

KANSAS GEOLOGICAL SURVEY

1930 Constant Ave., Campus West
The University of Kansas
Lawrence, Kansas 66047-3726
phone 785-864-3965
fax 785-864-5317

July 20, 2005

Jason M. Schlickbernd, P.E.
Wilson and Company, Inc
1700 East Iron Avenue
P. O. Box 1640
Salina, Kansas 67401

RE: Agency Review Transmittal Form for Wastewater Treatment Lagoon Facility, City of Downs, Kansas

Dear Mr. Schlickbernd:

I have received your request for comment by the Kansas Geological Survey (KGS) on an application by the City of Downs for funding through the Kansas Water Pollution Control Revolving Loan Fund (Kansas Department of Health and Environment) for the construction of a wastewater treatment lagoon facility, piping, and a new pump station. The lagoon facility will be located in the SW $\frac{1}{4}$ of S34, and the pump station will be in the SE $\frac{1}{4}$ of S27, T6S, R11W.

I examined the USGS Downs South 7 $\frac{1}{2}$ -minute topographic map, a 2002 orthophotograph, a report on the geology of Osborne County (Landes, 1930, KGS Bulletin 16), and the Osborne County Soil Report. The geologic map indicates that the site is on Quaternary Alluvium and Cretaceous Carlile Shale. One geologic concern for this site is the presence of expansive (shrink-swell) soils. This issue should be addressed during site characterization and engineering design of the facility. An additional concern is the stability and erosion along the stream terrace slope. In Mitchell County, we recently observed sinkholes and erosion possibly associated with piping of the alluvial soils in the terrace. This may be a minor concern, because the treatment lagoon appears to be set back from the terrace slope. The KGS assumes that the treatment lagoons will follow the Kansas Department of Health and Environment seepage rate requirements. Any issues involved with the construction of this facility will be offset by the future benefits to water quality. Clearance should be granted provided that the expansive soil issue and erosion along the slope of the stream terrace is addressed in the final design.

If you have any questions, please contract me at (785) 864-2194 or ohlmac@kgs.ku.edu.

Sincerely,

Gregory Ohlmacher, P.G.
Associate Scientist

Enc: Agency Review Transmittal Form

AGENCY REVIEW TRANSMITTAL FORM

Comments by: Kansas Geological Survey 29 June 2005

Project Title: City of Downs, Kansas
Wastewater Treatment Lagoon Facility
KDHE Project No. C20 1484 01

Contact Person: Jason Schlickbernd, P.E.
Project Manager

Return To: Jason Schlickbernd, P.E.
Wilson & Company, Inc.
1700 East Iron Avenue
P.O. Box 1640
Salina, KS 67401

This form provides notification and the opportunity for your agency to review and comment on the proposed project. Please complete Parts I and II as appropriate. Your response by **1 August 2005** will be appreciated.

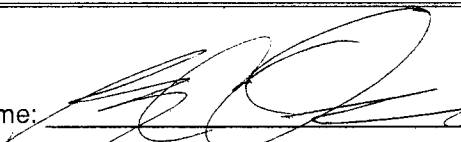
PART I - AGENCY REVIEW COMMENTS:

*see cover letter for comments on expansive soils, erosion
of terrace slope, and KDHE regulations*

PART II - RECOMMENDED ACTION COMMENTS:

- ☐ Clearance of the project should be granted.
- ☐ Clearance of the project should not be granted.
- ☐ Clearance of the project should be delayed until the issues or questions have been clarified.
- ☒ Clearance of the project should not be delayed, but the applicant should (in final design and/or permit application) address and clarify the questions or concerns indicated above.
- ☐ Request the opportunity to review final design and plans.

Reviewer's Name:


Gregory C. Ohlmacher

Date:

7/20/05

**WILSON
& COMPANY**

1700 East Iron Avenue
Salina, Kansas 67401
P.O. Box 1640 67402-1640
785-827-0433
785-827-5949 Fax

Albuquerque
Colorado Springs
Denver
Fort Worth
Houston
Kansas City
Lenexa
Omaha
Pasadena
Phoenix
Rio Rancho
Salina
San Bernardino
San Diego
Wilson & Company
Latin America, LLC

29 June 2005

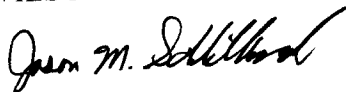
Dr. William Harrison, Interim Director
Kansas Geological Survey
University of Kansas
1930 Constant Avenue - Campus West
Lawrence, KS 66047-3726

Re: Environmental Clearance
Wastewater Treatment Lagoon Facility
Downs, Kansas
WCI File: X3-410-081; Ph 02; T.C. 71

The City of Downs is seeking funding through the Kansas Water Pollution Control Revolving Loan Fund as administered by the Kansas Department of Health and Environment (KDHE) for the construction of a wastewater treatment lagoon facility. The proposed new discharging wastewater treatment lagoon facility includes: three (3) lagoon cells; control structures and piping; a new pump station; and a new outfall structure. An additional description of the proposed improvements is attached. A copy of the cover sheet to the City's proposed loan application is also attached for reference.

As part of the Intergovernmental Review process, we are asking for your agency to review and comment on the proposed project. An Agency Review Transmittal Form is included for your convenience. Please complete Parts I and II, as appropriate, and return the form to my attention. Your response is requested by 1 August 2005.

WILSON & COMPANY



Jason M. Schlickbernd, P.E.
Project Manager

Enclosures

cc: Don Heiland, Mayor, City of Downs (w/ Enclosure)



Kansas Department of Health and Environment

APPLICATION FOR SRF LOAN ASSISTANCE		New	Amendment
Project Number	C 20-1484-01	Application Type	X
1. Legal Applicant / Recipient		2. Type of Applicant / Recipient	
Applicant Name	City of Downs, Kansas	A. City B. County C. Other (Specify) Enter Appropriate Letter A	
Organization Unit	City		
Street / PO Box	715 Railroad Avenue		
City	Downs		
County	Osborne		
State / Zip code	Kansas / 67437		
Contact Person Name	Don Heiland, Mayor		
Telephone Number	(785) 454-6622		
3. Title of applicants project City of Downs, Wastewater Treatment Lagoon Facility			
4. Type of Project Wastewater Treatment Facility - Discharging Lagoons			
5. Employer Identification Number		48-6021524	
6. Area of project impact (Names of cities, counties, etc)		City of Downs, Osborne County	
7a. Congressional District / Applicant		First	
7b. Congressional District / Project		First	
8. Type of change		Increase dollars	\$ -
		Decrease dollars	\$ -
9. Proposed Funding			
SRF Loan 9a.	\$ 1,461,095	10. Project Start Date 03/01/06 (Estimated) 11. Project Duration 9 mos. (Months) 12. Date Submitted (To KDHE)	
Applicant 9b.	\$ -		
CDBG 9c.	\$ 400,000		
EPA 9d.	\$ -		
EDA 9e.	\$ -		
Other 9f.	\$ -		
Total	\$ 1,861,095		
13. Requested Loan Repayment Period (Must not be over 20 years)			20 yrs.
14. The applicant certifies that: To the best of my knowledge and belief, data in this pre-application / application is true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved		This notice of intent / preapplication / application was made available to the state executive order 12372 process for review on: Date	
15. Certifying Representative		Signature	
Name	Don Heiland		
Title	Mayor		
Mail completed application to: Kansas Department of Health and Environment Bureau of Water / Attn: Rod Geisler Municipal Programs Section, Suite 420 1000 SW Jackson Street Topeka, KS 66612-1367		If you need assistance please contact: Bill Mondt Administrative / Finance Section, Suite 420 1000 SW Jackson Street Topeka, KS 66612-1367 785-296-4049	

PROJECT DESCRIPTION

City of Downs, Kansas Wastewater Treatment Facility

Background

The City of Downs, under the authority of the National Discharge Elimination System (NPDES) Permit No. M-SO12-OO01, discharges wastewater effluent from a mechanical treatment plant that utilizes a trickling filter into the North Fork of the Solomon River. The NPDES is administered by the Kansas Department of Health and Environment (KDHE). A map showing the general location of the existing wastewater treatment facility is attached.

The City of Downs was issued a new NPDES permit in February 2004. The permit contained more stringent limits on effluent ammonia, fecal coliform, BOD, and TSS. The City is to also continue begin monitoring the effluent for sulfates, total recoverable selenium, total phosphorus, nitrates, nitrites, and total kjeldahl nitrogen (TKN). Based on the effluent data from other similar mechanical treatment facilities in Kansas, KDHE presently predicts an effluent limitation for total phosphorus and total nitrogen will be required in the near future, possibly when the NPDES permit is reissued.

Due to the current and potential future discharge limits and the type of treatment process the existing wastewater treatment facility utilizes (Imhoff-trickling filter system), improvements to the existing facility or complete replacement of the facility is needed. Based on the potential future discharge limits, KDHE has recommended the City replace the existing wastewater treatment facility with a new wastewater treatment lagoon facility.

Project Description

The construction of a discharging wastewater treatment lagoon facility appears to be the best long-term wastewater treatment process and the most cost effective for the City. The proposed project includes the following components as described below and the location is indicated on the attached map:

1. Construction of a 3-cell, 120-day detention time discharging wastewater treatment lagoon facility.
2. Construction of a new outfall structure in a new location of the creek.
3. Construction of a new pump station located at the existing treatment facility and approximately 5,900 feet of force main piping to the new lagoon facility.

Project Cost

The current opinion of probable costs for the proposed improvements is:

New Lagoon Facility Complete	\$1,508,829
Engineering, Administrative, Legal, and Fiscal Costs	\$301,766
Soil Investigations	\$6,500
Land Acquisition	<u>\$44,000</u>
Total Probable Project Cost	\$1,861,095

Project Financing

As partial financing for the proposed improvements, the City intends to apply for low interest loan funding through the Kansas Water Pollution Control Revolving Loan Fund (KWPCRLF) as administered by KDHE. The loan fund money can be obtained for terms up to twenty years at lower interest rates than commercially available. Loan repayments begin one year after construction completion and can be generated through sewer user charges, sales tax, or general obligation bonds.

In an effort to minimize the amount of loan funding necessary, the City also intends to apply for grant funding through Community Development Block Grant (CDBG) program as administered by the Kansas Department of Commerce and Housing.

Downs, Kansas Wastewater Treatment Facility

