



KANSAS GEOLOGICAL SURVEY

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The University of Kansas
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Phone: 785-864-3965
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Brandon Prough
USDA Rural Development
2715 Canterbury Drive
Hays, Kansas 67601

October 19, 2006

Dear Mr. Prough,

I have reviewed the materials sent to me concerning the Royal Farms Dairy, LLC in Gray County, Kansas. After discussion with Mr. Averhoff and reviewing the materials sent I feel there should be minimal problems with the expansion. The owner is following the approved recommendations of KDHE and NRCS regarding waste containment and disposal, the soils appear adequate to minimize leaching from the waste applications, and the general water quality information available to me suggests limited impact on the water quality at this time.

Mr. Averhoff told me that he routinely tests his domestic well for water quality changes. Because of the size of the facility in terms of land application of waste I would suggest that Mr. Averhoff consider having the irrigation wells routinely tested for nutrients and also consider the possibility of installing monitoring wells for such testing in the future. Installing separate monitoring wells prevents possible contamination due to construction issues or leakage of waste from the system down the well bore.

Other than this I think the project should move forward.

Sincerely,

Margaret Townsend
Hydrogeologist

**FINAL NOTICE OF RURAL DEVELOPMENT'S FINDING OF NO
SIGNIFICANT ENVIRONMENTAL IMPACT**

The USDA Rural Development (RD) is considering an application for financial assistance from Wheatland Electric Cooperative Inc. The specific elements of this proposed action are to re-loan the money to Royal Farms Dairy, LLC in Gray County, KS to construct an 1100 head dairy calf facility and construct a 2300 head heifer replacement facility. RD has assessed the potential environmental impacts of this proposed action and the location of the facilities and has determined that it will not significantly affect the quality of the human environment. Therefore, RD will not prepare an environmental impact statement for this proposed action.

Any written comments regarding this determination should be provided within fifteen (15) days of this publication to Brandon Prough, USDA Rural Development, 2715 Canterbury Drive, Hays, KS 67601.

RD will make no further decisions regarding this proposed action during this fifteen day period. Request to review RD environmental assessment upon which this determination is based or to receive a copy of it should be directed to the above address.

Subject: Questions for Mr. Averhoff concerning the dairy
From: "Kyle Averhoff" <averhoff@ucom.net>
Date: Mon, 16 Oct 2006 08:31:23 -0500
To: <townsend@kgs.ku.edu>

Margaret,

Please find the answers to your questions typed in blue. I certainly appreciate your inquiry and please do not hesitate to let me know if there is anything else I can do for you.

Thanks,
Kyle S. Averhoff

Dear Mr. Averhoff,
My name is Margaret Townsend. I am a hydrogeologist for the state Kansas Geological Survey. My agency was asked to comment on your submittal for expansion of your dairy. I received some background information from the USDA Rural Development office and also a report that was submitted by the Sunflower Electric group.

I have a few questions about water use and waste disposal:

1) Is the solid manure and bedding composted before application on the field?

A portion of our solids are composted prior to field application. This is dependent on the time of year, field conditions, and the percent of bedding included in the solids. In general, over 90% of our manure and bedding solids will be spread directly on the fields at agronomically appropriate rates.

2) Is the solid manure stored in an enclosed area or on a cement pad to prevent leakage from infiltration or runoff?

Our solid manure is always stored within the confines of our waste management system. In some areas, this does involve cement pads and in other areas it is stored on compacted clay soil. Both of these methods are always within the drainage confines of our waste handling system. Furthermore, both of these methods are deemed appropriate by KDHE.

3) How long is the liquid waste stored in the lagoons before application on the fields?

The period of time waste is stored in the lagoons is dependent on field conditions, weather conditions, and crop rotations. Our liquid waste handling system is plumbed in to 6 center pivot systems. This abundance of options gives us great flexibility in handling the liquid waste in a way that best benefits the crops while easily maintaining compliance with our mandated pond levels. In general, pumping from the lagoons is an ongoing process that pauses during periods of unsuitable ground or weather conditions.

4) Have you noticed any appreciable increase in total dissolved solids in the lagoons due to evaporation, particularly in the summer?

I am sure that the Total Dissolved Solids in the lagoon water do concentrate with evaporation. However, our rapid lagoon water turnover onto crop ground minimizes this occurrence. Furthermore, we more directly monitor the ground undergoing application with annual soil tests. From these, we strategically align our crop and pumping rotations.

5) Has there been a noticeable increase in salts, nutrients or phosphate in the soils related to use of the solid or liquid waste as fertilizer? I presume that you work with NRCS or KSU or a crop consultant to determine the rate of application and resulting loading on the soils.

As stated in the prior question, we annually monitor all of the key nutrients in our dewatering fields. To date, we have noticed some increases in the level of salts and other nutrients. These changes could be rated as slight to moderate. To counteract this, we added an additional three dewatering locations in 2005. Additionally, we are in the process of adding a seventh location in 2006 and have the capability of adding an eighth location. With all of these changes, we (Royal Dairy, NRCS, KDHE) feel very confident in being able to maintain an appropriate nutrient balance on our dewatering ground.

6) I looked at your well records and noticed that the water rights are from the 1960s. I presume that there is sufficient water with your existing rights to cover the increased usage for the increased number of animals? I only ask because I noticed that your farm is in a closed area for new water rights.

Although the current water rights should be sufficient to accommodate the expansion, we are in the process of purchasing additional water rights to create some more buffer room. Our ease of access to additional water is facilitated by having an agreement with Irsik Farms regarding the option to purchase additional water rights as needed through the development of the dairy operation. Irsik Farms participates in Royal Farms Dairy as a major partner.

I think that is it. Thank you for your help. Please call the number below if you have questions or wish to discuss my questions. I should be here for the next two weeks. I have voice mail if I am away from my desk.

Thank you again.

Margaret A. Townsend

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Margaret Townsend
Hydrogeologist
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Subject: FW: final question for Mr. Averhoff
From: "Kyle Averhoff" <averhoff@ucom.net>
Date: Wed, 18 Oct 2006 19:08:00 -0500
To: <townsend@kgs.ku.edu>

Margaret,

Thanks for the question. Currently, our facility does not have monitoring wells. However, we routinely sample our well water for quality and noticeable changes in composition. I will certainly visit more with our environmental consultants regarding the possible need of monitoring wells.

Once again, thanks for the questions.

Kyle S. Averhoff

Hi Mr. Averhoff,

One final question: do you have any monitoring wells at your facility?
The reason I ask is that in general the water quality of the Ogallala is

gradually being affected by past and present farming practices. Work by the USGS and the KGS has indicated nitrate increasing in the aquifer over a 30+ year period. Part of this is due to past practices and part is due to preferential flow through root channels and cracks the unsaturated zone which means contaminants can move fairly quickly to ground water.

If you have monitoring wells I would like to put into my recommendations

that your company collect samples for nitrate and chloride as potential indicators of waste reaching the ground water at least once or twice a year. If you don't have monitoring wells I'd like to suggest the possibility of your installing some at some future time.

Thank you.

Margaret Townsend

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Margaret Townsend
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United States Department of Agriculture • Rural Development

2715 Canterbury Drive • Hays, KS 67601

Phone: (785) 628-3081 • Fax: (785) 625-8085 • Web: <http://www.rurdev.usda.gov/ks>

FAX COVER SHEET

DATE: OCTOBER 3, 2006

TO: Margaret Townsend
Kansas Geological SurveyFROM: Loretta Zordel
Hays RD 

FAX NUMBER: 785-864-5317

TELEPHONE NUMBER: (785) 628-3081

PHONE NUMBER:

FAX NUMBER: (785) 625-8085

SUBJECT: Royal Farms Dairy LLC

NO. OF PAGES INCLUDING COVER: 6

MESSAGE:

Margaret,

Included is the environmental impact she spoke about on the phone. She plans to fax you a copy of the original letter.

Committed to the future of rural communities.

"USDA is an equal opportunity provider, employer and lender."

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 328-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

ENVIRONMENTAL IMPACT - Exhibit One - Class II Action

1. Primary Beneficiaries

The primary beneficiaries of this project are the owner and employees of Royal Farms Dairy, LLC. With the proposed expansion, the dairy will be able to increase the financial stability of its operations through a more controlled and predictable source of replacement heifers and lay the foundation for the development of an Identity Preserved Holstein Steer Program.

2. Area Description

- a. Royal Farms Dairy is located at 3705 F Road. An aerial photo of the property is included as Tab 3. The legal description of the dairy facility is as follows:

The northeast quarter of Section 33, Township 24, Range 30, the southeast quarter of Section 28, Township 24, Range 30, and the east half of Section 33, Township 24, Range 30, the result being approximately 400 acres.

Royal Farms Dairy also owns and operates 400 acres of cropland surrounding the facility located on the southwest quarter of Section 33, Township 24, Range 30, the west half of Section 33, Township 24, Range 30 and the northwest quarter of Section 4, Township 25, Range 30.

- b. The proposed expansion of Royal Farms Dairy will involve dirt work and installation of piping and additional pens. The dairy will require additional feed and supplements for the proposed expansion which will consume additional alfalfa produced by local farmers. This expansion will also add solid waste to the dairy's current lagoon system which is capable of handling the proposed expansion. Adding 3,400 animal units to the dairy's current operation will also affect the current air quality, however this expansion is well within the confines of current permit from the Kansas Department of Health & Environment for Royal Farms Dairy.
- c. No existing land uses will be changed.
1. The US Geological Survey map is included as Tab 4.
 2. There is no FEMA flood map available for Gray County, Kansas.
 3. Photos of the dairy are included as Tab 5.
 4. A review of the Soil Survey for Gray County indicates that the land included in this property is in the Spearville-Harney association made up most of clayey soils and Mansic-Ulysses association made up on loamy soils. Copies of the general soil map for Gray County and soil legend are included as Tab 6.
 5. An aerial photo is included as Tab 3.

3. Air Quality

- a. Royal Farms Dairy, LLC currently falls within the confines of current air quality regulation for CAFO dairy facilities in Kansas. Additionally, the proposed expansion will also maintain within compliance of these regulations.
- b. CAFO dairy facilities in Kansas are not currently required to monitor or measure type and quantities of air emissions. In regards to odors, the operation was constructed with large buffer zones between the dairy and area residents. In turn, odor issues from this facility are of a very minimal risk.
- c. No topographical or meteorological conditions in or around Royal Farms Dairy will hinder the dispersal of air emissions.
- d. Royal Farms Dairy intensely manages pen conditions, weather conditions, and animal feeding practices to control and minimize air emissions from the dairy. This intense management includes daily grooming of pens, East/West orientation of both natural and constructed windbreaks, and professional consultation on ration formulation for the animals.

4. Water Quality

- a. There is not any existing surface water in the surrounding area. Water quality information for the underground water is included as Tab 7 for review.
- b. The project being constructed will utilize water from a battery of two existing wells that are rigged to pump 225 gallons/minute. Each of well yields water that falls well above livestock grade quality.
- c. All of the effluent and discharges associated with this project will be contained and controlled according to the regulations set forth in Royal Farms Dairy permit with KDHE. The primary beneficiary of these effluents will be the farm ground receiving liquid and solid application. The effluent and solids serve as a very inexpensive source of valuable nutrients for growing crops. Analysis reports for both the solids and liquids are included as Tab 8 for review.
- d. The effluents from this project will be captured and contained in an engineered waste management system that includes a clay lined lagoon. Once captured, the effluents and/or discharges will not receive treatment. They will simply remain in the holding structure awaiting timely application to agricultural crops.
- e. The systems being implemented fall within the design parameters and regulations of KDHE. In turn, they are designed to not be overloaded in predictable circumstances.
- f. The surface runoff within the boundaries of the contained footprint will be captured in the lagoon system in an identical manner as the effluent. Surface runoff surrounding the containment area will be directed through diversions and waterways to a clean runoff water area.

5. **Solid Waste Management**

- a. Solid waste production from the new project facilities will be comprised of manure and bedding material. Each of these products will beneficially impact the farm ground on which they are applied. They are both high in organic matter and valuable nutrients needed by crop ground. The production of these products on an annual basis will be approximately 5000 tons.
- b. The solid waste will be applied to farm ground utilizing applicator trucks set up with GPS and horizontal spinners to create a very precise and effective application of fertilizer. With the use of this technology and soil testing, the useful life of this process should be viable for many decades to come.
- c. No recycling process will be used in this project outside of the normal animal production recycling process (Feed = Production + Manure).

Storage
for animal
waste
composting
recycling
process?

6. **Transportation**

- a. Milk produced by the dairy is transported by truck to its destination. Trucks are filled eight to ten times daily for distribution. No other transportation is available on site.
- b. No new transportation patterns will arise due to the project. Both the calf rearing operations and heifer replacement operations will be put in place to replace cows after slaughter. Any additional milk production will be transported on the regular route.
- c. No land uses will be affected by the transportation patterns.
- d. Any additional milk produced from the expansion of the operations can be transported on the existing schedule of eight to ten trucks per day.

7. **Noise**

- a. The major source of noise is the motorized vehicles used during operation and mooing from cows located at the facility. With the buffer zone created between the dairy and area residents, noise has not been an issue. The milking parlor is located within a building where noise is contained.
- b. The surrounding acreage of Royal Farms Dairy is cropland used to supplement the dairy's operations. There is a farmstead located on the property that is owned by the dairy and inhabited by the dairy manager. There are no other farmsteads located within a one mile radius, thus noise pollution is not a factor in the proposed expansion.

8. **Historical/Archeological Properties**

- a. There are not any known historic/archeological resources within the project area.
- b. There have not been any historical/archeological surveys conducted for the project area. However, all historical and archeological organizations of possible interest have been given notification of this project. This was done in an effort

to preserve any possible historic or archeological significance of the project site.

9. Wildlife & Endangered Species

- a. Wildlife species located in the project area include wild rabbits, upland game birds such as pheasant and quail, and several species of birds.
- b. There are no known endangered or threatened species identified in the project area.

10. Energy

- a. Electric power and natural gas supplies already exist at the facilities. No expansion of the energy facilities will be required from the proposed dairy expansion.
- b. The current energy facilities are sufficient to supply the dairy and its proposed expansion. The expansion is expected to use 5-15% more from the existing energy facilities.

11. Construction

Construction of the new facilities will use environmentally friendly processes for the control of erosion and siltation. Many of the high risk areas for these issues have already been through improvement programs involving the planting of tree and grass strips. Other lower risk areas will have erosion control measures implemented throughout construction. Furthermore, all of the engineered grades in the project facility are designed to minimize these issues. In regards to construction impacts such as noise and other potential disturbances, all of the construction will occur during normal working hours. The farmstead located on the facility is owned by the dairy and inhabited by the dairy manager who will be overseeing all construction. Therefore, the nearest point of possible disturbance from the project site is approximately one mile away.

12. Toxic Substances

- a. There will not be any use and/or production of toxic, hazardous, or radioactive substances in the project area.
- b. It is the management protocol at Royal Farms Dairy to develop toxic and/or hazardous chemical handling protocols according to manufacturer recommendations.

13. Public Reaction

- a. There have been no negative public reactions to this project. Royal Farms Dairy is a respected employer in the county.
- b. There has not been a public hearing for the project.
- c. Public Notification of the project was published in the Gray County newspaper on the following dates on August 23 and August 30, 2006. A copy of the public notice is included as Tab 9.

14. Alternatives to the Project

- a. Other alternatives for the project were considered. The dairy could continue to purchase replacement heifers at a higher cost for the continued operation of the dairy. The dairy also considered doing only one part of the project, the calf rearing operations. However, the benefits of completing the heifer raising operation simultaneously would result in greater economic benefits for Royal Farms Dairy and the surrounding community.
- b. Royal Farms Dairy considered alternative designs for the project. This process of alternative design consideration involved several trips to other facilities in other regions looking at layout, cost, mechanics, and operation. After observation of these alternatives, the current design was developed. In turn, this design will be bid out for both dirt work and pipe/steel construction. A drawing of the proposed expansion is included as Tab 10.
- c. Royal Farms Dairy is expanding its operations by adding a calf rearing operation and heifer replacement operation. This is the next stages of growth for other dairies of similar size.

15. Mitigation Measures

Any mitigation measures identified by USDA Rural Development will be addressed.

16. Permits

The proposed expansion of Royal Farms Dairy is within the limitations of its environmental permit from the Kansas Department of Health & Environment. All other permits required will be obtained by the Royal Farms Dairy prior to its expansion. Applicable sections of the environmental permit are included as Tab 11.

17. Other Federal Actions

Information about this project was mailed to 25 state agencies on July 10, 2006. Agency responses to the Intergovernmental and Environmental Review are included as Tab 12.