5.7 acres).

Estimated Seepage Rate and Volume of Wastewater per Year				
Seepage = permeability x hydraulic gradient				
State Permeability	Hydraulic Gradient	Seepage Rate (gal/acre/day)	Volume of Wastewater (gal/day)	Volume of Wastewater (million gal/year)
Kansas 3.6 x 10 <sup>-8</sup> cm/sec (3325 gal/acre/day)	6	19,954	119,724	43.70
	8	26,600	212,800	77.67
	14.33	47,647	682,782	249.22
Oklahoma 1.0 x 10 <sup>-7</sup> cm/sec 92 gal/acre/day	6	552	3,146	1.14
	8	736	4,195	1.53
	14.33	1,318	7,512	2.74

The proposed legislation does not make sense if both the seepage rate and permeability are specified because the resulting hydraulic gradient is too small. Comparisons made using just the seepage rate show breakthrough times under one year. Comparisons made using the permeability and assuming a value for hydraulic gradient show that even the most conservative hydraulic gradient will result in 44 million gallons of wastewater seeping through the liner after breakthrough.

The question that remains to be answered is "How much pollution is in that 44 million gallons"? The answer can only be obtained by using wastewater analysis of the contents of the lagoon. If the lagoons are not built, then the licensee must provide data from a similar facility. The following table compares the concentration of typical pollutants found in the concrete pit under the barns, the anaerobic lagoon and typical raw wastewater at a municipal wastewater treatment plant.

<b>Common Pollutants in Wastewater (units of ppm)</b>			
<b>Pollutant</b>	<b>CAFO - Swine</b>		<b>Municipal</b>
	<b>Concrete Pit</b>	<b>Lagoon</b>	<b>Raw Wastewater</b>
<b>Chemical oxygen demand</b>	1,000,000	?	250 - 1000
<b>Biochemical oxygen demand</b>	40,000	14,400	250 - 400
<b>Total dissolved solids</b>	150,000	3300	250 - 850
<b>Chlorides</b>	61,000	130	30 - 100
<b>Alkalinity</b>	?	2200	50 - 200
<b>Total nitrogen</b>	78,000	500 - 1500	20 - 85
<b>Free ammonia</b>	39,000	474	12 - 50
<b>Total phosphorus</b>	26,000	47	4 - 15

NOTE: All units in both tables in "parts per million - ppm". Sources for data in table are attached and listed below:

**Swine Facility - Concrete pit:**

Livestock Waste Management Vol II (ed: Overcash, Humenik and Miner, CRC Press)

**Swine Facility - Anaerobic Lagoon:**

Wastewater Analysis Report - Servi-Tech Laboratories (Blackwelder Application)

**Raw Municipal Wastewater:**

Wastewater Engineering Treatment, Disposal and Reuse (3rd ed., Metcalf & Eddy, McGraw-Hill)

Understanding the Pollution Potential of Livestock Waste (Illinois Environmental Protection Agency, 1991)

Published data indicates that wastewater in the lagoons is at least ten times more concentrated than raw, untreated municipal wastewater. Even more important is the implication that the liquid swine manure slurry in the concrete pits under the barns is 100 times or more concentrated than raw, untreated municipal wastewater. Therefore, it is inappropriate to compare the environmental impact of a swine facility to that of a small community's wastewater treatment lagoon and say it would be the same. The environmental impact would be much greater from a swine facility.

The amount of pollutant that would be in the seepage can be calculated using the following equation:

$$\text{lbs pollutant} = \text{concentration} \times \text{volume of seepage} \quad \text{Equation 3}$$

Therefore, the amount of nitrogen compounds in the wastewater that will seep from a lagoon constructed using Kansas guidance of a seepage rate of 1/8 inch per day (3325 gal/acre/day) is calculated as:

$$\begin{aligned} \text{lbs of nitrogen compounds} &= 500 \text{ ppm} \times 7 \text{ million gallons} \times 8.34 \text{ lbs/million gallons} \\ &= 29,190 \text{ lbs per year} \\ &= 583,800 \text{ lbs over 20 year design life} \\ &= \mathbf{292 \text{ tons nitrogen}} \end{aligned}$$

$$\begin{aligned} \text{lbs hardness compounds} &= 2200 \text{ ppm} \times 7 \text{ million gallons} \times 8.34 \text{ lbs/million gallons} \\ &= 128,436 \text{ lbs per year} \\ &= 2,568,720 \text{ lbs over 20 year design life} \\ &= \mathbf{1284 \text{ tons hardness}} \end{aligned}$$

$$\begin{aligned} \text{lbs of salt compounds} &= 3300 \text{ ppm} \times 7 \text{ million gallons} \times 8.34 \text{ lbs/million gallons} \\ &= 192,654 \text{ lbs per year} \\ &= 3,853,080 \text{ lbs over 20 year design life} \\ &= \mathbf{1928 \text{ tons salt}} \end{aligned}$$

Another common and inappropriate comparison is made between swine facilities and cattle feedlots. The purpose of the comparison is to raise concern that once a swine facility is regulated, the next logical step would be to regulate cattle feedlots. That may or may not be true. Regardless, the environmental impact of a swine facility versus a cattle feedlot is best illustrated in the following table.

Source of Pollutant - "Livestock"	BOD ppm
Undiluted Livestock Waste	40,000
Manure Lagoon Effluent	14,400
Runoff from a concrete lot	1,000
Runoff from a dirt lot	500
Raw Municipal Sewage	250
Treated Municipal Sewage	30

NOTE: All units in both tables in "parts per million - ppm"

The comparison is made between the biochemical oxygen demand (BOD) of each wastewater. The liquid swine manure wastewater is shown to be 29 times stronger than the stormwater runoff of a dirt cattle feedlot. The swine wastewater in the concrete pits under the barns is shown to be 80 times more concentrated. Therefore, it is illogical to compare the two systems.

The following table shows the amount of wastewater generated by a typical swine finishing operation.

<b>Wastewater Generated by 10,000 Head Swine Finishing Operation</b>			
<b>Parameter</b>	<b>Design Factor</b>	<b>Amount per year</b>	<b>Units</b>
<b>Total manure generated</b>	1.2 gal/hd/day	4,380,000	gal/yr
<b>Total solids</b>	1.65 lbs/hd/day	6,022,500	lbs/yr
<b>Biochemical oxygen demand</b>	0.47 lbs/hd/day	1,715,500	lbs/yr
<b>Total nitrogen</b>	0.07 lbs/hd/day	255,500	lbs/yr
<b>Total phosphorus</b>	0.050 x 0.44 lbs/hd/day	80,300	lbs/yr
<b>Flush water</b>	10 gal/hd/day	36,500,000	gal/yr
<b>Total wastewater</b>	flush water + manure	40,880,000	gal/yr
<b>Total wastewater</b>	<b>20 year design life</b>	<b>817,600,000</b>	<b>gallons</b>

NOTE: Wastewater Values calculated using design factors in Table 2-1. Air Pollution Values calculated using design factors in Table 7-3 and assumption of 80% nitrogen volatilized as ammonia - Midwest Plan Service Livestock Waste Facilities Handbook (2nd ed, 1993) Calculation Method: 10,000 head x design factor x 365 days/yr

#### DEFINITIONS FOR WASTEWATER TERMINOLOGY

<b>Term</b>	<b>Definition</b>
<b>BOD - Biochemical Oxygen Demand</b>	amount of oxygen required by bacteria to degrade the organic matter in the wastewater
<b>COD - Chemical Oxygen Demand</b>	amount of oxygen required to chemically oxidize wastewater
<b>TDS - Total Dissolved Solids</b>	amount of non-filterable solids, solids that cannot be removed by filtering
<b>Alkalinity</b>	a measure of the buffering capacity of a solution the ability to accept H <sup>+</sup> ions with little change in pH
<b>ppm</b>	concentration of pollutant given in units of parts per million mg/l = ppm      1% = ppm divided by 10,000 Example: 1,000,000 ppm = 100%    and    78,000 ppm = 7.8%
<b>mg/l</b>	milligram per liter mass per unit volume

## Why would Kansas Give Nuisance Protection?

Industry regulated by federal and state environmental regulations do not receive nuisance protection, so why would Kansas give an agricultural industry such a large economic benefit? The typical swine facility will generate a tremendous amount of air pollution. The odors associated with swine facilities vary greatly depending on the time of day and health of the animals. The odor is a combination of mercaptans, sulfur compounds, ammonia compounds, and methane. It is known to cause nausea, headaches, and other physical effects, as well as adverse psychological effects.

Air Pollution Generated by 10,000 Head Swine Finishing Operation		
Parameter	Design Factor	Amount per year
Biogas	28 cu. ft./hd/day	102,200,000 cubic feet/yr
Methane	58% of biogas	59,276,000 cu. ft./yr
Ammonia	80% total nitrogen	204,400 lbs/yr
Ammonia over design life	20 yrs x ammonia	4,088,000 lbs in 20 years

The air pollution (ie., odors) are exhausted from the barns and are due to volatilization of gases from the lagoon and during land application. Considering that the neighboring landowners will be subjected to the air pollution from the exhaust fans immediately upon startup of the swine facility, it is no surprise that swine facilities want immunity from nuisance lawsuits. The odors from the lagoon will also occur soon after startup. The odors associated with land application may not be generated until a year of operation.

It is not logical to provide nuisance protection to an agricultural industry if such nuisance causes extreme discomfort of neighboring landowners. The private property interests of the neighboring landowners must be protected both by smart legislation and by formal administrative hearing processes.

Nuisance protection means that the neighboring landowners cannot exercise their constitutional rights. They must wait until groundwater or surface water pollution occurs before litigation can be used to reclaim their property rights.

### Recommendations related to seepage rate and permeability:

- Stipulate a maximum permeability equivalent to that of neighboring Oklahoma -  $1.0 \times 10^{-7}$  cm/sec
- Stipulate a maximum hydraulic gradient of 8 (as recommended by NRCS).
- Stipulate a minimum liner thickness reflective of Kansas State liner study of 36 inches.

The resulting maximum liquid level in the lagoon will be 21 feet with a 3 foot liner or 10.5 feet with an 18 inch liner. The resulting maximum seepage rate will be  $8.0 \times 10^{-7}$  cm/sec, equivalent to 736 gal/acre/day or 1.53 million gallons of wastewater per year.



# KATHY J. MARTIN

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## CURRENT POSITION

ENVIRONMENTAL CONSULTANT, MARTIN ENVIRONMENTAL SERVICES, NORMAN, OK  
Providing consultant expertise in areas of industrial permitting for air quality, non-hazardous industrial wastewater, and closure of surface impoundments

## EDUCATION

UNIVERSITY OF OKLAHOMA  
*M.S. Civil Engineering, 1989*  
Thesis: The Removal of Polychlorinated Biphenyls from Topsoil Using Nonionic Surfactants

UNIVERSITY OF OKLAHOMA  
*B.S. Petroleum Engineering, 1987*  
National Dean's List, 1986-87

## EXPERIENCE

DEPARTMENT OF ENVIRONMENTAL QUALITY  
*Environmental Engineer II, July 1, 1993 to November 1, 1996*  
Special training in areas of Air Quality and Hazardous Waste permits. Provide technical and regulatory assistance to business and industry with respect to environmental permits issued by the DEQ.

OKLAHOMA WATER RESOURCES BOARD  
*Environmental Engineer I, April 1990 to June 30, 1993*  
Special training in areas of industrial wastewater disposal permits and inspections. Draft state regulations for surface impoundments and land application. Supervise the development and implementation of the groundwater monitoring program at the Tar Creek Superfund Site in cooperation with the U.S. Geological Survey and the U.S. Environmental Protection Agency.

## SKILLS

- Extensive knowledge of environmental regulations
- Extensive research on waste/liner compatibility
- Drafted state regulations for impoundments and land application
- Professional Engineer February 1997

## ORGANIZATIONS

- Oklahoma Society of Environmental Professionals - current Board member
- Society of Petroleum Engineers - Executive Committee member
- National Association of Professional/Graduate Students - Board member
- Graduate Student Senate, University of Oklahoma - Chair

**TESTIMONY IN OPPOSITION TO HB 2950**

Presented By: JOHN CARTER

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Phone: 232-0656 Fax: 232-3647

Senate Energy and Natural Resources Committee  
Chairman Corbin; Members of the Committee:

I thank you for the opportunity to testify before you today. I, and the group I represent oppose this, and any bill that reaches a final regulatory solution to the problems presented by mega swine factories...before there is a sound scientific basis for those regulations. In our opinion, there is no valid scientific basis for these regulations. The K-State Lagoon Study which was designed to provide a scientific basis for KDHE's new regulations will not be concluded until October of 1999. The data from the preliminary results of this study have indicated that existing lagoon designs are not adequately protective of soil and groundwater, and may not even meet the State of Kansas 1/4 inch per day standard.

Representatives from the swine industry have stated that the citizens of Western Kansas are uninformed and not competent to decide whether or not to allow hog farming on their own. These citizens are informed and are competent enough to have an opinion on this issue. They are also competent to vote and they put at least some of you in office.

Representatives from the swine industry have stated that "Kansas has the most restrictive regulations on hog lagoons in the country." This is nothing more than a standard line that the pork producers use in every state they invade. In reality Kansas has some of the most lenient standards in the nation. The new regulation proposed by this legislation would allow a seepage rate far more lenient than that allowed in Oklahoma.

Hog producers routinely claim that their lagoon liners will outperform the state requirements by several orders of magnitude - allowing several hundred times less seepage than that allowed by the state. Yet these same producers balk at uniform standards that even moderately reduce seepage.

The hog industry has repeatedly claimed that there is no evidence of contamination of groundwater from any mega hog facility in this state. What the hog producers have not told you is that in the case of three Seaboard hog facilities

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here in Kansas, there was enough evidence of potential contamination that the KDHE ordered whole pond seepage tests. A whole pond seepage test is a test designed to determine the level of seepage from a lagoon. What the Hog industry has not told you is that the results of these whole pond seepage tests were so flawed and irregular that KDHE rejected them, and that despite a request by KDHE, these tests have never been properly conducted.

This issue has certainly provided me a lesson in representative democracy. I and a majority of the citizens from Western Kansas brought our concerns to this legislative body in the form of a request for a moratorium, and regulatory reform. We sought regulations designed to protect this state, its resources, and its citizens from a clearly demonstrable eminent hazard. The response of this legislative body has been to mock these citizens, calling them “idiots”, and refusing even to debate the issue of a moratorium. This legislation seems only to erode what weak environmental protection already existed in this state. It gives the swine industry an open invitation to turn portions of this state into virtually unregulated cesspools against the will of the people living here.

If you as an elected legislative body wish to ignore the will of your constituents and issue an open invitation to giant hog producers like Murphy and Seaboard to invade this state unfettered, do so. But do not insult the intelligence of the people who put you in office by calling that invitation “environmental regulation.”

Thank you.

Testimony in opposition to H.B. 2950  
Mike Knobloch, 5284 Timber Creek, Great Bend, Kansas 67530  
Senate Energy and Natural Resources Committee  
March 19, 1998

My name is Mike Knobloch and I reside in Barton County, city of Great Bend. I am here today to speak in opposition to the expansion of the swine processing and production industry in Kansas. Seaboard is considering Great Bend as the location of a massive processing plant capable of slaughtering 16,000 hogs per day. In anticipation of this, the Barton Co., Economic Development Commission has formed a number of Impact Study Teams whose purpose is to gauge the effect on our community and find solutions to anticipated problems should Seaboard decide to locate there. The teams are studying a wide variety of issues, including hospitals, schools, law enforcement, waste water treatment, agriculture, transportation, the environment (air, water, and wildlife), public health issues, and others. I am serving on the Environmental Impact Study Team.

This past Friday evening I attended a public forum held by the Public Health Impact Team. The team members enumerated various issues that <sup>SMK</sup> would materialize with the influx of workers at the plant. These included, among others, identification and vaccination of those who are carriers of tuberculosis, sexually transmitted diseases, and other communicable diseases, providing medical care for the large number of uninsured workers, retention of doctors that may leave the community due to the large number of non-paying patients, and finding sources of increased funding, either from the private sector or from public funds, **i.e. the taxpayer**. I sat there thinking "Why would anyone want to bring in all these problems and then have to try to figure out a solution?" This sounds a lot like the man who installed an expensive and sophisticated fire detection and prevention system in his house and then sets his house on fire just to see if it works. I am sure that everyone of you had a grandmother who told you "An ounce of prevention is worth a pound of cure."

I am here to ask you to support and strengthen the moratorium and referendum amendments on H.B. 2950. Specifically, I recommend the following:

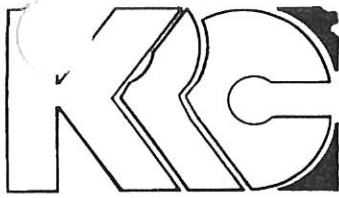
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1. I recommend changing the definition of "Swine Production Facility" to include all facilities regardless of how the ownership is structured.
2. I recommend lowering the animal unit limit for mega-swine facilities to no more than 2,000 animal units.
3. I also recommend including processing plants in the referendum provision.

Thank you for your attention this morning.



KANSAS RURAL CENTER

P.O. Box 133

Whiting, Kansas 66552

(913) 873-3431

Testimony for the Senate Energy and Natural Resources Committee  
Substitute for HB 2950  
Submitted by Mary Fund  
March 24, 1998

The Kansas Rural Center is a 19 year old private, non-profit organization that promotes sustainable agriculture - an environmentally sound, economically viable family farm agriculture. The Kansas Rural Center has a long history of support for public policies that protect family farming interests, the environment, and rural communities in this state.

We appreciate the time and energy that the Legislature has devoted to this issue. We realize it is a complicated and time-consuming issue. It has been divisive in communities and even in families. But it is of critical importance to the state's citizens.

We are here today to urge you to maintain the amendments added to the bill by the House. I am referring to Rep. Doug Johnston's amendment that would prohibit new or expanded swine operations with a capacity of 3800 animal units or more in counties that had voted to ban corporate hog operations. The second amendment by Rep. John Edmonds would require that when county commissioners pass a resolution allowing corporate hog operations, it would trigger an automatic countywide vote on the issue; this amendment also allow voters to revisit the issue every two years if they so choose.

The Kansas Rural Center believes that if the Legislature is to address the concerns of citizens around the state regarding local control and environmental protection, it is critical that these minimal amendments be kept within the bill. In fact, the Rural Center finds that 3800 animal units is still too high and too narrowly applied (only 21 counties) to offer the level of environmental and quality of life protection that the citizens of this state deserve. We also think that the 3,725 animal unit threshold that defines "meg-hogs" is also too high to get at the source of the existing or potential environmental and community problems.

Some have argued that the so-called "moratorium" would negatively impact family farmers by limiting their rights and abilities to expand. The same organizations and individuals also argue that the environmental regulations triggered by 3725 animal units of Substitute HB 2950 will also harm family farms. Family farm hog producers (ranging in size from 100 to 150 sows to several hundred sows) have told us that (1) they currently have a market enforced moratorium on their expansion due to low hog prices (caused by a glut of supply, created by expansion of the mega-facilities); and (2) the regulations in Substitute HB 2950 will not require any significant changes in the way they do business. An examination of the Legislative Research Department's "Major Requirements of Substitute H.B. 2950 for Various Sizes of Swine Facilities" also confirms that most of the new environmental regulations do not apply to facilities under 1000 animal units.

Also since this bill applies only to permits, and nothing in the bill limits the number of permits one farmer or any entity can have, it cannot be said to limit growth or expansion. All the bill does is set threshold numbers for specific regulations.

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The Rural Center's primary concern is that even though the House dropped the animal unit threshold from the original 4500 to 3725 animal units (9,312.5 hogs), it still does not get at the source of the public's concerns about odor, water quality, quality of life, and local control. An examination of available permit information from the Kansas Department of Health and Environment on Swine Facilities by Capacity and Animal Unit Size, shows that there are about 44 permits and pending permits for swine facilities over 3725 animal units. These facilities will house only about 45% of the state's total hog permitted capacity. We do not consider this strict environmental regulation when less than half the state's hog population is impacted.

If the threshold trigger is dropped, for example, to 1000 animal units, then 155 permitted facilities with 70% of the total permitted head capacity would be affected.

If the goal is to protect the environment, then the objective should be to affect the largest number of facilities, and the largest concentrations of hogs; and it does not matter if these are family farms or corporate farms. The make-up the volume, and the impact of hog manure is the same.

In short, this bill will not affect family farmers unless they are raising a significant number of hogs, in which case they should be doing everything they can to protect the environment and their communities. In closing, we urge you to reduce the trigger threshold of 3725 animal units, and to support the primary amendments the House attached to the bill.

Thank you.

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Sources:

Kansas Department of Health and Environment, List By Capacity and Animal Unit Size Over 100 Animal Units, Dated February 18, 1998. (List was presented to the Kansas Rural Center upon request.)

Kansas Legislative Research Department Memo, Major Requirements of Substitute for H.B. 2950 for Various Sizes of Swine Facilities, March 11, 1998.