Kansas Department of Agriculture
Division of Water Resources
PERMIT OF NEW APPLICATION WORKSHEET

1. File Number:	2. Status Change Date:	3. Field Office:	4. GMD:
49,077	11/1/2016	**02**	**0**

5. Status: ☒ Approved ☐ Denied by DWR/GMD ☐ Dismiss by Request/Failure to Return

6. Enclosures: ☒ Check Valve ☒ N of C Form ☒ Water Tube ☒ Driller Copy ☒ Meter

7a. Applicant(s)* New to system ☐ Person ID **62392** Add Seq# _____

RON NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

7c. Landowner(s) New to system ☐ Person ID _____ Add Seq# _____

7b. Landowner(s) New to system ☐ Person ID **63752** Add Seq# _____

MARCIA E. MAYBRIER TRUST
1577 EAST 40TH AVE N.
BELLE PLAINE KS 67013

7d. Misc. New to system ☐ Person ID _____ Add Seq# _____

8. WUR Correspondent New to system ☐ Person ID _____ Add Seq# _____
Overlap File (s) WUC Agree ☐ Yes ☐ No Notarized WUC Form ☐

7a.

9. Use of Water: Changing? ☐ Yes ☒ No
☒ Groundwater ☐ Surface Water
☒ IRR ☐ REC ☐ DEW ☐ MUN
☐ STK ☐ SED ☐ DOM ☐ CON
☐ HYD DRG ☐ WTR PWR ☐ ART RECHRG
☐ IND SIC: _____ ☐ OTHER: _____

10. Completion Date: **12/31/2017** 11. Perfection Date: **12/31/2021** 12. Exp Date: _____

13. Conservation Plan Required? ☐ Yes ☒ No Date Required: _____ Date Approved: _____ Date to Comply: _____

14. Water Level Measuring Device? ☐ Yes ☒ No Date to Comply: _____ Date WLMD Installed: _____

Date Prepared: **10/3/2016** By: **DWS**
Date Entered: 11/1/2016 By: WM

File No. **49,077**	15. Formation Code: **113**	Drainage Basin: Arkansas **River**	County: SU	Special Use:	Stream:

16. Points of Diversion									17. Rate and Quantity				
									Authorized		Additional		
T MOD DEL ENT	PDIV	Qualifier	S	T	R	ID	'N	'W	Rate gpm	Quantity af	Rate gpm	Quantity af	Overlap PD Files
MOD	**83055**	**NW NW SW**	**28**	**31**	**2E**	**7**	**2393**	**4934**	**800**	**162**	**800**	**162**	**None**

18. Storage: Rate _____ NF Quantity _____ ac/ft Additional Rate _____ NF Additional Quantity _____ ac/ft

19. Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

20. Meter Required? ☒ Yes ☐ No To be installed by **12/31/2017** Date Acceptable Meter Installed _____

21. Place of Use						NE¼				NW¼				SW¼				SE¼				Total	Owner	Chg? **NO**	Overlap Files
T MOD DEL ENT	PUSE	S	T	R	ID	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼				
√	**65943**	**28**	**31**	**2E**	**5**									33	33	33	33					**132**	**7b.**	**No**	**NONE**

Comments:

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources

M E M O R A N D U M

TO: Files **DATE:** October 3, 2016

FROM: Doug Schemm **RE:** Application File No. 49,077

Ronnie Neises has filed the above referenced new application proposing to appropriate 162 acre-feet of groundwater at a diversion rate of 800 gallons per minute for irrigation use. The initial application had requested 200 acre-feet, however this quantity was reduced to 162 acre-feet in order to comply with remaining safe yield quantity of water, and the applicant agreed to this reduction during a September 13, 2016 phone call. In addition, the well location was modified to improve safe yield calculations. The proposed well is to be located in the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of Section 28, Township 31 South, Range 2 East, Sumner County, within the drainage basin of the Arkansas River. There are no other water rights overlapping the point of diversion or place of use. The proposed acreage is entirely owned by Marcia E Maybrier Trust. The applicant has signed the application form stating he has legal access to the point of diversion.

Initial safe yield reviews indicated only a portion of the requested quantity of water was available in this area of consideration, and the applicant was informed of these calculations. Note that the extent of the alluvial aquifer used for safe yield evaluation was consistent with senior file processing in this local area (see File Nos. 48,559 and 48,651). Topographic map review indicates that the alluvial deposits do not extend into the south and southwest portions of the 2-mile circle. The applicant subsequently requested that DWR staff review a report originally prepared for Application, File No. 46,145 (Jim Neises), dated March 9, 2007. This application was located in the Southeast Quarter of Section 30, Township 31 South, Range 2 East, approximately one mile away (to the west) from this pending application. The report contains multiple test hole logs, as well as the results of an aquifer pumping test. The report concluded that the aquifer at this location was Illinoisan or Kansan terrace deposits, with a saturated thickness of approximately 20 feet. Based on the information contained in this report, the applicant's opportunity to submit additional information per K.A.R. 5-3-18, and the definition of safe yield that includes hydraulically connected groundwater, it was determined that the area of consideration could be increased to encompass these terrace deposits. Please note that this safe yield is specific to this location only and any other location would have to be supported by similar hydrologic data provided by the applicant.

In 2004 the United States Geological Survey (USGS) completed a hydrologic model of a portion of the Arkansas River and associated drainage basins (Ninnescah River), generally bounded by Ranges 2 West to 3 East and Townships 26 South to 34 South (near state line). The USGS model indicated that the aquifer in this area receives more recharge from precipitation than DWR has historically used in safe yield calculations. The data and analyses are detailed in the USGS Scientific Investigations Report 2004-5204 entitled "Characterization and Simulation of Flow in the Lower Arkansas River Alluvial Aquifer, South-Central Kansas". In order to evaluate the potential impact of this study on our safe yield calculations, DWR suspended processing applications for new appropriations of water in the model area.

DWR staff completed an evaluation of the USGS model and determined that the precipitation recharge value of 5.4 inches per year that is used in the USGS model is reasonable and appropriate. In order to reserve water in the alluvial aquifers that can contribute to base flow to area streams and for domestic use, it was determined that 75 percent of the 5.4 inches of precipitation recharge shall be available for appropriation. This is consistent with safe yield appropriation in many other basins across the state, and is the current percent available in for all applications in the Ninnescah River drainage basin. Therefore, for all pending applications within the model area, safe yield will be evaluated using the standard methodology in K.A.R. 5-3-11, which is based on the extent of the unconfined aquifer (area of consideration), a Potential Annual Recharge value of 5.4 inches, and a percent of recharge available for appropriation of 75%. Current annual recharge across the model area is approximately 3 inches.

Per the requirements in K.A.R. 5-3-11, safe yield is determined by the extent of the unconfined aquifer within a two-mile circle radius of the point of diversion, which establishes the area of consideration. For this application, the area of consideration (alluvial aquifer) provided an area of consideration of 5,703 acres (see discussion above regarding the alluvial aquifer). With a potential annual recharge of 5.4 inches, and 75% of recharge available for appropriation, safe yield was determined to be 1,924.8 acre-feet. Existing water rights have appropriated 1,762.9 acre-feet, providing a difference of 162 acre-feet available for appropriation, and the application reduced to 162 acre-feet complies with safe yield.

The applicant identified three domestic wells within one-half mile of the proposed well. Nearby well owner letters were sent to the well owners on September 13, 2016. No responses of any kind were received. According to the WRIS database, the nearest non-domestic point of diversion is located over 2,750 feet away. The site map indicates that the nearest domestic well is over 1,800 feet away. The proposed point of diversion meets minimum well spacing to all existing wells. Per the requirements in K.A.R. 5-4-4 for all other aquifers, the minimum well spacing should be one-quarter mile to all other non-domestic wells and 660 feet to domestic wells.

In accordance with K.S.A. 82a-706c, the Chief Engineer retains full authority to require any water user to install meters, gages, or other measuring devices, which devices he or she or his or her agents may read at any time. Water flowmeter requirements are further described in K.A.R. 5-1-4 through K.A.R 5-1-12. If any chemical or foreign substance is injected into the water pumped under this permit, a check valve will also need to be installed. A water level measurement tube is required because the rate of diversion will exceed 100 gpm.

In a September 20, 2016 e-mail, Jeff Lanterman, Water Commissioner, Stafford Field Office, stated that the referenced application be approved.

Based on the above discussion, that the area is open to new appropriations for groundwater, the proposed appropriation of water appears reasonable, the application complies with minimum well spacing and safe yield criteria, and there is no evidence that senior rights will be impaired, it is recommended that the referenced application be approved.

Doug Schemm
Environmental Scientist
Topeka Field Office

1320 Research Park Drive
Manhattan, Kansas 66502
(785) 564-6700

Kansas
Department of Agriculture
agriculture.ks.gov

900 SW Jackson, Room 456
Topeka, Kansas 66612
(785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

November 1, 2016

RON NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

Re: Appropriation of Water, File No. 49,077

FILE COPY

Dear Mr. Neises:

There is enclosed a permit to appropriate water authorizing you to proceed with construction of the proposed diversion works (except those dams and stream obstructions regulated by K.S.A. 82a-301 through 305a), to divert such unappropriated water as may be available from the source and at the location specified in the permit, and to use it for the purpose and at the location described in the permit.

Your attention is directed to the enclosures and to the terms, conditions, and limitations specified in these approval documents. A water meter is required on the proposed diversion works and you must install it prior to water being put to beneficial use in order for you to maintain accurate records of water use. The meter should be used to provide the information required on the annual water use report.

Failure to notify the Chief Engineer of the Division of Water Resources of the completion of the diversion works within the time allowed, or within any authorized extension of time thereof, will result in the dismissal of this permit. Enclosed is a form which may be used to notify the Chief Engineer that the proposed diversion works have been completed.

All requests for extensions of time to complete diversion works, or to perfect appropriations, must be submitted to the Chief Engineer before the expiration of time originally set forth in the permit to complete diversion works or to perfect an appropriation. If for any reason, you require an extension of time, you must request it before the expiration of time set forth in this permit. Failure to comply with this regulation will result in the dismissal of your permit or your water right. Any request for an extension of time shall be accompanied by the required statutory fee, which is currently $100.00.

There is also enclosed an information sheet setting forth the procedure to obtain a Certificate of Appropriation which will establish the extent of your water right. If you have any questions, please contact our office. If you wish to discuss this specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Brent A. Turney, P.G.
Change Application Unit Supervisor
Water Appropriation Program

BAT:dws
Enclosures

pc: Stafford Field Office
Marcia E. Maybrier Trust

THE STATE OF KANSAS

KANSAS DEPARTMENT OF AGRICULTURE
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

APPROVAL OF APPLICATION and PERMIT TO PROCEED

FILE COPY

(This is not a Certificate of Appropriation)

This is to certify that I have examined Application, **File No. 49,077** of the applicant

RON NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

for a permit to appropriate water for beneficial use, together with the maps, plans and other submitted data, and that the application is hereby approved and the applicant is hereby authorized, subject to vested rights and prior appropriations, to proceed with the construction of the proposed diversion works (except those dams and stream obstructions regulated by K.S.A. 82a-301 through 305a, as amended), and to proceed with all steps necessary for the application of the water to the approved and proposed beneficial use and otherwise perfect the proposed appropriation subject to the following terms, conditions and limitations:

1. That the priority date assigned to such application is **May 12, 2014.**

2. That the water sought to be appropriated shall be used for irrigation use on land described in the application, as follows:

	NE¼				NW¼				SW¼				SE¼				TOTAL
Sec. Twp. Range	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
28 31S 2E									33	33	33	33					132

3. That the authorized source from which the appropriation shall be made is groundwater, to be withdrawn by means of one (1) well located in the Northwest Quarter of the Northwest Quarter of the Southwest Quarter (NW¼ NW¼ SW¼) of Section 28, more particularly described as being near a point 2,393 feet North and 4,934 feet West of the Southeast corner of said section, in Township 31 South, Range 2 East, Sumner County, Kansas, located substantially as shown on the topographic map accompanying the application.

4. That the appropriation sought shall be limited to a maximum diversion rate not in excess of **800 gallons per minute** (1.78 c.f.s.) and to a quantity not to exceed **162 acre-feet** of water for any calendar year.

5. That installation of works for diversion of water shall be completed on or before **December 31, 2017**, or within any authorized extension thereof. The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee, which is currently $400.00, when construction of the works has been completed. Failure to timely submit the notice and the fee will result in revocation of the permit. Any request for an extension of time shall be accompanied by the required statutory fee, which is currently $100.00.

6. That the proposed appropriation shall be perfected by the actual application of water to the proposed beneficial use on or before **December 31, 2021,** or any authorized extension thereof. Any request for an extension of time shall be submitted prior to the expiration of the deadline and shall be accompanied by the required statutory fee, which is currently $100.00.

7. That the applicant shall not be deemed to have acquired a water appropriation for a quantity in excess of the amount approved herein nor in excess of the amount found by the Chief Engineer to have been actually used for the approved purpose during one calendar year subsequent to approval of the application and within the time specified for perfection or any authorized extension thereof.

8. That the use of water herein authorized shall not be made so as to impair any use under existing water rights nor prejudicially and unreasonably affect the public interest.

9. That the right of the appropriator shall relate to a specific quantity of water and such right must allow for a reasonable raising or lowering of the static water level and for the reasonable increase or decrease of the streamflow at the appropriator's point of diversion.

10. That this permit does not constitute authority under K.S.A. 82a-301 through 305a to construct any dam or other obstruction; nor does it grant any right-of-way, or authorize entry upon or injury to, public or private property.

11. That all diversion works constructed under the authority of this permit into which any type of chemical or other foreign substance will be injected into the water pumped from the diversion works shall be equipped with an in-line, automatic quick-closing, check valve capable of preventing pollution of the source of the water supply. The type of valve installed shall meet specifications adopted by the Chief Engineer and shall be maintained in an operating condition satisfactory to the Chief Engineer.

12. That an acceptable water flow meter shall be installed and maintained on the diversion works authorized by this permit in accordance Kansas Administrative Regulations 5-1-4 through 5-1-12 adopted by the Chief Engineer. This water flow meter shall be used to provide an accurate quantity of water diverted as required for the annual water use report (including the meter reading at the beginning and end of the report year).

13. That the applicant shall maintain accurate and complete records from which the quantity of water diverted during each calendar year may be readily determined and the applicant shall file an annual water use report with the Chief Engineer by March 1 following the end of each calendar year. Failure to file the annual water use report by the due date shall cause the applicant to be subject to a civil penalty.

14. That no water user shall engage in nor allow the waste of any water diverted under the authority of this permit.

15. That failure without cause to comply with provisions of the permit and its terms, conditions and limitations will result in the forfeiture of the priority date, revocation of the permit and dismissal of the application.

16. That the right to appropriate water under authority of this permit is subject to any minimum desirable streamflow requirements identified and established pursuant to K.S.A. 82a-703c for the source of supply to which this water right applies.

17. That the applicant shall submit to the Chief Engineer a copy of the well log required by the Kansas Department of Health and Environment under the authority of K.S.A. 82a-1212, currently form WWC-5, within 30 days following the drilling of the well at the location authorized herein.

This Order shall become a final agency action, as defined by K.S.A. 77-607(b), without further notice to the parties, if a request for hearing or a petition for administrative review is not filed as set forth below.

Request for Hearing. According to K.A.R. 5-14-3(c), any party who desires a hearing must submit a request within 15 days after the date shown on the Certificate of Service attached to this Order. Filing a request for a hearing will give you the opportunity to submit additional facts for consideration, contest any findings made by the Chief Engineer, or present any other information you believe should be considered in this matter. A timely-filed request for hearing will stay the deadline for requesting administrative review of this Order pending the outcome of the hearing.

Petition for Review. The applicant, if aggrieved by this Order, may petition for administrative review, pursuant to K.S.A. 82a-711(c) and K.S.A. 82a-1901(a). The petition must be filed within 30 days after the date shown on the Certificate of Service attached to this Order and must set forth the basis for the review, unless stayed by the timely filing of a request for hearing.

Any request for hearing or petition for administrative review shall be in writing and shall be submitted to the attention of: Chief Legal Counsel, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas 66502, Fax: (785) 564-6777.

Ordered this 1st day of November, 2016, in Topeka, Shawnee County, Kansas.

Lane P. Letourneau

Lane P. Letourneau, P.G.
Program Manager
Water Appropriation Program
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
) SS
County of Riley)

The foregoing instrument was acknowledged before me this 1st day of November, 2016, by Lane P. Letourneau, P.G., Program Manager, Division of Water Resources, Kansas Department of Agriculture.

STATE OF KANSAS NOTARY PUBLIC
DANIELLE WILSON
My Appointment Expires
August 23, 2020

Danielle Wilson

Notary Public

CERTIFICATE OF SERVICE

On this 1st day of November, 2016, I hereby certify that the foregoing Approval of Application, File No. 49,077, dated November 1, 2016 was mailed postage prepaid, first class, US mail to the following:

RON NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

With photocopies to:

MARCIA E. MAYBRIER TRUST
1577 EAST 40TH AVE N.
BELLE PLAINE KS 67013

Stafford Field Office

Danielle Wilson

Division of Water Resources

Schemm, Doug

Subject: Ron Neises 49,077

From: Lanterman, Jeff
Sent: Tuesday, September 20, 2016 9:23 AM
To: Schemm, Doug
Cc: Conant, Cameron
Subject: RE: Ron Neises 49,077

Doug. That works for me. Well worded.

Thanks

From: Schemm, Doug
Sent: Tuesday, September 20, 2016 8:21 AM
To: Lanterman, Jeff <Jeff.Lanterman@ks.gov>
Cc: Conant, Cameron <Cameron.Conant@ks.gov>
Subject: Ron Neises 49,077

Good Morning,
I have described how we determined the safe yield area of consideration and that any such review will require detailed hydrologic investigation and reporting by the applicant.
Thanks, Doug

APPLICATION COMPLETE
10 / 3 /2016
Reviewer DWS

THE STATE OF KANSAS

KANSAS DEPARTMENT OF AGRICULTURE
Dale A. Rodman, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

File Number 49077
This item to be completed by the Division of Water Resources.

WATER RESOURCES
RECEIVED
MAY 12 2014
1:20pm
KS DEPT OF AGRICULTURE

APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

Filing Fee Must Accompany the Application
(Please refer to Fee Schedule attached to this application form.)

To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, 109 SW 9th Street, Second Floor, Topeka, KS 66612-1283:

1. Name of Applicant (Please Print): Ronnie M Neises
   Address: 409 N. Rock Rd.
   City: Belle Plaine State KS Zip Code 67013
   Telephone Number: (620) 229-3334

2. The source of water is: ☐ surface water in _____ (stream)
   OR ☒ groundwater in Lower Arkansas River (drainage basin)

   Certain streams in Kansas have minimum target flows established by law or may be subject to administration when water is released from storage for use by water assurance district members. If your application is subject to these regulations on the date we receive your application, you will be sent the appropriate form to complete and return to the Division of Water Resources.

3. The maximum quantity of water desired is ~~200~~ 162 AF * acre-feet OR _____ gallons per calendar year, to be diverted at a maximum rate of 800 gallons per minute OR _____ cubic feet per second.

   Once your application has been assigned a priority, the requested maximum rate of diversion and maximum requested quantity of water under that priority number can **NOT** be increased. Please be certain your requested maximum rate of diversion and maximum quantity of water are appropriate and reasonable for your proposed project and are in agreement with the Division of Water Resources' requirements.

4. The water is intended to be appropriated for **(Check use intended):**

(a) ☐ Artificial Recharge	(b) ☒ Irrigation	(c) ☐ Recreational	(d) ☐ Water Power
(e) ☐ Industrial	(f) ☐ Municipal	(g) ☐ Stockwatering	(h) ☐ Sediment Control
(i) ☐ Domestic	(j) ☐ Dewatering	(k) ☐ Hydraulic Dredging	(l) ☐ Fire Protection
(m) ☐ Thermal Exchange	(n) ☐ Contamination Remediation		

YOU **MUST** COMPLETE AND ATTACH ADDITIONAL DIVISION OF WATER RESOURCES FORM(S) PROVIDING INFORMATION TO SUBSTANTIATE YOUR REQUEST FOR THE AMOUNT OF WATER FOR THE INTENDED USE REFERENCED ABOVE.

For Office Use Only:
F.O. 2 GMD 2 Meets K.A.R. 5-3-1 (YES / NO) Use IRR Source G S County SU By AGL Date 5-12-14
Code RE2 Fee $ 300 TR # 14047990 Receipt Date 5-12-14 Check # 3653

DWR 1-100 (Revised 02/04/2013)

* Reduced Quantity to 162 Acre-feet to meet safe yield. Applicant agreed in 9/13/16 phone discussion. DWS / DWR

SCANNED 5-13-14 DSS

* Modified well location to improve safe yield Quantity (i.e. Senior Files out of Area of Consideration). File No. 49,077
Applicant agreed to revised well location in 9/13/16 phone discussion.

5. The location of the proposed wells, pump sites or other works for diversion of water is:

Note: For the application to be accepted, the point of diversion location must be described to at least a 10 acre tract, unless you specifically request a 60 day period of time in which to locate the site within a specifically described, minimal legal quarter section of land.

(A) One in the * NW quarter of the *NW Near Center quarter of the SW quarter of Section 28, more particularly described as being near a point ~~1326~~ 2393' * feet North and ~~3960~~ 4934' * feet West of the Southeast corner of said section, in Township 31 South, Range 2 East ~~West~~ (circle one), Sumner County, Kansas.

(B) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.

(C) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.

(D) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter (¼) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

A battery of wells is defined as two or more wells connected to a common pump by a manifold; or not more than four wells in the same local source of supply within a 300 foot radius circle which are being operated by pumps not to exceed a total maximum diversion rate of 800 gallons per minute and which supply water to a common distribution system.

6. The owner of the point of diversion, if other than the applicant is (please print):

Marcia E Maybrier Trust 1577 East 40th Ave North Belle Plaine, Kansas 67013 620 455 3295
(name, address and telephone number)

_____
(name, address and telephone number)

You must provide evidence of legal access to, or control of, the point of diversion from the landowner or the landowner's authorized representative. Provide a copy of a recorded deed, lease, easement or other document with this application. In lieu thereof, you may sign the following sworn statement:

I have legal access to, or control of, the point of diversion described in this application from the landowner or the landowner's authorized representative. I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 3rd, 2014. Lonnie M Nees
Applicant's Signature

The applicant must provide the required information or signature irrespective of whether they are the landowner. Failure to complete this portion of the application will cause it to be unacceptable for filing and the application will be returned to the applicant.

7. The proposed project for diversion of water will consist of ONE
(number of wells, pumps or dams, etc.)
and (was)(will be) completed (by) ASAP as Approved.
(Month/Day/Year - each was or will be completed)

8. The first actual application of water for the proposed beneficial use was or is estimated to be 06/1/2015
(Mo/Day/Year)

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

File No. 49,077

9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?

   ☒ Yes ☐ No If "yes", a check valve shall be required.

   All chemigation safety requirements must be met including a chemigation permit and reporting requirements.

10. If you are planning to impound water, please contact the Division of Water Resources for assistance, prior to submitting the application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir. NA

    Have you also made an application for a permit for construction of this dam and reservoir with the Division of Water Resources? ☐ Yes ☐ No

    - If yes, show the Water Structures permit number here _____
    - If no, explain here why a Water Structures permit is not required _____

11. The application must be supplemented by a U.S.G.S. topographic map, aerial photograph or a detailed plat showing the following information. On the topographic map, aerial photograph, or plat, identify the center of the section, the section lines or the section corners and show the appropriate section, township and range numbers. Also, please show the following information:

    (a) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) should be plotted as described in Paragraph No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section.
    3960 Feet west + 1320 Feet North of S.E. Corner of Section

    (b) If the application is for groundwater, please show the location of any existing water wells of any kind within ½ mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within ½ mile, please advise us. On Map Attached

    (c) If the application is for surface water, the names and addresses of the landowner(s) ½ mile downstream and ½ mile upstream from your property lines must be shown.

    (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.

    (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use. NA

    A 7.5 minute U.S.G.S. topographic map may be obtained by providing the section, township and range numbers to: Kansas Geological Survey, 1930 Constant, Campus West, University of Kansas, Lawrence, Kansas 66047.

12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application. None

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

File No. 49,077

13. Furnish the following well information if the proposed appropriation is for the use of groundwater. If the well has not been completed, give information obtained from test holes, if available.

Information below is from: ☐ Test holes ☐ Well as completed ☐ Drillers log attached

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled				
Total depth of well				
Depth to water bearing formation				
Depth to static water level				
Depth to bottom of pump intake pipe				

14. The relationship of the applicant to the proposed place where the water will be used is that of Tenant (owner, tenant, agent or otherwise).

15. The owner(s) of the property where the water is used, if other than the applicant, is (please print):

Marcia E. Maybrier 1577 East 40th Ave N. Belle Plaine, Kansas 67013 620 455 3295
(name, address and telephone number)

(name, address and telephone number)

16. The undersigned states that the information set forth above is true to the best of his/her knowledge and that this application is submitted in good faith.

Dated at Belle Plaine, Kansas, this 3rd day of May (month), 2014 (year).

Ronni M [redacted]
(Applicant Signature)

513 74 0168
APPLICANT(S) SOCIAL SECURITY IDENTIFICATION NUMBER(S)

By _____
(Agent or Officer Signature)

_____
and/or
APPLICANT(S) TAXPAYER I.D. NO.(S)

_____
(Agent or Officer - Please Print)

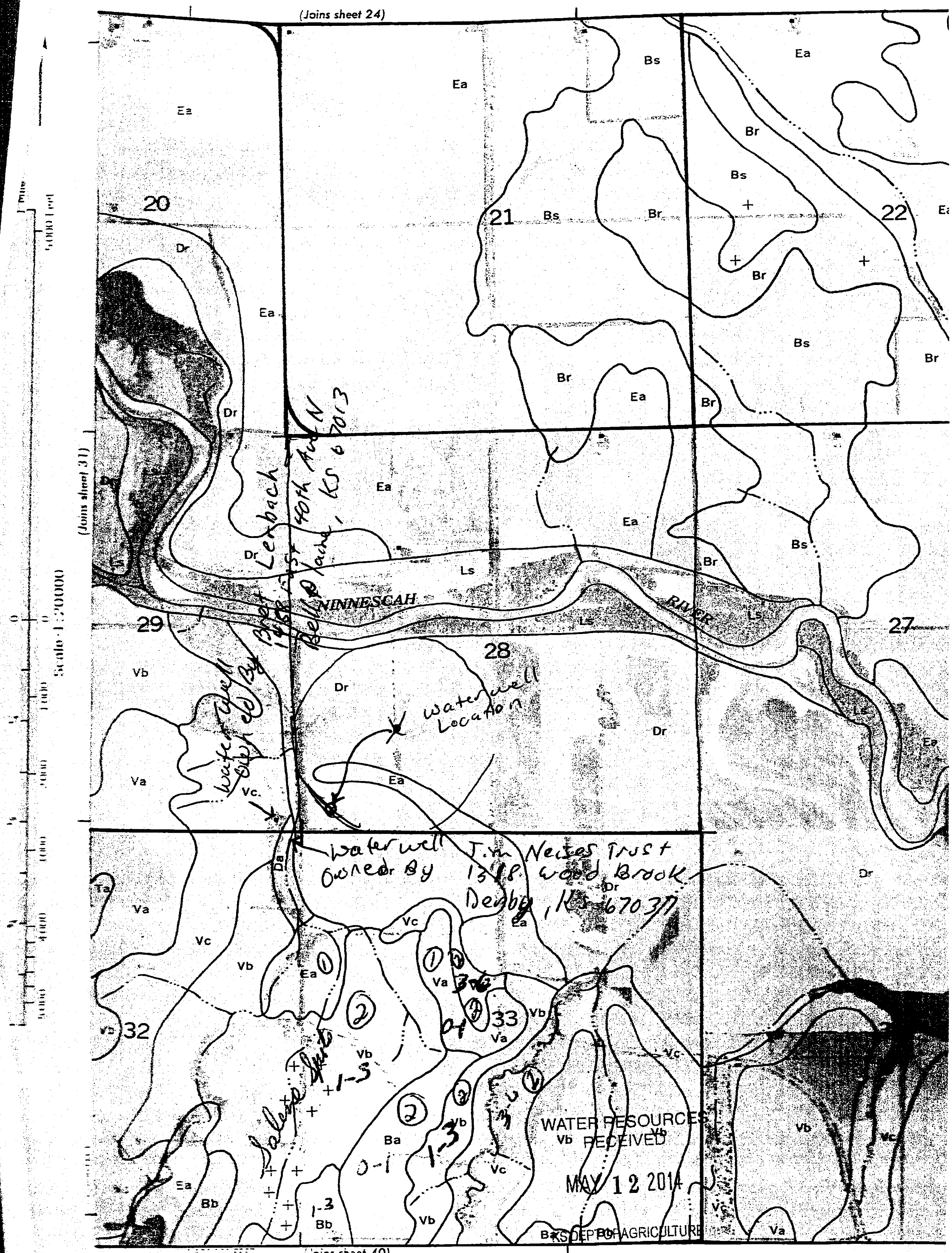
Assisted by _____ _____ Date: _____
(office/title)

WATER RESOURCES
RECEIVED

SCANNED

MAY 12 2014

KS DEPT OF AGRICULTURE


(Joins sheet 24)
(Joins sheet 31)
(Joins sheet 40)
Scale 1:20000
1 Mile
5000 Feet
20
21
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28
29
32
33
NINNESCAH
RIVER
Ea
Bs
Br
Dr
Ls
Vb
Va
Vc
Ba
Bb
Ta
Da
Water well Location
Waterwell Owned By Jim Neises Trust
1318 Wood Brook
Derby, KS 67037
WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

* Proposed acreage OK with Requested Quantity of 162 AF.
DWS/DWR 9/19/16

IRRIGATION USE
SUPPLEMENTAL SHEET

File No. _____

Name of Applicant (Please Print): Ronnie M Neises

1. Please supply the name and address of each landowner, the legal description of the lands to be irrigated, and designate the actual number of acres to be irrigated in each forty acre tract or fractional portion thereof:

Landowner of Record NAME: Marcia E Maybrier trust

ADDRESS: 1577 E. 40th Ave. N. Belle Plaine, KS 67013

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
28	31S	2E									33	33	33	33					132

✓OK *

Landowner of Record NAME: _____

ADDRESS: _____

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

Landowner of Record NAME: _____

ADDRESS: _____

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

SCANNED

49,077

2. Please complete the following information for the description of the operation for the irrigation project. Attach supplemental sheets as needed.

   a. Indicate the soils in the field(s) and their intake rates:

Soil Name	Percent of field (%)	Intake Rate (in/hr)	Irrigation Design Group
Dale + Reinach Silt Loams	90	.6-2.0	
Elandco Silty Clay Loam	10	.6-2.0	
Total:	100 %		

   b. Estimate the average land slope in the field(s): .5 %

      Estimate the maximum land slope in the field(s): 1.0 %

   c. Type of irrigation system you propose to use (check one):

      X Center pivot ___ Center pivot - LEPA ___ "Big gun" sprinkler

      ___ Gravity system (furrows) ___ Gravity system (borders) ___ Sideroll sprinkler

      Other, please describe: _____

   d. System design features:

      i. Describe how you will control tailwater: N/A

      ii. For sprinkler systems:

      (1) Estimate the operating pressure at the distribution system: 40 psi

      (2) What is the sprinkler package design rate? 800 gpm

      (3) What is the wetted diameter (twice the distance the sprinkler throws water) of a sprinkler on the outer 100 feet of the system? 2740 feet

      (4) Please include a copy of the sprinkler package design information.

   e. Crop(s) you intend to irrigate. Please note any planned crop rotations:
      Corn Soybeans Wheat

   f. Please describe how you will determine when to irrigate and how much water to apply (particularly important if you do not plan a full irrigation).
      will water based on crop need & soil moisture throughout the growing season

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE

You may attach any additional information you believe will assist in informing the Division of the need for your request.

SCANNED

File #49,077
Reduced to 162 AF
meets safe Yield.

Analysis Results

The selected PD is in an area to new appropriations.
The safe yield, based on the variables listed below is 1,924.76 AF.
Total prior appropriation in the circle is 2,394.89 AF. -632 = 1762.9
Total quantity of water available for appropriation is ~~0.00~~ 162 AF.

Safe Yield Variables

The area used for the analysis is set at 5703 acres.
Potential annual recharge of the area is estimated to be 5.4 inches.
The percent of recharge available for appropriation is 75%.

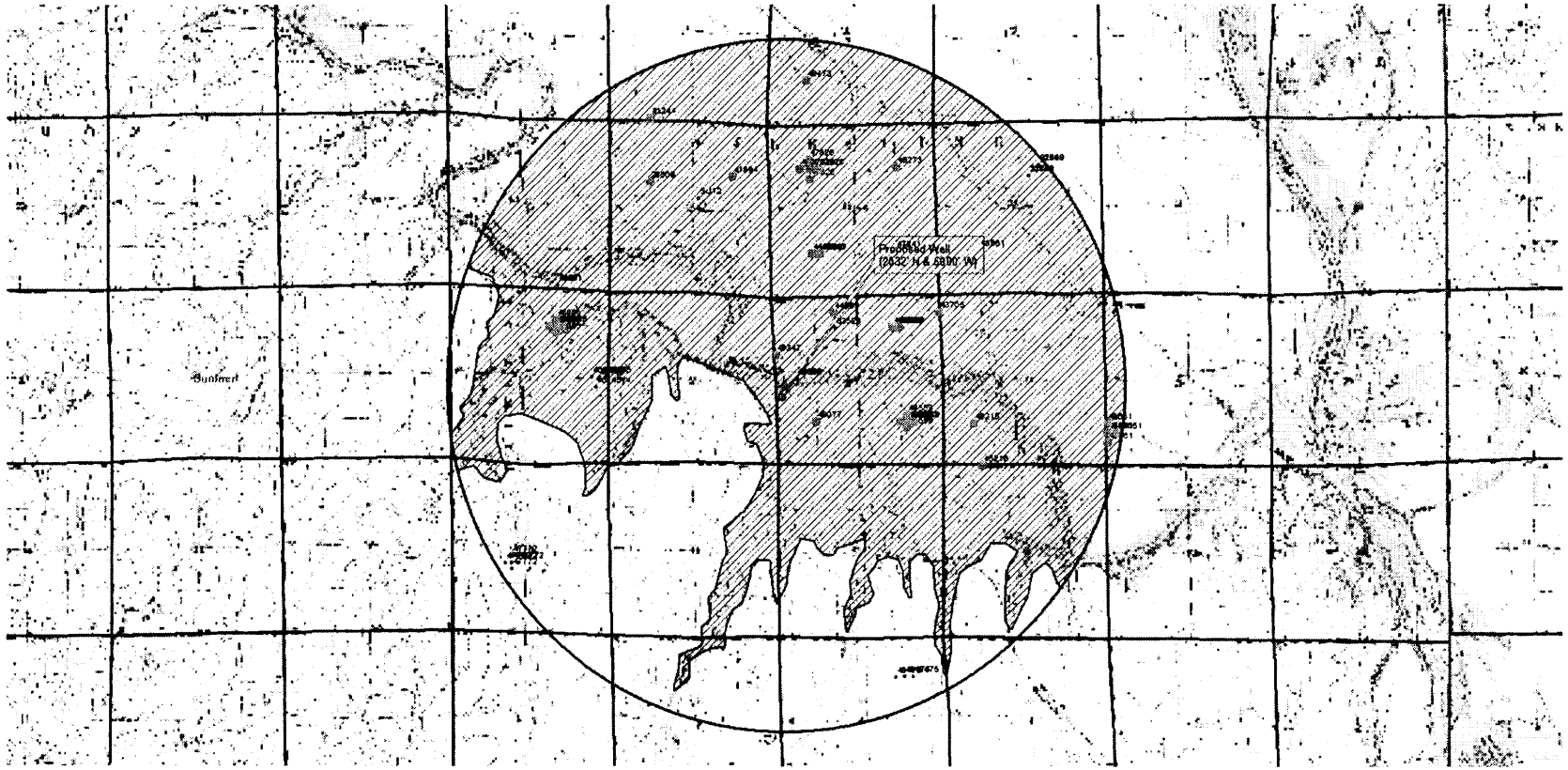
Authorized Quantity values are as of 15-JUN-2016 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

There are 17 water right(s) and 37 point(s) of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth_Quant	Add_Quant	Tacres	Nacres
A 28609 00	IRR	NK	G		NC	S2	NW	3460	3695	20	31	02E	2	WR	148.00	148.00	222.00	222.00
A 31244 00	IRR	NK	G					80	3770	17	31	02E	1	WR	152.00	152.00	317.00	317.00
A 41894 00	IRR	NK	G		NW	SE	NE	3750	1163	20	31	02E	3	WR	155.00	155.00	103.60	103.60
A 41946 00	IRR	NK	G		NW	SE	SW	1288	3948	21	31	02E	1	WR	151.00	151.00	128.00	128.00
Same	IRR	NK	G		NW	SE	SW	1286	3814	21	31	02E	2	WR				
Same	IRR	NK	G		NW	SE	SW	1285	3680	21	31	02E	3	WR				
A 43705 00	IRR	NK	G		NW	NW	NW	4739	5142	27	31	02E	1	WR	163.50	163.50	135.00	135.00
A 44569 00	IRR	NK	G		NW	NE	NW	4659	3369	28	31	02E	2	WR	54.60	54.60	42.00	42.00
A 45215 00	IRR	NK	G		NE	SW	SW	1316	4098	27	31	02E	2	WR	91.00	91.00	79.00	79.00
A 45216 00	IRR	NK	G		NW	NE	NW	5319	3874	34	31	02E	1	WR	135.20	135.20	114.00	114.00
A 46508 00	IRR	KE	G		SE	NW	NE	4200	1440	28	31	02E	3	WR	122.59	122.59	94.30	94.30
Same	IRR	KE	G		SE	NW	NE	4200	1340	28	31	02E	5	WR				
Same	IRR	KE	G		SE	NW	NE	4200	1540	28	31	02E	6	WR				
A 47826 00	IRR	KE	G		NE	SW	NW	3890	4000	21	31	02E	4	WR	169.00	169.00	130.00	130.00
Same	IRR	KE	G		NE	SW	NW	3890	4300	21	31	02E	6	WR				
Same	IRR	KE	G		NW	SE	NW	3890	3700	21	31	02E	7	WR				
Same	IRR	KE	G		SE	NW	NW	4190	4000	21	31	02E	8	WR				
Same	IRR	KE	G		NE	SW	NW	3590	4000	21	31	02E	9	WR				

Safe Yield Report Sheet
Proposed Water Right Application
Point of Diversion in NWNWNWSW 28-31S-02E
File No. 49,077 (2,393'N & 4,934'W)

==========



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49,077

Same		IRR	HK	G	SE	NW	NE	4200	1800	30	31	02E	9	WR		
Same		IRR	HK	G	SE	NW	NE	4200	1400	30	31	02E	10	WR		
A	48559 00	IRR	GY	G	NW	SE	SE	1306	1112	28	31	02E	4	WR	77.00	77.00	67.00	67.00
Same		IRR	GY	G	NW	SE	SE	1106	1112	28	31	02E	10	WR		
Same		IRR	GY	G	SW	NE	SE	1506	1112	28	31	02E	11	WR		
Same		IRR	GY	G	NW	SE	SE	1306	1312	28	31	02E	12	WR		
Same		IRR	GY	G	NW	SE	SE	1306	912	28	31	02E	13	WR		
A	48651 00	IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	3	WR	175.00	175.00	146.00	146.00
Same		IRR	GY	G	NW	SW	SW	760	5110	26	31	02E	4	WR		
Same		IRR	GY	G	NW	SW	SW	1060	4810	26	31	02E	5	WR		
Same		IRR	GY	G	NW	SW	SW	1360	5110	26	31	02E	6	WR		
Same		IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	7	WR		
A	49077 00	IRR	AY	G			SW	1320	3960	28	31	02E	7	WR	200.00	200.00	132.00	132.00
A	49273 00	IRR	AY	G		SE	NE	3926	1261	21	31	02E	10	WR	169.00	169.00	130.00	130.00
A	49347 00	IRR	AY	G	NW	SW	NW	3383	5215	28	31	02E	8	WR	94.00	94.00	73.00	73.00
A	49473 00	IRR	AY	G			SW	1320	3960	16	31	02E	1	WR	169.00	169.00	130.00	130.00

632

Pending

#49,077

Report Date Thursday, September 1 2016

Water Rights and Points of Diversion Within 2.00 miles of point defined as:

2393 ft N and 4934 ft W of the SE Corner of Section 28, T 31S, R 2E

Located at: 97.221634 West Longitude and 37.324947 North Latitude

GROUNDWATER ONLY

meets spacing all wells > 1,320'

File Number	Use	ST	SR	Dist (ft)	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Batt	Auth_Quan	Add_Quan	Unit	
A__ 28609 00	IRR	NK	G	7428	--	NC	S2	NW	3460	3695	20	31	2E	2		148.00	148.00	AF	
A__ 31244 00	IRR	NK	G	9863	--	--	--	--	80	3770	17	31	2E	1		152.00	152.00	AF	
A__ 41894 00	IRR	NK	G	6691	--	NW	SE	NE	3750	1163	20	31	2E	3		155.00	155.00	AF	
A__ 41946 00	IRR	NK	G	4226	--	NW	SE	SW	1286	3814	21	31	2E	2	G 2	151.00	151.00	AF	
Same				4198	--	NW	SE	SW	1288	3948	21	31	2E	1	B 2				
Same				4260	--	NW	SE	SW	1285	3680	21	31	2E	3	B 2				
A__ 43705 00	IRR	NK	G	5352	--	NW	NW	NW	4739	5142	27	31	2E	1		163.50	163.50	AF	
A__ 44569 00	IRR	NK	G	2754	--	NW	NE	NW	4659	3369	28	31	2E	2		54.60	54.60	AF	> ½ mile
A__ 45215 00	IRR	NK	G	6014	--	NE	SW	SW	1316	4098	27	31	2E	2		91.00	91.00	AF	
A__ 45216 00	IRR	NK	G	6642	--	NW	NE	NW	5319	3874	34	31	2E	1		135.20	135.20	AF	
A__ 46508 00	IRR	KE	G	3934	--	SE	NW	NE	4200	1440	28	31	2E	3	G 2	122.59	122.59	AF	
Same				4023	--	SE	NW	NE	4200	1340	28	31	2E	5	B 2				
Same				3845	--	SE	NW	NE	4200	1540	28	31	2E	6	B 2				
A__ 47826 00	IRR	KE	G	6756	--	NE	SW	NW	3890	4000	21	31	2E	4	G 4	169.00	169.00	AF	
Same				6725	--	NE	SW	NW	3890	4300	21	31	2E	6	B 4				
Same				6800	--	NW	SE	NW	3890	3700	21	31	2E	7	B 4				
Same				7053	--	SE	NW	NW	4190	4000	21	31	2E	8	B 4				
Same				6458	--	NE	SW	NW	3590	4000	21	31	2E	9	B 4				
A__ 48065 00	IRR	HK	G	7416	--	SE	NW	NE	4200	1600	30	31	2E	6	G 4	169.00	169.00	AF	
Same				7472	--	SE	NW	NE	4400	1600	30	31	2E	7	B 4				
Same				7366	--	SE	NW	NE	4000	1600	30	31	2E	8	B 4				
Same				7610	--	SE	NW	NE	4200	1800	30	31	2E	9	B 4				
Same				7224	--	SE	NW	NE	4200	1400	30	31	2E	10	B 4				
A__ 48559 00	IRR	GY	G	3974	--	NW	SE	SE	1306	1112	28	31	2E	4	G 4	77.00	77.00	AF	
Same				4033	--	NW	SE	SE	1106	1112	28	31	2E	10	B 4				
Same				3924	--	SW	NE	SE	1506	1112	28	31	2E	11	B 4				
Same				3782	--	NW	SE	SE	1306	1312	28	31	2E	12	B 4				
Same				4166	--	NW	SE	SE	1306	912	28	31	2E	13	B 4				
A__ 48651 00	IRR	GY	G	10169	--	NW	SW	SW	1060	5110	26	31	2E	3	G 4	175.00	175.00	AF	
Same				10218	--	NW	SW	SW	760	5110	26	31	2E	4	B 4				
Same				10466	--	NW	SW	SW	1060	4810	26	31	2E	5	B 4				
Same				10129	--	NW	SW	SW	1360	5110	26	31	2E	6	B 4				
Same				10169	--	NW	SW	SW	1060	5110	26	31	2E	7	B 4				
A__ 49077 00	IRR	AY	G	1449	--	--	--	SW	1320	3960	28	31	2E	7		200.00	200.00	AF	
A__ 49273 00	IRR	AY	G	7632	--	--	SE	NE	3926	1261	21	31	2E	10		169.00	169.00	AF	
A__ 49347 00	IRR	AY	G	1029	--	NW	SW	NW	3383	5215	28	31	2E	8		94.00	94.00	AF	
A__ 49473 00	IRR	AY	G	9437	--	--	--	SW	1320	3960	16	31	2E	1		169.00	169.00	AF	
T__20127043 MF	IRR	GY	G	9863	--	--	--	--	80	3770	17	31	2E	1		730.89	.00	AF	

Total Net Quantities Authorized:	Direct	Storage
Total Requested Amount (AF) =	632.00	.00
Total Permitted Amount (AF) =	712.59	.00
Total Inspected Amount (AF) =	.00	.00
Total Pro_Cert Amount (AF) =	.00	.00
Total Certified Amount (AF) =	1050.30	.00
Total Vested Amount (AF) =	.00	.00

Kansas
Department of Agriculture
Division of Water Resources

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

Phone: (785) 296-5733
Fax: (785) 862-2460
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

September 13, 2016

BRET LERBACH
1488 EAST 40TH AVE N
BELLE PLAINE KS 67013

Re: Pending New Application, File No. 49,077

Dear Sir or Madam:

This is to advise you that Ronnie M. Neises has filed the application referred to above for a permit to appropriate 162 acre-feet of groundwater per calendar year for irrigation use to be diverted at a maximum rate of 800 gallons per minute from a well located as follows:

In the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of Section 28, in Township 31 South, Range 2 East, in Sumner County, Kansas.

A map is enclosed indicating the location of the proposed point of diversion. Records in this office indicate that you may have a well or wells in this vicinity and you are being notified of receipt of this application in order that you may be fully informed of the proposed location of the applicant's point of diversion and proposed use of water. Consideration will be given to comments or other information which you desire to submit to this office **within 15 days** from the date of this letter.

If you have any questions or comments, you may also contact me at (785) 296-3495. If you call, please reference the file number so I can help you more efficiently.

Sincerely,

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Ron Neises

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

Kansas
Department of Agriculture
Division of Water Resources

Phone: (785) 296-5733
Fax: (785) 862-2460
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

September 13, 2016

ROBERT L & MARSHA L NEEDHAM
1525 EAST 50TH AVE N
BELLE PLAINE KS 67013

Re: Pending New Application, File No. 49,077

Dear Sir or Madam:

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Sincerely,

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Ron Neises

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

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Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

September 13, 2016

JAMES H NEISES TRUST
1318 WOODBROOK
DERBY KS 67037

Re: Pending New Application, File No. 49,077

Dear Sir or Madam:

This is to advise you that Ronnie M. Neises has filed the application referred to above for a permit to appropriate 162 acre-feet of groundwater per calendar year for irrigation use to be diverted at a maximum rate of 800 gallons per minute from a well located as follows:

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Sincerely,

Doug Schemm

Douglas W. Schemm
Environmental Scientist
Topeka Field Office

Enclosure

pc: Ron Neises

GEOLOGIC SECTIONS, SUMNER COUNTY, KANSAS

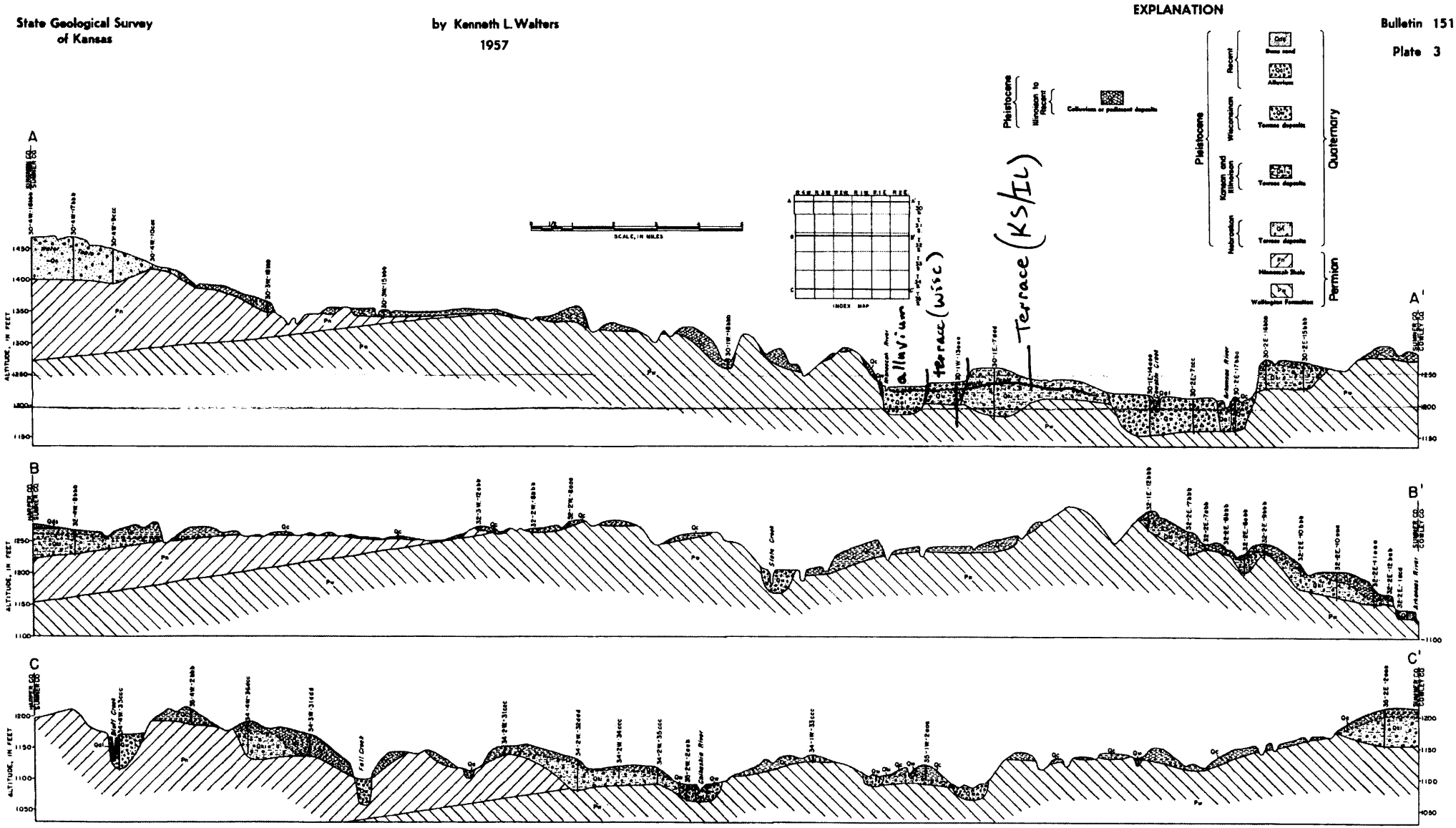
State Geological Survey of Kansas

by Kenneth L. Walters

1957

Bulletin 151

Plate 3



D-1

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL	Fraction	Section Number	Township Number	Range Number
County: SUMNER	SE ¼ SE ¼ SW ¼	19	T 31 S	R 2 E E/W

Distance and direction from nearest town or city? 2 Mi. E. of Belle Plaine, Ks., 4 S., ½ W., Belle Plaine, Ks. Street address of well if located within city?

2 WATER WELL OWNER: Theodore Nieses
RR#, St. Address, Box # : R. #2
City, State, ZIP Code : Belle Plaine, Ks.
Board of Agriculture, Division of Water Resources Application Number:

3 DEPTH OF COMPLETED WELL 40 ft. Bore Hole Diameter 11 in. to ft., and in. to ft.

Well Water to be used as: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Observation well 11 Injection well 12 Other (Specify below)

Well's static water level 20 ft. below land surface measured on 7 month 31 day 80 year

Pump Test Data: Well water was ft. after hours pumping gpm
Est. Yield gpm: Well water was ft. after hours pumping gpm

4 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
Casing Joints: Glued X Clamped Welded Threaded

Blank casing dia 5 in. to 20 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 1.2 in., weight lbs./ft. Wall thickness or gauge No .200

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

Screen or Perforation Openings Are: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut .06 9 Drilled holes 10 Other (specify) 11 None (open hole)

Screen-Perforation Dia 5 in. to 40 ft., Dia in. to ft., Dia in. to ft.
Screen-Perforated Intervals: From 20 ft. to 40 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
Gravel Pack Intervals: From 14 ft. to 40 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

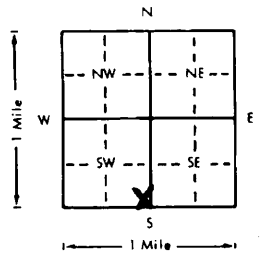
5 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grouted Intervals: From 40" ft. to 14 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination: Septic System not Installed at This Time.
1 Septic tank 2 Sewer lines 3 Lateral lines 4 Cess pool 5 Seepage pit 6 Pit privy 7 Sewage lagoon 8 Feed yard 9 Livestock pens 10 Fuel storage 11 Fertilizer storage 12 Insecticide storage 13 Watertight sewer lines 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below) None Apparent

Direction from well How many feet ? Water Well Disinfected? Yes X No
Was a chemical/bacteriological sample submitted to Department? Yes No X If yes, date sample was submitted month day year: Pump Installed? Yes No X
If Yes: Pump Manufacturer's name Model No. HP Volts
Depth of Pump Intake ft. Pumps Capacity rated at gal./min.
Type of pump: 1 Submersible 2 Turbine 3 Jet 4 Centrifugal 5 Reciprocating 6 Other

6 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on 7 month 31 day 80 year and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 236
This Water Well Record was completed on 10 month 7 day 1980 year under the business name of Harp Well & Pump by (signature) M. Arnold

7 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



ELEVATION:

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
0	3	Topsoil			
3	16	Clay			
16	25	Fine Sand			
25	40	Grey Shale			

Depth(s) Groundwater Encountered 1. 20 ft. 2. ft. 3. ft. 4. ft. (Use a second sheet if needed)

INSTRUCTIONS: Use typewriter or ball point pen, *please press firmly* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Division of Environment, Water Well Contractors, Topeka, KS 66620. Send one to WATER WELL OWNER and retain one for your records.

OFFICE USE ONLY T 31 R 2 E W SEC 19 SE¼ SE¼ SW¼

#41,894

Water Well Record Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL:	FRACTION	Section Number	Township Number	Range Number
Sumner	1/4 1/4 C of NE 1/4	20	T 31 S	R 2E E/W

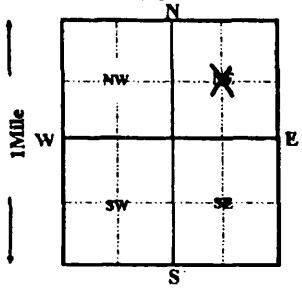
Distance and direction from nearest town or city street address of well if located within city?

2 m. E., 3 m. S., 3/4 m. E., 1/4 m. S. of Belle Plaine, Kansas

WATER WELL OWNER: HISKEN, Doug
RR#, ST. ADRESS, BOX #: 1459 E. 60th North
CITY, STATE, ZIP CODE: Belle Plaine, Kansas

Board of Agriculture, Division of Water Resources
Application Number: 41,894

LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 57 ft. ELEVATION:
Depth(s) groundwater Encountered 1 ft. 2 ft. 3 ft.
WELL'S STATIC WATER LEVEL 13 FT. BELOW LAND SURFACE MEASURED ON mo/day/yr 07/08/1996
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 700 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 30 in. to 57 ft. and in. to ft.
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden only 10 Monitoring well
Was a chemical/bacteriological sample submitted to Department? Yes No X ; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued X Clamped
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (Specify below) Welded
2 PVC 4 ABS 7 Fiberglass SDR-26 Threaded
Blank casing Diameter 16 in. to 27 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 12 in., weight 19.750 lbs./ft. Wall thickness or gauge No. .616
TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless Steel 5 Fiberglass 8 RMP (SR) 11 other (specify)
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)
SCREEN OR PERFORATION OPENING ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify)
SCREEN-PERFORATION INTERVALS: from 27 ft. to 57 ft., From ft. to ft.
from ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: from 20 ft. to 57 ft., From ft. to ft.
from ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other bentonite hole plug
Grout Intervals: From 0 ft. to 20 ft. From ft. to ft. From ft. to ft.
What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandon water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage None Apparent
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	2	soil			
2	13	brown clay			
13	25	fine to coarse sand			
25	45	fine to coarse sand and fine to medium gravel			
45	57	fine to coarse sand and medium to coarse gravel with few cemented streaks			
57	58	gray shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 07/08/1996 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 236 This Water Well Record was completed on (mo/day/yr) 07/09/96
Under the business name of Harp Well & Pump Service, Inc by (signature)

Todd S. Harp

D-2

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: SUMNER | Fraction: SE ¼ SE ¼ SW ¼ | Section Number: 29 | Township Number: T 31 S | Range Number: R 2 E E/W

Distance and direction from nearest town or city? 2 E., 5 S., ½ E., of Belle Plaine, Ks. | Street address of well if located within city?

2 WATER WELL OWNER: Phillip Turner
RR#, St. Address, Box # : R.R.2
City, State, ZIP Code : Belle Plaine, Ks.
Board of Agriculture, Division of Water Resources Application Number:

3 DEPTH OF COMPLETED WELL 65 ft. Bore Hole Diameter 11 in. to ft., and in. to ft.

Well Water to be used as: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Observation well 11 Injection well 12 Other (Specify below)

Well's static water level 16 ft. below land surface measured on 9 month 10 day 80 year

Pump Test Data: Well water was ft. after hours pumping gpm
Est. Yield gpm: Well water was ft. after hours pumping gpm

4 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)

Casing Joints: Glued X Clamped Welded Threaded

Blank casing dia 5 in. to 55 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 12 in., weight lbs./ft. Wall thickness or gauge No .200

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

Screen or Perforation Openings Are: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut .06 9 Drilled holes 10 Other (specify) 11 None (open hole)

Screen-Perforation Dia 5 in. to 65 ft., Dia in. to ft., Dia in to ft.
Screen-Perforated Intervals: From 55 ft. to 65 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
Gravel Pack Intervals: From 14 ft. to 65 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

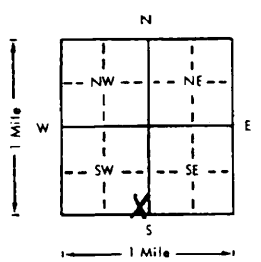
5 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grouted Intervals: From 40" ft. to 14 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Lateral lines 4 Cess pool 5 Seepage pit 6 Pit privy 7 Sewage lagoon 8 Feed yard 9 Livestock pens 10 Fuel storage 11 Fertilizer storage 12 Insecticide storage 13 Watertight sewer lines 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)

Direction from well Northeast How many feet 75 ? Water Well Disinfected? Yes X No
Was a chemical/bacteriological sample submitted to Department? Yes No X : If yes, date sample was submitted month day year: Pump Installed? Yes No X
If Yes: Pump Manufacturer's name Model No. HP Volts
Depth of Pump Intake ft. Pumps Capacity rated at gal./min.
Type of pump: 1 Submersible 2 Turbine 3 Jet 4 Centrifugal 5 Reciprocating 6 Other

6 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on 9 month 10 day 80 year and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 236
This Water Well Record was completed on 1 month 14 day year under the business name of Harp Well & Pump Serv., Inc. by (signature) M. Arnold

7 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



ELEVATION:

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
0	2	Topsoil			
2	8	Sandy Soil			
8	19	Sandy Clay			
19	27	Fine to Medium Sand with Clay Streaks			
27	45	Medium Sand with Clay Streaks			
45	52	Medium Sand			
52	65	Medium to Coarse Sand			

Depth(s) Groundwater Encountered 1. 16 ft. 2. ft. 3. ft. 4. ft. (Use a second sheet if needed)

INSTRUCTIONS: Use typewriter or ball point pen, *please press firmly* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Division of Environment, Water Well Contractors, Topeka, KS 66620. Send one to WATER WELL OWNER and retain one for your records.

OFFICE USE ONLY T 31 R 2 E/W SEC 29 SE ¼ SE ¼ SW ¼

D-3

USE TYPEWRITER OR BALL POINT PEN-PRESS FIRMLY, PRINT CLEARLY.

T R EW sec 1/4 1/4 1/4 No.

WATER WELL RECORD
KSA 82a-1201-1215

Kansas State Dept. Of Health
(Water Well Contractors)
Forbes-Bldg. 740
Topeka, Kansas 66620

1 Location of well:	County	Township name	Fraction	Section number	Town number	Range number
	Sumner	Palestine		29	31S	2E

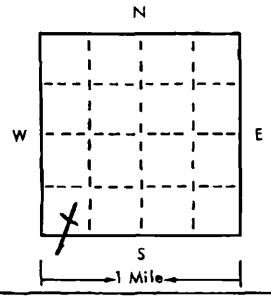
Distance and direction from nearest town or city: 2 East 4½ South of Belle Plaine, Ks.

Street address of well location if in city:

3 Owner of well: Theadore Neises

Address: R#2 Belle Plaine, Kansas

Locate with "X" in section below:



Sketch map:

4 Well depth: 45 ft. Date of completion 3-19-75
Well diameter 11 in.

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ Reverse rotary

6 Use: ☒ Domestic ☐ Public supply ☐ Industry ☐ Irrigation ☐ Air conditioning ☐ Commercial ☐ Test well ☐

7 Casing: Material Styrene Height: above/below
Threaded ☐ Welded ☐ Surface 12 in.
Diam. 5 in. to 45 ft. depth Weight ___ lbs./ft.
___ in. to ___ ft. depth Drive shoe? ☐ Yes ☐ No

2 Type and color of material	From	To
Dirt and top soil	0	3
Clay	3	15
Sand	15	40
Shale	40	45
(use a second sheet if needed)		

8 Screen:
Manufacturer Sunflower Plastic
Type Styrene Dia. 5"
Slot/gauze .005 Length 15'
Set between 30 ft. and 45 ft.
Fittings:
Gravel pack ☒ Yes ☐ No Size range of material ¼-1/8"

9 Static water level:
16 ft. below land surface Date 3-19-75

10 Pumping level below land surfaces:
___ ft. after ___ hrs. pumping ___ g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.
Estimated maximum yield ___ g.p.m.

11 Water sample submitted:
☐ Yes ☐ No Date ___

12 Well head completion: capped
☐ Pitless adapter 12 ☒ Inches above grade

13 Well grouted? ☒ Yes ☐ No
☒ Neat cement ☐ Bentonite ☐ ___
Depth: From 0 ft. to 12 ft.

14 Nearest source of possible contamination:
100 ft. Direction South Type Septic tank
Well disinfected upon completion? ☒ Yes ☐ No

15 Pump: ☒ Not installed
Manufacturer's name ___
Model number ___ HP ___ Volts ___
Length of drop pipe ___ ft. capacity ___ g.m.p.
Type:
☐ Submersible ☐ Turbine
☐ Jet ☐ Reciprocating
☐ Certrifugal ☐ Other

16 Remarks: elevation

Topography:
☐ Hill
☒ Slope
☐ Upland
☐ Valley

17 Water well contractor's certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Harp WEll & Pump 236
Business name License No.
Address Wichita, Kansas 67209
Signed Mary Arnell Date 3-20-75
Authorized representative

Forward the white, blue and pink copies to the Kansas State Dept. Of Health.

Form WWC-5

877-H

CORRECTION(S) TO WATER WELL RECORD (WWC-5)

(to rectify lacking or incorrect information)

County: Sumner

Location listed as:	**Location changed to:**
Section-Township-Range: 29-31S-2E	29-31S-2E
Fraction (¼ ¼ ¼): None Given	SE SW SW

Other changes: Initial statements: _____

Changed to: _____

Comments: _____

verification method: Written & legal descriptions, position on plat map, and Belle Plaine 1:24,000 topo. map.

initials: ~~DRL~~ date: 4/1/2005

submitted by: Kansas Geological Survey, Data Resources Library, 1930 Constant Ave., Lawrence, KS 66047-3726
to: Kansas Dept of Health & Environment, Bureau of Water, 1000 SW Jackson, Suite 420, Topeka, KS 66612-1367.

D-4

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: SUMNER | Fraction: NE ¼ NE ¼ NE ¼ | Section Number: 30 | Township Number: T 31 S | Range Number: R 2 E E/W

Distance and direction from nearest town or city? 2 E. of Belle Plaine, Ks. 4 1/8 S., on W. side, Belle Plaine, Ks.

Street address of well if located within city?

2 WATER WELL OWNER: Elvin Phipps
RR#, St. Address, Box # : R #2 Box 193
City, State, ZIP Code : Belle Plaine, Ks.
Board of Agriculture, Division of Water Resources Application Number:

3 DEPTH OF COMPLETED WELL 65 ft. Bore Hole Diameter 11 in. to ft., and in. to ft.

Well Water to be used as: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Observation well 11 Injection well 12 Other (Specify below)

Well's static water level 24 ft. below land surface measured on 7 month 31 day 80 year

Pump Test Data: Well water was ft. after hours pumping gpm
Est. Yield gpm: Well water was ft. after hours pumping gpm

4 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)

Casing Joints: Glued X Clamped Welded Threaded

Blank casing dia 5 in. to 40 ft., Dia in. to ft., Dia in. to ft.

Casing height above land surface 1.2 in., weight lbs./ft. Wall thickness or gauge No .200

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

Screen or Perforation Openings Are: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut .06 9 Drilled holes 10 Other (specify) 11 None (open hole)

Screen-Perforation Dia 5 in. to 65 ft., Dia in. to ft., Dia in. to ft.

Screen-Perforated Intervals: From 40 ft. to 65 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

Gravel Pack Intervals: From 14 ft. to 65 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

5 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other

Grouted Intervals: From 40" ft. to 14 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Lateral lines 4 Cess pool 5 Seepage pit 6 Pit privy 7 Sewage lagoon 8 Feed yard 9 Livestock pens 10 Fuel storage 11 Fertilizer storage 12 Insecticide storage 13 Watertight sewer lines 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)

Direction from well Northeast How many feet 158 ? Water Well Disinfected? Yes X No

Was a chemical/bacteriological sample submitted to Department? Yes No X : If yes, date sample was submitted month day year: Pump Installed? Yes No X

If Yes: Pump Manufacturer's name Model No. HP Volts

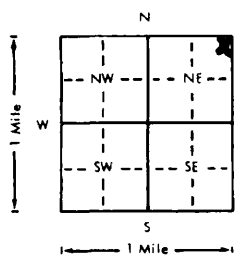
Depth of Pump Intake ft. Pumps Capacity rated at gal./min.

Type of pump: 1 Submersible 2 Turbine 3 Jet 4 Centrifugal 5 Reciprocating 6 Other

6 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on 7 month 31 day 80 year and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 236

This Water Well Record was completed on 10 month 24 day 1980 year under the business name of Harp Well & Pump Service, Inc. by (signature) M. Arnold

7 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



ELEVATION:

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
0	3	Topsoil			
3	24	Clay			
24	58	Fine Sand			
58	65	Grey Shale			

Depth(s) Groundwater Encountered 1. 22 ft. 2. ft. 3. ft. 4. ft. (Use a second sheet if needed)

INSTRUCTIONS: Use typewriter or ball point pen, *please press firmly* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Division of Environment, Water Well Contractors, Topeka, KS 66620. Send one to WATER WELL OWNER and retain one for your records.

OFFICE USE ONLY T 31 R 2 E SEC 30 NE ¼ NE ¼ NE ¼

WATER WELL RECORD Form WWC-5

Division of Water Resources App. No. 48065

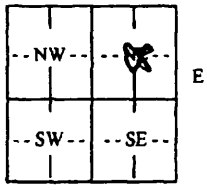
1 LOCATION OF WATER WELL: County: Sumner | Fraction: ¼ ¼ ¼ NE ¼ | Section Number: 30 | Township No.: T 31 S | Range Number: R 2 ☑E ☐W

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here ☐.
E. 50th Ave N. and N. Rock Rd.
Hole #3 EAST HOLE

Global Positioning System (GPS) information:
Latitude: ..... (in decimal degrees)
Longitude: ..... (in decimal degrees)
Elevation: .....
Datum: ☐ WGS 84, ☐ NAD 83, ☐ NAD 27
Collection Method:
☐ GPS unit (Make/Model: .....)
☐ Digital Map/Photo, ☐ Topographic Map, ☐ Land Survey
Est. Accuracy: ☐ <3 m, ☐ 3-5 m, ☐ 5-15 m, ☐ >15 m

2 WATER WELL OWNER: Ron Neises
RR#, Street Address, Box #: 409 N. Rock Rd.
City, State, ZIP Code : Belle Plain. KS 67013

3 LOCATE WELL WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 45 ft.
Depth(s) Groundwater Encountered (1) 15 ft. (2) ..... ft. (3) ..... ft.
WELL'S STATIC WATER LEVEL 15 ft. below land surface measured on mo/day/yr .....
Pump test data: Well water was ..... ft. after ..... hours pumping ..... gpm
EST. YIELD 75 gpm. Well water was ..... ft. after ..... hours pumping ..... gpm
Bore Hole Diameter 30 in. to 45 ft., and ..... in. to ..... ft.
WELL WATER TO BE USED AS: ☐ Public water supply ☐ Geothermal ☐ Injection well
☐ Domestic ☐ Feedlot ☐ Oil field water supply ☐ Dewatering ☐ Other (Specify below)
☑ Irrigation ☐ Industrial ☐ Domestic-lawn & garden ☐ Monitoring well .....
Was a chemical/bacteriological sample submitted to Department? ☐ Yes ☑ No
If yes, mo/day/yr sample was submitted .....
Water well disinfected? ☑ Yes ☐ No

5 TYPE OF CASING USED: ☐ Steel ☑ PVC ☐ Other .....
CASING JOINTS: ☑ Glued ☐ Clamped ☐ Welded ☐ Threaded
Casing diameter 16 in. to 45 ft., Diameter ..... in. to ..... ft., Diameter ..... in. to ..... ft.
Casing height above land surface 12 in., Weight 16 lbs./ft., Wall thickness or gauge No. SCH40
TYPE OF SCREEN OR PERFORATION MATERIAL:
☐ Steel ☐ Stainless Steel ☑ PVC ☐ Other (Specify) .....
☐ Brass ☐ Galvanized Steel ☐ None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE:
☐ Continuous slot ☐ Mill slot ☐ Gauze wrapped ☐ Torch cut ☐ Drilled holes ☐ None (open hole)
☐ Louvered shutter ☐ Key punched ☐ Wire wrapped ☑ Saw cut ☐ Other (specify) .....
SCREEN-PERFORATED INTERVALS: From 25 ft. to 45 ft., From ..... ft. to ..... ft.
From ..... ft. to ..... ft., From ..... ft. to ..... ft.
GRAVEL PACK INTERVALS: From 20 ft. to 45 ft., From ..... ft. to ..... ft.
From ..... ft. to ..... ft., From ..... ft. to ..... ft.

6 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☐ Bentonite ☐ Other .....
Grout Intervals: From 3 ft. to 20 ft., From ..... ft. to ..... ft., From ..... ft. to ..... ft.
What is the nearest source of possible contamination:
☐ Septic tank ☐ Lateral lines ☐ Pit privy ☐ Livestock pens ☐ Insecticide storage ☑ Other (specify below)
☐ Sewer lines ☐ Cesspool ☐ Sewage lagoon ☐ Fuel storage ☐ Abandoned water well
☐ Watertight sewer lines ☐ Seepage pit ☐ Feedyard ☐ Fertilizer storage ☐ Oil well/gas well
NONE - OPEN FIELD
Direction from well ..... Distance from well .....

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	27	Clay			
27	33	Medium Gravel			
33	45	Shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☑ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo/day/year) 8/11/2014 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 238 This Water Well Record was completed on (mo/day/year) 08/18/2014 under the business name of Premier Pump & Well Service, Inc. by (signature) .....

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks and check the correct answers. Send one copy to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5524. Send one copy to WATER WELL OWNER and retain one for your records. Include fee of $5.00 for each constructed well. Visit us at http://www.kdheks.gov/waterwell/index.html

KSA 82a-1212

120 8646 OB2-06

WATER WELL RECORD

Form WWC-5 Division of Water Resources; App. No. 46,145

1 LOCATION OF WATER WELL: County: Sumner | Fraction: NE 1/4 NE 1/4 SE 1/4 | Section Number: 30 | Township Number: T 31 S | Range Number: R 2 (E) W

Distance and direction from nearest town or city street address of well if located within city? Approximately 3 1/2 miles north and 4 miles west of Oxford

Global Positioning Systems (decimal degrees, min. of 4 digits)
Latitude: 37.325593
Longitude: -97.241213
Elevation: Unknown
Datum: NAD83
Data Collection Method: WAAS GPS Unit

2 WATER WELL OWNER: Jim Neises
RR#, St. Address, Box # : 409 North Rock Rd.
City, State, ZIP Code : Belle Plaine, KS 67013

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:

N / W / E / S; --NW-- --NE-- --SW-- --SE-- X

4 DEPTH OF COMPLETED WELL 57 ft.
Depth(s) Groundwater Encountered (1) ____ ft. (2) ____ ft. (3) ____ ft,
WELL'S STATIC WATER LEVEL 35.60 ft. below land surface measured on mo/day/yr 12-15-06
Pump test data: Well water was Not checked ft. after ____ hours pumping ____ gpm
Est. Yield Unknown gpm: Well water was ____ ft. after ____ hours pumping ____ gpm

WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering (12) Other (Specify below)
2 Irrigation 4 Industrial 7 Domestic (lawn & garden) 10 Monitoring well Observation Well

Was a chemical/bacteriological sample submitted to Department? Yes ____ No ✓ If yes, mo/day/yrs
Sample was submitted ____ Water well disinfected? Yes ____ No ✓

5 TYPE OF CASING USED: 5 Wrought Iron 8 Concrete tile CASING JOINTS: Glued ✓ Clamped ____
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded ____
(2) PVC 4 ABS 7 Fiberglass Threaded ____

Blank casing diameter 2 in. to 43 ft., Diameter ____ in. to ____ ft., Diameter ____ in. to ____ ft.
Casing height above land surface 24 in., weight .44 lbs./ft. Wall thickness or gauge No. .091

TYPE OF SCREEN OR PERFORATION MATERIAL:
1 Steel 3 Stainless Steel 5 Fiberglass (7) PVC 9 ABS 11 Other (Specify) ____
2 Brass 4 Galvanized Steel 6 Concrete tile 8 RM (SR) 10 Asbestos-Cement 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE:
1 Continuous slot (3) Mill slot 5 Gauzed wrapped 7 Torch cut 9 Drilled holes 11 None (open hole)
2 Louvered shutter 4 Key punched 6 Wire wrapped 8 Saw Cut 10 Other (Specify) ____

SCREEN-PERFORATED INTERVALS: From 43 ft. to 55 ft., From ____ ft. to ____ ft.
From ____ ft. to ____ ft., From ____ ft. to ____ ft.
GRAVEL PACK INTERVALS: From 21 ft. to 58 ft., From ____ ft. to ____ ft.
From ____ ft. to ____ ft., From ____ ft. to ____ ft.

6 GROUT MATERIAL: 1 Neat Cement 2 Cement grout 3 Bentonite (4) Other Bentonite Holeplug

Grout Intervals: From ____ ft. to ____ ft., From ____ ft. to ____ ft., From 0 ft. to 21 ft.
What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 13 Insecticide Storage (16) Other (specify below)
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 14 Abandoned water well Observation Well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer Storage 15 Oil well/gas well
Direction from well? North How many feet? 130

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3	Topsoil			
3	17	Clay, brown, silty			
17	21	Sand, fine, with clay streaks			
21	23	Clay, with sand streaks, fine			
23	41	Sand, fine to medium, with clay streaks			
41	55	Sand, fine to medium, increasing gravel			
		below 45', fine to coarse			
55	57	Shale, weathered, gray, green			
57	58	Shale, weathered, blue, gray			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) (constructed) (2) reconstructed (3) plugged under my jurisdiction and was completed on (mo/day/year) 12-15-06 and this record is true to the best of my knowledge and belief.
Kansas Water Well Contractor's License No. 185 This Water Well Record was completed on (mo/day/year) 12-20-06
Under the business name of Clarke Well & Equipment, Inc. by (signature) [signature]

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5522. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

D-5

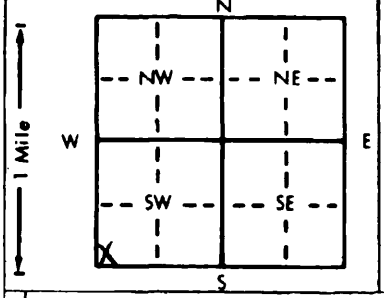
WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: SUMNER	SW ¼ SW ¼ SW ¼	31	T 31 S	R 2 E E/W

Distance and direction from nearest town or city street address of well if located within city?
6 miles S., 1 1/8 E. of Belle Plain, Ks.

2 WATER WELL OWNER: Edward Neises
RR#, St. Address, Box # : Rt. 1, Box 194A
City, State, ZIP Code : Wellington, Ks.
Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 46 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 20 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 20 ft. below land surface measured on mo/day/yr 11-18-81
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 11 in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden only 10 Observation well
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued X Clamped
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded
2 PVC 4 ABS 7 Fiberglass Threaded
Blank casing diameter 5 in. to 25 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 12 in., weight 1.59 lbs./ft. Wall thickness or gauge No. .203
Cer-Mac Styrene SDR-26

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify)
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut .06 11 None (open hole)
1 Continuous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify)

SCREEN-PERFORATED INTERVALS: From 25 ft. to 46 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 14 ft. to 46 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 40" ft. to 14 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage NONE APPARENT
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
0	2	Topsoil			
2	13	Clay			
13	20	Sandy Clay			
20	40	Medium to Coarse Sand			
40	46	Blue Shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 11-18-81 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 236 This Water Well Record was completed on (mo/day/yr) 12-30-81
under the business name of Harp Well & Pump Serv., Inc. by (signature) Mary Arnold

INSTRUCTIONS: Use typewriter or ball point pen, *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Division of Environment, Environmental Geology Section, Topeka, KS 66620. Send one to WATER WELL OWNER and retain one for your records.

OFFICE USE ONLY T 31 R 2 E W SEC. 31 NW¼ SW¼ SW¼

FEE SCHEDULE

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic use, shall be (see paragraph No. 2 below if requesting storage):

ACRE-FEET	FEE
0-100	$200.00
101-320	$300.00
More than 320	$300.00 plus $20.00 for each additional 100 acre-feet or any part thereof.

2. The fee for an application in which storage is requested, except for domestic use, shall be:

ACRE-FEET	FEE
0-250	$200.00
More than 250	$200.00 plus $20.00 for each additional 250 acre-feet of storage or any part thereof.

   Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for a permit to appropriate water for water power or dewatering purposes shall be $100.00 plus $200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

   Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of $400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of $200.00.

MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE

ATTENTION

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

CONVERSION FACTORS

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet

WATER RESOURCES
RECEIVED

MAY 12 2014

KS DEPT OF AGRICULTURE

SCANNED

File #49,077

Report Date Wednesday, April 20 2016

All wells > ½ mile

meets spacing of 1,320'

Water Rights and Points of Diversion Within 2.00 miles of point defined as:

2393 ft N and 4934 ft W of the SE Corner of Section 28, T 31S, R 2E

Located at: 97.221634 West Longitude and 37.324947 North Latitude

GROUNDWATER ONLY

File Number	Use	ST	SR	Dist (ft)	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Batt	Auth_Quan	Add_Quan	Unit	
A__ 28609	00 IRR	NK	G	7428	--	NC	S2	NW	3460	3695	20	31	2E	2		148.00	148.00	AF	
A__ 31244	00 IRR	NK	G	9863	--	--	--	--	80	3770	17	31	2E	1		152.00	152.00	AF	
A__ 41894	00 IRR	NK	G	6691	--	NW	SE	NE	3750	1163	20	31	2E	3		155.00	155.00	AF	
A__ 41946	00 IRR	NK	G	4226	--	NW	SE	SW	1286	3814	21	31	2E	2	G 2	151.00	151.00	AF	
Same				4198	--	NW	SE	SW	1288	3948	21	31	2E	1	B 2				
Same				4260	--	NW	SE	SW	1285	3680	21	31	2E	3	B 2				
A__ 43705	00 IRR	NK	G	5352	--	NW	NW	NW	4739	5142	27	31	2E	1		163.50	163.50	AF	
A__ 44569	00 IRR	NK	G	2754	--	NW	NE	NW	4659	3369	28	31	2E	2		54.60	54.60	AF	> ½ mile
A__ 45215	00 IRR	NK	G	6014	--	NE	SW	SW	1316	4098	27	31	2E	2		91.00	91.00	AF	
A__ 45216	00 IRR	NK	G	6642	--	NW	NE	NW	5319	3874	34	31	2E	1		135.20	135.20	AF	
A__ 46508	00 IRR	KE	G	3934	--	SE	NW	NE	4200	1440	28	31	2E	3	G 2	122.59	122.59	AF	
Same				4023	--	SE	NW	NE	4200	1340	28	31	2E	5	B 2				
Same				3845	--	SE	NW	NE	4200	1540	28	31	2E	6	B 2				
A__ 47826	00 IRR	KE	G	6756	--	NE	SW	NW	3890	4000	21	31	2E	4	G 4	169.00	169.00	AF	
Same				6725	--	NE	SW	NW	3890	4300	21	31	2E	6	B 4				
Same				6800	--	NW	SE	NW	3890	3700	21	31	2E	7	B 4				
Same				7053	--	SE	NW	NW	4190	4000	21	31	2E	8	B 4				
Same				6458	--	NE	SW	NW	3590	4000	21	31	2E	9	B 4				
A__ 48065	00 IRR	HK	G	7416	--	SE	NW	NE	4200	1600	30	31	2E	6	G 4	169.00	169.00	AF	
Same				7472	--	SE	NW	NE	4400	1600	30	31	2E	7	B 4				
Same				7366	--	SE	NW	NE	4000	1600	30	31	2E	8	B 4				
Same				7610	--	SE	NW	NE	4200	1800	30	31	2E	9	B 4				
Same				7224	--	SE	NW	NE	4200	1400	30	31	2E	10	B 4				
A__ 48475	00 IRR	GY	G	9623	--	NE	SW	NE	3760	1380	4	32	2E	1	G 3	137.80	137.80	AF	
Same				9623	--	NE	SW	NE	3760	1380	4	32	2E	2	B 3				
Same				9522	--	NE	SW	NE	3760	1655	4	32	2E	3	B 3				
Same				9730	--	NW	SE	NE	3760	1105	4	32	2E	4	B 3				
A__ 48559	00 IRR	GY	G	3974	--	NW	SE	SE	1306	1112	28	31	2E	4	G 4	77.00	77.00	AF	
Same				4033	--	NW	SE	SE	1106	1112	28	31	2E	10	B 4				
Same				3924	--	SW	NE	SE	1506	1112	28	31	2E	11	B 4				
Same				3782	--	NW	SE	SE	1306	1312	28	31	2E	12	B 4				
Same				4166	--	NW	SE	SE	1306	912	28	31	2E	13	B 4				
A__ 48651	00 IRR	GY	G	10169	--	NW	SW	SW	1060	5110	26	31	2E	3	G 4	175.00	175.00	AF	
Same				10218	--	NW	SW	SW	760	5110	26	31	2E	4	B 4				
Same				10466	--	NW	SW	SW	1060	4810	26	31	2E	5	B 4				
Same				10129	--	NW	SW	SW	1360	5110	26	31	2E	6	B 4				
Same				10169	--	NW	SW	SW	1060	5110	26	31	2E	7	B 4				
A__ 49077	00 IRR	AY	G	1449	--	--	--	SW	1320	3960	28	31	2E	7		200.00	200.00	AF	
A__ 49273	00 IRR	AY	G	7632	--	--	SE	NE	3926	1261	21	31	2E	10		169.00	169.00	AF	
A__ 49347	00 IRR	AY	G	1029	--	NW	SW	NW	3383	5215	28	31	2E	8		94.00	94.00	AF	
A__ 49473	00 IRR	AY	G	9437	--	--	--	SW	1320	3960	16	31	2E	1		169.00	169.00	AF	
T__20127043	MF IRR	GY	G	9863	--	--	--	--	80	3770	17	31	2E	1		730.89	.00	AF	

Total Net Quantities Authorized:	Direct	Storage
Total Requested Amount (AF) =	632.00	.00
Total Permitted Amount (AF) =	850.39	.00

Kansas
Department of Agriculture
Division of Water Resources

109 SW 9th Street, 2nd Floor
Topeka, Kansas 66612-1280

Phone: (785) 296-3717
Fax: (785) 296-1176
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer

Sam Brownback, Governor

May 12, 2014

RONNIE M. NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

RE: Application
File No. 49,077

Dear Sir or Madam:

Your application for permit to appropriate water in 28-31S-2E, in Sumner County, was received and has been assigned the file number noted above.

As a matter of record, the Division of Water Resources has on hand a large number of applications awaiting processing. Therefore to be fair to all concerned, and so that we can process those applications on hand in the order they were received, we intend to concentrate on the backlog of applications until the issue is resolved. Once review of your application has begun, we will contact you, if additional information is required.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water as proposed prior to approval of the application is unlawful. Once approved, compliance with the terms, conditions and limitations of the permit is necessary. Conservation of the water resources of Kansas is required.

Section 82a-728 of the Kansas Water Appropriation Act, provides (a) except for the appropriation of water for the purpose of domestic use, . . . it shall be unlawful for any person to appropriate or threaten to appropriate water from any source without first applying for and obtaining a permit to appropriate water in accordance with the provisions of the Water Appropriation Act or for any person to violate any condition of a vested right, appropriation right or an approved application for a permit to appropriate water for beneficial use.

(b) (1) The violation of any provision of this section by any person is a class C misdemeanor . . .

A class C misdemeanor is punishable by a fine not to exceed $500 and/or a term of confinement not to exceed one month in the county jail. Each day that the violation occurs constitutes a separate offense.

If you have any questions, please contact our office. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Douglas W. Schemm

Douglas W. Schemm
New Application Unit Supervisor
Water Appropriation Program

DWS: al
pc: Stafford Field Office

SCANNED

Kansas
Department of Agriculture
Division of Water Resources

Topeka Field Office
6531 SE Forbes Ave., Suite B
Topeka, Kansas 66619

Phone: (785) 296-5733
Fax: (785) 862-2460
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer
Katherine A. Tietsort, Water Commissioner

Sam Brownback, Governor

December 29, 2015

RONNIE M NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

RE: Pending Application, File No. 49,077

Dear Mr. Neises:

We have conducted a preliminary review of your application referenced above based on the information received in our office on May 12, 2014. The application is requesting to appropriate 200 acre-feet of groundwater for irrigation use on 132 acres. The source of water for the pending application is alluvial deposits, based on the geographical location of the well, and nearby well logs. Based on a review of the 2004 United States Geological Survey report, the Division of Water Resources has established a value of 5.4 inches for calculated recharge, with 75% of the calculated recharge available for appropriation within the Lower Arkansas River valley. Per K.A.R. 5-3-11(d)(1), the safe yield area of consideration represents the portion of the two-mile circle located within the limit of the unconfined aquifer expressed in acres (4,589 acres for this file). Calculated recharge is 5.4 inches, and as noted above within the Lower Arkansas River Valley 75 percent of the calculated recharge can be considered to be available for appropriation.

As we discussed, a review of safe yield at your proposed point of diversion located near the center of the Southwest Quarter of Section 28, in Township 31 South, Range 2 East, Sumner County, Kansas indicates no water is available. However, an alternative location described as a point in the Southwest Quarter of the Southwest Quarter of the Southwest Quarter of Section 28, more particularly described as being near a point 323 feet North and 4,643 feet West of the Southeast corner of said section, in Township 31 South, Range 2 East, Sumner County, Kansas, indicates that **86 acre-feet would be available (see map)**.

Per K.A.R. 5-3-11(c)(2) if there is sufficient water available to reasonably satisfy part of the request, then the application shall be approved for the quantity available if the remaining quantity is reasonable for the proposed use. Therefore, if you elect to pursue your proposed irrigation project based on the information presented above, the quantity you requested on Application, File No. 49,077 **must be reduced to 86 acre-feet**, and you must also reduce your proposed place of use acreage to ensure that this quantity of 86 acre-feet is reasonable for the proposed use. In order to comply with K.A.R. 5-3-19, for Sumner County, the maximum reasonable annual quantity of water for irrigation use is 1.3 acre-feet per acre. With your reduced quantity of 86 acre-feet, this would equate to a maximum of approximately **66 acres** that could be irrigated. Please revise both the enclosed topographic map, and the "Irrigation Use Supplemental Sheet" to depict this reduced acreage. Please initial any changes you make on these attachments, and return the originals to our office when completed.

We are advising you of this recommendation in order to allow you an opportunity to submit additional information to show why our evaluation should be reconsidered. You have a period of 30 days (**until January 29, 2016**) to either (1) submit additional information to our office or (2) request additional time beyond the 30 days to submit additional information. If you wish to request additional time, you must do so **in writing**, before the 30 day period expires. Such a request should state what steps are being taken to obtain the information and the amount of time you will need to supply the information to our office. Any relevant credible information submitted within the time allowed will be given due consideration, prior to final action on the application. If you have any questions, please contact me at (785) 296-3495. If you wish to discuss a specific file, please have the file number ready so that I may help you more efficiently.

Sincerely,

Doug Schemm

Doug Schemm
Environmental Scientist
Topeka Field Office

SCANNED

Enclosure

49,077
Initial Safe yield
(4/20/16)

Analysis Results

The selected PD is in an area to new appropriations.
The safe yield, based on the variables listed below is 1,858.95 AF.
Total prior appropriation in the circle is 2,394.89 AF. −632 = 1762.9
Total quantity of water available for appropriation is ~~0.00~~ AF.
96 AF

Safe Yield Variables

The area used for the analysis is set at 5508 acres.
Potential annual recharge of the area is estimated to be 5.4 inches.
The percent of recharge available for appropriation is 75%.

Authorized Quantity values are as of 20-APR-2016 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

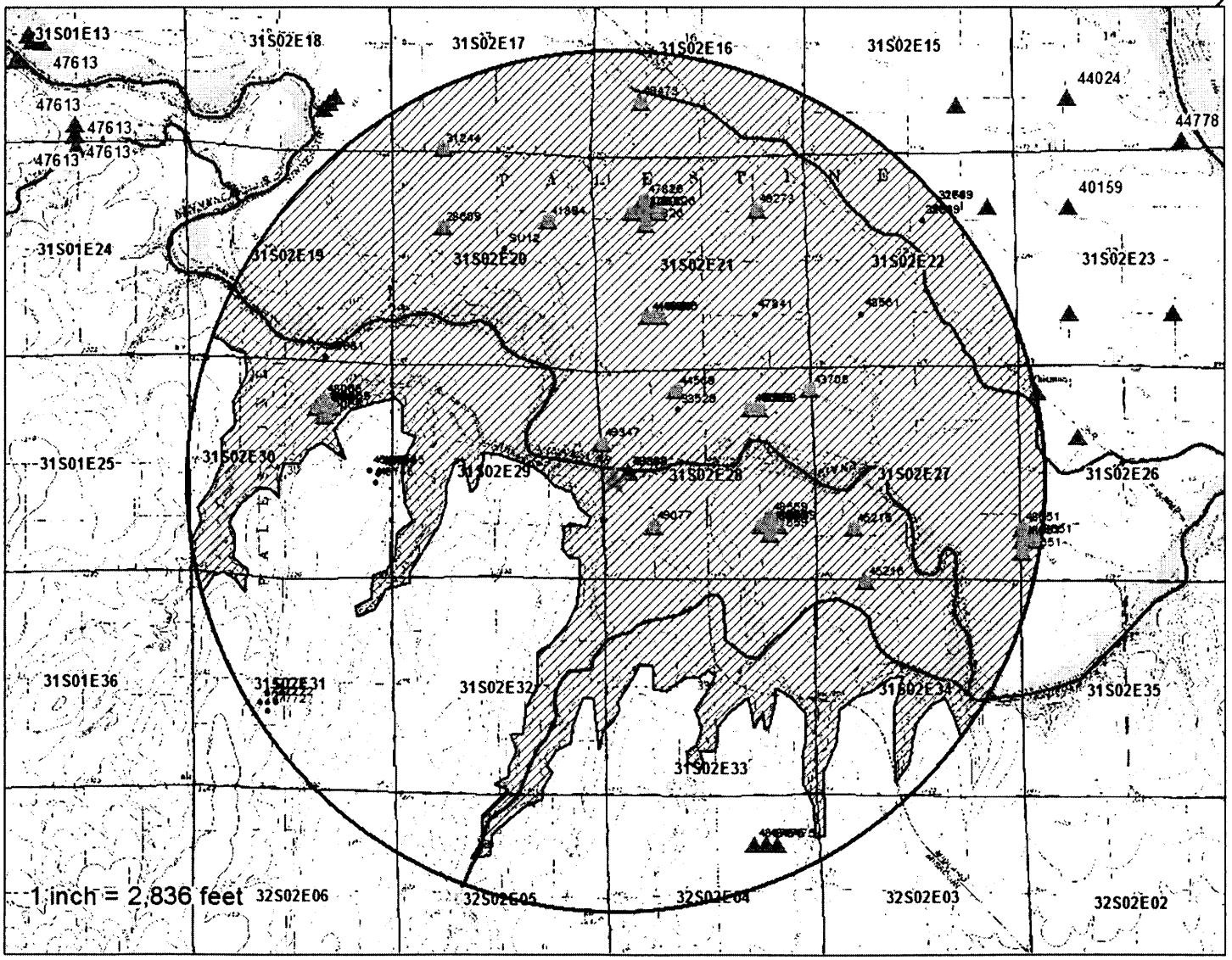
There are 17 water right(s) and 37 point(s) of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth_Quant	Add_Quant	Tacres	Nacres
A 28609 00	IRR	NK	G		NC	S2	NW	3460	3695	20	31	02E	2	WR	148.00	148.00	222.00	222.00
A 31244 00	IRR	NK	G					80	3770	17	31	02E	1	WR	152.00	152.00	317.00	317.00
A 41894 00	IRR	NK	G		NW	SE	NE	3750	1163	20	31	02E	3	WR	155.00	155.00	103.60	103.60
A 41946 00	IRR	NK	G		NW	SE	SW	1288	3948	21	31	02E	1	WR	151.00	151.00	128.00	128.00
Same	IRR	NK	G		NW	SE	SW	1286	3814	21	31	02E	2	WR				
Same	IRR	NK	G		NW	SE	SW	1285	3680	21	31	02E	3	WR				
A 43705 00	IRR	NK	G		NW	NW	NW	4739	5142	27	31	02E	1	WR	163.50	163.50	135.00	135.00
A 44569 00	IRR	NK	G		NW	NE	NW	4659	3369	28	31	02E	2	WR	54.60	54.60	42.00	42.00
A 45215 00	IRR	NK	G		NE	SW	SW	1316	4098	27	31	02E	2	WR	91.00	91.00	79.00	79.00
A 45216 00	IRR	NK	G		NW	NE	NW	5319	3874	34	31	02E	1	WR	135.20	135.20	114.00	114.00
A 46508 00	IRR	KE	G		SE	NW	NE	4200	1440	28	31	02E	3	WR	122.59	122.59	94.30	94.30
Same	IRR	KE	G		SE	NW	NE	4200	1340	28	31	02E	5	WR				
Same	IRR	KE	G		SE	NW	NE	4200	1540	28	31	02E	6	WR				
A 47826 00	IRR	KE	G		NE	SW	NW	3890	4000	21	31	02E	4	WR	169.00	169.00	130.00	130.00
Same	IRR	KE	G		NE	SW	NW	3890	4300	21	31	02E	6	WR				
Same	IRR	KE	G		NW	SE	NW	3890	3700	21	31	02E	7	WR				
Same	IRR	KE	G		SE	NW	NW	4190	4000	21	31	02E	8	WR				
Same	IRR	KE	G		NE	SW	NW	3590	4000	21	31	02E	9	WR				
A 48065 00	IRR	HK	G		SE	NW	NE	4200	1600	30	31	02E	6	WR	169.00	169.00	130.00	130.00
Same	IRR	HK	G		SE	NW	NE	4400	1600	30	31	02E	7	WR				
Same	IRR	HK	G		SE	NW	NE	4000	1600	30	31	02E	8	WR				

49,077

Initial Safe Yield (4/20/16)

Safe Yield Report Sheet
Proposed Water Right Application
Point of Diversion in NWNWNWSW 28-31S-02E (2,393'N & 4,934'W)



A	48065	00	IRR	HK	G	SE	NW	NE	4200	1600	30	31	02E	6	WR	169.00	169.00	130.00	130.00
Same			IRR	HK	G	SE	NW	NE	4400	1600	30	31	02E	7	WR				
Same			IRR	HK	G	SE	NW	NE	4000	1600	30	31	02E	8	WR				
Same			IRR	HK	G	SE	NW	NE	4200	1800	30	31	02E	9	WR				
Same			IRR	HK	G	SE	NW	NE	4200	1400	30	31	02E	10	WR				
A	48559	00	IRR	GY	G	NW	SE	SE	1306	1112	28	31	02E	4	WR	77.00	77.00	67.00	67.00
Same			IRR	GY	G	NW	SE	SE	1106	1112	28	31	02E	10	WR				
Same			IRR	GY	G	SW	NE	SE	1506	1112	28	31	02E	11	WR				
Same			IRR	GY	G	NW	SE	SE	1306	1312	28	31	02E	12	WR				
Same			IRR	GY	G	NW	SE	SE	1306	912	28	31	02E	13	WR				
A	48651	00	IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	3	WR	175.00	175.00	146.00	146.00
Same			IRR	GY	G	NW	SW	SW	760	5110	26	31	02E	4	WR				
Same			IRR	GY	G	NW	SW	SW	1060	4810	26	31	02E	5	WR				
Same			IRR	GY	G	NW	SW	SW	1360	5110	26	31	02E	6	WR				
Same			IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	7	WR				
A	49077	00	IRR	AY	G			SW	1320	3960	28	31	02E	7	WR	200.00	200.00	132.00	132.00
A	49273	00	IRR	AY	G		SE	NE	3926	1261	21	31	02E	10	WR	169.00	169.00	130.00	130.00
A	49347	00	IRR	AY	G	NW	SW	NW	3383	5215	28	31	02E	8	WR	94.00	94.00	73.00	73.00
A	49473	00	IRR	AY	G			SW	1320	3960	16	31	02E	1	WR	169.00	169.00	130.00	130.00

632

Same		IRR	GY	G	SE	NW	NE	4200	1800	30	31	02E	9	WR		
Same		IRR	GY	G	SE	NW	NE	4200	1400	30	31	02E	10	WR		
A	48559 00	IRR	GY	G	NW	SE	SE	1306	1112	28	31	02E	4	WR	77.00	77.00	67.00	67.00
Same		IRR	GY	G	NW	SE	SE	1106	1112	28	31	02E	10	WR		
Same		IRR	GY	G	SW	NE	SE	1506	1112	28	31	02E	11	WR		
Same		IRR	GY	G	NW	SE	SE	1306	1312	28	31	02E	12	WR		
Same		IRR	GY	G	NW	SE	SE	1306	912	28	31	02E	13	WR		
A	48651 00	IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	3	WR	175.00	175.00	146.00	146.00
Same		IRR	GY	G	NW	SW	SW	760	5110	26	31	02E	4	WR		
Same		IRR	GY	G	NW	SW	SW	1060	4810	26	31	02E	5	WR		
Same		IRR	GY	G	NW	SW	SW	1360	5110	26	31	02E	6	WR		
Same		IRR	GY	G	NW	SW	SW	1060	5110	26	31	02E	7	WR		
A	49077 00	IRR	AY	G			SW	1320	3960	28	31	02E	7	WR	200.00	200.00	132.00	132.00
A	49273 00	IRR	AY	G		SE	NE	3926	1261	21	31	02E	10	WR	169.00	169.00	130.00	130.00
A	49347 00	IRR	AY	G	NW	SW	NW	3383	5215	28	31	02E	8	WR	94.00	94.00	73.00	73.00

463.0

#49,077
Revised pd to
(323'N & 4,643'W)

Analysis Results

The selected PD is in an area to new appropriations.
The safe yield, based on the variables listed below is 1,548.79 AF.
Total prior appropriation in the circle is 1,925.89 AF. −463= 1462.89
Total quantity of water available for appropriation is ~~0.00 AF~~ 86AF

Safe Yield Variables

The area used for the analysis is set at 4589 acres.
Potential annual recharge of the area is estimated to be 5.4 inches.
The percent of recharge available for appropriation is 75%.

Authorized Quantity values are as of 21-DEC-2015 and are based on Appropriated and Vested ground water right and possible stream nodes for GMD #2. Domestic, Term and Temporary water rights have been excluded.

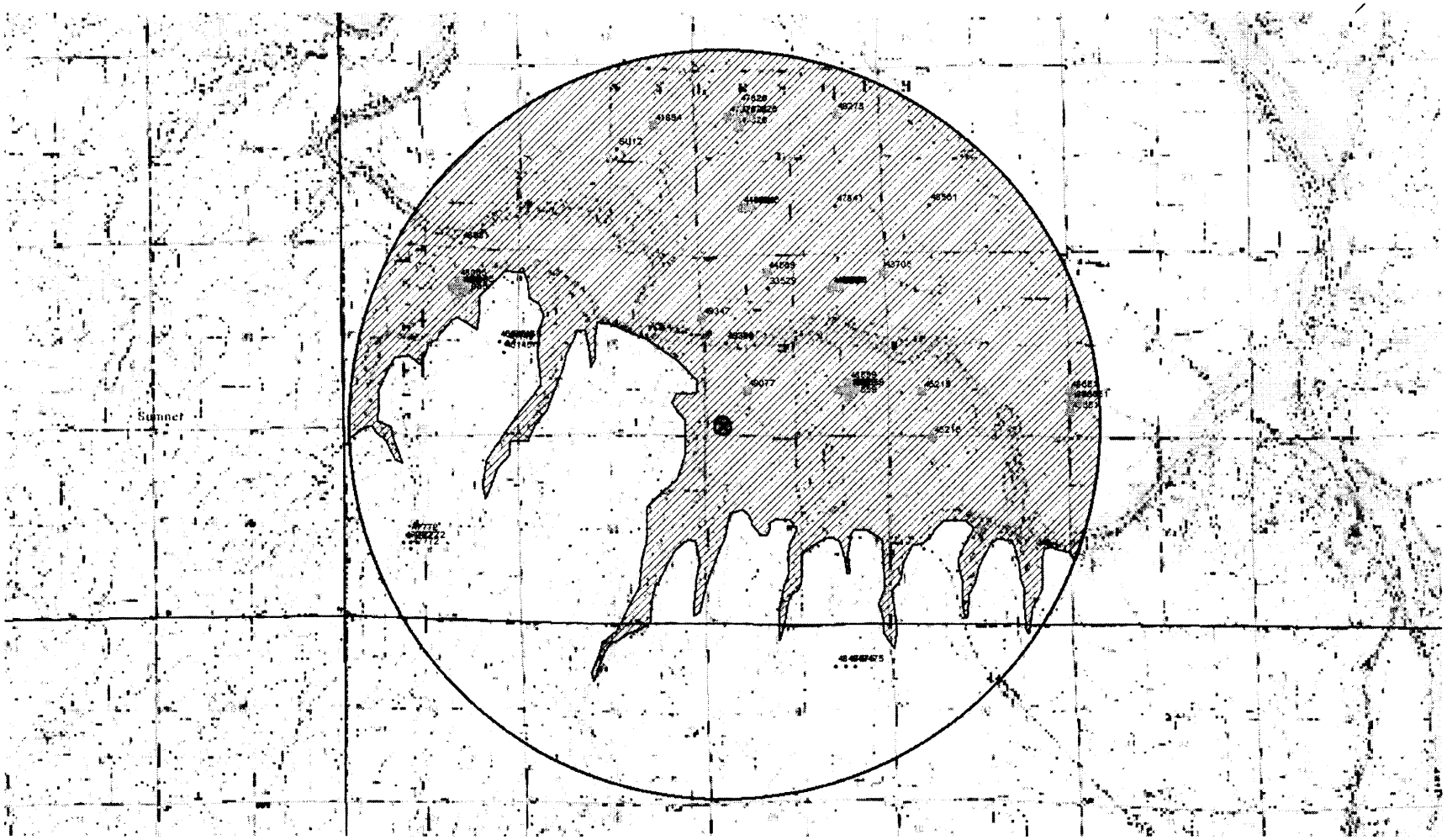
There are 14 water right(s) and 34 point(s) of diversion within the circle.

File Number	Use	ST	SR	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Qind	Auth_Quant	Add_Quant	Tacres	Nacres
A 41894 00	IRR	NK	G			NW	SE	NE	3750	1163	20	31	02E	3	WR	155.00	155.00	103.60	103.60
A 41946 00	IRR	NK	G			NW	SE	SW	1288	3948	21	31	02E	1	WR	151.00	151.00	128.00	128.00
Same	IRR	NK	G			NW	SE	SW	1286	3814	21	31	02E	2	WR				
Same	IRR	NK	G			NW	SE	SW	1285	3680	21	31	02E	3	WR				
A 43705 00	IRR	NK	G			NW	NW	NW	4739	5142	27	31	02E	1	WR	163.50	163.50	135.00	135.00
A 44569 00	IRR	NK	G			NW	NE	NW	4659	3369	28	31	02E	2	WR	54.60	54.60	42.00	42.00
A 45215 00	IRR	NK	G			NE	SW	SW	1316	4098	27	31	02E	2	WR	91.00	91.00	79.00	79.00
A 45216 00	IRR	NK	G			NW	NE	NW	5319	3874	34	31	02E	1	WR	135.20	135.20	114.00	114.00
A 46508 00	IRR	KE	G			SE	NW	NE	4200	1440	28	31	02E	3	WR	122.59	122.59	94.30	94.30
Same	IRR	KE	G			SE	NW	NE	4200	1340	28	31	02E	5	WR				
Same	IRR	KE	G			SE	NW	NE	4200	1540	28	31	02E	6	WR				
A 47826 00	IRR	KE	G			NE	SW	NW	3890	4000	21	31	02E	4	WR	169.00	169.00	130.00	130.00
Same	IRR	KE	G			NE	SW	NW	3890	4300	21	31	02E	6	WR				
Same	IRR	KE	G			NW	SE	NW	3890	3700	21	31	02E	7	WR				
Same	IRR	KE	G			SE	NW	NW	4190	4000	21	31	02E	8	WR				
Same	IRR	KE	G			NE	SW	NW	3590	4000	21	31	02E	9	WR				
A 48065 00	IRR	GY	G			SE	NW	NE	4200	1600	30	31	02E	6	WR	169.00	169.00	130.00	130.00
Same	IRR	GY	G			SE	NW	NE	4400	1600	30	31	02E	7	WR				
Same	IRR	GY	G			SE	NW	NE	4000	1600	30	31	02E	8	WR				

49,077

Safe Yield Report Sheet
Proposed Water Right Application
Point of Diversion in ~~NESWSWSW~~ 28-31S-02E
FILE NO. 49,077 (323'N & 4,643'W)

==========



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119 8646 OB1-06

WATER WELL RECORD

Form WWC-5 Division of Water Resources; App. No.

1 LOCATION OF WATER WELL: County: Sumner | Fraction: NE 1/4 NE 1/4 SE 1/4 | Section Number: 30 | Township Number: T 31 S | Range Number: R 2 (E) W

Distance and direction from nearest town or city street address of well if located within city? Approximately 3 1/2 miles north and 4 miles west of Oxford

Global Positioning Systems (decimal degrees, min. of 4 digits)
Latitude: 37.325936
Longitude: -97.24125
Elevation: Unknown
Datum: NAD83
Data Collection Method: WAAS GPS Unit

2 WATER WELL OWNER: Jim Neises
RR#, St. Address, Box # : 409 North Rock Rd.
City, State, ZIP Code : Belle Plaine, KS 67013

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:

N / W / E / S; --NW-- --NE-- --SW-- --SE-- (X in --SE--)

4 DEPTH OF COMPLETED WELL 58 ft.

Depth(s) Groundwater Encountered (1) ____ ft. (2) ____ ft. (3) ____ ft,

WELL'S STATIC WATER LEVEL 34.47 ft. below land surface measured on mo/day/yr 12-15-06

Pump test data: Well water was Not checked ft. after ____ hours pumping ____ gpm

Est. Yield Unknown gpm: Well water was ____ ft. after ____ hours pumping ____ gpm

WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering (12) Other (Specify below)
2 Irrigation 4 Industrial 7 Domestic (lawn & garden) 10 Monitoring well Observation Well

Was a chemical/bacteriological sample submitted to Department? Yes ____ No ✓ If yes, mo/day/yrs

Sample was submitted ____ Water well disinfected? Yes ____ No ✓

5 TYPE OF CASING USED: 5 Wrought Iron 8 Concrete tile CASING JOINTS: Glued ✓ Clamped ____
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) ____ Welded ____
(2) PVC 4 ABS 7 Fiberglass ____ Threaded ____

Blank casing diameter 2 in. to 44 ft., Diameter ____ in. to ____ ft., Diameter ____ in. to ____ ft.

Casing height above land surface 24 in., weight .44 lbs./ft. Wall thickness or gauge No. .091

TYPE OF SCREEN OR PERFORATION MATERIAL:
1 Steel 3 Stainless Steel 5 Fiberglass (7) PVC 9 ABS 11 Other (Specify) ____
2 Brass 4 Galvanized Steel 6 Concrete tile 8 RM (SR) 10 Asbestos-Cement 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE:
1 Continuous slot (3) Mill slot 5 Gauzed wrapped 7 Torch cut 9 Drilled holes 11 None (open hole)
2 Louvered shutter 4 Key punched 6 Wire wrapped 8 Saw Cut 10 Other (Specify) ____

SCREEN-PERFORATED INTERVALS: From 44 ft. to 56 ft., From ____ ft. to ____ ft.
From ____ ft. to ____ ft., From ____ ft. to ____ ft.

GRAVEL PACK INTERVALS: From 21 ft. to 60 ft., From ____ ft. to ____ ft.
From ____ ft. to ____ ft., From ____ ft. to ____ ft.

6 GROUT MATERIAL: 1 Neat Cement 2 Cement grout 3 Bentonite (4) Other Bentonite Holeplug

Grout Intervals: From ____ ft. to ____ ft., From ____ ft. to ____ ft., From 0 ft. to 21 ft.

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 13 Insecticide Storage (16) Other (specify below)
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 14 Abandoned water well Test Well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer Storage 15 Oil well/gas well

Direction from well? North How many feet? 35

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3	Topsoil			
3	17	Clay, sandy, silty, brown			
17	21	Clay, gray, brown, with sand streaks, thin			
21	29	Sand, fine to medium, with clay streaks			
29	30	Clay, light brown			
30	34	Sand, fine to medium, with clay streaks			
34	41	Sand, fine to medium			
41	56	Sand, medium to coarse, with gravel, fine,			
		some clay streaks, thin			
56	59	Shale, weathered, gray, green			
59	60	Shale, weathered, light to dark gray			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) (constructed) (2) reconstructed (3) plugged under my jurisdiction and was completed on (mo/day/year) 12-15-06 and this record is true to the best of my knowledge and belief.

Kansas Water Well Contractor's License No. 185 This Water Well Record was completed on (mo/day/year) 12-20-06

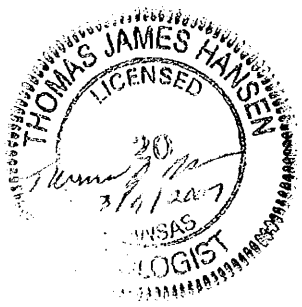
Under the business name of Clarke Well & Equipment, Inc by (signature) [signature]

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5522. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

DWR WATER RIGHT
FILE NO. 46,145
AQUIFER PUMPING TEST
SE/4 SEC. 30, T31S, R2E
SUMNER COUNTY, KANSAS

Prepared for:
Mr. Jim Neises

Bittersweet Energy, Inc.
March 9, 2007



Thomas J. Hansen
Consulting Geologist
Ks. Lic. # 020
(316) 721-3322

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1.0 CONCLUSIONS

1. Aquifer at the Neises farm site is Illinoisan or Kansan terrace deposits. Saturated thickness of the aquifer is approximately 20 feet at the test well site. The aquifer is unconfined.

2. Transmissivity of the aquifer is estimated to range from 13,000 to 19,000 gpd/ft based on the distance drawdown graph and early the data on the time drawdown graph (Test Well 01-06). Transmissivity of the aquifer will vary from location to location due to variations in amount of clay and silt present in the aquifer.

3. Specific capacity of test well was 9.33 gpm/ft at conclusion of 24-hour aquifer test. Well efficiency of the test well was 72.89 percent. Installing a properly designed irrigation well will increase the well efficiency and, therefore, increase the specific capacity of a well to approximately 12.8 gpm/ft.

4. Distance drawdown graph shows radius of influence to be approximately 200 feet based on the 24-hour aquifer test conducted at the test well site. The proposed point of diversion will not impair the nearby domestic well.

5. Based on the Servi-Tech Laboratories irrigation water lab analysis, the groundwater is excellent quality irrigation water.

2.0 RECOMMENDATIONS

1. Submit report to Division of Water Resources.

2. Reduce maximum pumping rate of the battery of four wells to 400 gallons per minute (100 gpm per irrigation water well).

3. A qualified individual should design all irrigation wells installed at the site.

4. Screened interval of irrigation wells installed at the site should be less than 50 percent of the saturated thickness of the aquifer.

5. Pumping water level in the irrigation water wells must be maintained above the screened interval of the aquifer.

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3.0 INTRODUCTION

3.1 GENERAL

Water right file number 46,145 is located in the NENESE Section 30, Township 31 South, Range 2 East, Summer County, Kansas. Priority date of the water right is January 21, 2005. Permit application requested a maximum quantity of water of 169 acre-feet. A maximum rate of 800 gallons per minute was requested in the permit application for a battery of four wells.

Division of Water Resources suspended application based on potential impairment of prior water right (nearby domestic well) for comments from applicant on January 27, 2006. Applicant proposed conducting a pumping test in letter dated February 24, 2006.

Proposed site is within the Ninnescah River Basin. Aquifer at the site consists of Illinoisan and/or Kansas terrace deposits, which generally yields moderate quantities of water to wells. These deposits generally consist of poorly sorted sand and gravel, containing varying amounts of silt and clay. The aquifer is unconfined. Bedrock at the site is the Wellington Formation.

3.2 INITIATION

In a phone conversation on April 28, 2006, Mr. Jim Neises retained Bittersweet Energy, Inc. to review available data and conduct site specific investigation to determine if a battery of four wells would impair nearby senior water right (domestic well).

3.3 PURPOSE OF STUDY

To determine impact of the proposed point of diversion (water right file # 46,145) on nearby senior water right (domestic well) by conducting an aquifer test.

3.4 SCOPE AND CONDITIONS OF STUDY

Reviewed available publications for general information pertinent to the project. Supervised installation of four test holes to confirm aquifer descriptions and collected samples for sieve analysis. Installed test well and three observation wells. Conducted a 24-hour aquifer test to evaluate aquifer characteristics and radius of influence of a pumping well at the proposed point of division.

Project was delayed waiting on a water well contractor. Also, winter weather (snow storms) delayed installation of test well and observation wells and the 24-hour aquifer test.

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4.0 PREVIOUS WORK

Bulletin 151, "Geology and ground-water resources of Sumner County, Kansas" was authored by Kenneth L. Walters and published by the Kansas Geological Survey in 1961. Also, Scientific

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Investigations Report 2004 – 2005, published by the U. S. Geological Survey and Soil Survey of Sumner County, Kansas, prepared by the USDA were used as references. The author of this report is not aware of any site-specific hydrological investigations.

5.0 PROCEDURES

Available publications, Kansas Geological Survey website, and available site-specific information (boring logs, etc.) were reviewed. Four test holes, a test well, and three observation wells were installed at the site by Clarke Well & Equipment, Inc. (licensed water well contractor). Field geologist (Tom Hansen) described drilling samples and prepared boring logs. The test well and observation wells were completed using PVC screen, PVC casing, gravel pack, and a bentonite seal. Each observation well was developed using compressed air for at least 1 hour. A 24-hour aquifer test and 2-hour recovery was conducted on the test well installed at the site. A water sample was collected near the conclusion of the pumping test. Water sample was sent to Servi-Tech Laboratories for analysis. Test holes were plugged from total depth to surface with bentonite.

6.0 RESULTS

Aquifer test data collected during the 24-hour pumping test and time-drawdown curves are presented in Appendix A. Also, in Appendix A is distance-drawdown graph. Boring logs for the test holes, test well, and observation wells installed during this investigation are shown in Appendix B. Laboratory report prepared by Servi-Tech Laboratories of the water sample collected from test well and a sieve analysis conducted by Geotechnical Services, Inc. are presented in Appendix C. A well schematic of the test well is shown Appendix D. Appendix E contains a site map. Results of sieve analysis are shown in Appendix F.

7.0 DISCLOSURE AND DISCLAIMER

This report and the opinions, interpretations and analysis contained therein, are based upon the author's examination and interpretation of numerous technical matters including aquifer test, lab analysis, maps, and publications, the accuracy and reliability of which is not guaranteed by this report. This report is only to be utilized by the party to whom it is addressed and may not be relied upon by any other party. This report must be utilized in its entirety and portions of it may not be extracted.

The author of this report is not responsible for any extractions, extrapolations, or other use of the report not specifically authorized by the author, and in no event shall the author be liable for any loss or damage resulting from the use of or reliance upon the report.

The author of this report is an independent consulting geologist, retained by Mr. Jim Nelson to supervise installation of test holes, test well, observation wells, and a 24-hour aquifer test at his farm site located in Sumner County, Kansas.

The author of this report holds a Bachelor of Science degree in Geology and Masters of

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Science degree in Groundwater from Kansas State University, has practiced his geological profession for 38 years, and has been designated Certified Professional Geological Scientist (Certificate Number 3339) by the American Institute of Professional Geologists and Certified Petroleum Geologist (Certificate Number 1918) by the American Association of Petroleum Geologists. Also, is a licensed geologist in the State of Kansas (Lic. # 020) and the State of Missouri (Lic. # 0700).

8.0 DISCUSSION

The Neises farm site is located (SE/4 Section 30, Township 31 South, Range 2 East) in Sumner Co., Kansas. Sumner County is located in the Wellington Lowland and the Arkansas River Lowlands of the Central Lowland physiographic province. The annual precipitation is 33.95 inches. Soils at the site are in the Farnum-Vanoss-Bethany association. The soils are deep, well drained, and moderately permeable. Slopes range from zero to 6 percent. Soils are classified as Vanoss silt loam. Parent material for the soils are colluvium or pediment deposits, which are underlain by Kansan and Illinoisan terrace deposits and Wellington Shale.

At the Neises farm site colluvium is present at the surface. The colluvium was formed by weathering of the Permian shales in place and by deposition of silt, clay, and sand by sheet wash. It sometimes yields small quantities of water in Sumner County. Below the colluvium are Kansas and Illinoisan terrace deposits. The terrace deposits are comprised of sand and gravel with some clay overlying the Wellington Shale. These terrace deposits yield moderate quantities of water to wells in Sumner County.

Four test holes, three observation wells, and a test well (Appendix E – Site Map) were installed during field operations (December 14 – 16, 2006) at the Neises farm site. Clarke Well and Equipment, Inc. (licensed water well contractor) installed the test holes, observation wells, and test well using a rotary rig. Samples of drill cuttings (5-foot intervals) were collected at each site and placed in Ziploc bags. Each bag was labeled showing well ID; date sample was collected, and sample depth. Drill cuttings will be saved until project is completed. Geologist (Tom Hansen) described drill cuttings during drilling operations at each drill site. Lithologic descriptions are presented in Appendix B. Sieve analysis were performed on selected drill cuttings from test hole 03-06 and test hole 04-06 by Geotechnical Services, Inc. Results of the sieve analysis are presented in Appendix F.

Depth to bedrock (Wellington Shale) at the Neises Farm site varies from approximately 47 feet (TH 01-06) to 59 feet (OB 03-06). The Wellington Shale dips to the west about 15 to 20 feet per mile. Static water level varies from approximately 25 feet to 35 feet below ground level at the site. Based on Plate 2 Bulletin 151 (Appendix E) ground water flow at the site is generally in a east to northeast direction.

The test well was installed on December 15, 2006, by Clarke Well & Equipment, Inc. A 9-inch borehole was drilled. Five inch screen was set from 42' to 54'. Casing was set from two feet above ground level to 42'. Three centralizers were placed at bottom of screen and at the top of the screen. Test well was gravel packed from total depth to twenty feet. Annulus was sealed with bentonite from surface to 20 feet below ground level. Test well was developed using a bailer. The bailer volume was 9.9 gallons. Test well was bailed for approximately 1.3 hours. Approximately 1700 gallons of water were removed from the test well using the bailer. Test well was further developed using compressed air

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for approximately 2.4 hours. The 2-inch observation wells were developed for approximately 1.5 hours using compressed air.

On January 24, 2007, the test well was further developed using a submersible pump prior to beginning the 24-hour aquifer pumping test. Winter snowstorms delayed the scheduling of the aquifer test. Approximately 8 inches of snow underlain by approximately 2 inches of sleet covered the test site. Daytime temperatures were in the low 30's during the aquifer test. A circular orifice weir with a 2.5-inch orifice plate was used to measure flow rate during the pumping test. An aquifer step-drawdown test was conducted to determine the maximum flow rate to be used during the aquifer pumping test. The step-drawdown test began at 8:55 am on January 24, 2007, at a pumping rate of 55 gallons per minute for 45 minutes. The pumping rate was then increased to 75.5 gallons per minute for 45 minutes and then to 100.8 gallons per minute for 45 minutes. At the end of the step-drawdown test the well was surged 5 to 6 times to further develop the test well. Drawdown measurements were recorded during the step-drawdown test (Appendix A). Also, a 55-gallon barrel test was used to check the flowrate during each phase of the step-drawdown test.

The 24-hour aquifer test was started at 12:45 pm on January 24, 2007. A pumping rate of 86 gallons per minute was selected to assure the pumping water level did not reach the top of the submersible pump. Drawdown measurements were recorded in the test well and three observation wells during the aquifer test (Appendix A). The observation wells were located 35 feet, 165 feet, and 600 feet in a southeasterly direction from the test well.

Drawdown data vs. time was plotted on graph paper to determine transmissivity and radius of influence of test well. Graphs are presented in Appendix A. Transmissivity of the aquifer based on the 24-hour aquifer test is estimated to range from approximately 13,000 to 19,000 gpd/ft based on distance drawdown graph and TW 01-06 time drawdown graph. Time drawdown graphs using recovery data indicate transmissivity ranges from approximately 50,000 to 59,000 gpd/ft. Radius of influence is approximately 200 feet based on distance drawdown graph. Also, the specific capacity is 9.33 gpm/ft based on the aquifer test. The well efficiency of the test well is 72.89 percent based on the distance drawdown graph. Specific capacity of a 100 percent efficient well should be approximately 12.8 gpm/ft. Transmissivity calculated from specific capacity assuming a 100 percent efficient water well is 19,196 gpd/ft, which supports transmissivity calculations based upon the distance drawdown graph and TW 01-06 time drawdown graph.

Based on the 24-hour aquifer test, a battery of four wells installed at the proposed point of diversion (water right file # 46,145) should be pumped at a rate not to exceed 400 gallons per minute. Also, the battery of 4 wells (water right file # 46,145) will not impair the nearby domestic water well.

9.0 ACKNOWLEDGEMENTS

I would like to thank the following individuals for their cooperation and assistance in providing information necessary for this report: Mr. Jim Neises and Mr. Bob Vincent.

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10.0 REFERENCES

Jian, Niaodong; Combs, Lanna J.; & Hansen, Cristi V., 2004, Characterization and Simulation of Flow in the Lower Arkansas River Alluvial Aquifer South-Central Kansas, Scientific Investigations Report 2004-2005, U. S. Geological Survey, 82 p.

Kansas Geological Survey, 2007, WWC-5's and WIMAS on KGS website

USDA, 1979, Soil Survey of Sumner County, Kansas, Soil Conservation Service in cooperation with the Kansas Agruiculture Experiment Station, 110 p.

Walters, Kenneth L., 1961, Geology and Ground-Water Resources of Sumner County, Kansas, Bulletin 151, State Geological Survey of Kansas, 198 p.

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. TW 01-06

DATE: Jan. 24, 2007

REF. PT. Top of Casing
SWL 36.75 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
	0	36.75	36.75	0	55
	1		42.11	5.36	
	2				
	3		42.23	5.48	
	4		41.75	5	
	5		41.78	5.03	
	7		41.8	5.05	
	9		42.32	5.57	
	11		42.34	5.59	
	15		42.35	5.6	
	20		42.37	5.62	
	25		42.38	5.63	
	30		42.4	5.65	
	35		42.41	5.66	
	40		42.41	5.66	
	45		42.41	5.66	
	50				
	60				
	70				
	80				
	90				
	100				
	120				
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

STEP TEST @ 55 GPM

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. TW 01-06

DATE: Jan. 24, 2007

REF. PT. Top of Casing
SWL 36.75 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
	0	36.75	42.41	5.66	55
	1		43.83	7.08	75.5
	2		43.99	7.24	
	3		44.02	7.27	
	4				
	5		44.05	7.3	
	7				
	9				
	11		44.1	7.35	
	15		44.12	7.37	
	20		44.13	7.38	
	25		44.15	7.4	
	30		44.15	7.4	
	35		44.16	7.41	
	40				
	45		44.19	7.44	
	50				
	60				
	70				
	80				
	90				
	100				
	120				
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

STEP TEST @ 75.5 GPM

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MICROFILMED

NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. TW 01-06

DATE: Jan. 24, 2007
REF. PT. Top of Casing
SWL 36.75 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
	0	36.75	44.19	7.44	75.5
	1				100.8
	2		46.75	10	
	3				
	4		47.25	10.5	
	5		46.82	10.07	
	7		46.85	10.1	
	9		46.87	10.12	
	11		46.88	10.13	
	15		46.9	10.15	
	20		46.92	10.17	
	25		46.92	10.17	
	30		46.93	10.18	
	35		46.95	10.2	
	40				
	45		46.96	10.21	
	50				
	60				
	70				
	80				
	90				
	100				
	120				
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

STEP TEST @ 100.8 GPM

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. TW 01-06

DATE: Jan. 24-25, 2007

REF. PT. Top of Casing
SWL 36.75 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	36.75	36.84	0.09	
	1		44.32	7.57	86
	2		44.76	8.01	
	3		44.94	8.19	
	4		44.97	8.22	
	5		44.92	8.17	
	7		44.94	8.19	
	9		45.01	8.26	
	11		45.02	8.27	
	15		45.05	8.3	
	20		45.09	8.34	
	25		45.11	8.36	
	30		45.13	8.38	
	35		45.15	8.4	
	40		45.16	8.41	
	45		45.17	8.42	
	50		45.19	8.44	
1345	60		45.2	8.45	86
	70		45.21	8.46	
	80		45.24	8.49	
	90		45.24	8.49	
	100		45.25	8.5	
1445	120		45.28	8.53	86
	150		45.28	8.53	86
1545	180		45.3	8.55	86
	210		45.34	8.59	
1645	240		45.36	8.61	86
	270		45.35	8.6	86
1745	300		45.36	8.61	86
1845	360		45.56	8.81	86
1945	420		45.62	8.87	86
2045	480		45.6	8.85	86
2145	540		45.64	8.89	86
2245	600		45.64	8.89	86
2345	660		45.65	8.9	86
45	720		45.64	8.89	86
145	780				
245	840		45.61	8.86	86
345	900		45.67	8.92	86
445	960		45.65	8.9	86
545	1020		45.69	8.94	86
645	1080		45.81	9.06	86
745	1140		45.93	9.18	86
845	1200		45.95	9.2	86
945	1260		45.94	9.19	86
1045	1320		45.96	9.21	86
1145	1380		45.97	9.22	86
1245	1440		45.97	9.22	86

SWL had not recovered from step test prior to beginning 24 hour aquifer test
Adjusted flow rate - approximately 1/4" up @ 1745 Jan. 24, 2007
1:45 am - missed reading

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. TW 01-06

DATE: Jan. 25, 2007

REF. PT. Top of Casing
SWL 36.75 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	45.97	45.97	9.22	0
	1		37.67	0.92	
	2		37.56	0.81	
	3		37.48	0.73	
	4		37.43	0.68	
	5		37.39	0.64	
	7		37.34	0.59	
	9		37.31	0.56	
	11		37.28	0.53	
	15		37.26	0.51	
	20		37.22	0.47	
	25		37.19	0.44	
	30		37.17	0.42	
	35		37.16	0.41	
	40		37.14	0.39	
	45		37.12	0.37	
	50		37.12	0.37	0
1345	60		37.1	0.35	
	70		37.08	0.33	
	80		37.06	0.31	
	90		37.05	0.3	
	100		37.06	0.31	
1445	120		37.04	0.29	0
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

Recovery Aquifer Test

2

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NAME: Jim Neises
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 01-06 (35' South of TW 01-06)

DATE: Jan. 24-25, 2007
REF. PT. Top of Casing
SWL 36.20 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	36.2	36.25	0.05	86
	1		37.25	1.05	86
	2		37.35	1.15	
	3		37.4	1.2	
	4		37.45	1.25	
	5		37.5	1.3	
	7		37.53	1.33	
	9		37.55	1.35	
	11		37.59	1.39	
	15		37.6	1.4	
	20		37.62	1.42	
	25		37.63	1.43	
	30		37.65	1.45	
	35		37.66	1.46	
	40		37.68	1.48	
	45		37.68	1.48	
	50		37.69	1.49	
1345	60		37.7	1.5	86
	70		37.7	1.5	
	80		37.72	1.52	
	90		37.72	1.52	
	100		37.75	1.55	
1445	120		37.76	1.56	86
	150		37.79	1.59	86
1545	180		37.76	1.56	86
	210		37.78	1.58	
1645	240		37.77	1.57	86
	270		37.79	1.59	86
1745	300		37.8	1.6	86
1845	360		37.82	1.62	
1945	420		37.83	1.63	
2045	480		37.86	1.66	
2145	540		37.86	1.66	86
2245	600		37.88	1.68	
2345	660		37.89	1.69	
45	720		37.89	1.69	
145	780				
245	840		37.92	1.72	
345	900		37.92	1.72	
445	960		37.94	1.74	
545	1020		37.96	1.76	
645	1080		37.99	1.79	
745	1140		37.98	1.78	86
845	1200		38	1.8	86
945	1260		37.99	1.79	86
1045	1320		38.01	1.81	86
1145	1380		38.02	1.82	86
1245	1440		38	1.8	86

SWL had not recovered from step test prior to beginning 24 hour aquifer test
Adjusted test well flow rate - approximately 1/4" up @ 1745 Jan. 24, 2007
1:45 am - missed reading

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 1-06 (35' South of TW 01-06)

DATE: Jan. 25, 2007

REF. PT. Top of Casing
SWL 36.20 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	38	38	1.8	0
	1			0.77	
	2			0.68	
	3			0.63	
	4			0.58	
	5			0.54	
	7			0.5	
	9			0.48	
	11			0.45	
	15			0.41	
	20			0.37	
	25			0.36	
	30			0.33	
	35			0.32	
	40			0.32	
	45			0.3	
	50			0.29	0
1345	60			0.29	
	70			0.29	
	80			0.25	
	90			0.25	
	100			0.25	
1445	120			0.24	0
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

Same as the Page under it.

Recovery Aquifer Test

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 1-06 (35' South of TW 01-06)

DATE: Jan. 25, 2007
REF. PT. Top of Casing
SWL 36.20 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	38	38	1.8	0
	1			0.77	
	2			0.68	
	3			0.63	
	4			0.58	
	5			0.54	
	7			0.5	
	9			0.48	
	11			0.45	
	15			0.41	
	20			0.37	
	25			0.36	
	30			0.33	
	35			0.32	
	40			0.32	
	45			0.3	
	50			0.29	0
1345	60			0.29	
	70			0.29	
	80			0.25	
	90			0.25	
	100			0.25	
1445	120			0.24	0
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

Recovery Aquifer Test

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NAME: **Jim Nelses** DATE: **Jan. 24-25, 2007**

LOCATION: **NE SE Sec. 30, T31S, R2E**

WELL NO. **OB 02-06 (165' South of TW 01-06)** REF. PT. **Top of Casing**

SWL **37.07 ft.**

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0	37.07	37.09	0.02	
	1		37.09	0.02	86
	2		37.1	0.03	
	3		37.11	0.04	
	4		37.12	0.05	
	5		37.12	0.05	
	7		37.12	0.05	
	9		37.12	0.05	
	11		37.13	0.06	
	15		37.14	0.07	
	20		37.14	0.07	
	25		37.14	0.07	
	30		37.14	0.07	
	35		37.15	0.08	
	40		37.15	0.08	
	45		37.14	0.07	
	50		37.15	0.08	
1345	60		37.16	0.09	86
	70		37.16	0.09	
	80		37.16	0.09	
	90		37.16	0.09	
	100		37.17	0.1	
1445	120		37.17	0.1	86
	150		37.18	0.11	86
1545	180		37.18	0.11	86
	210		37.18	0.11	
1645	240		37.18	0.11	86
	270		37.18	0.11	86
1745	300		37.19	0.12	86
1845	360		37.2	0.13	86
1945	420		37.19	0.12	86
2045	480		37.2	0.13	86
2145	540		37.22	0.15	86
2245	600		37.23	0.16	86
2345	660		37.22	0.15	86
45	720		37.23	0.16	86
145	780				
245	840		37.24	0.17	86
345	900		37.25	0.18	86
445	960		37.25	0.18	86
545	1020		37.25	0.18	86
645	1080		37.25	0.18	86
745	1140		37.27	0.2	86
845	1200		37.28	0.21	86
945	1260		37.29	0.22	86
1045	1320		37.3	0.23	86
1145	1380		37.3	0.23	86
1245	1440		37.3	0.23	86

SWL had not recovered from step test prior to beginning 24 hour aquifer test
Adjusted test well flow rate - approximately 1/4" up @ 1745 Jan. 24, 2007
1:45 am - missed reading

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 2-06 (165 South of TW 01-06)

DATE: Jan. 25, 2007
REF. PT. Top of Casing
SWL 37.07 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0		37.3	0.23	0
	1		37.3	0.23	Recovery
	2		37.28	0.21	
	3		37.29	0.22	
	4		37.28	0.21	
	5		37.27	0.2	
	7		37.27	0.2	
	9		37.27	0.2	
	11		37.27	0.2	
	15		37.27	0.2	
	20		37.26	0.19	
	25		37.26	0.19	
	30		37.26	0.19	
	35		37.26	0.19	
	40		37.25	0.18	
	45		37.25	0.18	
	50		37.25	0.18	0
1345	60		37.24	0.17	
	70		37.24	0.17	
	80		37.24	0.17	
	90		37.24	0.17	
	100		37.24	0.17	
1445	120		37.24	0.17	0
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

Recovery Aquifer Test

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 03-06 (600' South of TW 01-06)

DATE: Jan. 24-25, 2007
REF. PT. Top of Casing
SWL 34.81

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0		34.81	0	
	1				86
	2				
	3				
	4				
	5				
	7				
	9				
	11				
	15				
	20				
	25				
	30				
	35				
	40				
	45				
	50		34.79	-0.02	
1345	60				86
	70				
	80				
	90				
	100				
1445	120		34.82	-0.01	86
	150		34.81	0	86
1545	180		34.82	-0.01	86
	210		34.81	0	
1645	240		34.81	0	86
	270				86
1745	300		34.81	0	86
1845	360				86
1945	420				86
2045	480				86
2145	540		34.81	0	86
2245	600				86
2345	660				86
45	720		34.81	0	86
145	780				
245	840				86
345	900		34.81	0	86
445	960				86
545	1020				86
645	1080				86
745	1140		34.84	0.03	86
845	1200		34.84	0.03	86
945	1260		34.84	0.03	86
1045	1320		34.84	0.03	86
1145	1380		34.83	0.02	86
1245	1440		34.83	0.02	86

Adjusted test well flow rate - approximately 1/4" up @ 1745 Jan. 24, 2007
1:45 am - missed reading

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NAME: Jim Nelses
LOCATION: NE SE Sec. 30, T31S, R2E
WELL NO. OB 3-06 (600 ft. South of TW 01-06)

DATE: Jan. 25, 2007
REF. PT. Top of Casing
SWL 34.81 ft.

Time of Day	Elasped Time In Minutes	Tape Reading	Water Level Below MS PT	Drawdown In Feet	Pumping Rate of Test Well (gpm)
1245	0		34.83	0.02	0
	1				Recovery
	2				
	3				
	4				
	5				
	7				
	9				
	11				
	15				
	20				
	25				
	30				
	35				
	40				
	45				
	50				
1345	60		34.81	0	0
	70				
	80				
	90				
	100				
1445	120		34.81	0	0
	150				
	180				
	210				
	240				
	270				
	300				
	360				
	420				
	480				
	540				
	600				
	660				
	720				
	780				
	840				
	900				
	960				
	1020				
	1080				
	1140				
	1200				
	1260				
	1320				
	1380				
	1440				

Recovery Aquifer Test

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Neales Aquifer Test
TW 01-06
24 hour

Semi-Logarithmic
3 Cycles - 10 to the Inch

Drawdown (feet)

$Q = 81$ gpm

$T = \frac{264 \times Q}{\Delta s} = \frac{264 \times 81}{1.73} = 12,364$ gpd/ft $= 1,653$ gpd/ft

$T = \frac{264 \times Q}{\Delta s} = \frac{264 \times 81}{1.53} = 13,976$ gpd/ft

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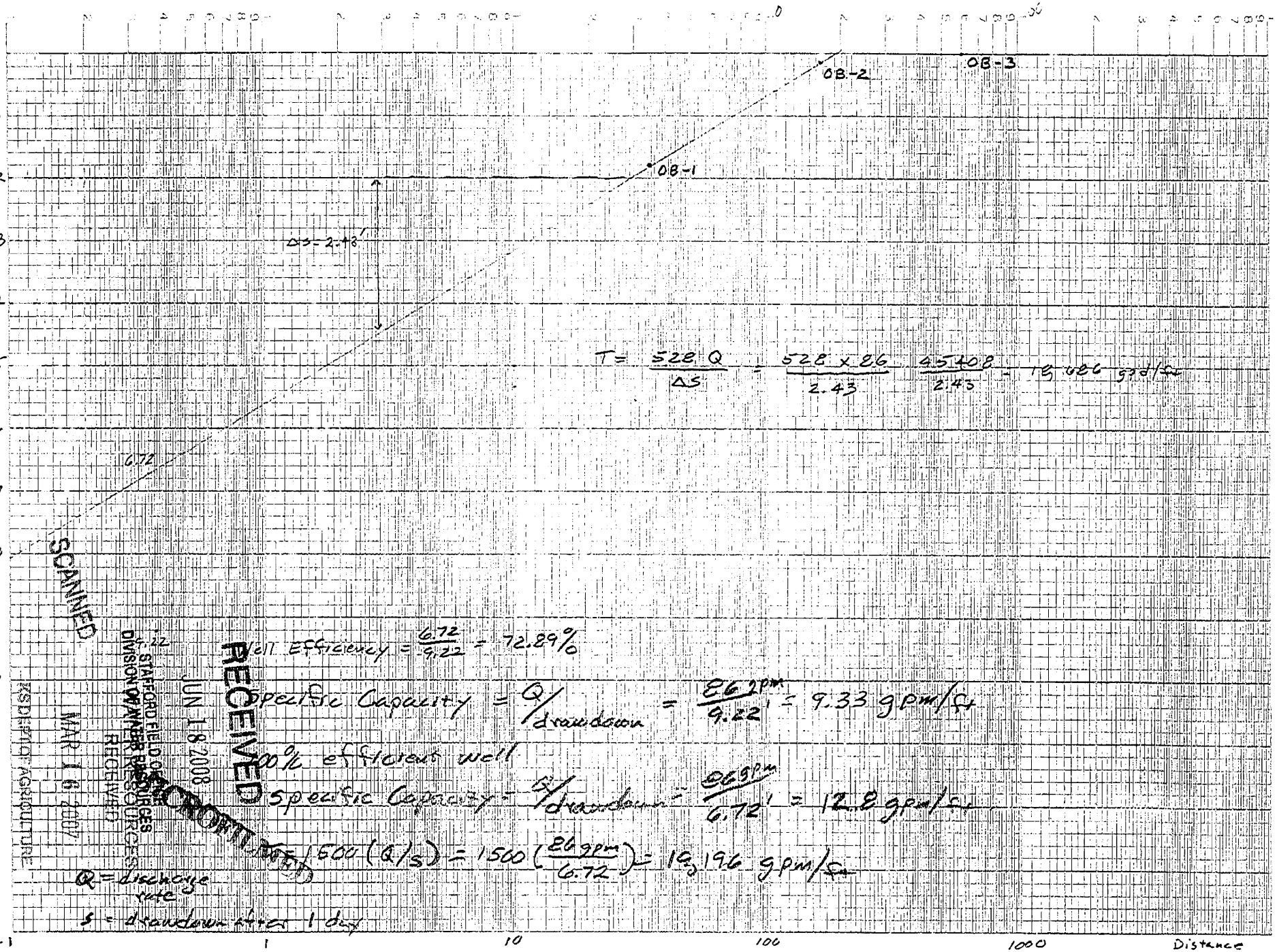
Neises Aquifer Test
Distance Drawdown



$$T = \frac{528\,Q}{\Delta s} = \frac{528 \times 86}{2.43} = \frac{45408}{2.43} = 18,686\ gpd/ft$$

Well Efficiency $= \frac{6.72}{9.22} = 72.89\%$

Specific Capacity $= Q/drawdown = \frac{86\ gpm}{9.22'} = 9.33\ gpm/ft$

100% efficient well

Specific Capacity $= Q/drawdown = \frac{86\ gpm}{6.72'} = 12.8\ gpm/ft$

$1500\,(Q/s) = 1500\left(\frac{86\ gpm}{6.72}\right) = 19,196\ gpm/ft$

Q = Discharge rate

s = drawdown after 1 day

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Drawdown (feet)

Semi-Logarithmic
Cycles = 10 to the inch

Neises Aquifer Test
TW 1-06

Recovery

$Q = 86$ gpm

$$T = \frac{264 \times Q}{\Delta s} = \frac{264 \times 86}{.45} = 50,453 \text{ gpd/ft}$$

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Drawdown (feet)

Recovery

Theis Aquifer Test
OB 1-OC 35' South of Twin Oc

$$T = \frac{264 \times Q}{\Delta s} = \frac{264 \times 8C}{.38} = 55,747 \text{ gpd/ft}$$

Q = 8C gpm

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Semi-Logarithmic
3 Cycles - 10 to the Inch

Jim Neises Project
SE/4 Section 30, T31S, R2E
Sumner County, Kansas

Test Hole 1-06
SESE Sec. 30, T31S, R2E
December 14, 2006

0 – 3'	Topsoil, brown to reddish brown
3 – 8'	Clay, brown, slightly sandy, very fine to fine grained
8 – 11'	Clay, silty, reddish brown, small amount of sand, very fine to fine grained
11 – 12'	Sandy clay, brown, trace gravel
12 – 15'	Sand, fine to medium grained, gravel, fine, clayey
15 – 17'	Clay, light brown
17 – 21'	Sand with clay stringers, medium to coarse grained, some gravel
21 – 31'	Clay, gray, soft, with sand stringers, fine to medium grained
31 – 36'	Clay, dark gray, yellowish red brown, light brown
36 – 47'	Gravel, fine, sand, fine to medium grained, some coarse grained
47 – 53'	Clay, light gray to dark gray, firm
53 – 60'	Weathered shale, dark gray to bluish gray

Filled hole with sand to 20 feet, 1 bag of Holeplug at 50 feet
Holeplug surface to 20 feet

Test Hole 2-06
NENESE Sec. 30, T31S, R2E
December 14, 2006

0 - 2'	Topsoil, reddish brown
2 – 14'	Clay, reddish brown to brown, slightly silty
14 – 21'	Clay, reddish brown with sand stringers, medium to coarse grained
21 – 25'	Sand and gravel, medium to coarse grained, fine gravel, with clay stringers
25 – 31'	Clay, light yellowish brown, with sand stringers, medium to coarse grained, small amount of gravel
31 – 37'	sand and gravel Lost circulation, mixed 1 pit of mud, did not regain circulation, moved 31 feet west to drill TH 03-06

Filled hole with sand to 22 feet
Holeplug surface to 22 feet

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Test Hole 3-06
NENESE Sec. 30, T31S, R2E
December 14, 2006

0 – 2'	Topsoil, reddish brown
2 – 17'	Clay, silty, reddish brown to brown, slightly sandy, very fine to fine grained
17 – 21'	Clay, light yellowish brown, with sand stringers, fine to coarse grained
21 – 35'	Sand, medium to coarse grained, with some fine gravel, clay stringers, light grayish brown
35 – 41'	Sand, fine to medium grained, some coarse
41 – 53'	Gravel, fine to medium, sand, fine to very coarse grained, with some clay stringers, increase in clay from 45 to 50 feet
53 – 56'	Weathered shale, olive gray
56 – 58'	Weathered shale, dark gray to bluish gray

Filled hole with sand from total depth to 21 feet
Holeplug 21 feet to surface

Test Hole 4-06
NWNWSE Sec. 30, T31S, R2E
50 feet south of fence, 52 feet west of fence
December 14, 2006

0 – 4'	Topsoil, reddish brown
4 – 7'	Clay, brown
7 – 25'	Sand, fine to coarse grained, some fine gravel, clay stringers, yellowish brown
25 – 32'	Sand, fine grained, some medium grained
32 – 33'	Clay, tan
33 – 36'	Sand, fine grained, with clay stringers
36 – 41'	Clay, light reddish brown, soft, with some sand, fine grained
41 – 43'	Sand, fine to medium grained, some fine gravel, clay stringers, light reddish brown, light gray
43 – 56'	Sand, medium to coarse grained, gravel, fine to medium
56 – 60'	Weathered shale, yellowish brown, olive gray, color change at 60 feet, dark gray to bluish gray

Left hole open to measure water level, hole collasped at 21 feet
Holeplug from 21 feet to surface

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Test Well 1-06
NENESE Sec. 30, T31S, R2E
December 15, 2006

0 – 2'	Topsoil, reddish brown
2 – 17'	Clay, silty, reddish brown to brown, slightly sandy, very fine to fine grained
17 – 21'	Clay, light yellowish brown, with sand stringers, fine to coarse grained
21 – 35'	Sand, medium to coarse grained, with some fine gravel, clay stringers, light grayish brown
35 – 41'	Sand, fine to medium grained, some coarse
41 – 53'	Gravel, fine to medium, sand, fine to very coarse grained, with some clay stringers, increase in clay from 45 to 50 feet
53 – 56'	Weathered shale, olive gray
56 – 58'	Weathered shale, dark gray to bluish gray

42 to 54 feet	PVC Screen .050 mil slot	SWL	36.62' TOC
+2 to 42 feet	PVC Casing	TOC>GL	2.00'
		SWL	34.62' GL
20 to 54 feet	Gravel pack		
20' to surface	Holeplug		

Developed well with bailer (170 total) for ~ 1.5 hours and further developed well with air for approximately 2.5 hours

Observation Well 01-06
~ 35 feet South of test well
NENESE Sec. 30, T31S, R2E
December 15, 2006

0 – 3'	Topsoil, reddish brown
3 – 17'	Clay, silty, reddish brown to brown, slightly sandy
17 – 21'	Clay, light grayish brown, with sand stringers
21 – 29'	Sand, fine to medium grained, with some fine gravel, clay stringers, light yellowish brown
29 – 30'	Clay, light yellowish brown to light brown
30 – 34'	Sand, fine to medium grained, fine gravel, clay stringers
34 – 41'	Sand, fine to medium grained
41 – 56'	Gravel, fine, sand, medium to coarse grained, some thin clay stringers, yellowish brown
56 – 59'	Weathered shale, yellowish brown, olive gray
59 - 60'	Weathered shale, light to dark gray

44 – 56 feet	2" PVC screen .032 mil slot	SWL	36.2' TOC
+2 – 44 feet	2" PVC Casing	TOC>GL	1.7'
		SWL	34.5' GL
21 – 60'	Gravel pack		
0 – 21'	Holeplug		

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Observation Well 02-06
~ 165 feet South of test well
NESE Sec. 30, T31S, R2E
December 15, 2006

0 – 3'	Topsoil, reddish brown
3 – 17'	Clay, reddish brown, firm, some silty clay zones
17 – 21'	Sand, fine, with clay, reddish brown
21 – 23'	Clay, reddish brown, with sand stringers, fine grained
23 – 41'	Sand, fine to medium grained and some fine gravel increasing amount below ~ 25 feet, with clay stringers, light yellowish brown, reddish brown
41 – 55'	Sand, fine to medium grained, fine gravel increasing gravel below ~ 45 feet, some coarse gravel
55 – 57'	Weathered shale, yellowish brown
57 – 58'	Weathered shale, dark gray to bluish gray

43 – 55 feet	2" PVC screen .032 mil slot	SWL	37.07' TOC
+2 – 43 feet	2" PVC casing	TOC >GL	1.70'
		SWL	35.37' GL
22 – 55'	Gravel pack		
0 – 22'	Holeplug		

Observation Well 03-06
~ 600 feet South of test well
NESE Sec. 30, T31S, R2E
December 16, 2006

0 – 3'	Topsoil, reddish brown
3 – 11'	Clay, reddish brown, brown, slightly silty
11 – 20'	Clayey sand, fine to medium grained, some fine gravel at 20 feet
20 – 32'	Sand, fine to medium grained, gravel, fine, clay stringers, yellowish brown
32 – 33'	Clay, light grayish brown
33 – 40'	Sand, fine to medium grained, gravel, fine, thin (2-3") clay at ~ 35 feet
40 – 59'	Gravel, fine, some coarse gravel at base, sand, fine to medium grained, with small amount of clay, yellowish brown
59 – 62'	Weathered shale, yellowish brown to light gray grading to light gray

47 – 59 feet	2" PVC screen .032 mil slot
+2 – 47 feet	2" PVC casing
21 – 59'	Gravel pack
0 – 21'	Holeplug

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Phone: 620.227.7123 • 800.557.7509 • **Fax:** 620.227.2047

Lab #: D-2007NL001467

LABORATORY REPORT

Report Date: 01/30/2007 03:59 pm

ACCREDITED IN ACCORDANCE WITH nelac

Accreditation # E-10150

Send To: BITTERSWEET ENERGY, INC
16265 10110 ALAMO
WICHITA, KS 67212

Nancy Jenny
Laboratory Manager

Project ID:	**Date/Time Received:** 01/29/2007 08:16 am	**Location:** Neises Site Sumner Co. KS
Project Title:	**Name of Submitter:**	
Sample ID: TW 01-06	**Date/Time Sampled:** 01/26/2007	**Invoice No:** 52851
Client Name:	**Name of Sampler:**	**P.O. #:**
Subject: Irrigation Water Lab Analysis		**Depth:**
		Flow Rate:

Analysis	Result	Unit	RL	Method	Analysis Date/Time	Tech
NELAP Accredited Tests						
1 Nitrate Nitrogen, NO3-N	19.9	mg/L	0.1	EPA 300.0	1/29/2007 1:07PM	SS
Chloride, Cl	19	mg/L	1	EPA 300.0	1/29/2007 1:07PM	SS
Sulfate, SO4	48	mg/L	0.6	Calculation	1/29/2007 1:07PM	SS
Sulfate-Sulfur, SO4-S	16	mg/L	0.2	EPA 300.0	1/29/2007 1:07PM	SS
Total Alkalinity, CaCO3	240	mg/L	10	SM 2320 B (18th Ed.)	1/29/2007	SS
Bicarbonate, HCO3	300	mg/L	10	SM 2320 B (18th Ed.)	1/29/2007	SS
Carbonate, CO3	ND	mg/L	10	SM 2320 B (18th Ed.)	1/29/2007	S
Hydroxide, OH	ND	mg/L	10	SM 2320 B (18th Ed.)	1/29/2007	SS
Electrical Conductivity, EC	675	µmho/cm	0.1	SM 2510 B (18th Ed.)	1/29/2007	SS
1 pH	7.0	units	NA	SM 4500-H+ B (20th Ed.)	1/29/2007 2:00PM	SS
Hardness (CaCO3)	280	mg/L	10	Calculation	1/30/2007 3:59PM	NJJ
Hardness (CaCO3)	16	grains/gal	0.6	Calculation	1/30/2007 3:59PM	NJJ
Langlier Index, at 20°C	0.1		NA	SM 2330 B (20th Ed.)	1/30/2007 9:54AM	SS
Aggressive Index, AI	11.8		NA	AWWA C400-77	1/30/2007 3:59PM	NJJ
Total Calcium, Ca	85	mg/L	1	EPA 200.7	1/30/2007 10:04AM	LC
Total Iron, Fe	ND	mg/L	0.05	EPA 200.7	1/30/2007 10:04AM	LC

RL = Reporting Limit | ND = Not Detected at RL

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Lab #: D-2007NL001467

LABORATORY REPORT

Report Date: 01/30/2007 03:59 pm

Analysis	Result	Unit	RL	Method	Analysis Date/Time	Tech
Total Manganese, Mn	ND	mg/L	0.005	EPA 200.7	1/30/2007 10:04AM	LC
Total Sodium, Na	36	mg/L	1	EPA 200.7	1/30/2007 10:04AM	LC
Non-Accredited Tests						
Total Dissolved Solids (Calc), TDS	432	mg/L	5	Calculation	1/30/2007 3:59PM	NJJ
Sodium Adsorption Ratio, SAR	0.9	ratio	0.1	Calculation	1/30/2007 3:59PM	NJJ
Adjusted SAR, SARa	2.1	ratio	0.1	Calculation	1/30/2007 3:59PM	NJJ
pHc	7.2		0.1	Calculation	1/30/2007 3:59PM	NJJ
Sodium Percentage	21.8%	of Cations	NA	Calculation	1/30/2007 3:59PM	NJJ
Total Boron, B	0.08	mg/L	0.02	EPA 200.7	1/30/2007 10:04AM	LC
Total Magnesium, Mg	16	mg/L	1	EPA 200.7	1/30/2007 10:04AM	LC
Total Potassium, K	2	mg/L	1	EPA 200.7	1/30/2007 10:04AM	LC

Result Notes

1. The sample was received and analyzed outside the regulatory holding time for this analyte.

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ND = Not Detected at RL

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Lab #: D-2007NL001467

LABORATORY REPORT

Report Date: 01/30/2007 03:59 pm

Additional Information

Analysis	Result	lbs / Acre Inch	meq / L
Nitrate Nitrogen, NO3-N	19.9 mg/L	4.5	1.4
Chloride, Cl	19 mg/L	4.3	0.5
Sulfate, SO4	48 mg/L	10.9	1.0
Sulfate-Sulfur, SO4-S	16 mg/L	3.6	1.0
Total Alkalinity, CaCO3	240 mg/L	54.4	4.8
Bicarbonate, HCO3	300 mg/L	68.0	4.9
Carbonate, CO3	ND mg/L	0	0
Hydroxide, OH	ND mg/L	0	
Total Dissolved Solids (Calc), TDS	432 mg/L		
Hardness (CaCO3)	280 mg/L		
Total Boron, B	0.08 mg/L	<0.1	
Total Calcium, Ca	85 mg/L	19.3	4.2
Total Iron, Fe	ND mg/L	0	
Total Magnesium, Mg	16 mg/L	3.6	1.3
Total Manganese, Mn	ND mg/L	0	
Total Potassium, K	2 mg/L	0.5	<0.1
Total Sodium, Na	36 mg/L	8.2	1.6

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Lab #: D-2007NL001467 **LABORATORY REPORT** Report Date: 01/30/2007 03:59 pm

Interpretations for Corrosive Indices

NON-CORROSIVE: A positive Langlier Index indicates that the water is non-corrosive and tends to deposit scale on the inside of pipes.

The Langlier Index and Aggressive Index can be used as indicators of the potential corrosivity of water. Other factors that affect corrosivity may be present and not included in this test.

Interpretations For Irrigation Use

WATER QUALITY RATING - EXCELLENT QUALITY IRRIGATION WATER

SALINITY HAZARD: VERY LOW.

PERMEABILITY HAZARD: VERY LOW.

BORON HAZARD - NONE: Safe for nearly all crops.

CHLORIDE HAZARD FROM SPRINKLER IRRIGATION- LOW: Considered satisfactory to plant growth and development.

pHc: pHc values above 8.4 indicate a tendency to dissolve lime from soil through which the water moves; values below 8.4 indicates a tendency to precipitate lime from water applied.

NELAC Certification

The test results included in this report meet all the requirements of NELAC unless otherwise noted and apply only to the sample that was tested.
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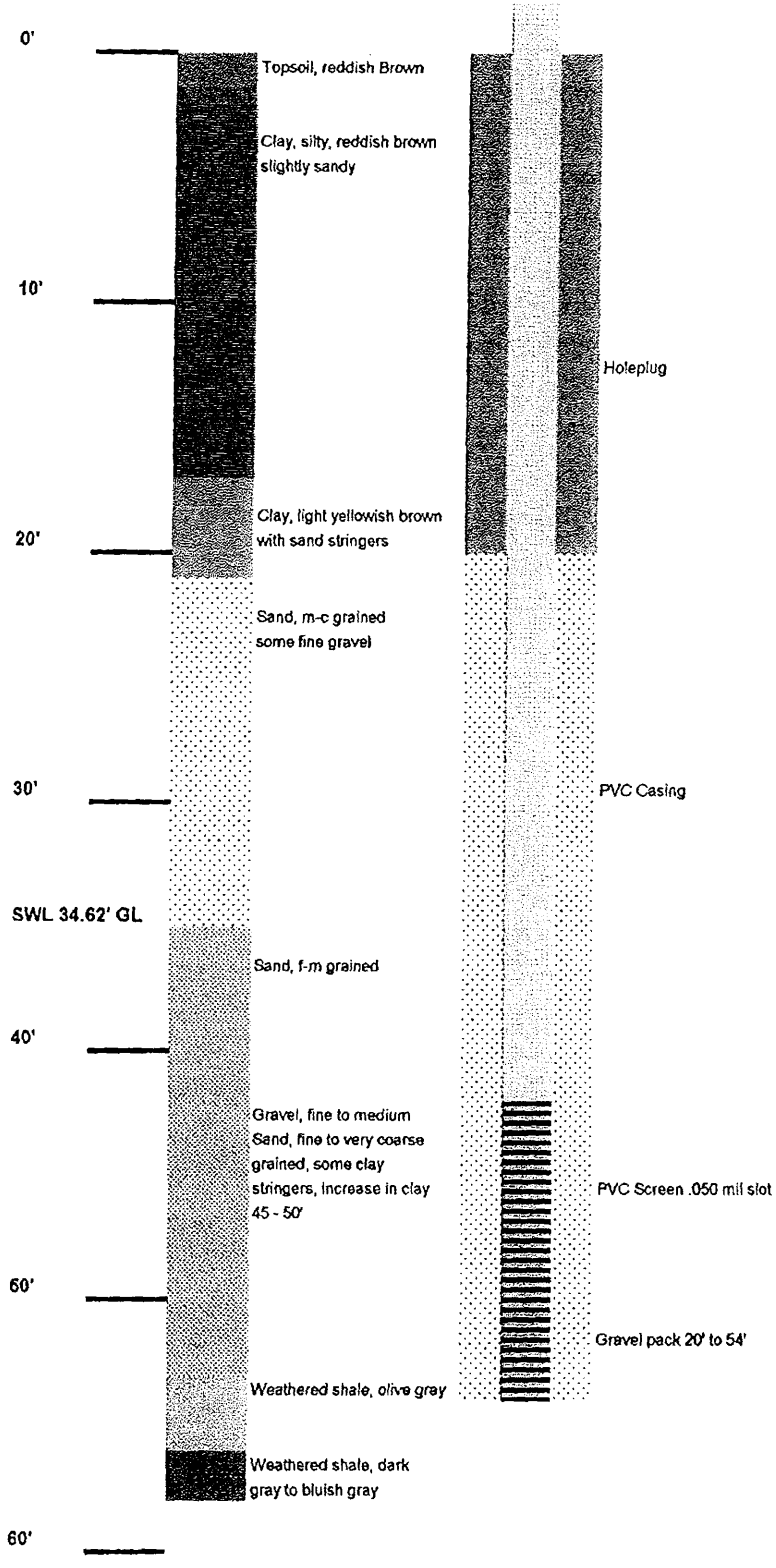
Nelses Test Well Schematic
NENESE Section 30, T31S, R2E
Sumner County, Kansas



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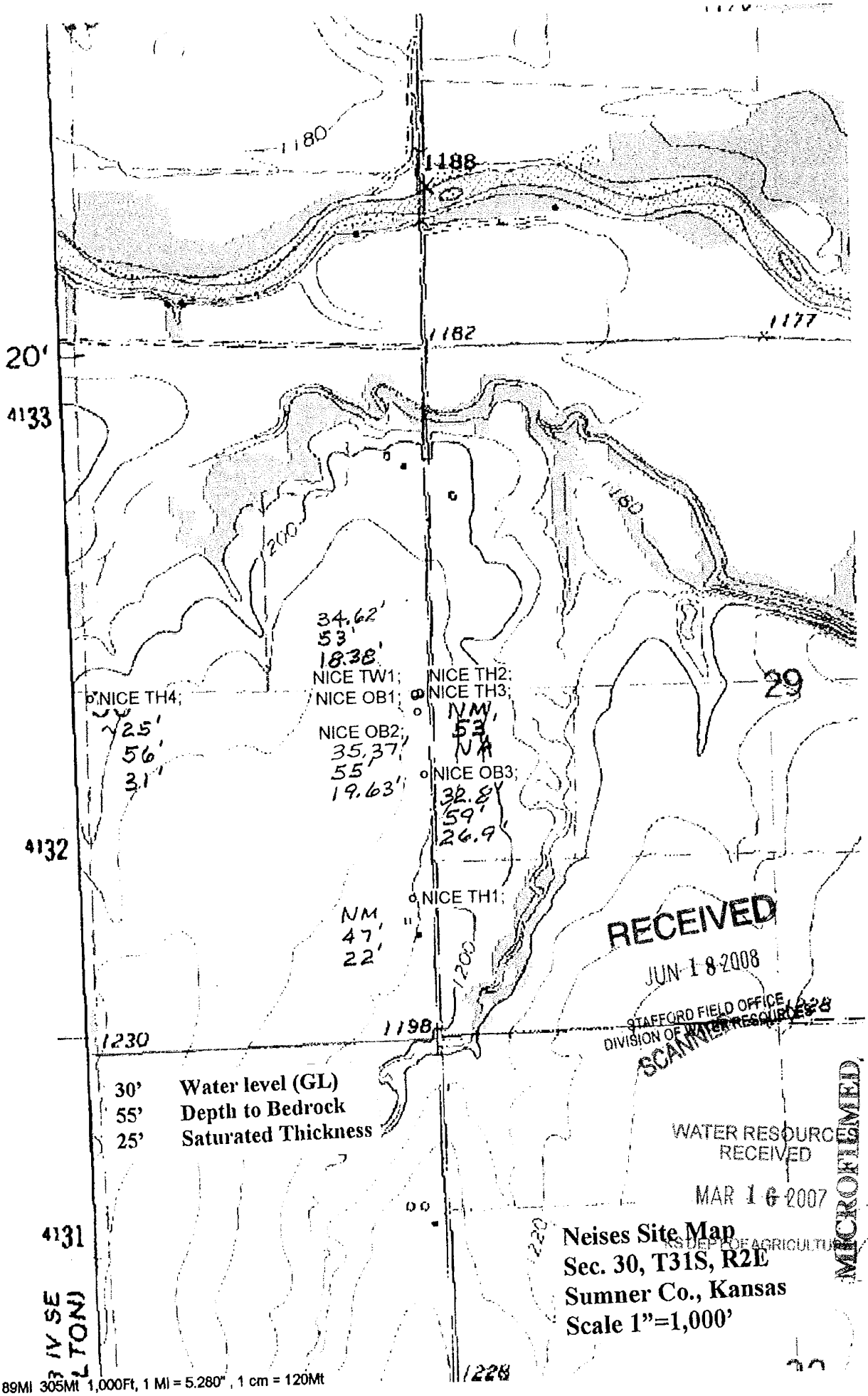

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Neises Site Map
Sec. 30, T31S, R2E
Sumner Co., Kansas
Scale 1"=1,000'

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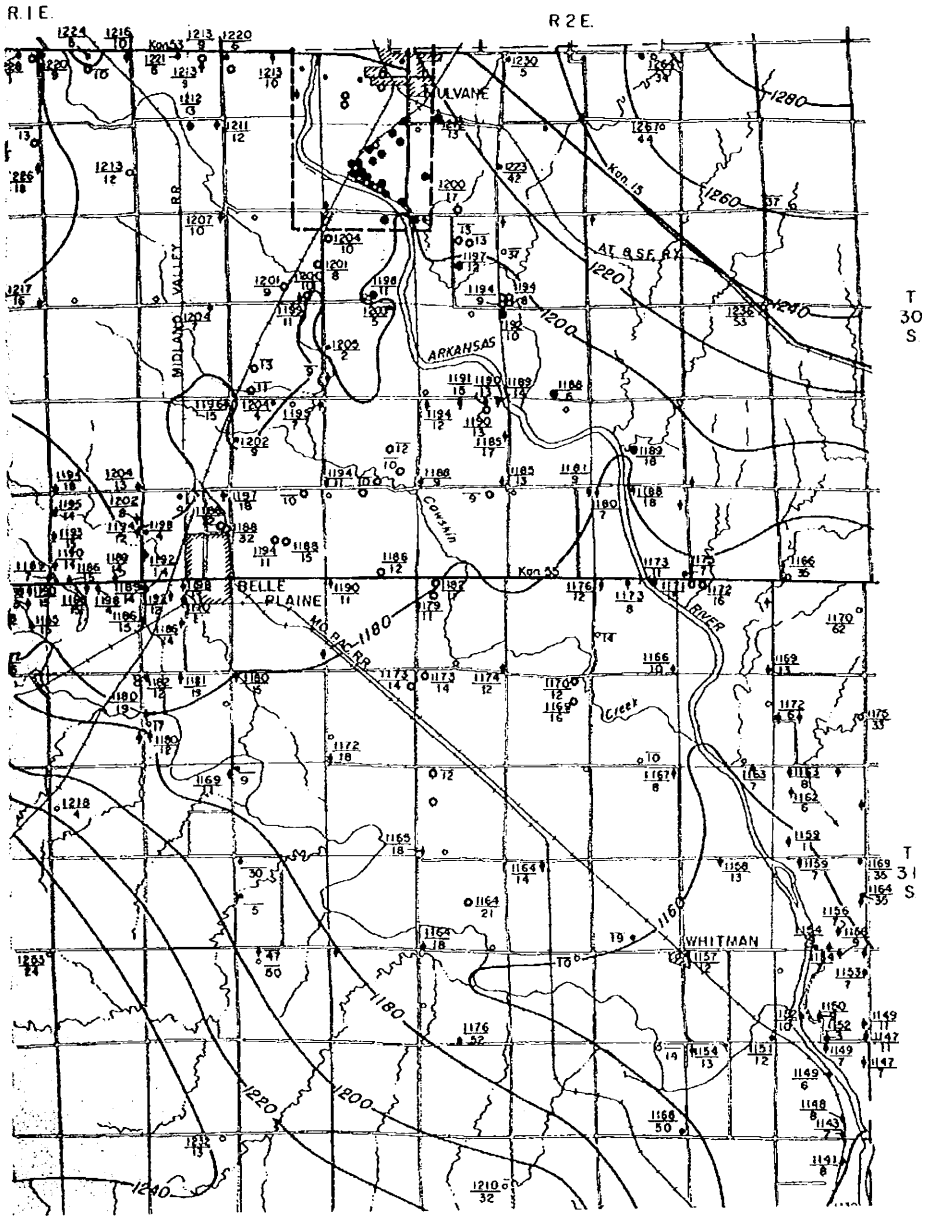
Bulletin 151

Plate 2



EXPLANATION

- Drilled test hole
- Augered test hole
- Domestic or stock well
- Public supply well
- Irrigation well
- Industrial well
- Observation well
- 1180 — Water-table contour
- 1189 / 26 — Upper number refers to altitude of water level, in feet. Lower number refers to depth to water below land surface, in feet
- Federal or state highway
- Graded road
- Railroad
- Ungraded road
- County line (no road)
- State line (no road)
- Section line (no road)
- Outline of area shown in inset map
- Intermittent stream

0 1/2 1 — Scale, in miles

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GSI Geotechnical Services, Inc.

GRAIN SIZE ANALYSIS

(Sieve Analysis)
ASTM C-117 AND C-136

Project Name: Neises	Project Location: Sumner County, KS
Job Number: 77041	Tested By: JN / Checked By: JA
Sample I.D.: Th-03-06	Sample Description: Brown Clayey Sand (SC)
Depth: 41'-53'	Date Tested: 02/21/07
	Comments
Date Sampled	
Date Received: 02/19/07	

Sieve Size	Percent Retained (Individual)	Percent Passing (Cumulative)	Specification (astm # or project)
2"	0	100	
1-1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	0	100	
3/8"	1	99	
#4	6	94	
#8	19	81	
#16	42	58	
#30	65	35	
#50	80	19	
#60	81	19	
#80	82	18	
#100	82	18	
#200	82.6	17.4	

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GSI Geotechnical Services, Inc.

GRAIN SIZE ANALYSIS

(Sieve Analysis)
ASTM C-117 AND C-136

Project Name: Nelses	Project Location: Sumner County, KS
Job Number: 77041	Tested By: JN / Checked By: JA
Sample I.D.: Th-04-06	Sample Description: Brown Sand (SP-SC) Poorly Graded with Clay
Depth: 43'-53'	Date Tested: 02/21/07
	Comments
Date Sampled	
Date Received: 02/19/07	

Sieve Size	Percent Retained (Individual)	Percent Passing (Cumulative)	Specification (astm # or project)
2"	0	100	
1-1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	0	100	
3/8"	0	100	
#4	1	99	
#8	10	90	
#16	38	62	
#30	68	32	
#50	86	14	
#60	88	12	
#80	92	8	
#100	93	7	
#200	94.1	5.9	

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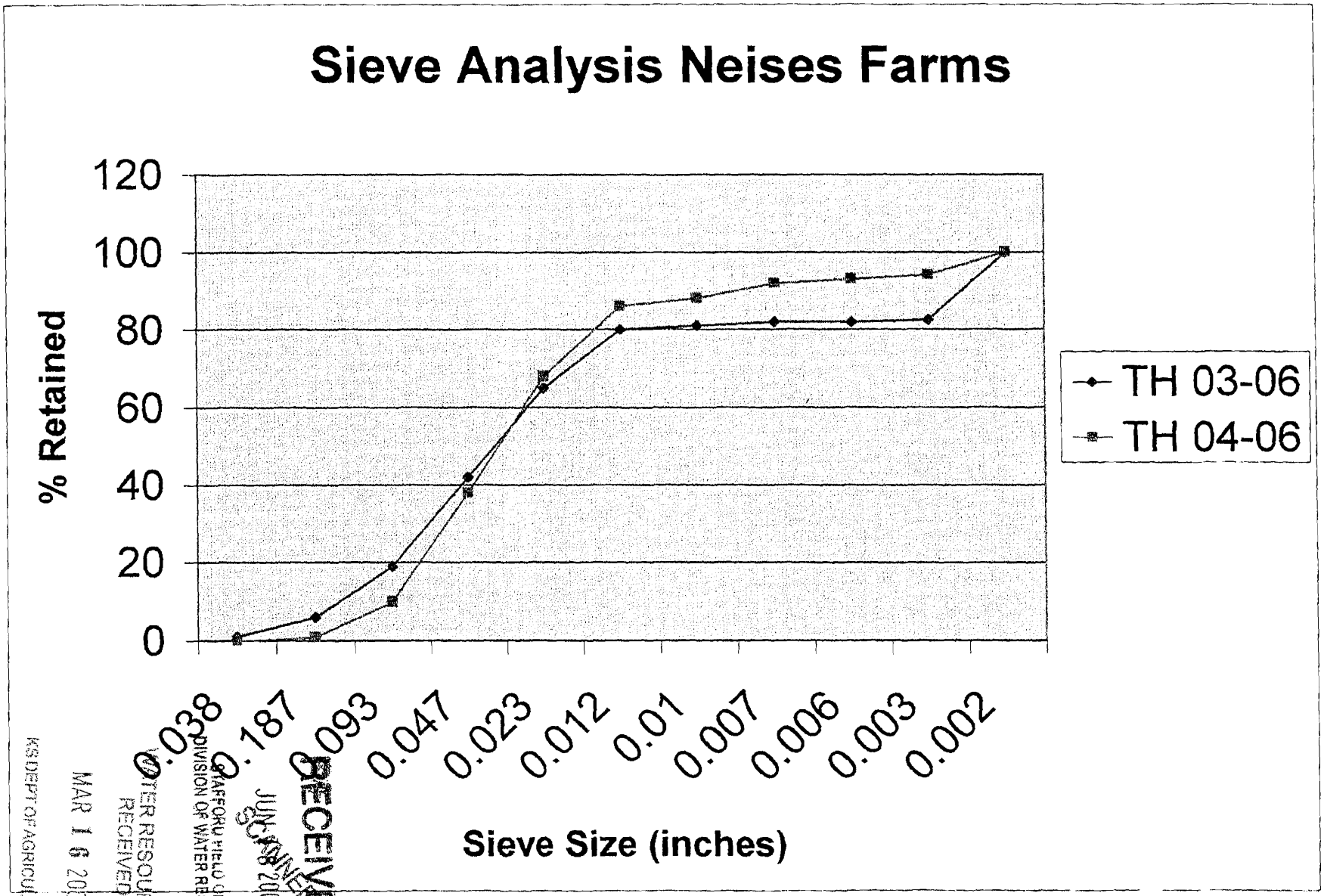

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Topeka, Kansas 66612-1280

Phone: (785) 296-3717
Fax: (785) 296-1176
www.agriculture.ks.gov

Jackie McClaskey, Secretary
David W. Barfield, Chief Engineer

Sam Brownback, Governor

May 12, 2014

RONNIE M. NEISES
409 N ROCK RD
BELLE PLAINE KS 67013

RE: Application
File No. 49,077

Dear Sir or Madam:

Your application for permit to appropriate water in 28-31S-2E, in Sumner County, was received and has been assigned the file number noted above.

As a matter of record, the Division of Water Resources has on hand a large number of applications awaiting processing. Therefore to be fair to all concerned, and so that we can process those applications on hand in the order they were received, we intend to concentrate on the backlog of applications until the issue is resolved. Once review of your application has begun, we will contact you, if additional information is required.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water as proposed prior to approval of the application is unlawful. Once approved, compliance with the terms, conditions and limitations of the permit is necessary. Conservation of the water resources of Kansas is required.

Section 82a-728 of the Kansas Water Appropriation Act, provides (a) except for the appropriation of water for the purpose of domestic use, . . . it shall be unlawful for any person to appropriate or threaten to appropriate water from any source without first applying for and obtaining a permit to appropriate water in accordance with the provisions of the Water Appropriation Act or for any person to violate any condition of a vested right, appropriation right or an approved application for a permit to appropriate water for beneficial use.

(b) (1) The violation of any provision of this section by any person is a class C misdemeanor . . .

A class C misdemeanor is punishable by a fine not to exceed $500 and/or a term of confinement not to exceed one month in the county jail. Each day that the violation occurs constitutes a separate offense.

If you have any questions, please contact our office. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

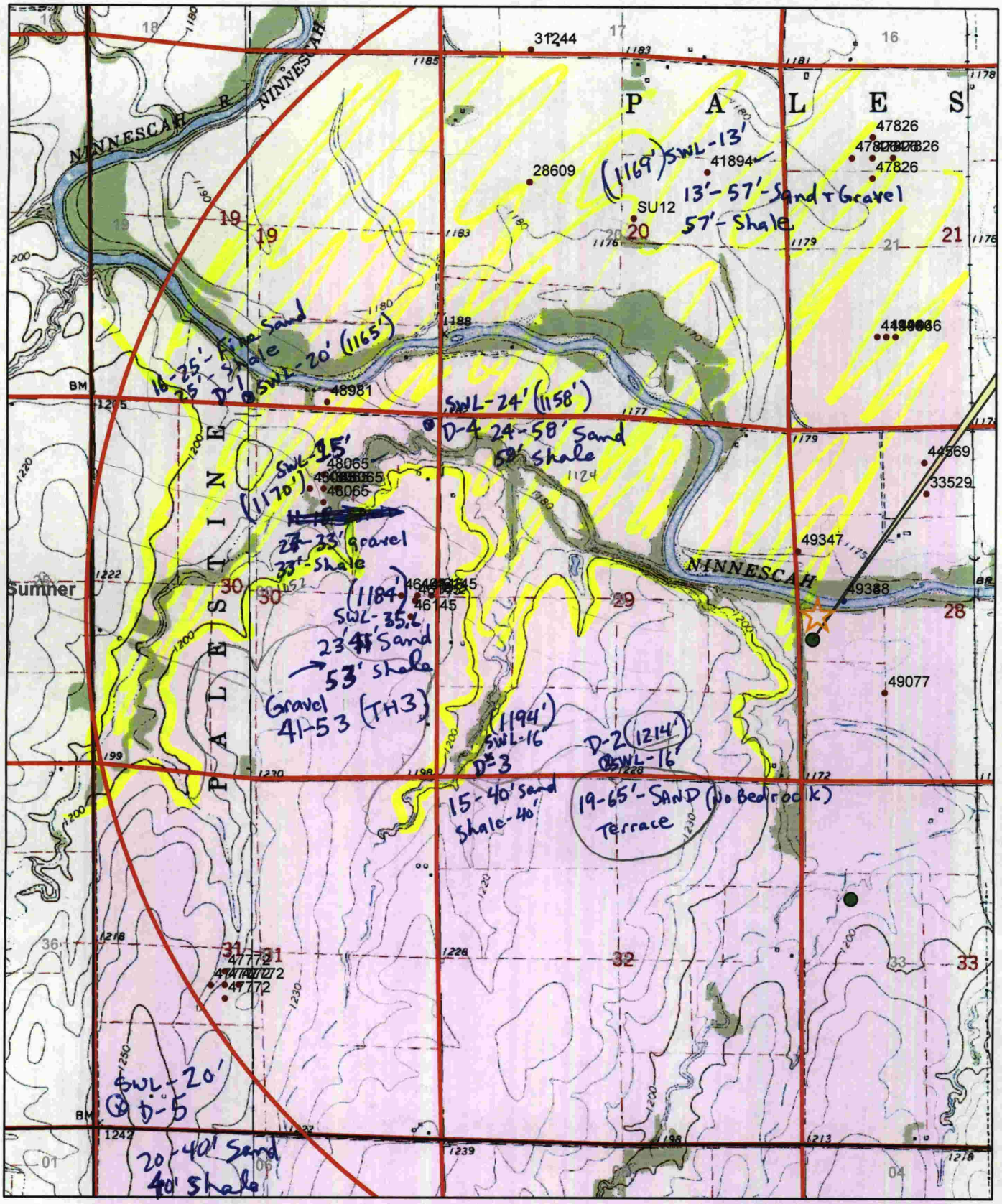
Douglas W. Schemm

Douglas W. Schemm
New Application Unit Supervisor
Water Appropriation Program

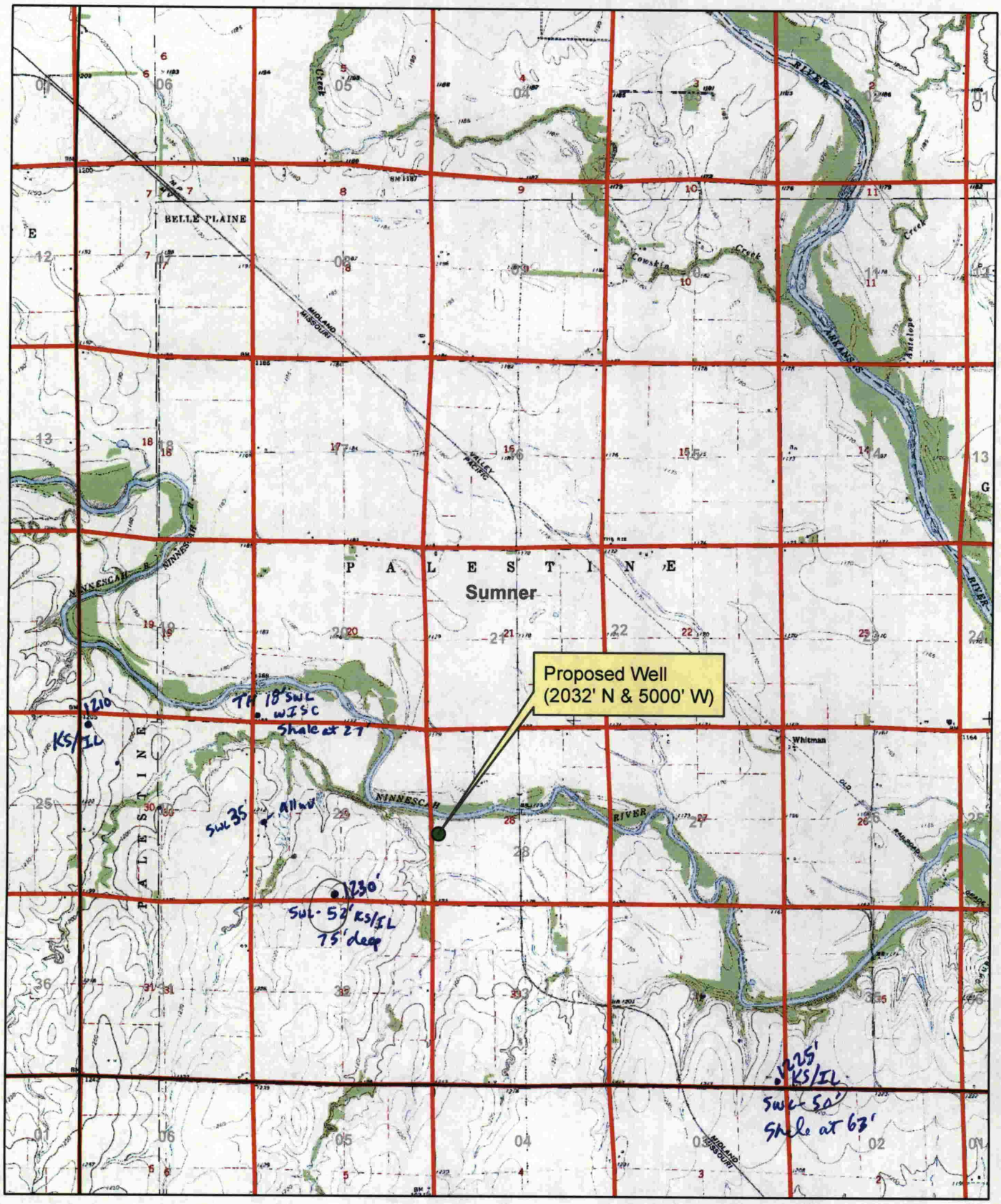
DWS: al
pc: Stafford Field Office

SCANNED

RON ~~NIIESES~~ NEISES FILE NO 49,077

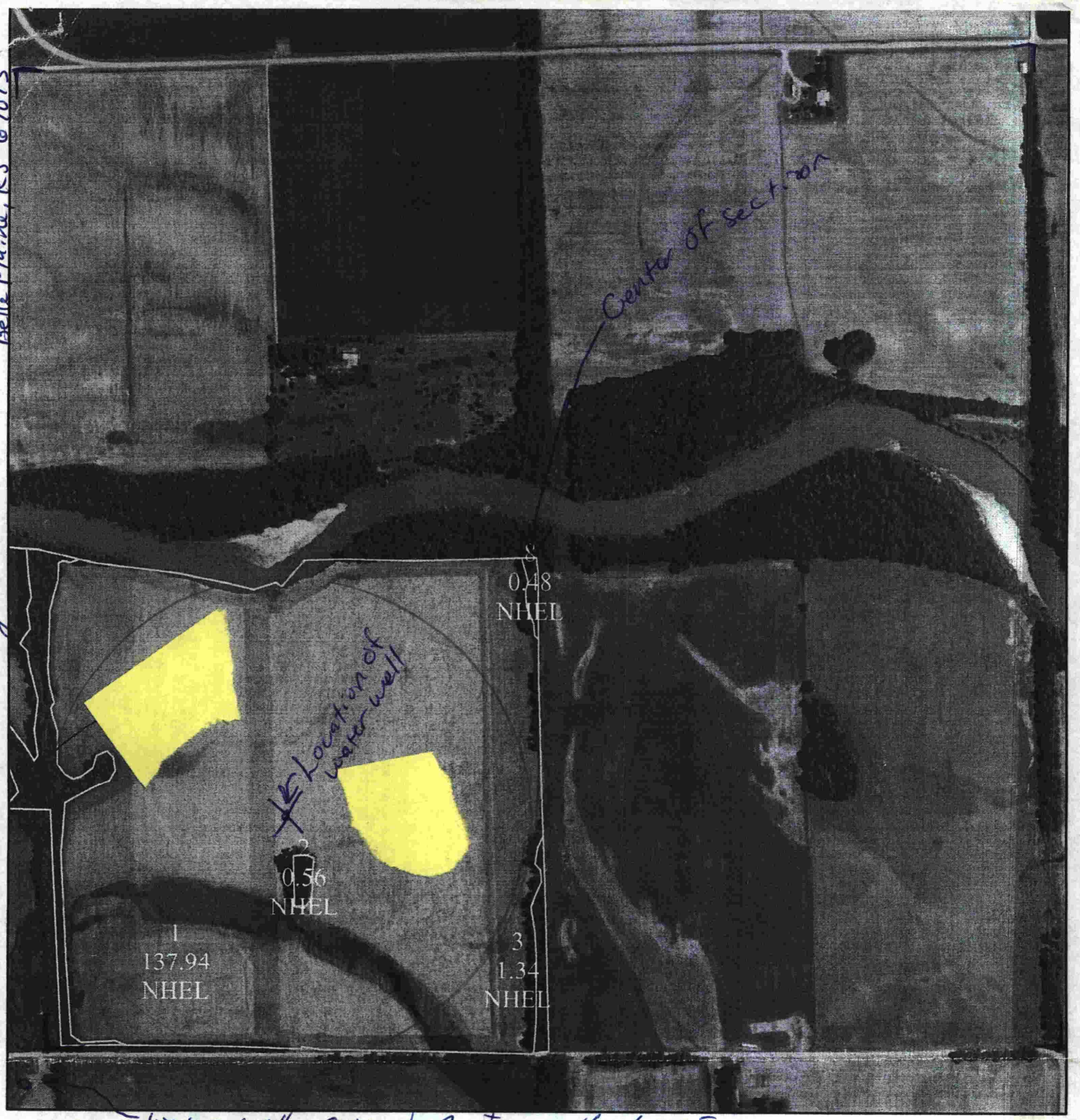


RON ~~NIESES~~ NEISES FILE NO 49,077



1:48,000

● Proposed Point of Diversion



Water well owned by Bret Lerbach 1488 East 40th Ave N. Belle Plaine, KS 67013

Water well owned by James H. Neises Trust 1318 Woodbrook Derby, KS 67037

USDA United States Department of Agriculture
Farm Service Agency

November 12, 2010

PLSS: 28_31_2E
Farm: 8538
Tract: 5146

Sumner County, KS

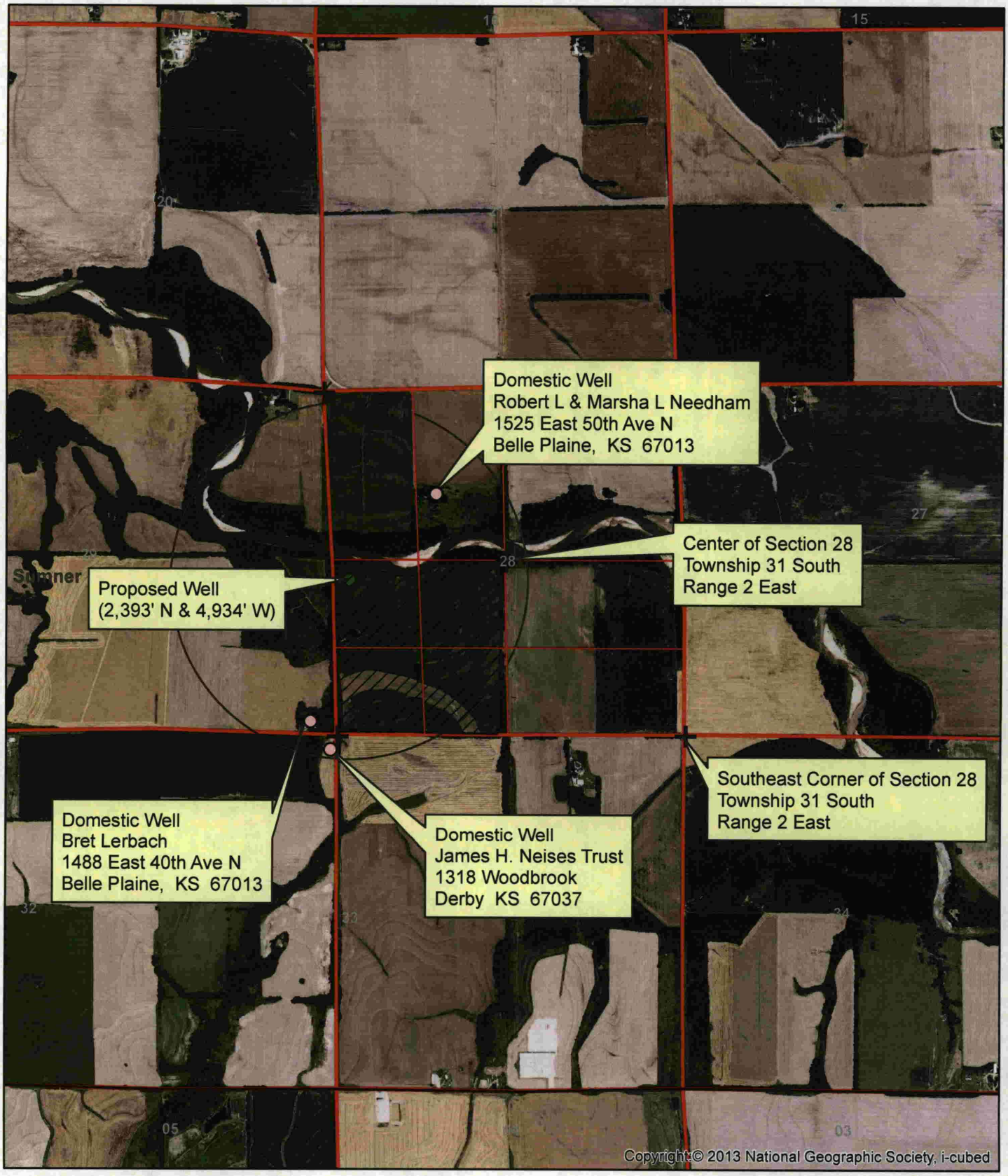
1:8,348

N

Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original dermination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.

WATER RESOURCES
RECEIVED
MAY 12 2014
KS DEPT OF AGRICULTURE
SCANNED

RONNIE M NEISES - APPLICATION, FILE NO. 49,077
Section 28, Township 31 South, Range 2 East
Sumner County



N

1:24,000

Proposed Place of Use

Proposed Point of Diversion

All known wells within one-half mile of the proposed point of diversion are shown on this map.

see attached Maps from Applicant