DWR EXHIBIT C
Application, File No. 45,568

THE STATE OF KANSAS

F.O. 2
GMD 2
MEETS
K.A.R.5-3-1
USE MUN
G/S G
Co. HV
By JP
Date 7/3/03

KANSAS DEPARTMENT OF AGRICULTURE
Jamie Clover Adams, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David L. Pope, Chief Engineer

File Number 45568
This item to be completed by the Division of Water Resources.

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.)

WATER RESOURCES RECEIVED
DEC 16 2003
KS DEPT OF AGRICULTURE

ASR Project RRW-2

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): City of Wichita, Water & Sewer Dept.
   Address: 455 N. Main
   City: Wichita State KS Zip Code 67202
   Telephone Number: (316) 268-4504

2. The source of water is: G surface water in _____ (stream)
   OR ✓ groundwater in Equus Beds, Arkansas River basin (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 1,000 acre-feet OR _____ gallons per calendar year,
   to be diverted at a maximum rate of 1,000 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) G Artificial Recharge (c) G Irrigation Use (e) G Recreational Use (g) G Water Power use
   (b) G Industrial Use (d) ✓ Municipal Use (f) G Stockwatering Use

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: Code WATER RES FEES $440- TR # [illegible] Receipt Date 7-3-03 Check # 0001849

WATER RESOURCES RECEIVED
12:54pm
JUL 03 2003
KS DEPT OF AGRICULTURE

56

DWR 1-100 (Revised 2/02)

WATER RESOURCES
RECEIVED

DEC 1 6 2003

KS DEPT OF AGRICULTURE File No. 45568

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 60 days in which to locate the site within a quarter section tract. Any request for an extension of time in which to locate the point of diversion shall include a contract with a well driller or a contractor for the necessary test holes.

(A) One in the NE quarter of the NE quarter of the NE quarter of Section 23, more particularly described as being near a point 5232 feet North and 159 feet West of the Southeast corner of said section, in Township 23 South, Range 3 East/West (circle one), Harvey 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 and which are operated by means of submersible pumps.

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 proposed project for diversion of water will consist of one recharge/recovery well
(number of wells, pumps or dams, etc.)
and (was)(will be) completed (by) March 1 2004.
(Month/Day/Year - each was or will be completed)

7. The first actual application of water for the proposed beneficial use was or is estimated to be 06/01/10.
(Mo/Day/Year)

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

Yes G No ✓ If "yes", a check valve shall be required.

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

WATER RESOURCES
RECEIVED

JUL 0 3 2003

KS DEPT OF AGRICULTURE

57

MICROFILMED

MICROFILMED

File No. 45568

9. 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.

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

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

10. 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.

(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.

(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.

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.

11. 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.

Part of City of Wichita's ASR project. Water will be withdrawn from this well only when ~~re~~ recharge credits are available

WATER RESOURCES
RECEIVED

DEC 16 2003

KS DEPT OF AGRICULTURE

File No. 45568

12. 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 G Drillers log attached G

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled	10/17/02			
Total depth of well	253			
Depth to water bearing formation	62			
Depth to static water level	35.1			
Depth to bottom of pump intake pipe				

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

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

(name, address and telephone number)

(name, address and telephone number)

15. 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 Wichita, Kansas, this 2nd day of July (month), 2003 (year)

(Applicant Signature)

APPLICANT(S) SOCIAL SECURITY IDENTIFICATION NUMBER(S)

By Gerald T. Blain
(Agent or Officer Signature)

48-6000653
and/or
APPLICANT(S) TAXPAYER I.D. NO.(S)

Gerald T. Blain
(Agent or Officer - Please Print)

Assisted by WATER RESOURCES RECEIVED JUL 03 2003 KS DEPT OF AGRICULTURE (office/title) Date:

59

MICROFILMED

USGS **5 km E of Burrton, Kansas, United States** 17 Aug 1991

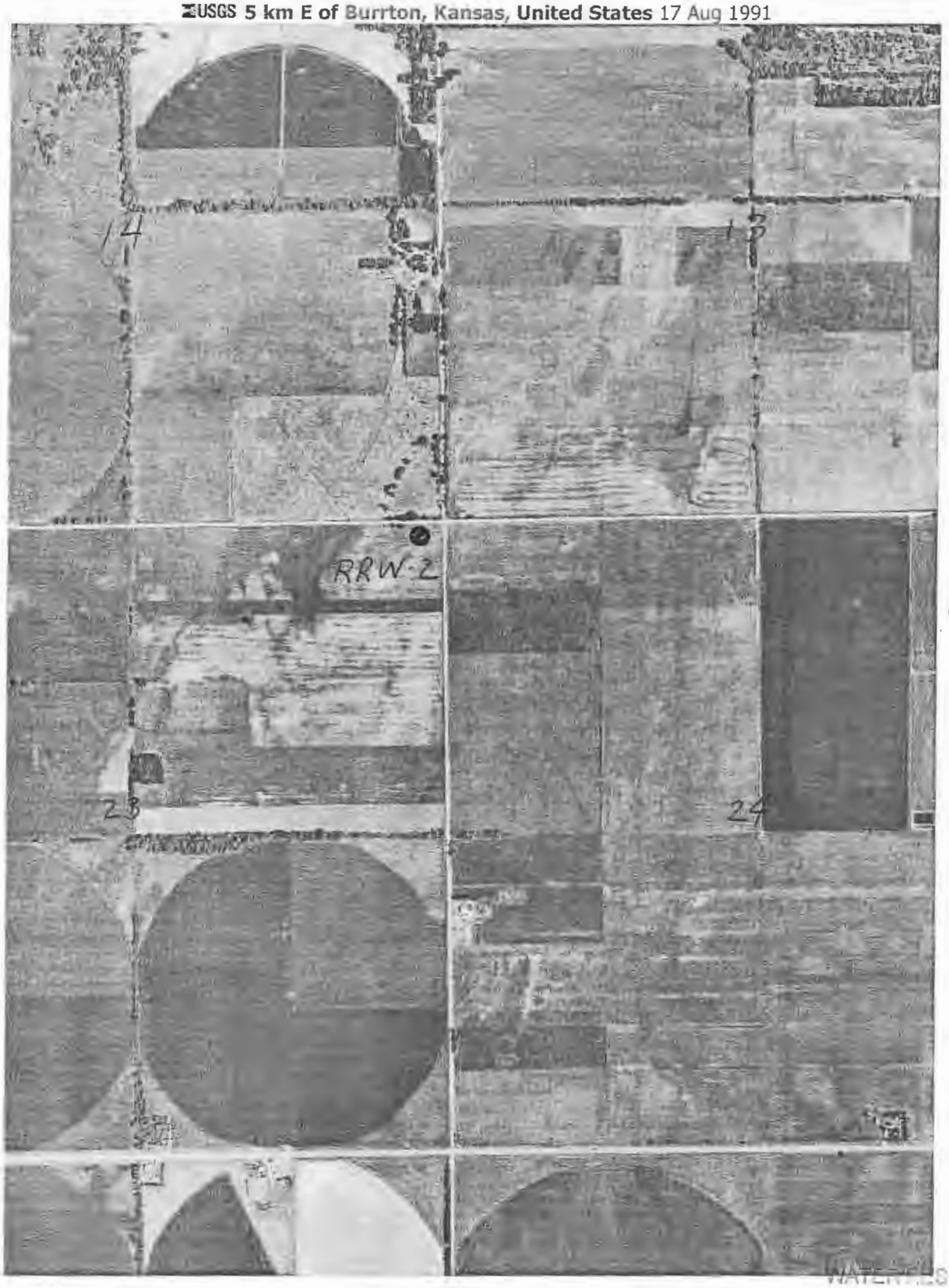
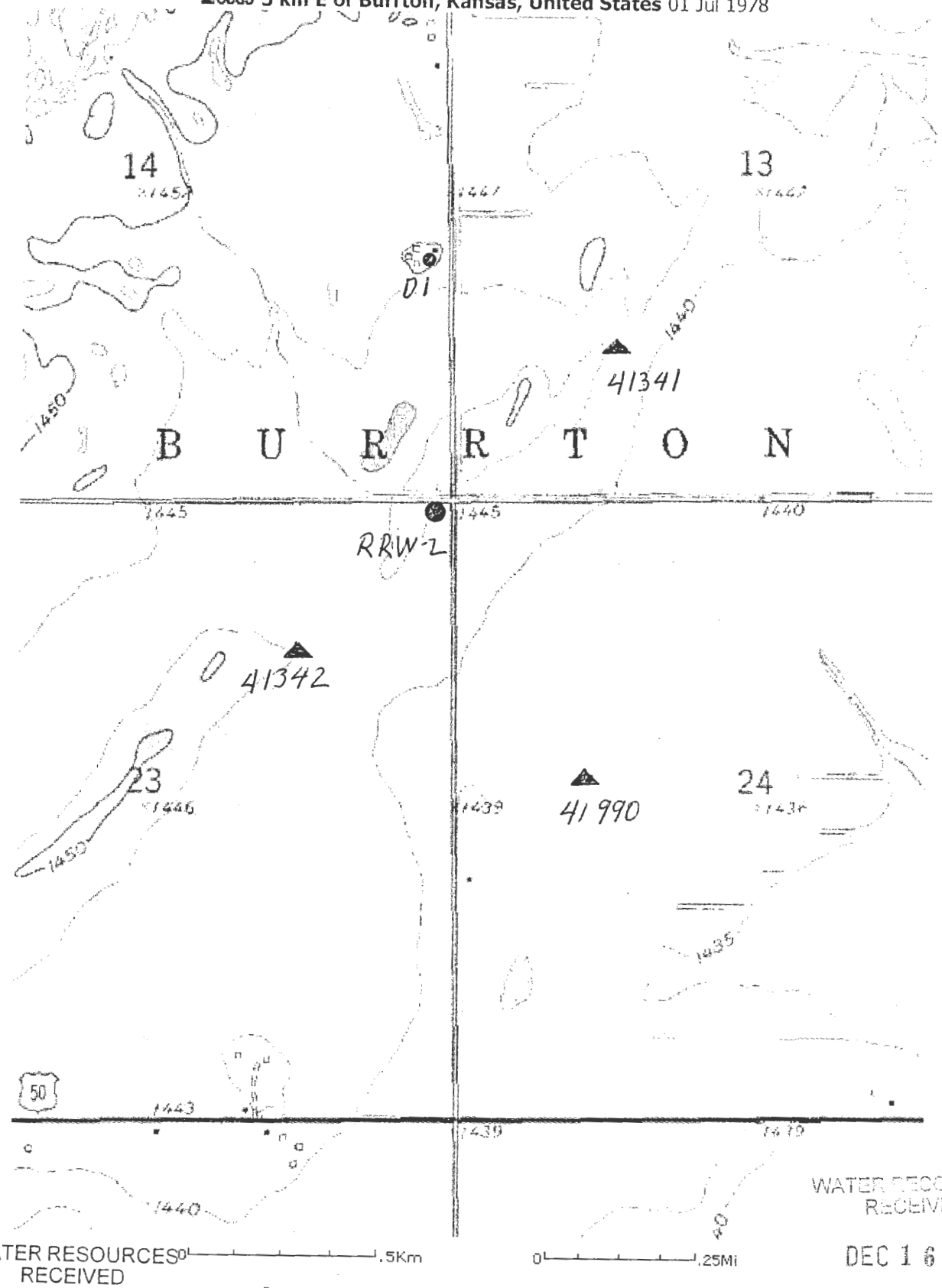


Image courtesy of the U.S. Geological Survey

Send To Printer Back To TerraServer Change to 11x17 Print Size Show Grid Lines Change to Landscape

USGS **5 km E of Burrton, Kansas, United States** 01 Jul 1978



WATER RESOURCES RECEIVED
JUL 0 3 2003
KS DEPT OF AGRICULTURE

WATER RESOURCES RECEIVED
DEC 1 6 2003
KS DEPT OF AGRICULTURE

Image courtesy of the U.S. Geological Survey

61

Recharge and Recovery Well No. 2
5232 ft. N. and 159 ft. W. of SE Corner of Sec. 23, T 23 S, R 3 W.

Diversions within 1/2 mile:

Irrigation Wells –
42341 & # 41342
John Weber
9414 W. 1st St.
Halstead, KS 67056

41990
Gordon Schmidt
10320 Wheat State Rd.
Inman, KS 67546

Domestic Wells
D1 - Terri Thach
505 N. Willow Lake Rd.
Burrton, KS 67020

62

MUNICIPAL (PUBLIC WATER SUPPLY) APPLICATION
SUPPLEMENTAL INFORMATION SHEET

NAME _____
(Please Print)

Application File Number
_____
(assigned by DWR)

SECTION 1: PRESENT WATER USE SUMMARY (IF NO PREVIOUS MUNICIPAL WATER USE HAS BEEN UTILIZED, PROCEED TO SECTION 3)
NOTE: WORKSHEET FOR WATER PUMPED, PURCHASED, AND SOLD BY YOUR WATER DISTRIBUTION SYSTEM.

Column 1 Raw Water Diverted Under Your Rights	Column 2 Water Purchased From All Sources	Column 3 Water Sold to Other Public Water Suppliers	Column 4 Water Sold to Your Industrial, Stock, and Bulk Customers	Column 5 Water Sold to Your Residential and Commercial Customers	Column 6 Other Metered Water	Column 7 Remaining Water Used (See Below Explanation)
TOTAL WATER = Columns 1 + 2		ACCOUNTED FOR WATER = Columns 3 + 4 + 5 + 6				UNACCOUNTED FOR WATER

UNACCOUNTED FOR WATER = TOTAL WATER - ACCOUNTED FOR WATER

Column 1: The amount of raw water diverted from all of your points of diversion.

Column 2: The amount of water purchased wholesale from all other public water supply systems or the Kansas Water Office.

Column 3: The amount of water sold wholesale to all other public water supply systems.

Column 4: The amount of water sold retail to all industrial, pasture, stockwater, feedlot, and bulk water service connections. Include the amount of water sold to all farmsteads using at least 200,000 gallons of water per year.

Column 5: The amount of water sold retail to your residential and commercial customers and to industries and farmsteads using less than 200,000 gallons of water per year.

Column 6: The amount of water used that is metered at individual service connections and supplied free, such as for public service, treatment processes, and connections receiving free water.

Column 7: The amount of remaining water used. The gallons reported in this column are found by adding the numbers in Columns 1 and 2 and subtracting the numbers in Columns 3, 4, 5, and 6.

UNACCOUNTED FOR WATER

Use the following to calculate your distribution system's Unaccounted For Water:
Start with the amount in Column 1 and add the amount in Column 2, then subtract the amounts in Columns 3, 4, 5, and 6 leaving an amount of water representing your unaccounted for water to enter in Column 7.

Use the following to calculate the percent Unaccounted For Water versus the Total Water of your system:

$$\text{Percent Unaccounted For Water} = \frac{\text{Unaccounted For Water}}{\text{Total Water (Columns 1,2)}} \times 100$$

If this number exceeds 20%, please explain the large amount of unaccounted for water and describe any steps being taken to reduce it.

SECTION 2: PAST WATER USE
COMPLETE THE FOLLOWING TABLE FROM YOUR PAST WATER USE RECORDS.

	Column 1 Raw Water Diverted Under Your Rights	Column 2 Water Purchased From All Sources	Column 3 Water Sold to Other Public Water Suppliers	Column 4 Water Sold to Your Industrial, Stock, and Bulk Customers	Column 5 Water Sold to Your Residential and Commercial Customers	Column 6 Other Metered Water	Column 7 Remaining Water Used (See Above Explanation)
20 years ago							
15 years ago							
10 years ago							
5 years ago							
	TOTAL WATER = Columns 1 + 2		ACCOUNTED FOR WATER = Columns 3 + 4 + 5 + 6				UNACCOUNTED FOR WATER

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

July 8, 2003

CITY OF WICHITA
WATER AND SEWER DEPT
455 N MAIN
WICHITA KS 67202

RE: Application
File No. 45,568

Dear Sir or Madam:

Your application for permit to appropriate water in 23-23-03 West, Harvey County, was received and has been assigned the file number noted above.

As a matter of information, the Division of Water Resources has on hand a large number of applications awaiting processing. In order to be fair to all concerned, it is our policy to process applications in the order they are received. 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. (Emphasis added)

(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,

William J. Gilliland, L.G.
Permits Unit Head
Water Appropriation Program

WJG:zjp
pc: Stafford Field Office
Groundwater Management District No. 2

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

JOHN WEBER
9414 W 1ST ST
HALSTEAD KS 67056

August 12, 2003

Re: Application
File No. 45,568

Dear Mr. Weber:

This is to advise you that the City of Wichita Water and Sewer Department has filed the application referred to above for permit to appropriate 1,000 acre-feet of groundwater per calendar year from the Equus Beds aquifer for municipal use to be diverted at a maximum rate of 1,000 gallons per minute from a location or locations as follows:

one (1) well in the Northeast Quarter of the Northeast Quarter of the Northeast Quarter (NE¼ NE¼ NE¼) of Section 23, Township 23 South, Range 3 West, Harvey County Kansas.

The well is intended to produce water recharged to the aquifer by the City of Wichita, as part of the city's aquifer storage and recovery project. Pumping of water from the proposed well could take place only at times when recharge credits are available.

Records in this office indicate that you have a well in this vicinity and you are 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.

Sincerely,

Mark D. Jennings, L. G.
Environmental Scientist
Water Appropriation Program

MDJ
pc: Stafford Field Office
City of Wichita Water & Sewer Dept.

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

GORDON SCHMIDT
10320 WHEAT STATE RD
INMAN KS 67546

August 12, 2003

Re: Application
File No. 45,568

Dear Mr. Schmidt:

This is to advise you that the City of Wichita Water and Sewer Department has filed the application referred to above for permit to appropriate 1,000 acre-feet of groundwater per calendar year from the Equus Beds aquifer for municipal use to be diverted at a maximum rate of 1,000 gallons per minute from a location or locations as follows:

one (1) well in the Northeast Quarter of the Northeast Quarter of the Northeast Quarter (NE¼ NE¼ NE¼) of Section 23, Township 23 South, Range 3 West, Harvey County Kansas.

The well is intended to produce water recharged to the aquifer by the City of Wichita, as part of the city's aquifer storage and recovery project. Pumping of water from the proposed well could take place only at times when recharge credits are available.

Records in this office indicate that you have a well in this vicinity and you are 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.

Sincerely,

Mark D. Jennings, L. G.
Environmental Scientist
Water Appropriation Program

MDJ
pc: Stafford Field Office
City of Wichita Water & Sewer Dept.

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

TERRI THACH
505 N WILLOW LAKE RD
BURRTON KS 67020

August 12, 2003

Re: Application
File No. 45,568

Dear Ms Thach:

This is to advise you that the City of Wichita Water and Sewer Department has filed the application referred to above for permit to appropriate 1,000 acre-feet of groundwater per calendar year from the Equus Beds aquifer for municipal use to be diverted at a maximum rate of 1,000 gallons per minute from a location or locations as follows:

one (1) well in the Northeast Quarter of the Northeast Quarter of the Northeast Quarter (NE¼ NE¼ NE¼) of Section 23, Township 23 South, Range 3 West, Harvey County Kansas.

The well is intended to produce water recharged to the aquifer by the City of Wichita, as part of the city's aquifer storage and recovery project. Pumping of water from the proposed well could take place only at times when recharge credits are available.

Records in this office indicate that you have a well in this vicinity and you are 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.

Sincerely,

Mark D. Jennings, L. G.
Environmental Scientist
Water Appropriation Program

MDJ
pc: Stafford Field Office
City of Wichita Water & Sewer Dept.

SEE EXHIBIT L

COMMENT LETTERS RECEIVED AND DWR RESPONSES

SEE EXHIBIT M

INFORMAL SUBMISSION
CARL NUZMAN
AUGUST 7, 2003

SEE EXHIBIT N

DWR LETTER TO CITY OF WICHITA REQUESTING INFORMATION NEEDED TO COMPLETE THE APPLICATION
OCTOBER 30, 2003

SEE EXHIBITS O, P, AND Q

CITY OF WICHITA'S RESPONSE TO REQUEST FOR INFORMATION
DECEMBER 16, 2003

[DO NOT BATE-STAMP]

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

February 11, 2004

GROUNDWATER MANAGEMENT DISTRICT NO 2
313 SPRUCE ST
HALSTEAD KS 67056-1925

Re: Application File Nos.
45,567 through 45,576
Wichita ASR Project

Ladies and Gentlemen:

We are enclosing copies of the applications referred to above which appear to be in proper form.

We are delaying any further action for a period of 15 days from the date of this letter, or within any authorized extension of time, to allow you time to submit your recommendations concerning this application.

Please note that some of the technical reports submitted by the City of Wichita in support of these applications have not been included with the applications, because the District most likely already has copies of these reports. These reports include the Final Report on the Equus Beds Groundwater Recharge Demonstration Project, by Burns and McDonnell, dated April, 2000; USGS Water Resources Investigations Report 99-4250, on water quality samples taken during the demonstration project, and USGS Water Resources Investigations Report 98-4141, on water level changes in the Wichita Well Field Area, 1940-1998. A copy of data relating to the groundwater model for the ASR project has been included on a CD for your review.

Please submit your recommendations within the allotted time, or any authorized extension of time thereof. If you wish to discuss a specific file, please refer to the file number so that we may help you more efficiently.

Sincerely,

Mark D. Jennings, L. G.
Environmental Scientist
Water Appropriation Program

MDJ
Enclosure

pc: Stafford Field Office

EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE • HALSTEAD, KANSAS 67056-1925 • equusbed@ink.org • VOICE (316) 835-2224 • FAX (316) 830-2210

February 13, 2004

David L. Pope, Chief Engineer
Division of Water Resources
Kansas Department of Agriculture
109 S.W. 9th Street, Second Floor
Topeka, Kansas 66612-1283

Re: Application Nos. 45,567 through 45,576 – City of Wichita

Dear Mr. Pope:

The Equus Beds Groundwater Management District No. 2, on February 12, 2004, received the referenced applications for the City of Wichita aquifer storage and recovery project.

Due to the unique conditions of the applications, the District requests that the time to review the applications and provide recommendations be extended 120 days from the date of this letter. The extension will permit the Board of Directors to review the applications at its next available public meeting.

Should you have any questions, please contact me.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2

Michael T. Dealy, L. G.
Manager

MTD/DRK/rk

pc: Gerald T. Blain, City of Wichita
John F. and Ileen L. Weber
Edward J. Weber
Dick Van Wye
Ronald and Sharon Neuway
Edward W. Combs
Equus Beds Groundwater Management District Board of Directors

70

EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE • HALSTEAD, KANSAS 67056-1925 • equusbed@ink.org • VOICE (316) 835-2224 • FAX (316) 830-2210

May 13, 2004

David L. Pope, Chief Engineer
Division of Water Resources
Kansas Department of Agriculture
109 S.W. 9th Street, Second Floor
Topeka, Kansas 66612-1283

Re: Application Nos. 45,567 through 45,576 – City of Wichita

Dear Mr. Pope:

The Equus Beds Groundwater Management District Board of Directors, at its May 11, 2004, meeting discussed the proposed review of the referenced water appropriation applications for the City of Wichita aquifer storage and recovery project.

It was the consensus of the Board to request an extension of time to review the proposed applications, to allow additional time for application review by its consultant and to establish a time and location for the public meeting.

Based upon the Board's decision, the District requests that the time to review the applications and provide recommendations be extended an additional 90 days. 60

Should you have any questions, please contact me.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2

Michael T. Dealy, L. G.
Manager

MTD/DRK/rk

pc: Gerald T. Blain, City of Wichita
John F. and Ileen L. Weber
Edward J. Weber
Dick Van Wye
Ronald and Sharon Neuway
Edward W. Combs
Equus Beds Groundwater Management District Board of Directors

KANSAS

DEPARTMENT OF AGRICULTURE
ADRIAN J. POLANSKY, SECRETARY

KATHLEEN SEBELIUS, GOVERNOR

June 7, 2004

GROUNDWATER MANAGEMENT DISTRICT NO 2
313 SPRUCE ST
HALSTEAD KS 67056-1925

Re: Application File Nos.
45,567 through 45,576
Wichita ASR Project

Ladies and Gentlemen:

In response to your request, dated May 13, 2004, for an extension of time to review and submit recommendations regarding the referenced applications, the Chief Engineer has approved an extension of time until August 13, 2004.

For your information, the Division of Water Resources is currently in the planning process for setting up formal hearings on these applications, as required by K.A.R. 5-12-3. A tentative date for a pre-hearing conference has been scheduled for August 31, 2004

.

Please submit your recommendations within the allotted time, or any authorized extension of time thereof. If you wish to discuss the extension of time or the formal hearing process, please contact this office.

Sincerely,

Thomas L. Huntzinger, P. E.
Water Appropriation Program Manager

TLH:mdj

pc: Stafford Field Office

Division of Water Resources Dovid L. Pope, Chief Engineer
109 SW 9th ST., 2nd Floor Topeka, KS 66612-1283
Voice (785) 296-3717 Fax (785) 296-1176 http://www.accesskansas.org/kda

EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE • HALSTEAD, KANSAS 67056-1925 • equusbed@ink.org • VOICE (316) 835-2224 • FAX (316) 830-2210

August 12, 2004

David L. Pope, Chief Engineer
Division of Water Resources
Kansas Department of Agriculture
109 S.W. 9th Street, Second Floor
Topeka, Kansas 66612-1283

Re: Application No. 45568 – City of Wichita

Dear Mr. Pope:

The referenced application was reviewed by the Equus Beds Groundwater Management District pursuant to K.A.R. 5-22-12. The application was reviewed using the District's Revised Management Program (effective May 1, 1995), and Rules and Regulations K.A.R. 5-22-1 through 5-22-12. Copies of the District's Application Review Information report and the independent consultant's project report are enclosed for your information.

Additionally, a draft copy of the proposed Memorandum of Understanding (MOU) between the District and the applicant has been enclosed. The District Board of Directors and the City of Wichita have conditionally agreed to the terms of the MOU, and a copy of the signed agreement shall be submitted to the Division by September 15, 2004.

Based upon the review findings, the provisions of the proposed MOU, and comments from the Board of Directors, the applicant and the public, the District recommends the application for approval subject to conditions that:

1) the basin storage area shall be defined in compliance with K.A.R. 5-1-1(k) specifying the portion of the aquifer's unsaturated zone used for aquifer storage that has defined horizontal boundaries and is delimited by the highest and lowest index water level elevations;

2) monitoring of the basing storage area shall include water levels, water quality, water use, water storage, water recovery, precipitation, basic data access and operational reports;

3) a monitoring well network is established using Kansas Geological Survey methodology to determine index water levels in each water budget accounting unit, and monitoring water levels for water balance calculations and determination of recharge credits;

4) as determined by Kansas Geological Survey methodology the basin storage area is divided into 38 water budget accounting units and each unit is assigned an index identification number as shown on figure 3;

5) the index water levels are established in compliance with K.A.R. 5-1-1(oo), to designate water level elevations spatially throughout the basin storage area, to be used to represent the maximum volume of a basin storage area, and storage available for recovery based upon accounting methodology, and conditions of the permit;

6) the highest index water level shall be limited to the predevelopment water table measurement or computed gradient based on KGS Bulletin 79 data and a minimum depth of 10 feet below land surface at the point of lowest land surface elevation in water budget accounting unit index no. 5;

73

7) the lowest index water level shall be determined per K.A.R. 5-12-1(b)(2) and the highest index water level shall be 1425 feet msl (17.6 feet bls), based on the predevelopment water level for index well no. 5, as determined from Kansas Geological Survey Bulletin 79 (1949);

8) water level monitoring data from index well no. 5 shall be used to compute the water balance and determine recharge credits for the proposed ASR application;

9) the total volume of the basin storage area shall be calculated in acre-feet utilizing the established highest and lowest index well levels for each water budget accounting unit, the area of the basin storage area, and the storage coefficient of the aquifer in each accounting unit;

10) the water balance to determine change in the basin storage area shall be calculated, where total inflow minus total outflow equals the change in groundwater storage;

11) the inflow data utilized in water balance calculations shall include natural recharge, groundwater and stream inflow, artificial recharge, and any other source of water deemed inflow by the District or the Division of Water Resources, further passive recharge shall not be considered as inflow and shall be excluded from water balance calculations;

12) the outflow data utilized in water balance calculations shall include evapotranspiration, baseflow, groundwater and stream outflow, non-domestic well use, and any other source of water deemed outflow by the District or the Division of Water Resources;

13) the proposed recovery of water artificially recharged by the operator of the aquifer storage and recovery system shall only occur when recharge credits are determined to be available;

14) determination of recharge credits for the proposed ASR application shall be computed through water balance methodology utilizing index data from water budget accounting unit nos. 1, 2, 3, 4, 5, 6, 8, 9 and 10, and credit for passive recharge shall be prohibited;

15) a monitoring well network is installed at the applicant's expense to monitor the aquifer storage and recovery site as shown on Attachment 45568-A(r), and shall include existing monitoring well site IW05;

16) the monitoring wells are drilled and completed at depths correlating to the upper and lower zones of the aquifer for water sample collection, water level measurements and testing purposes;

17) the monitoring well sites are completed at spacing distances within 660 feet from the recharge and recovery well;

18) water level monitoring at the recharge and recovery site shall be automated with a frequency not to exceed six hours;

19) before installation of the proposed ASR well, the applicant shall submit a water level and water quality monitoring plan to GMD2 for review and comment and to the Chief Engineer, DWR for approval;

20) the water quality monitoring plan shall provide all necessary chemical, physical, radiological and biological data, and include but not be limited to continuous monitoring of specific conductance, PH, turbidity, dissolved oxygen, and temperature;

21) the proposed ASR well is equipped with water meters to separately and accurately record the total flow of water injected and diverted from the ASR well;

22) the water meter installations shall comply with K.A.R. 5-22-4;

23) the use of the proposed ASR well is authorized by the Kansas Department of Health and Environment as a Class V UIC well and minimum water quality standards for effluent are approved by the Department for organic and inorganic compounds, pesticides and bacteria; the

water recharged to the aquifer through the ASR well shall comply with the source water regulation K.A.R. 5-1-1(sss);

24) the water recharged to the aquifer shall either comply with EPA and KDHE safe drinking water standards, or meet the ambient water quality at the recharge sites, whichever is better, as determined by the Secretary of the Kansas Department of Health and Environment;

25) the quality of recharge water injected into the aquifer through the proposed well shall not degrade the ambient groundwater quality in the basin storage area;

26) to establish baseline ambient groundwater quality prior to bank storage withdrawal, water quality analyses shall be completed at the applicant's expense for samples collected from: a) domestic wells located within one-quarter mile of the proposed aquifer storage and recovery well, b) the proposed ASR well, and 3) all monitoring wells located at the ASR site;

27) the recharge system is constructed, operated and monitored to prevent groundwater contamination;

28) the applicant shall provide to the District a final report containing a description and scaled map of the as-built aquifer storage and recovery system;

29) the diversion quantities, aquifer injection quantities, water level data and water quality analyses are reported to the Division of Water Resources and the District each month for the 1st year of operation, each calendar quarter for the 2nd year of operation, and annually thereafter by March 1, of each year; and

30) the operation of the proposed ASR well shall not impair existing water rights nor prejudicially affect the public interest.

Please contact me should there be any question regarding the District's findings or recommendation.

A District decision may be appealed to the District Board of Directors by submitting a written petition to the District office within 30 days from date of this notification, pursuant to K.A.R. 5-22-12.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2

Michael T. Dealy, L. G.
Manager

This is a recommendation by the Equus Beds Groundwater Management District and not an approval of an application or water permit.

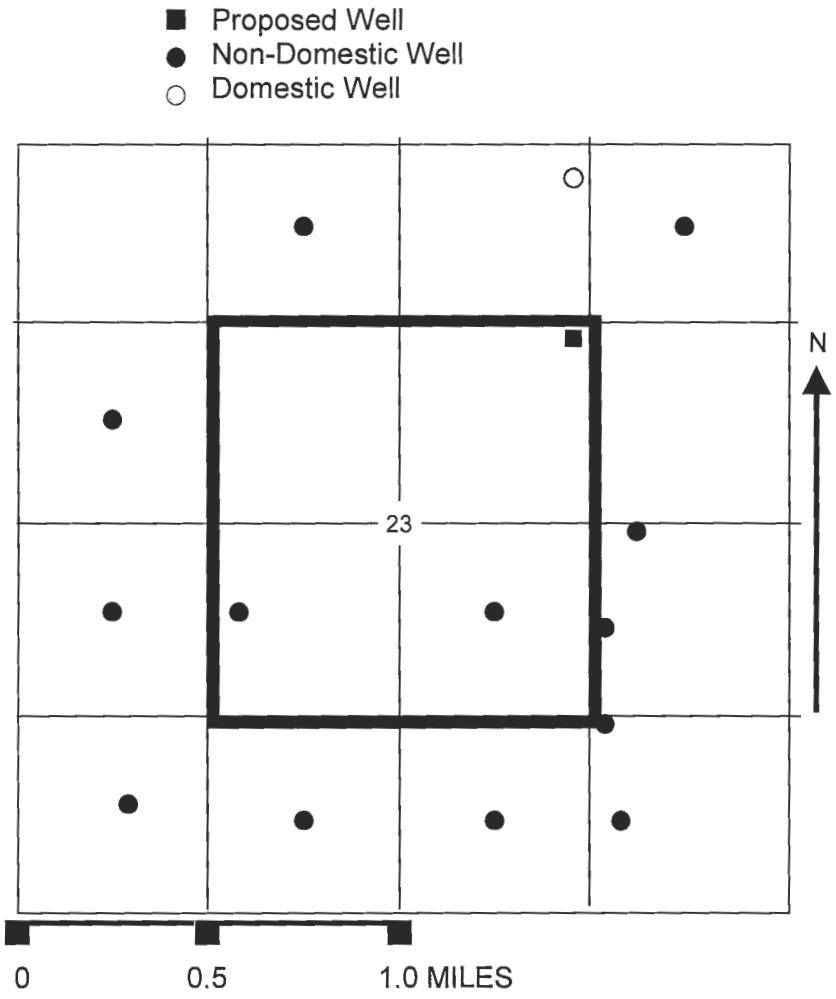
MTD/DRK/rk
Enclosures

pc: David Warren, City of Wichita
John F. and Ileen L. Weber
Edward J. Weber
Ronald and Sharon Neuway
Edward W. Combs
Dick Van Wye
Equus Beds Groundwater Management District Board of Directors

APPLICATION REVIEW INFORMATION

NAME CITY OF WICHITA
ADDRESS 455 N. MAIN STREET
WICHITA, KS 67202

APPLICATION NO. 45568
APPL. NEW
COUNTY HARVEY TRACT NE-NE-NE
WELL LOCATION S 23 T 23 R 3 W
QUANT 1000 AF RATE 1000 GPM
WELL SPACING D=2085', ND=1750'



ISSUE: The application was filed for an aquifer storage and recovery well for the City of Wichita's Aquifer Storage and Recovery system. The applicant proposes to recharge water to the Equus Beds aquifer through the well for aquifer storage and recovery. The recharged water shall be diverted from the same well to be utilized for municipal use at a later time.

BACKGROUND INFORMATION:

JUL 3, 2003 - The applicant filed application no. 45568 for permit to withdraw water for municipal use as part of the Aquifer Storage and Recovery system. The application proposes the diversion of 1,000 AF/Y at a maximum diversion rate of 1,000 GPM, from a proposed aquifer storage and recovery well located in the Northeast quarter of the Northeast quarter of the Northeast quarter of Section 23, Township 23 South, Range 3 West, Harvey County. The proposed well location is more specifically described as being 5,232 feet north and 159 feet west of the southeast corner of said section (figures 1 and 2).

FEB 11, 2004 - DWR requested that the District review the application and make recommendations.

FEB 13, 2004 - The District requested an extension of time to submit recommendations on the application to allow review of the application by the Board of Directors. It was requested that

storage available for recovery based upon accounting methodology, and conditions of the permit;

(hhh) Recharge credit – the quantity of water that is stored in the basin storage area and that is available for subsequent appropriation for beneficial use by the operator of the aquifer storage and recovery system;

(sss) Source water – water used for artificial recharge that meets the following conditions:

(1) Is available for appropriation for beneficial use;

(2) Is above baseflow stage in the stream;

(3) Is not needed to satisfy minimum desirable streamflow requirements; and

(4) Will not degrade the ambient groundwater quality in the basin storage area;

(iiii) Water balance – the method of determining the amount of water in storage in a basin storage area by accounting for inflow to, outflow from and changes in storage in that basin storage area.

Based on Kansas Geological Survey methodology for optimum monitoring well network design, the basin storage area was sub-divided into of 38 water budget accounting units, each comprised of a four square mile area (figure 3). Each unit consists of a monitoring well site utilized to obtain index water levels, and water quality data.

The proposed ASR well is located in the NE-NE-NE of Section 23, Township 23 South, Range 3 West (figure 4), and at a point near the center of the boundary between basin storage unit nos. 2 and 5 (figure 5).

The proposed well is one of three aquifer storage and recovery wells centralized in basin storage unit nos. 2 and 5, to be implemented as part of Phase I of the ASR project. The aquifer storage and recovery wells are identified by the applicant as RRW-1 through RRW-3, and proposed under application nos. 45567, 45568 and 45576 (figures 2, 4 and 5).

The applicant's proposed aquifer storage and recovery system is an effort to meet the City of Wichita's projected long term water demands, and to impede the movement of saltwater contamination plumes from the Burrton oil field area and the Arkansas River.

It is projected that the recharge of bank storage water to the aquifer will raise water levels in the basin storage area creating a change in hydraulic head that will retard movement of saltwater contamination.

The proposed ASR well is located one mile east of the Burrton Intensive Groundwater Use Control Area Boundary (figure 6). Saltwater contamination plumes with chloride concentrations greater than 250 mg/L, are located west of the proposed well site (figure 6). The nearest saltwater plumes are in the upper (depth 66 feet bls) and middle (depth 152 feet bls) portions of the aquifer located approximately one-half mile west of the application and moving to the southeast.

The proposed quantity of 1,000 AF/Y, to be diverted at a maximum rate of 1,000 GPM, would allow the withdrawal of water for a maximum period of 226 days, when aquifer storage and recovery conditions are met.

The District Board of Directors, by approved motion recommended to the Chief Engineer, DWR, revisions of Article 22. The proposed changes included a provision to Safe Yield regulation 5-22-7, stipulating that applications not subject to the Safe Yield Regulation shall include applications for aquifer storage and recovery wells.

The District maintains a groundwater monitoring site EB17, located one-mile west of the proposed application. Water level and lithologic data at the site indicate that hydrologic conditions are similar to those at IW02.

The application's proposed well depth is 253 feet bls to be completed in the lower portion of the aquifer with hydrologic conditions similar to the C well completion zones of IW02 and IW05. Proposed well construction specifications were not submitted with the application. An example diagram of recharge and recovery well construction was included in the applicant's demonstration project report (figure 10).

The applicant proposes to install observation wells for groundwater level and water quality monitoring at the site. The quantity and quality of source water recharged at the site will be monitored.

STAFF RECOMMENDATIONS:

Based on data submitted by the applicant and District findings, staff recommends that the application be approved subject to conditions that:

1) the basin storage area shall be defined in compliance with K.A.R. 5-1-1(k) specifying the portion of the aquifer's unsaturated zone used for aquifer storage that has defined horizontal boundaries and is delimited by the highest and lowest index water level elevations;

2) monitoring of the basing storage area shall include water levels, water quality, water use, water storage, water recovery, precipitation, basic data access and operational reports;

3) a monitoring well network is established using Kansas Geological Survey methodology to determine index water levels in each water budget accounting unit, and monitoring water levels for water balance calculations and determination of recharge credits;

4) as determined by Kansas Geological Survey methodology the basin storage area is divided into 38 water budget accounting units and each unit is assigned an index identification number as shown on figure 3;

5) the index water levels are established in compliance with K.A.R. 5-1-1(oo), to designate water level elevations spatially throughout the basin storage area, to be used to represent the maximum volume of a basin storage area, and storage available for recovery based upon accounting methodology, and conditions of the permit;

6) the highest index water level shall be limited to the predevelopment water table measurement or computed gradient based on KGS Bulletin 79 data and a minimum depth of 10 feet below land surface at the point of lowest land surface elevation in water budget accounting unit index no. 5;

7) the lowest index water level shall be determined per K.A.R. 5-12-1(b)(2) and the highest index water level shall be 1425 feet msl (17.6 feet bls), based on the predevelopment water level for index well no. 5, as determined from Kansas Geological Survey Bulletin 79 (1949);

8) water level monitoring data from index well no. 5 shall be used to compute the water balance and determine recharge credits for the proposed ASR application;

9) the total volume of the basin storage area shall be calculated in acre-feet utilizing the established highest and lowest index well levels for each water budget accounting unit, the area of the basin storage area, and the storage coefficient of the aquifer in each accounting unit;

10) the water balance to determine change in the basin storage area shall be calculated, where total inflow minus total outflow equals the change in groundwater storage;

26) to establish baseline ambient groundwater quality prior to bank storage withdrawal, water quality analyses shall be completed at the applicant's expense for samples collected from: a) domestic wells located within one-quarter mile of the proposed aquifer storage and recovery well, b) the proposed ASR well, and 3) all monitoring wells located at the ASR site;

27) the recharge system is constructed, operated and monitored to prevent groundwater contamination;

28) the applicant shall provide to the District a final report containing a description and scaled map of the as-built aquifer storage and recovery system;

29) the diversion quantities, aquifer injection quantities, water level data and water quality analyses are reported to the Division of Water Resources and the District each month for the 1st year of operation, each calendar quarter for the 2nd year of operation, and annually thereafter by March 1, of each year; and

30) the operation of the proposed ASR well shall not impair existing water rights nor prejudicially affect the public interest.

EXHIBIT A.

8-23-03

Mark Jennings:

We are writing in reguards to Permit #45,568 that the city of Wichita has filed for. In our meetings with Jerry Blane and Leslie Hicks, who are representing Wichita at this time, have told us that are using this well for recharging purposes, and do not intend to pump this well for water for the city of Wichita, but will pump only to "Flush" the screen. It is our under standing that this recharge water is to be used to hold back salt water from the Burrton oil Feild area.

We are for the most part in favor of this project, but are concerned about some aspects such as well depths, Pollution, and over pumping, due to the "sale" of water to other cities that might be able to find other sources of water.

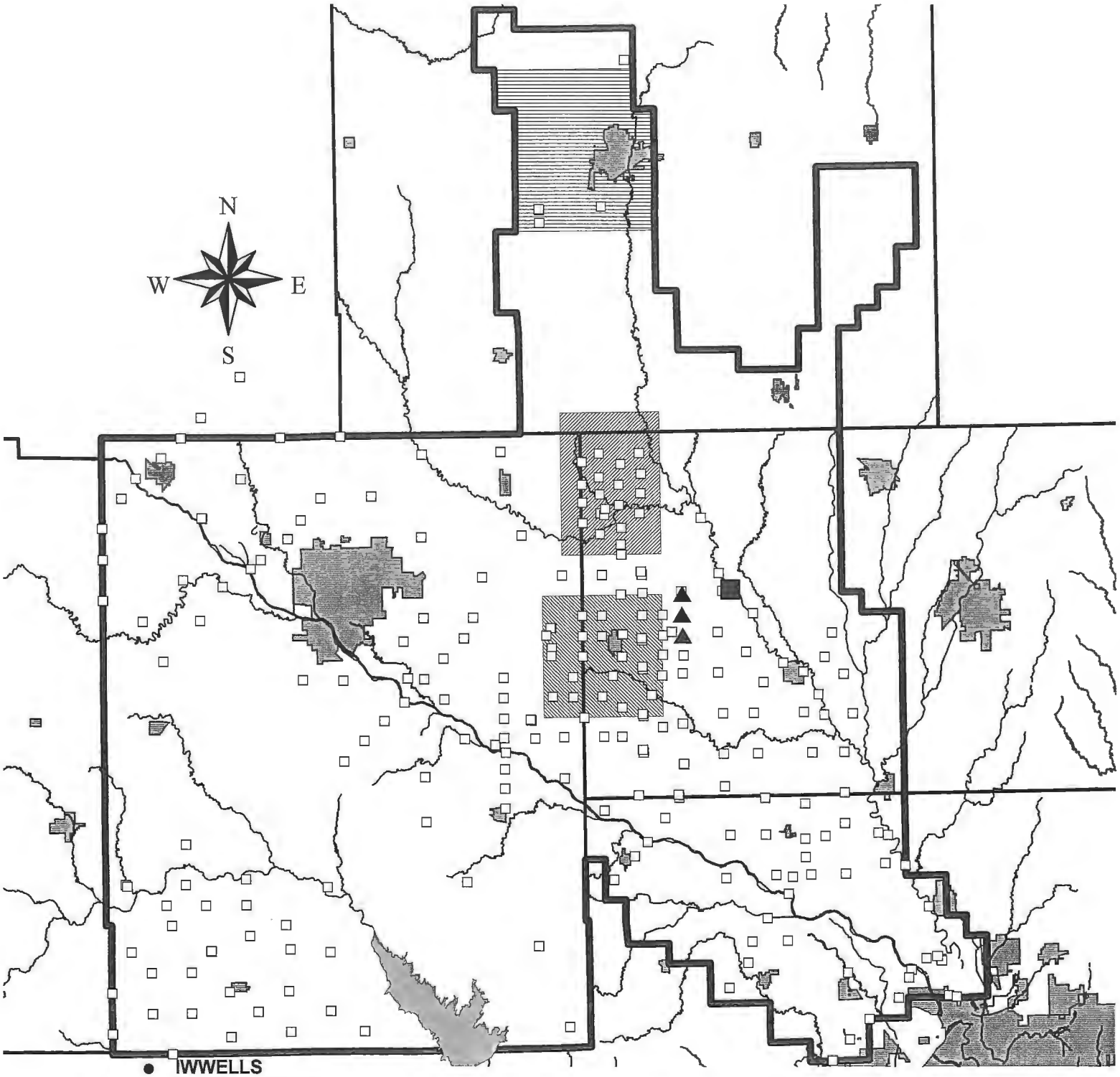
Again we feel that this is a positive move by the city of wichita. I have not had time to visit about the 1,000 acre ft per year but this seems to be high.

Thanks John & Weber

Ilsea L Weber

Edward J. Weber

Figure 1. - Equus Beds Groundwater Management District No. 2 Aquifer Storage and Recovery Project Map July 13, 2004



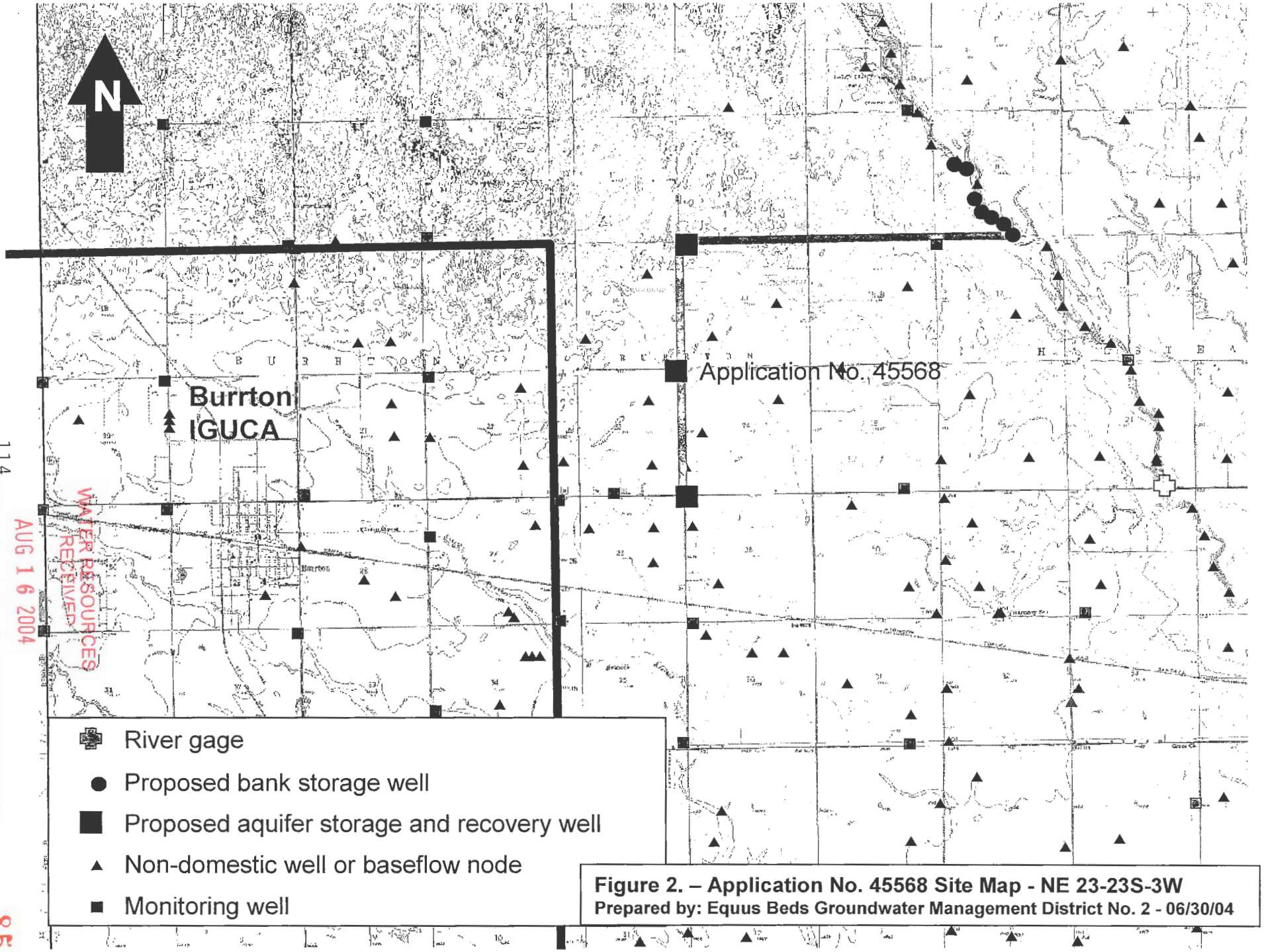


Figure 2. – Application No. 45568 Site Map - NE 23-23S-3W
Prepared by: Equus Beds Groundwater Management District No. 2 - 06/30/04

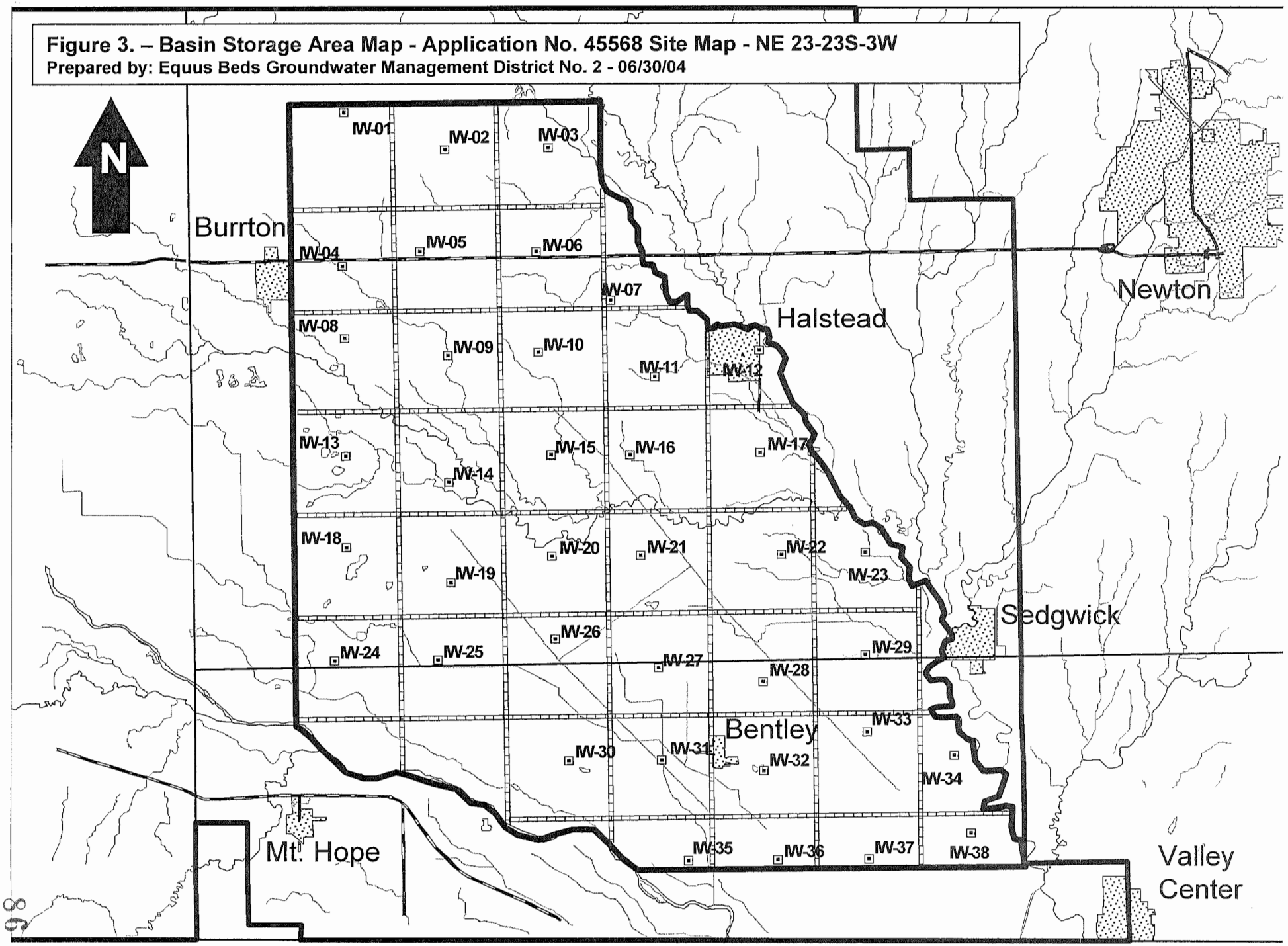


Figure 3. – Basin Storage Area Map - Application No. 45568 Site Map - NE 23-23S-3W
Prepared by: Equus Beds Groundwater Management District No. 2 - 06/30/04
N
Burrton
Halstead
Newton
Sedgwick
Bentley
Mt. Hope
Valley Center
IW-01
IW-02
IW-03
IW-04
IW-05
IW-06
IW-07
IW-08
IW-09
IW-10
IW-11
IW-12
IW-13
IW-14
IW-15
IW-16
IW-17
IW-18
IW-19
IW-20
IW-21
IW-22
IW-23
IW-24
IW-25
IW-26
IW-27
IW-28
IW-29
IW-30
IW-31
IW-32
IW-33
IW-34
IW-35
IW-36
IW-37
IW-38

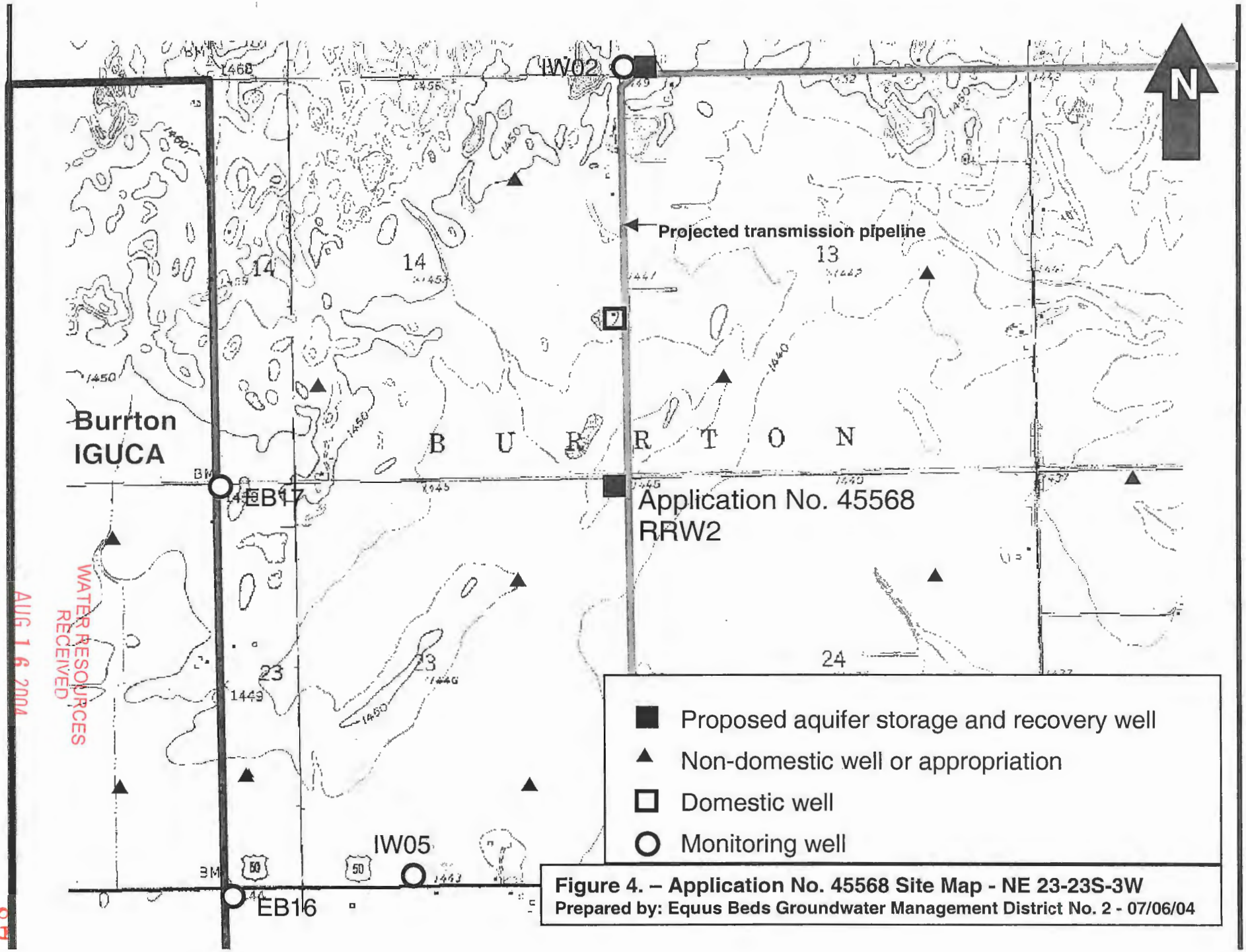


Figure 4. – Application No. 45568 Site Map - NE 23-23S-3W
Prepared by: Equus Beds Groundwater Management District No. 2 - 07/06/04

Figure 5. – Basin Storage Area Accounting Unit Map- Application No. 45568 Site Map - NE 23-23S-3W
Prepared by: Equus Beds Groundwater Management District No. 2 - 06/30/04

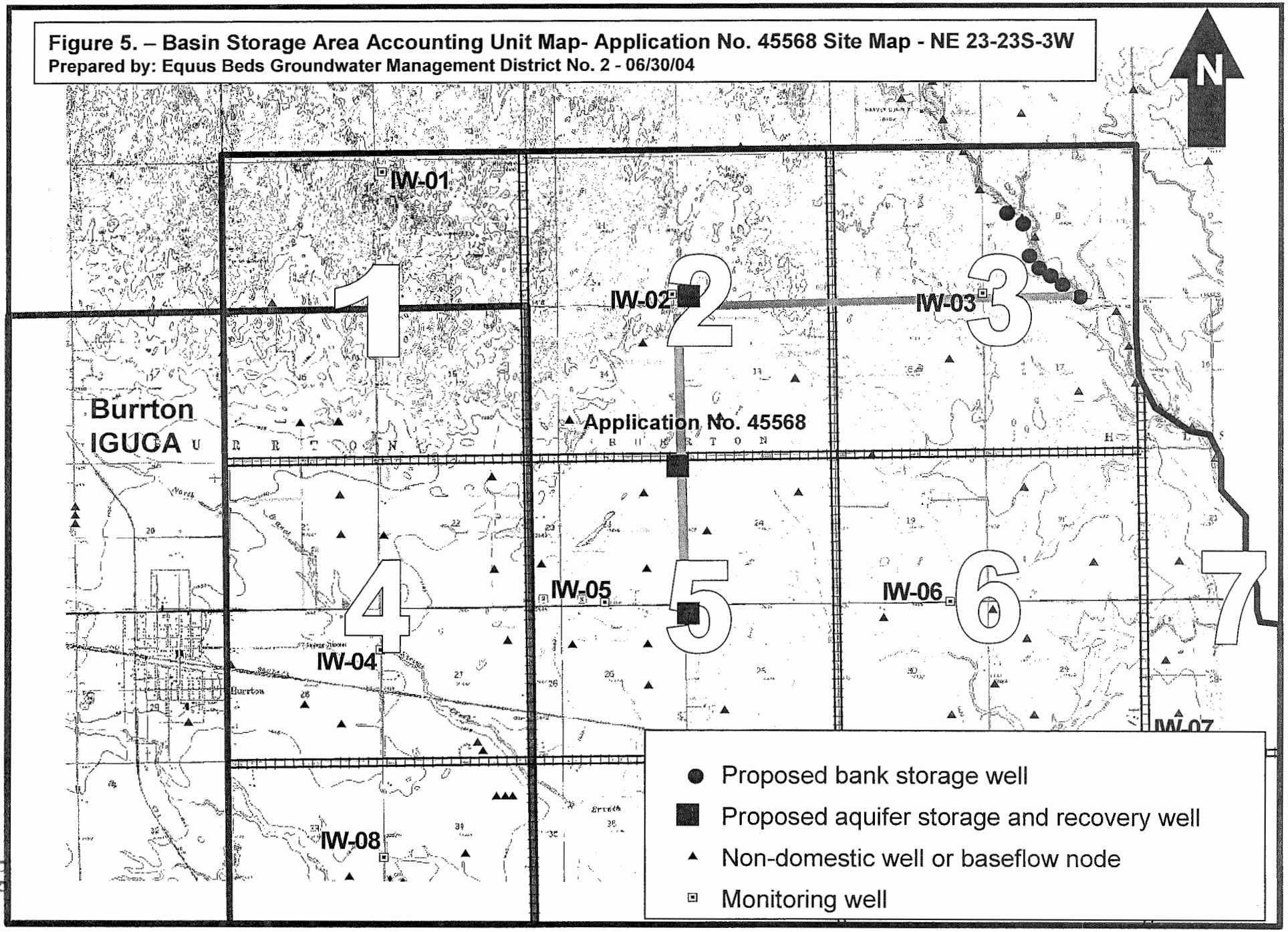
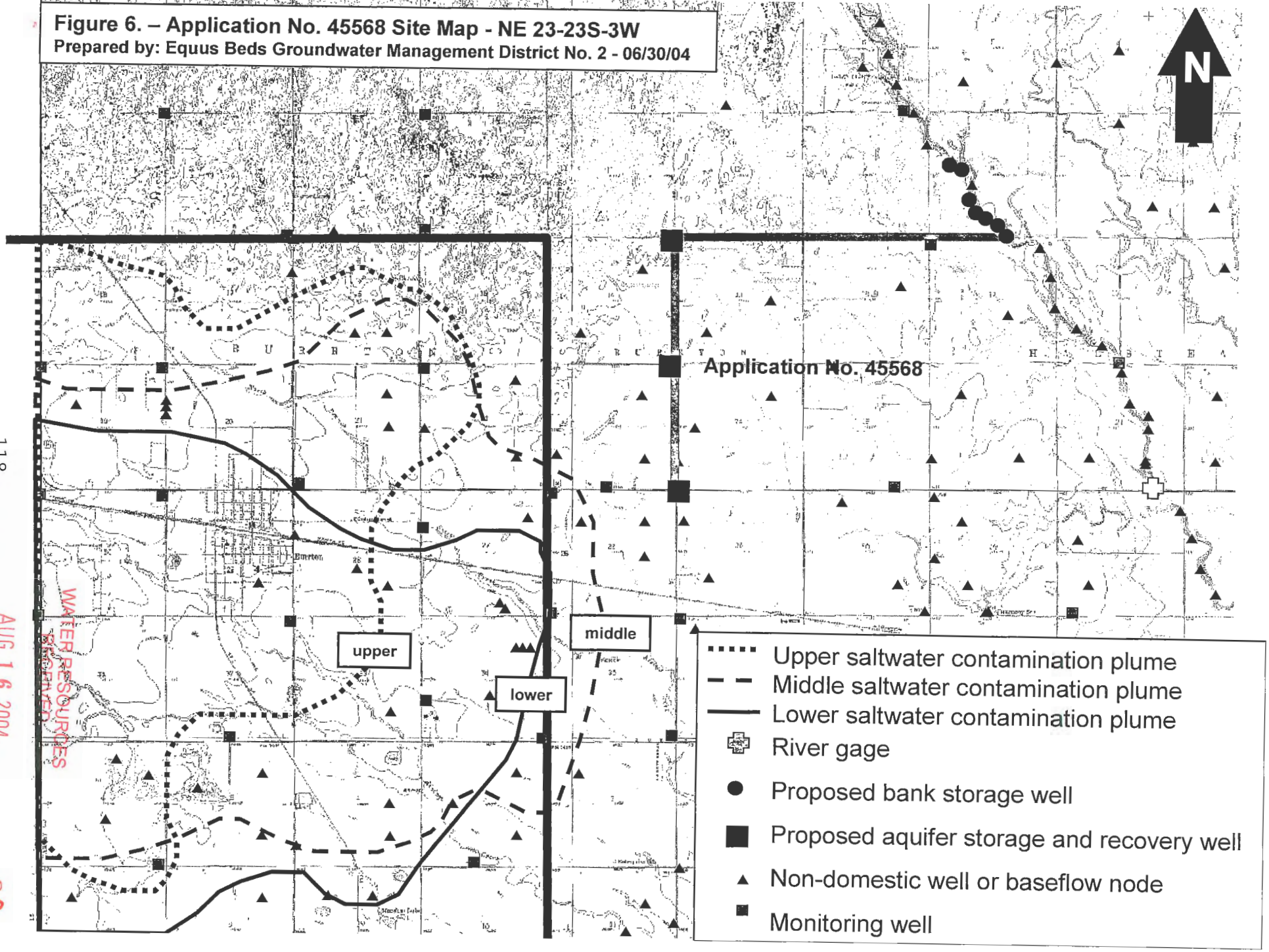


Figure 6. – Application No. 45568 Site Map - NE 23-23S-3W
Prepared by: Equus Beds Groundwater Management District No. 2 - 06/30/04



251 5925 WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No. RRW-2

1 LOCATION OF WATER WELL: County: Harvey | Fraction: NE ¼ NE ¼ NE ¼ | Section Number: 23 | Township Number: T 23 S | Range Number: R 3 E (W)

Distance and direction from nearest town or city street address of well if located within city?
Approximately 1 mile north and 3 miles east of Burton

2 WATER WELL OWNER: City of Wichita
RR#, St. Address, Box # : 455 N. Main
City, State, ZIP Code : Wichita, KS 67202
Board of Agriculture, Division of Water Resources Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX: N, NW, NE, W, E, SW, SE, S, X

4 DEPTH OF COMPLETED WELL 255 ft. ELEVATION: unknown
Depth(s) Groundwater Encountered 1 ft. 2 ft. 3 ft.
WELL'S STATIC WATER LEVEL not checked ft. below land surface measured on mo/day/yr
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
Bore Hole Diameter 6 in. to 265 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 Domestic (lawn & garden) (10) Monitoring 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 BLANK 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 233 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24 in., weight .96 lbs./ft. Wall thickness or gauge No .214

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 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) ft.

SCREEN-PERFORATED INTERVALS: From 233 ft. to 253 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 225 ft. to 265 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

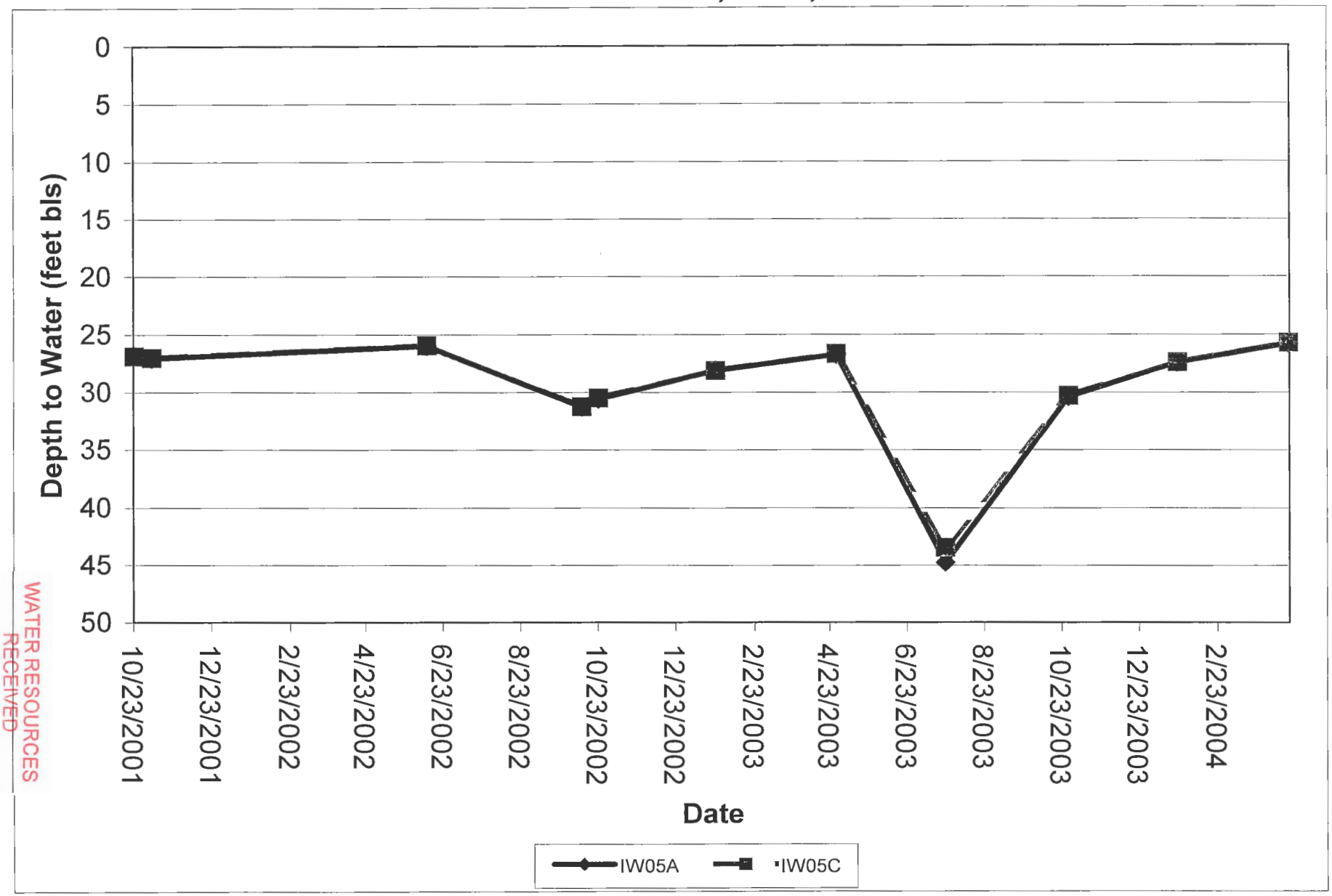
6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other Bentonite Holeplug
Grout Intervals: From ft. to ft., From ft. to ft., From 0 ft. to 225 ft.
What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer 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 known
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	4	Topsoil	124	151	Clay, green
4	6	Clay, dark gray	151	154	Sand, coarse to fine
6	9	Clay, gray	154	190	Clay, dark gray with sand streaks
9	13	Clay, tan, sandy	190	205	Sand, coarse to fine with clay streaks
13	19	Gravel, coarse to fine with sand, coarse to fine	205	215	Clay, grey
19	62	Clay, tan and green with gravel streaks	215	219	Sand, coarse to fine
62	75	Sand, coarse to fine with clay streaks and gravel,	219	232	Clay, green
		medium, fine	232	253	Sand, coarse to fine
75	90	Clay, dark gray with sand streaks, fine to medium	253	257	Clay, grayish brown
90	95	Sand, coarse to fine	257	265	Shale, black
95	102	Clay, tan and green with sand streaks			
102	106	Sand, coarse to fine			
106	119	Clay, green with sand streaks			
119	124	Sand, coarse to fine			

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) 10-17-02 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/yr) 10-24-02
under the business name of Clarke Well & Equipment, Inc. by (signature)

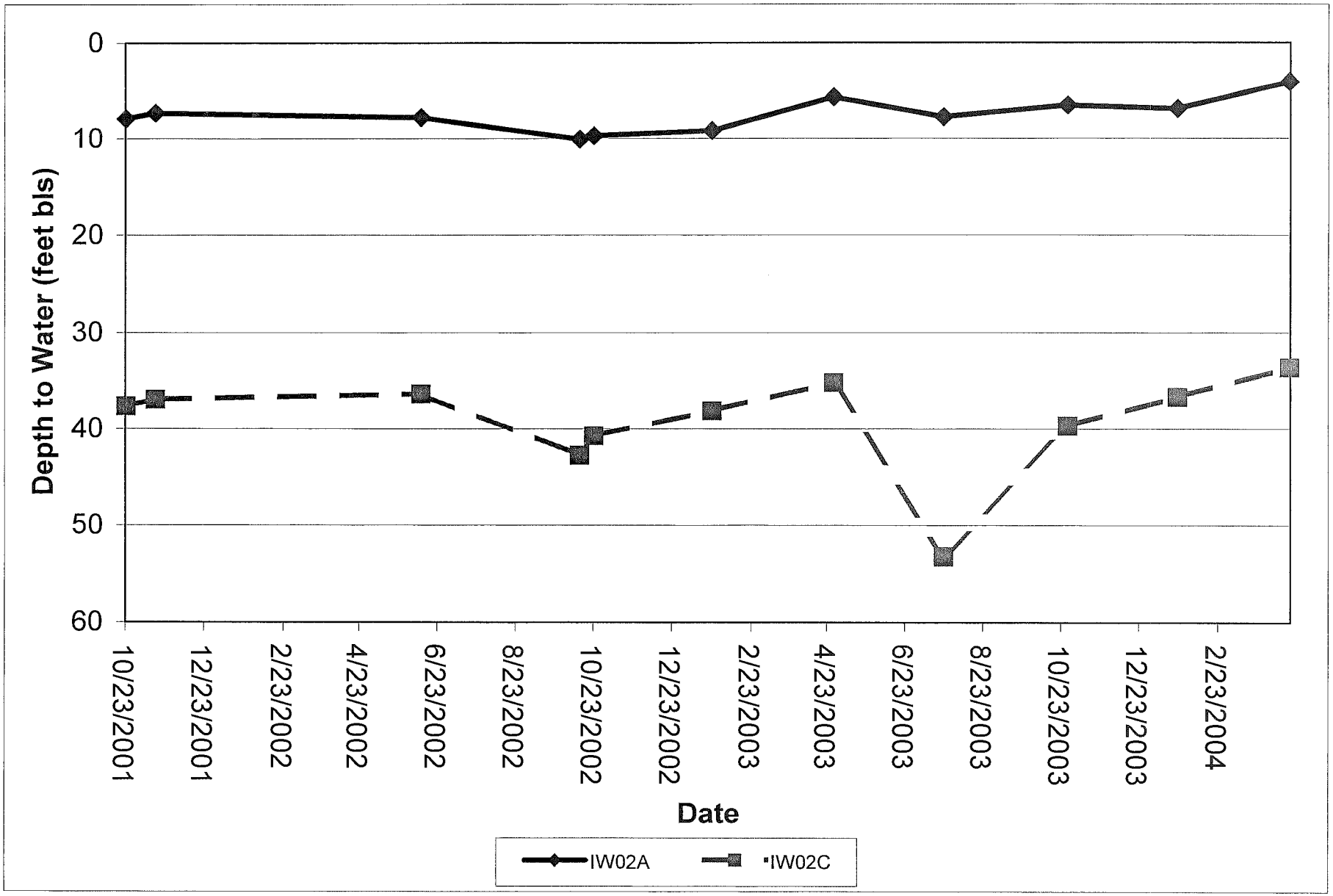
INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone 785-296-5524. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

Figure 7. – Application No. 45568 Lithologic Log for Test Well at Proposed ASR Well Site



IW05A Depth = 65 feet
IW05C Depth = 190 feet

Figure 8 .



IW02A Depth = 26 feet
IW02C Depth = 95 feet

Figure 9.

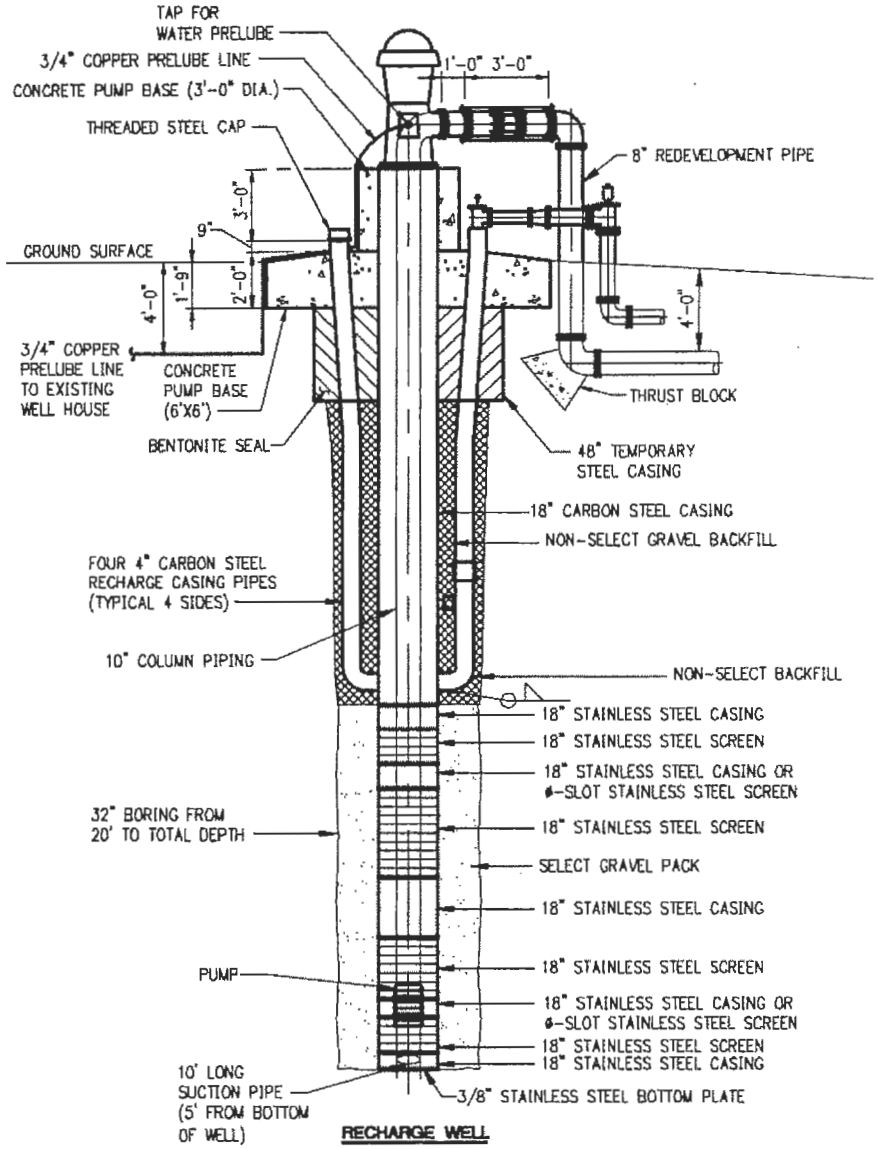
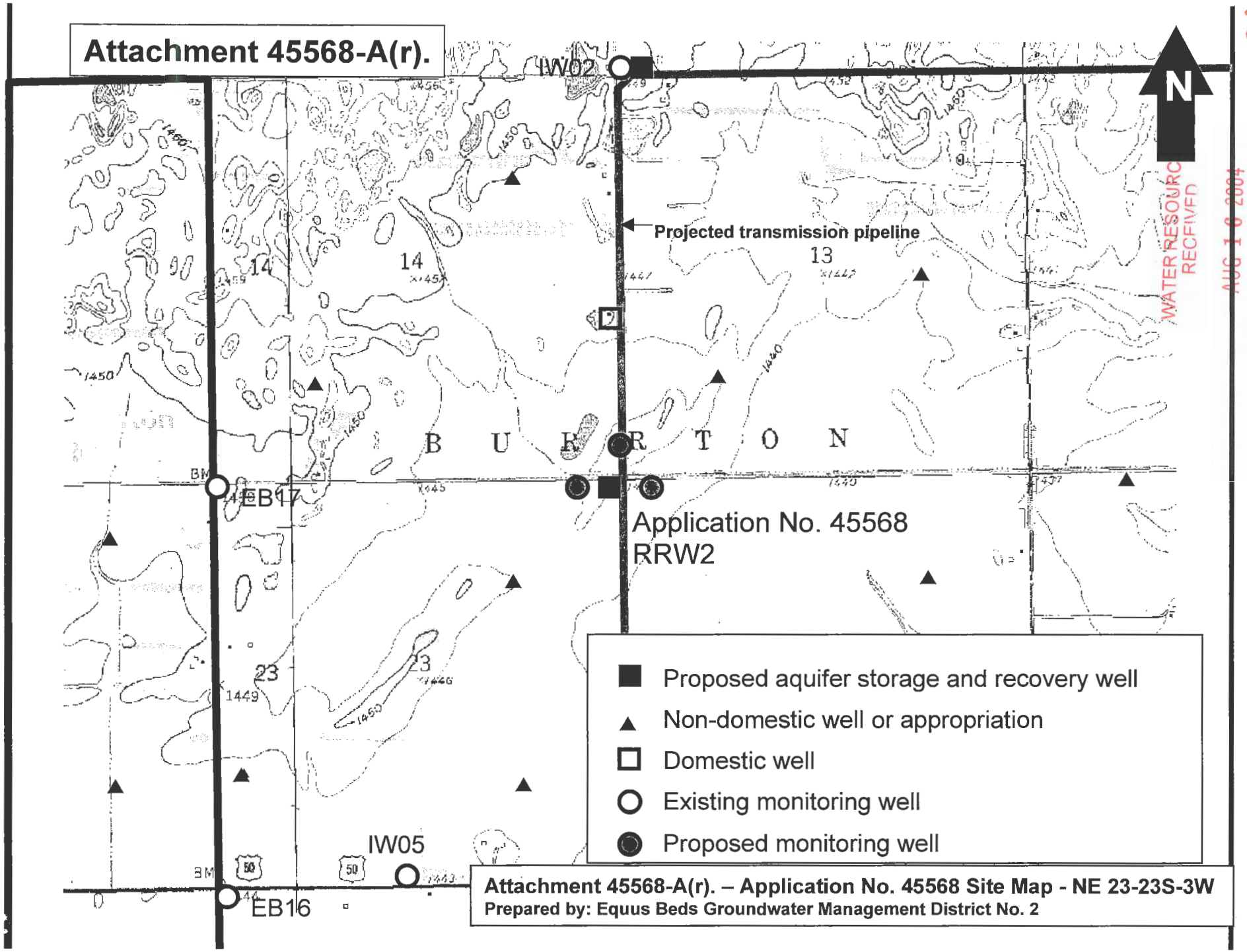


Figure 10. – Application No. 45568 Example of Construction Design for Recharge and Recovery Well



SEE EXHIBIT R

DRAFT MOU
GMD LETTER TO CHIEF ENGINEER
AUGUST 12, 2004

SEE EXHIBIT S

INDEPENDENT CONSULTANT'S REPORT
GMD LETTER TO CHIEF ENGINEER
AUGUST 12, 2004

[DO NOT BATE-STAMP]