KANSAS GEOLOGICAL SURVEY

1930 Constant Ave., Campus West
The University of Kansas
Lawrence, Kansas 66047-3726
Phone: 785-864-3965
Fax: 785-864-5317

Mr. Todd J. Anderson, P. E.
Project Manager
Bucher, Willis & Ratliff Corporation
609 West North Street
Salina, KS 67401-2064

May 11, 2006

Dear Mr. Anderson,

I am writing to provide comments on the work that you are proposing to do for the City of Phillipsburg. My concerns are in the location of the wells in T4S-R17W-Sec 29. The map shows that a gravel pit is located northwest of one of the proposed well sites and that both wells are located in the alluvium of the Solomon River.

Based on the limited water quality information available to me from the Kansas Department of Health and Environment, I have determined that the city of Phillipsburg well #25 has an average nitrate-nitrogen value of 5.23 mg/L over a period of 1991-1999. Work done by the KGS for the LEPP program indicates that wells along the North Fork of the Solomon River have sources of nitrate-N due to fertilizer, animal waste, and also volatilization enrichment of fertilizer affected by calcareous sediments in the soil and aquifer profiles (Townsend, 1996).

The location of well 33 in T4S-R17W-Sec 29 needs to be evaluated in terms of the presence of the gravel pit to the northeast and the water quality of the gravel pit. Studies in other parts of the state (Groundwater Management District #2) suggest that gravel pits may have degraded water quality due to surface water inflow of contaminants and also evapoconcentration of water due to evaporation. The concern would be if the gravel pit is leaking to the ground water and therefore might provide a direct source of water to the well if the well is located too near the pit. I do not have a water table map for the area but assume the general flow is towards the Solomon River and the Kirwin Reservoir. Determination of ground water flow in the vicinity of the gravel pit would help to determine if leakage might impact a new well.

There are no water well records in the KGS database for any wells in this section. There is a water right issued for the gravel pit. The Kansas Division of Water Resources would be better able to determine if sufficient water is available in this area for use by the City of Phillipsburg.

Soils in the area of interest for the wells include silt loams and sandy loams. Both of these soils have the potential for leaching of agrichemicals, particularly nitrate, and may provide a source of contamination to new wells. Evaluation of the soils by a soil scientist and testing the irrigation wells in the area near the proposed drilling sites would determine if nitrate-N and other contaminants are a potential issue.

The above discussion represents the information that the Kansas Geological Survey has on this proposed site. Other geologic conditions, not discussed here, might affect the proposed project. The information provided in this letter is from regional (countywide and statewide) studies and should not be

used as a substitute for detailed site investigations by a licensed geologist or engineer. It is the responsibility of the applicant to produce the detailed site evaluation.

Sincerely,

Margaret A. Townsend

Margaret A. Townsend
Hydrogeologist

Townsend, M.A., 1996, Summary report of work on sources of nitrate-N in ground water, North and South Forks of Solomon River basin: Kansas Geological Survey, Open-file Report, no. 96-28, 42 pages

The following form may be used by the Review Agency/Commission for comments in response to the request for clearance from the proposed Public Water Supply Loan Fund Project.

_____	Army Corps of Engineers
_____	Kansas Biological Survey
_____	State Conservation Commission
_____	Kansas Corporation Commission
_____	Division of Water Resources/Kansas Department of Agriculture
X	Kansas Geological Survey
_____	Kansas State Historical Society, State Historic Preservation Office
_____	Kansas Water Office
_____	Kansas Department of Wildlife & Parks
_____	US Dept of Agriculture - Natural Resources Conservation Service
_____	Kansas Department of Health and Environment
_____	US Dept of the Interior - Fish and Wildlife Service

Agency Review Comments: (to be completed by reviewing agency and returned to applicant contact person at name and address shown below)

Comments: _____

_____

_____

Recommended Action: (to be completed by the reviewing agency and returned to applicant contact person at name and address shown below.)

_____	Clearance of project should be granted
_____	Clearance of project should not be granted
_____	Clearance of project should be delayed until the issues or questions have been clarified.
X	Clearance of project should not be delayed, but the applicant (in the application) should address or clarify the questions or concerns indicated above.)

Margaret A. Townsend — Reviewer's Name

KGS — Division/Agency/Commission

5-11-06 — Date

Project Title: Public Water Supply Loan Fund Application

Applicant: CITY OF PHILLIPSBURG

Contact Person: TODD ANDERSON - BUCHER, WILLIS & RATLIFF

Address: 609 WEST NORTH STREET

City, State: SALINA, KS Zip: 67401 Phone: (785)- 827 - 3603

BUCHER, WILLIS & RATLIFF
CORPORATION

April 24, 2006

Kansas Geological Survey
University of Kansas
1930 Constant Ave., Campus West
Lawrence, KS 66047

Re: Environmental Review
City of Phillipsburg, Kansas
Potable Water Improvements
BWR Project No. 2005-0182.02

Kansas Geological Survey:

The City of Phillipsburg is preparing an application to the Kansas Department of Health and Environment for a loan from the Kansas Public Water Supply Loan Fund to finance the following improvements. The lime slaker within the City's existing water treatment facility is physically deteriorated and in need of replacement. The location of the water treatment plant is shown on an attached drawing. Additionally, a new pump, associated controls, and an electrical upgrade to the City's water pumping station, located in the eastern part of Phillipsburg as shown, will be included in this project. These improvements will be made within an existing building. Finally, two raw water wells in the City's well field will be eliminated and a new well will be developed within the area shown on the attached drawing to replace these two low producing wells. It is anticipated that the new well will be located within one-quarter mile of the existing wells numbered 33 and 34 as shown.

We would appreciate your review of the project description and location, and any comments you may have, within 30 days. A project review form is enclosed for your use.

Please contact Todd Anderson, P.E. at 785-827-3603 if you have questions regarding this project. Thank you for your attention in this matter.

Sincerely,

BUCHER, WILLIS & RATLIFF CORPORATION

Todd J. Anderson

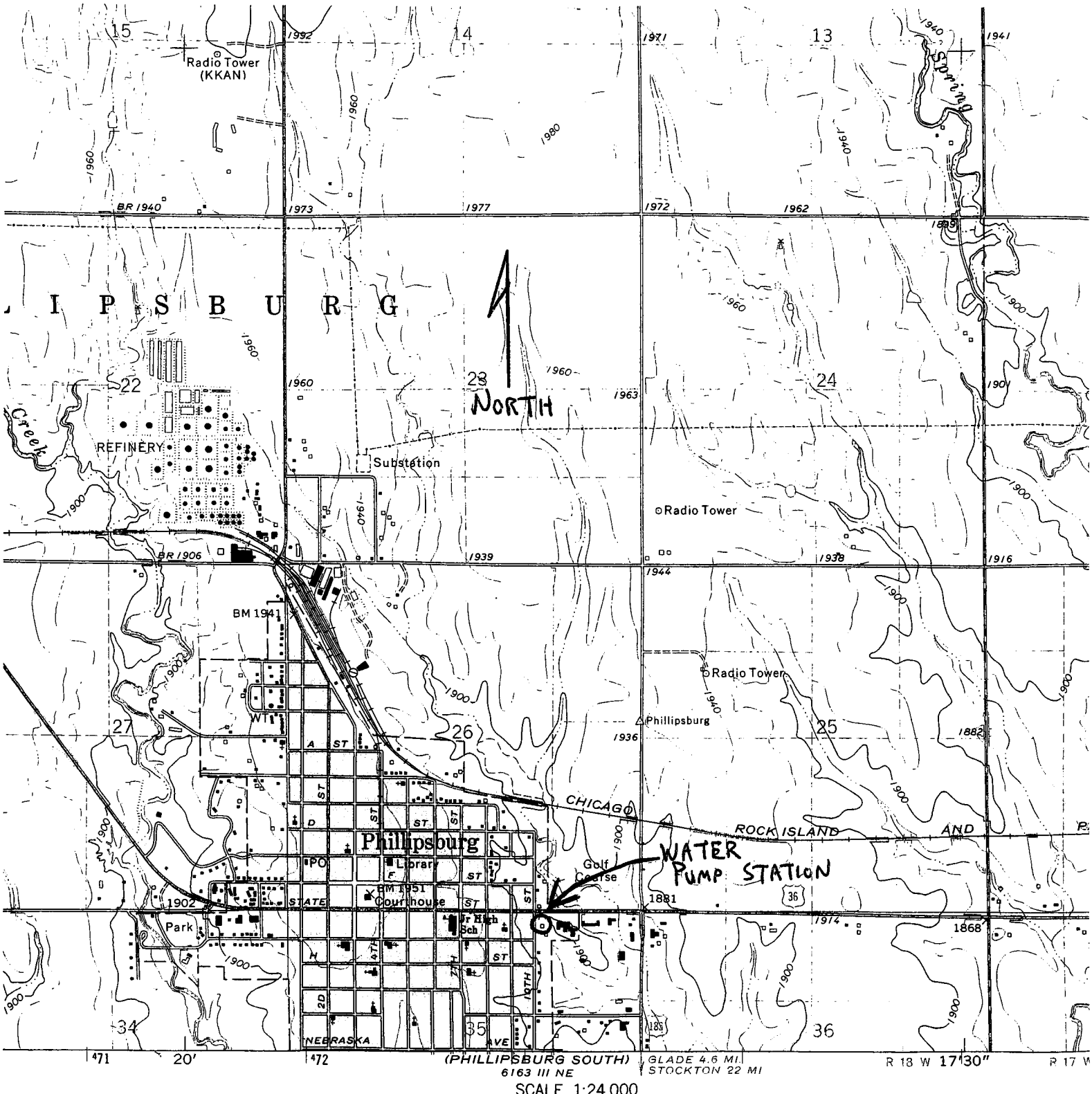
Todd J. Anderson, P.E.
Project Manager
Environmental Engineering

TJA/tja

Enclosures

609 West North Street
Salina, KS 67401-2064

Phone 785.827.3603
Fax 785.827.3029
www.bwrcorp.com



(PHILLIPSBURG SOUTH)
6163 III NE

GLADE 4.6 MI.
STOCKTON 22 MI

R 18 W 17'30"

R 17 W

SCALE 1:24 000

1 0 ½ 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE

GN MN

0°12' 4 MILS

10° 178 MILS

AND 1973 MAGNETIC NORTH
ATION AT CENTER OF SHEET

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRA

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND BY THE STATE GEOLOGICAL SURVEY, LAWRENCE, KANSAS 66044
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

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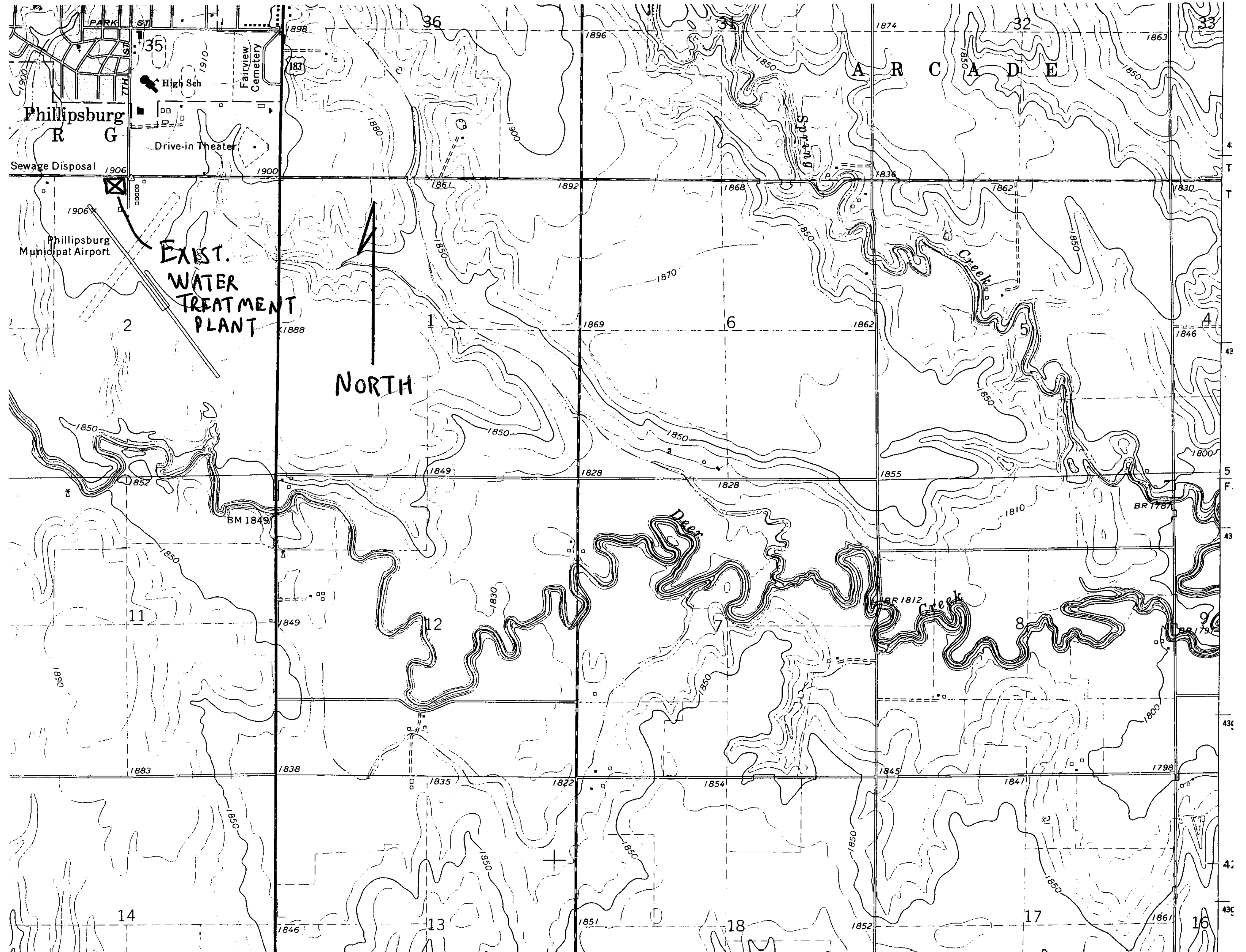
Phillipsburg
PARK ST
7TH ST
High Sch
Fairview Cemetery
Drive-in Theater
Sewage Disposal
Phillipsburg Municipal Airport
EXIST. WATER TREATMENT PLANT
NORTH
A R C A D E
Spring
Creek
Deer
Creek
BR 1812
BR 1787
BM 1849
183
R G
35
36
31
32
33
2
1
6
5
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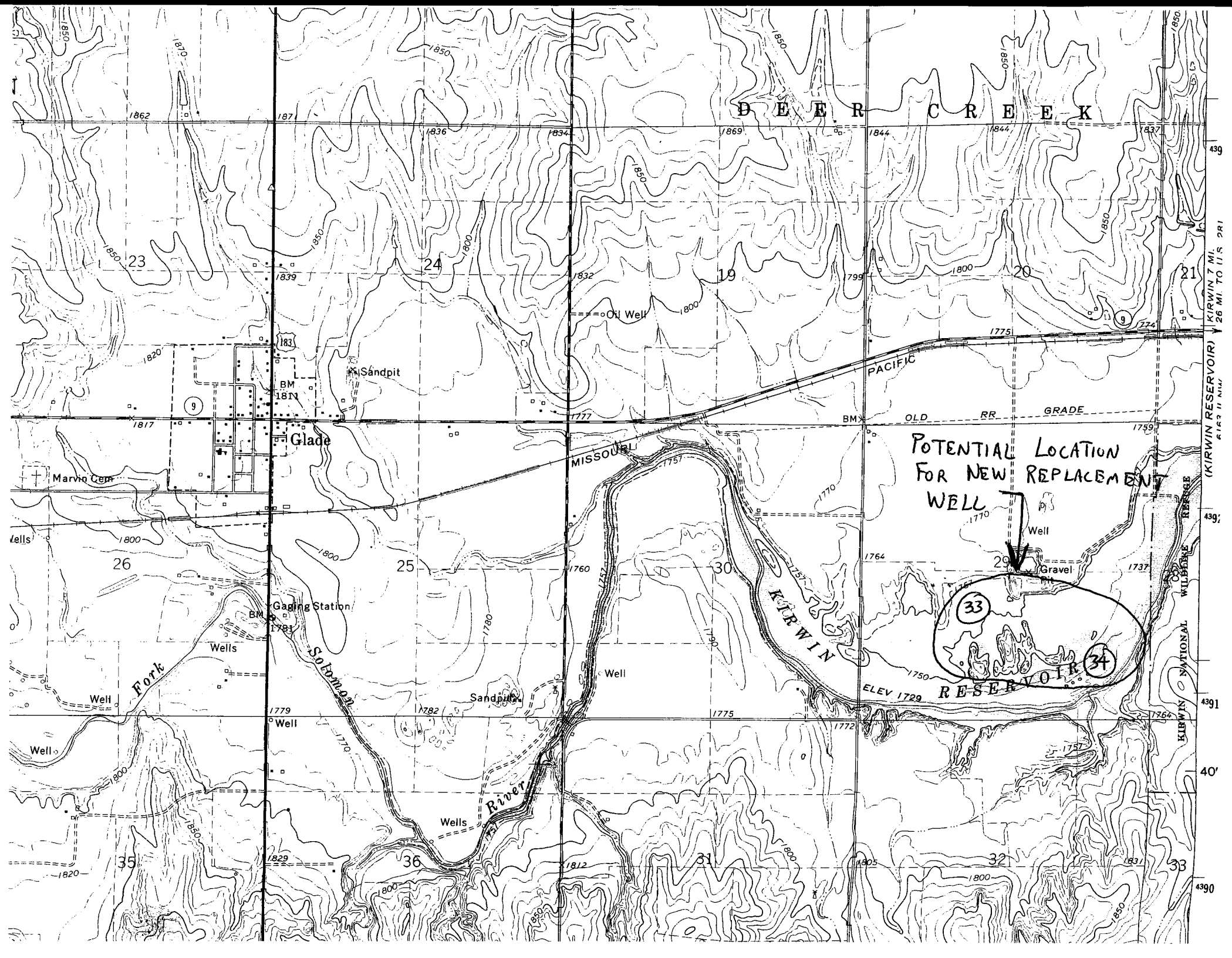
DEER CREEK
Oil Well
Sandpit
BM 1811
Glade
Marvin Cem
PACIFIC
MISSOURI
OLD RR GRADE
POTENTIAL LOCATION FOR NEW REPLACEMENT WELL
Well
Gravel Pit
KIRWIN RESERVOIR
ELEV 1729
KIRWIN
Gaging Station
BM 1781
Wells
Solomon
Fork
River
Sandpit
KIRWIN NATIONAL WILDLIFE REFUGE
(KIRWIN RESERVOIR)
KIRWIN 7 MI.
26 MI. TO U.S. 281
23
24
19
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26
25
30
29
33
34
35
36
31
32