

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

1. File Number: <p style="text-align: center;">50026</p>	2. Status Change Date: <p style="text-align: center;">5/6/2020</p>	3. Field Office: <p style="text-align: center;">2</p>	4. GMD: <p style="text-align: center;">2</p>
5. Status: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied by DWR/GMD <input type="checkbox"/> Dismiss by Request/Failure to Return			
6. Enclosures: <input checked="" type="checkbox"/> Check Valve <input checked="" type="checkbox"/> N of C Form <input checked="" type="checkbox"/> Water Tube <input checked="" type="checkbox"/> Driller Copy <input checked="" type="checkbox"/> Meter			
<p>7a. Applicant(s) Person ID New to system <input type="checkbox"/> Add Seq# 66011</p> <p style="text-align: center;">MARY S MCCURRY 11913 E ILLINOIS AVE BURRTON KS 67020</p>	<p>7c. Landowner(s) Person ID 66012 New to system <input type="checkbox"/> Add Seq# _____</p> <p style="text-align: center;">CHARLES E RUDICEL III 3604 N MAPLE ST HUTCHINSON KS 67502</p>		
<p>7b. Landowner(s) Person ID 62963____ New to system <input type="checkbox"/> Add Seq# _____</p> <p style="text-align: center;">ANDREW J & MARY S MCCURRY TRUST 11913 E ILLINOIS AVE BURRTON KS 67020</p>	<p>7d. Misc. Person ID _____ New to system <input type="checkbox"/> Add Seq# _____</p>		
<p>8. WUR Correspondent Person ID 62963 New to system <input type="checkbox"/> Add Seq# _____ Overlap File (s) WUC Notarized WUC Form <input type="checkbox"/> Agree <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>7b.</p>	<p>9. Use of Water: Changing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water</p> <p><input checked="" type="checkbox"/> IRR <input type="checkbox"/> REC <input type="checkbox"/> DEW <input type="checkbox"/> MUN</p> <p><input type="checkbox"/> STK <input type="checkbox"/> SED <input type="checkbox"/> DOM <input type="checkbox"/> CON</p> <p><input type="checkbox"/> HYD DRG <input type="checkbox"/> WTR PWR <input type="checkbox"/> ART RECHRG</p> <p><input type="checkbox"/> IND SIC: _____ <input type="checkbox"/> OTHER: _____</p>		
10. Completion Date: 12/31/2021 11. Perfection Date: 12/31/2025 12. Exp Date: _____			
13. Conservation Plan Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date Required: _____ Date Approved: _____ Date to Comply: _____			
14. Water Level Measuring Device? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date to Comply: _____ Date WLMD Installed: _____			
Date Prepared: 1/16/2019 By: LI Date Entered: 5/11/2020 By: _____ LMoody			

File No. **50,026** 15. Formation Code: 190 Drainage Basin: Little Arkansas River County: RN Special Use: **013 BURRTON IGUCA** Stream:

16. Points of Diversion										17. Rate and Quantity					
MOD	DEL	ENT	PDIV	Qualifier	S	T	R	ID	'N	'W	Rate gpm	Quantity af	Rate gpm	Quantity af	Overlap PD Files
MOD			81043	SW NW SW	35	23	4W	3	1325	5290	800	215.6	00	110.6	48417
GPS UP DATE															

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

19. Limitation: _____ 215.6 _____ af/yr at _____ 800 gpm (**1.78** cfs) when combined with file number(s) 48417 _____
 Limitation: _____ af/yr at _____ gpm (_____ cfs) when combined with file number(s) _____

20. Meter Required? Yes No To be installed by 12/31/2020 **2021** Date Acceptable Meter Installed _____

21. Place of Use	NE¼				NW¼				SW¼				SE¼				Total	Owner	Chg? NO	Overlap Files			
	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
MOD			68809	35	23	4W	4						40.0	15.5						55.5	7a	NO	48417
CHK			64096	35	23	4W	3					40.0		13.5	36.0					89.5	7b	NO	48417
CHK			68810	35	23	4W	5							9.0						9.0	7c	NO	48417

Comments: **Special Conditions: WATER QUALITY SAMPLING ~~BIANNUAL MAX 250 mg/L~~** **EXISTING WELL CONSRUCTION CONDITION** 5/1/2020
KAB

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources
MEMORANDUM

TO: Files

DATE: January 28, 2019

FROM: Leslie Ireland

RE: Appropriation of Water, File No. 48,417
Application, File No. 50,026

Mary S. McCurry as an owner of the above referenced right has filed an application to change the irrigated place of use and an application for a new appropriation, all received on March 28, 2018. The applicant was assisted by Tim Boese, Equus Beds Groundwater Management District No. 2 (GMD 2). The place of use for the existing appropriation is in the extreme western portion of the Burton IGUCA in the Little Arkansas River basin, Reno County.

The referenced file does not appear to be abandoned as per K.S.A. 82a-718. The application for change appears to comply with K.A.R. 5-3-2ab, *Complete change application*. The Reno County property database indicates the trusts of Mary S. McCurry along with Andrew J. McCurry then a Charles E. Rudicel III, as owners of the currently authorized and proposed place of use.

The currently authorized place of use under the existing rights is 75 acres in the West Half of the Southwest Quarter (W $\frac{1}{2}$ SW $\frac{1}{4}$) of Section 35, in Township 23 South, Range 4 West, Reno County. **File No. 48,417**, is authorized **105 acre-feet (AF) at 800 gallons per minute (gpm)** from the point of diversion that is also the proposed well under File No. 50,026. The existing appropriation would have the authorized 75 acres as the "base acres". The feet distances on the well will be updated from the 2017 Compliance Investigation, from 1,356 feet North and 5,176 feet West to 1,325 feet North and 5,290 feet West of the Southeast corner of Section 35, and will remain as designated in the Southwest Quarter of the Northwest Quarter of the Southwest Quarter (SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$) of Section 35, Township 23 Range 4 West. A correction of approximately 118 feet. As less than 300 feet the update complies with K.A.R. 5-5-6, *Failure to construct diversion works at authorized location*.

The proposed change in place of use is to add 79 contiguous acres, authorizing a total of 154 acres. Per KAR 5-3-24, *Reasonable quantity for irrigation use*, Reno county is afforded 1.4 AF per acre, allowing 215.6 AF for the proposed place of use. The new appropriation, File No. 50,026 is proposed to divert a limited 215.6 AF at 800 gpm from the well currently authorized by File No. 48,417. The new appropriation will provide an additional 110.6 AF.

The safe yield for the requested additional quantity was determined in this special use area by the Equus Beds Groundwater Management District No. 2, staff. The extent of the alluvium for the area of consideration is 8,042 acres, with the total area in the 6 inch recharge zone. Safe yield was determined to be 4,021.00 acre-feet. Existing water rights have appropriated 3,553.00 acre-feet within the area of consideration, leaving 468 acre-feet available. The request for the total 215.6 acre-feet is available. File No. 50,026 will be authorized a limited 215.6 acre-feet and 800 gallons per minute when combined with File No. 48,417.

The proposed existing well was constructed in 2014. It appears to have a depth of 41 feet and a static water level of 6 feet. Recent data indicates decreasing chloride values at this point of diversion in the IGUCA. Biannual water quality testing with a maximum of 250 mg/l will continue to be required.

The review and recommendation by the Equus Beds Groundwater Management District No. 2, required the same conditions as the permit for File No. 48,417. The required testing for chloride levels will be continued and a condition of the new permit to further verify the additional pumping will not cause the chloride concentrations to increase. The Equus Beds Groundwater Management District No. 2, recommendation was further detailed in Tim Boese, Manager, letter of December 19, 2018, summarizes the conditions and recommended approval by the District Board of Directors. The portion of the recommendation concerning review actions for elevated chlorides was further explained by Tim Boese in emails dated April 4, 2019, and January 8, 2020. The recommendation also contained the standard requirement of the Districts Rules and Regulations K.A.R 5-22-1 through 5-22-17, be applicable to the permit and approval.

As a new permit has been recommended to be approved, it appears the change in place of use meets part No. 6 of the regulation, with no increase in historic net consumptive use of K.A.R. 5-5-11, *Applications for change in place of use for irrigation purposes*. This will result in acres being authorized. The new appropriation will provide an additional 110.6 acre-feet, bringing the total combined quantity to 215.6 acre-feet. The additional quantity will assure that the historical consumptive use under the referenced files will not increase and the proposal complies with K.A.R. 5-5-3, *Change in consumptive use*.

A water conservation plan meeting the guidelines of the Kansas Water Office will not be required as there appears to be sufficient quantity authorized for irrigation use.

There are four (4) domestic wells located within one-half (½) mile of the proposed existing point of diversion. Letters providing notice were mailed on September 19, 2018. No comments of any kind were received.

In an email dated January 24, 2019, Jeff Lanterman, Water Commissioner of the Stafford Field Office recommended approval of the application for change with the approval of the new appropriation.

If the applicant is proposing to chemigate, an approved check valve will be required on the diversion works. An approved flow meter will be required on the diversion works in accordance K.S.A 82a-706c, and will be required to meet the GMDs meter regulations. Water level measurement tubes and WWC-5s will not be conditions of the change. The permit will contain the additional conditions for permits in the Burrton IGUCA that have historically been in place.

Based on the above discussion, that water is available for the new appropriation, that consumptive use will not substantially increase, impairment to existing water rights is unlikely, the application for permit and approval for change have been recommended for approval.



Leslie Ireland
Environmental Scientist
Water Appropriation Program

From: Ireland, Leslie [KDA]
Sent: Thu 4/30/2020 4:27 PM
To: Baum, Kristen [KDA]
Subject: FW: Recommendation for Permit File No. 50026 & change File No. 48417_PU McCurry
Attachments: 50026_app irr 48417_PU_ memo2_2.docx

From: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>
Sent: Thursday, January 24, 2019 3:32 PM
To: Ireland, Leslie [KDA] <Leslie.Ireland@ks.gov>; Conant, Cameron [KDA] <Cameron.Conant@ks.gov>
Subject: RE: Recommendation for Permit File No. 50026 & change File No. 48417_PU McCurry

Leslie.

I think as part of the IGUCA review this one might eventually be out of the IGUCA. The plume is moving east and I think one of the recommendations was to move the IGUCA east a township. Of course if we change any of the provisions of the IGUCA we will have to have another hearing to do it. That happens to be something I agree with. That said the chlorides were a little elevated in the recent Servitech sample. Although some of the earlier ones collected by GMD 2 were fresher.

Looks like we did a good job contacting surroundings, and thank you for updating the feet distances on both files based on our GPS and compliance check.

The Irrigation supplemental sheet says that they will be pivot irrigating and I am not sure how they will do that place of use with a pivot but we can work all that out at certification time.

The authorized quantity represents 1.4 af/a which is the maximum allowable in Reno county and is a reasonable quantity for both files when operated together.

Nearest water levels bracketing this proposed water right appear rock solid, and is not in an area of known water level declines.

http://hercules.kgs.ku.edu/geohydro/wizard/wizardwelldetail.cfm?usgs_id=380000097463001

http://hercules.kgs.ku.edu/geohydro/wizard/wizardwelldetail.cfm?usgs_id=380000097463003

http://hercules.kgs.ku.edu/geohydro/wizard/wizardwelldetail.cfm?usgs_id=380139097420604

http://hercules.kgs.ku.edu/geohydro/wizard/wizardwelldetail.cfm?usgs_id=375909097434402

I recommend approval of the change application as well as the new application.

Thank You Leslie.

Jeff

From: Ireland, Leslie [KDA]
Sent: Wednesday, January 16, 2019 11:59 AM
To: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>; Conant, Cameron [KDA] <Cameron.Conant@ks.gov>
Subject: FW: Recommendation for Permit File No. 50026 & change File No. 48417_PU McCurry

Jeff & Cameron

I added a paragraph about the notification.. didn't receive any comments.. so forgot to put it in my original summary memo.

Let me know if there is anything else,, when you can.

Leslie

From: Ireland, Leslie [KDA]

Sent: Friday, January 11, 2019 9:26 AM

To: Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>; Conant, Cameron [KDA] <Cameron.Conant@ks.gov>

Subject: Recommendation for Permit File No. 50026 & change File No. 48417_PU McCurry

Jeff & Cameron,

It has been a long time since I've had to do a package for your area.

Please let me know if you see anything needing clarification or perhaps I missed in this summary memo, and mainly if you'd recommend this project.

Leslie Ireland, Environmental Scientist
Kansas Department of Agriculture
Division of Water Resources - Change Unit
(785) 564-6633
Leslie.Ireland@ks.gov
www.agriculture.ks.gov

From: Ireland, Leslie [KDA]
Sent: Thu 4/30/2020 4:26 PM
To: Baum, Kristen [KDA]
Subject: FW: Application No. 50026

From: Tim Boese <tboese@gmd2.org>
Sent: Wednesday, January 8, 2020 4:52 PM
To: Turney, Brent [KDA] <Brent.Turney@ks.gov>
Cc: Ireland, Leslie [KDA] <Leslie.Ireland@ks.gov>
Subject: RE: Application No. 50026

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Brent / Leslie – I have reviewed the information I sent on April 4, 2019 (below), regarding the District's proposed condition that if Chloride levels equaled or exceeded 250 mg/L from the proposed irrigation well, then the permit would be subject to Board review. I believe my answer was satisfactory, but I would like to add the following:

1. From my research, it appears that most, if not all of the appropriation permit applications that have been approved in the Burrton IGUCA and Hollow-Nikkel SWQUA since those areas were established, contain this type of condition. This includes almost 50 water permits that the District made recommendations of approval with conditions (including the Board review if Chloride values exceeded a set value) and the Chief Engineer agreed and included the conditions. Most contain a 500 mg/L Chloride trigger for Board review, but some have a lower limit in the case of municipal use or nearby domestic wells. This is consistent with the District's testimony during the original IGUCA Hearing on August 4, 1982, during which the GMD2 Manager testified that the EPA established recommended drinking water Chloride limit is 250 mg/L and that the District's belief was that a maximum 500 mg/L Chloride concentration is safe for irrigation use in the area.
2. Monitoring the Chloride values in both the District's monitoring wells and the permitted wells in the Burrton IGUCA is essential to track the contamination movement and protect the aquifer and water users.
3. Having a set Chloride limit in permitted wells allows the District and District Board to review the Chloride values and make recommendations if the Chloride value exceeds the set limit. This is vital for protecting not only the aquifer and other groundwater users, but also the water permit owner. For example, the owner of Water Permit No. 43000 re-drilled the authorized well to a different depth after exceeding the 500 mg/L trigger and GMD Board review. The owner of No. 42968 also re-drilled recently to a different depth after approaching/exceeding the 500 mg/L limit. This did not take a Board review, because the District staff samples the well twice annually and notified the owner of the Chloride values (as it does for all of the water permits in the Burrton IGUCA and SWQUA with these conditions). These actions on both permits not only protected the upper aquifer from contamination due to high Chloride water being pumped from a lower aquifer depth and then being applied to a sandy soil with a shallow depth to water, it also protected the owner's investment and farm ground. Without the required monitoring and trigger, I can't say that the owner would have re-drilled, at least not as quickly as he did. I can't speak for the owner directly, but I can say without question that the owner was extremely happy that we take samples, notified him of the results, and provided recommendations on what depths to re-drill the wells.
4. The District is aware that the Chief Engineer's ability to modify existing water permits was severely limited by the Clawson case. The proposed condition of a Chloride limit triggering a GMD2 Board review does not appear to be inconsistent with the Clawson ruling, as the Board would review and make recommendations for the permit owner and Chief Engineer.

5. It makes more sense to be proactive and sample the permitted wells in the Burrton IGUCA, have the samples analyzed for salinity concentrations (including Chloride) and have a set Chloride value trigger for Board review, rather than be reactive if the pumped water Chloride concentrations increase to an unusable level and the District has to investigate the use as a potential waste of water as defined in K.A.R. 5-22-1 (II)(2).

Hope this helps. As has been done for the past ~ 50 applications in the Burrton IGUCA and Hollow-Nikkel SWQUA, the District requests that the application be approved with the District's recommended conditions.

Thanks.

Tim Boese, Manager
Equus Beds GMD2
313 Spruce, Halstead, Kansas 67056
316-835-2224
Fax: 316-835-2225
tboese@gmd2.org
www.gmd2.org

From: Tim Boese [<mailto:tboese@gmd2.org>]
Sent: Thursday, April 04, 2019 3:55 PM
To: 'Turney, Brent [KDA]'
Subject: Application No. 50026

Brent – You recently inquired about the District's recommendation of approval of Application No. 50026, that included a proposed condition that if Chloride levels equaled or exceeded 250 mg/L from the proposed irrigation well, then the permit would be subject to Board review. You specifically asked where this recommended condition comes from. Below is summary of my explanation.

1. Application No. 50026 is located in the Burrton IGUCA, and is therefore reviewed by the District staff and Board on a case by case basis. Besides having to meet all applicable District rules and regulations, the application is also reviewed to determine the proximity to the known salt plumes in the aquifer, the impact the proposed pumping will have on the salt plume, and the possible impacts to nearby existing wells. The District reviews all new water permit applications in the Burrton IGUCA and the Equus Beds SWQUA in this manner.
2. The drinking water standard for Chloride is 250 mg/L and the District uses 500 mg/L as the maximum level considered useable for irrigation (see the Burrton IGUCA Findings and Order establishing the Burrton IGUCA in which the District testified to this).
3. Most, if not all, of the new water permits approved in the Burrton IGUCA and the Equus Beds SWQUA (after the areas were established), included a condition that set the maximum concentration limit for Chloride, and if the limit was equaled or exceeded, the permit is subject to Board review. Most of these permits have the Chloride limit set at 500 mg/L, however a few have the limit set at 250 mg/L if there are nearby domestic wells.
4. The reason for the Chloride concentration limit and Board review is to help ensure that the proposed pumping doesn't negatively impact the salt plume movement or other groundwater users in the area. If the Chloride values increase above the set limit, the Board can review and make recommendations to alleviate or eliminate the impact the well pumping is causing. For example, there has been at least one case where the Chloride values exceeded 500 mg/L and the Board reviewed and recommended/requested that the irrigation well be drilled to a different depth. The well was re-drilled to a different aquifer zone and Chloride levels dropped below 500 mg/L and have stayed below the limit, thus eliminating the adverse impact to the aquifer and possibly other groundwater users.

5. For Application No. 50026, the Chloride limit was set at 250 mg/L due to multiple nearby domestic wells. If the operation of the proposed irrigation well causes the Chloride values in the areas to exceed 250 mg/L, then the Board could review and request/recommend that the well is either re-drilled to a different depth, moved to a different location, or some other step(s) to reduce or eliminate the adverse impact.

Hope this helps. The District recommends that Application No. 50026 be approved with the conditions recommended by the Board.

Thanks.

Tim Boese, Manager
Equus Beds GMD2
313 Spruce, Halstead, Kansas 67056
316-835-2224
Fax: 316-835-2225
tboese@gmd2.org
www.gmd2.org

From: Ireland, Leslie [KDA]
Sent: Thu 4/30/2020 4:39 PM
To: Baum, Kristen [KDA]
Subject: FW: 48417 and 50026 Approval Recommendation Letters
Attachments: 48417 Approval Recommendation Letter 12-19-18.pdf, 50026 Approval Recommendation Letter 12-19-18.pdf

From: Rebecca Wilson <rwilson@gmd2.org>
Sent: Tuesday, January 8, 2019 11:45 AM
To: Ireland, Leslie [KDA] <Leslie.Ireland@ks.gov>
Subject: 48417 and 50026 Approval Recommendation Letters

EXTERNAL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hi, Leslie!

Attached you will find the Approval Recommendation Letters from Manager Tim Boese for #48417 and #50026.

I apologize that these are late in getting to you, but I believed that I sent them prior to the holidays. If so, I apologize for sending them twice!

Please let me know if you have any difficulties opening the attachments.

Thanks!

Rebecca Wilson

Rebecca Wilson
Administrative Assistant
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EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE STREET • HALSTEAD, KANSAS 67056-1925 • PHONE (316) 835-2224 • FAX (316) 835-2225 • equusbeds@gmd2.org • www.gmd2.org

December 19, 2018

Chief Engineer, Division of Water Resources
Attn: Leslie Ireland
1320 Research Park Drive
Manhattan, Kansas 66502

Re: Application No. 50026 – Mary S. McCurry

Dear Ms. Ireland:

The referenced application was reviewed by the Equus Beds Groundwater Management District No. 2, Board of Directors at the December 5, 2018, meeting. District staff and the applicant presented information regarding the application. A copy of the District's Application Review Information report is enclosed for your information.

Upon review of the information presented and discussed at the meeting, and based on findings that:

1. The application complies with the District's Revised Management Program (effective May 1, 1995), and Rules and Regulations K.A.R. 5-22-1 through 5-22-17;
2. The application is subject to District metering regulation K.A.R. 5-22-4a;
3. The well proposed by the application is the irrigation well authorized by Water Permit No. 48417. The proposed place of use identically overlaps the place of use proposed by the change application filed on Water Permit No. 48417.
4. The District Board of Directors reviewed Application No. 48417 on May 13, 2014, and recommended it for approval, subject to several conditions.
5. Current hydrologic conditions, including chloride concentrations, in the area of the application are similar to the hydrologic conditions when the Board reviewed Application No. 48417.
6. Water quality data obtained from water samples collected from the proposed irrigation well authorized by Water Permit No. 48417 indicates a decreasing trend in chloride concentrations at the well site.

It was the decision of the Board of Directors to recommend to the Chief Engineer that the application be approved, subject to:

1. The proposed well shall comply with the well construction standards adopted by the Kansas Department of Health and Environment for the Burrton Intensive Groundwater Use Control Area.
2. The constructed well be equipped with a sample port or ports for water sample collection.
3. The point of diversion be restricted to the aquifer's uppermost zone with the lower screen limit of the proposed well to be set at or above the first encountered significant clay layer (approximately 40 feet below land surface).
4. The applicant submit biannual water samples collected from the point of diversion to be collected at the start and end of each pumping season and analyzed by a State accredited water quality laboratory for chloride and specific conductance.
5. Water sample collection shall be conducted by trained and qualified persons as determined by the Division of Water Resources and the Equus Beds Groundwater Management District. The collection and water quality analysis of each sample shall be completed at the applicant's expense.
6. Any application for change in point of diversion to modify the well to a depth greater than the first encountered significant clay layer (approximately 40 feet below land surface), shall be subject to District Board review.
7. The permit shall be subject to Board review if chloride concentrations from the point of diversion equal or exceed 250 mg/L;
8. The approved water permit is subject to the provisions of the June 1, 1984, Burrton Intensive Groundwater Use Control Area order or any revisions thereof.

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 the date of this notification, pursuant to K.A.R. 5-22-12.

Please contact the District if you have any questions regarding the District's findings or recommendation.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2



Tim Boese
Manager
TDB/db
Enclosure

pc: Andrew J. McCurry Trust and Mary S. McCurry Trust, Landowners
Charles E. Rudicel III, Landowner
Jeff Lanterman, Division of Water Resources, Stafford

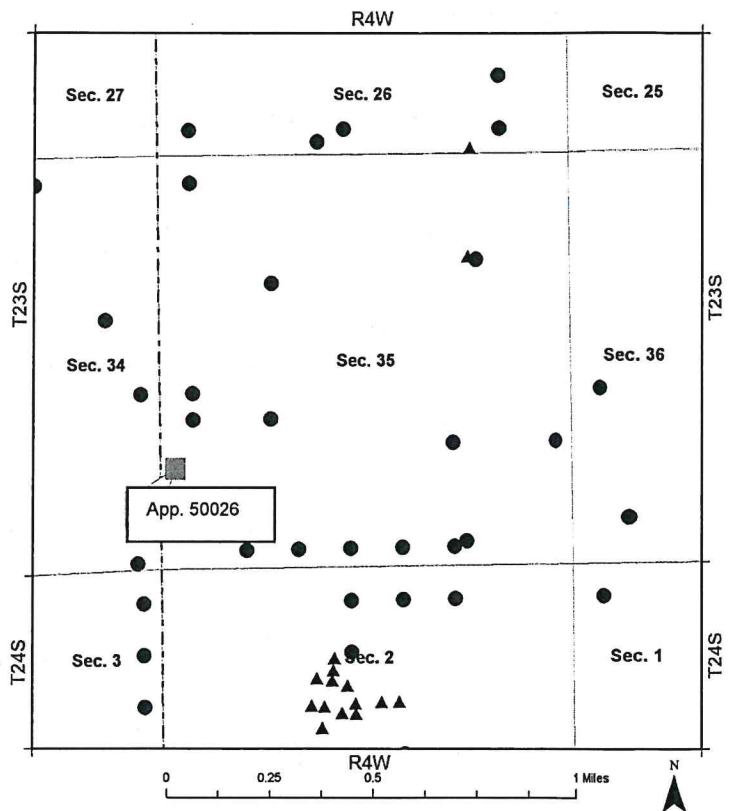
APPLICATION REVIEW INFORMATION

NAME Mary S. McCurry APPLICATION NO. 50026
 ADDRESS 11913 E Illinois Ave NEW APPL. X
Burrton, KS 67020 COUNTY Reno TRACT SW-NW-SW
 WELL LOCATION S 35 T 23S R 4W

CHG. P/U _____
 CHG. P/D _____
 CHG. USE _____
 QUANT 215.6 (LTD) AF/Y RATE 800 (LTD) GPM
 WELL SPACING D>660', ND>1320'

- Proposed Well
- ▲ Existing Non-Domestic Well
- Existing Domestic Well

ISSUE: Board review of an application for a water permit in the Burrton Intensive Groundwater Use Control Area.



BACKGROUND INFORMATION:

JUN 1, 1984 - Chief Engineer, DWR, ordered the establishment of the Control Area as a result of deterioration of the quality of groundwater occurring within the Control Area. The Control Area was established and corrective control provisions initiated in order to protect the public interest. All applications to appropriate groundwater in the Control Area are reviewed on a case by case basis

April 13, 2004 – The Board of Directors, by approved motion, implemented the following criteria to be utilized for future reviews of applications filed in the Burrton IGUCA:

- 1) Applications filed for proposed points of diversion located down gradient of the maximum contamination areas of the saltwater plumes shall not be recommended for approval; and
- 2) Applications filed for proposed points of diversion located up gradient of the maximum contamination areas of the saltwater plumes shall be reviewed on a case-by-case basis by the District Board of Directors to determine site specific effects on the aquifer and prior appropriations.

March 28, 2018 – The applicant filed a new water permit application for a single point of diversion (well) located in the Southwest quarter of the Northwest quarter of the Southwest quarter, (1356'N & 5176'W), Section 35, Township 23 South, Range 4 West, Reno County. The proposed well is the existing irrigation well authorized by Water Permit No. 48417. The applicant also filed a change in place of use application on Water Permit No. 48417 to completely overlap No. 50026 proposed place of use.

October 18, 2018 – The District received a request from DWR to review and make a recommendation on the new application No. 50026, and the place of use application filed on No. 48417

October 25, 2018 – The District requested an extension of time to the review the applications and schedule for Board review.

November 28, 2018 – The District notified the applicant that the application would be reviewed by the District Board of Directors at the December 5, 2018, meeting.

FINDINGS: The application is subject to the Revised Management Program, and Rules and Regulations adopted by the Board of Directors.

The application is for a proposed irrigation well located in the extreme western portion of the Burrton IGUCA.

The application is subject to the District's metering regulation K.A.R. 5-22-4a.

The application requests 215.60 acre-feet per year of water at a rate of 800 GPM for irrigation use from an existing irrigation well authorized by Water Permit No. 48417 located in the Southwest quarter of the Northwest quarter of the Southwest quarter of Section 35, Township 23 South, Range 4 West, Reno County (Figure 1). The proposed rate and quantity is further limited to 215.60 acre-feet per year and 800 GPM when combined with the 105 acre-feet year and 800 GPM authorized by Water Permit No. 48417, resulting in a 110.60 acre-feet per year net quantity of water quantity requested. The proposed place of use is 154 acres located in the Southwest quarter of Section 35, Township 23 South, Range 4 West (Figure 1). The proposed place of use identically overlaps the place of use proposed by the change in place of use application filed on No. 48417, which proposes to increase the place of use of No. 48417 from 75 acres to 154 acres (Figure 2).

The application complies with Safe Yield Regulation 5-22-7. The District safe-yield analysis found that the application with existing appropriations within the area of consideration (2 mile radius circle) totaled 3553.00 AF/Y (Figure 3). The maximum allowable quantity is 4021.00 AF/Y.

The application complies with Well Spacing Regulation 5-22-2 (Figure 4).

The proposed well is an existing irrigation well authorized by Water Permit No. 48714. The 16 inch well was drilled and constructed on September 29, 2014 and was completed at a total depth of 41 feet below land surface (Exhibit A).

Application No. 48417 was reviewed by the Board of Directors at the May 13, 2014, meeting. The Board was provided with an extensive review (Exhibit B) of the application and aquifer conditions, including nearby water quality information. Based on the review, the Board recommended Application No. 48417 be approved, subject to several conditions including biannual sampling and well depth restrictions (Exhibit B).

The Division of Water Resources approved Application No. 48417 on August 26, 2014.

A review of water quality data from nearby monitoring well site EB44 located approximately 0.90 mile northeast of the proposed well shows all three zones of the aquifer chloride values are below 200 mg/L, fairly stable, and not showing an increasing trend (Figures 5-7). The most recent samplings on September 19, 2018 show the following chlorides value as:

- EB 44A (52 feet): 28 mg/L
- EB44B (90 feet): 66 mg/L
- EB44C (182 feet): 118 mg/L

Water quality data obtained from water samples collected from the proposed well as required by the conditions of Water Permit No. 48417 shows the chloride values from the operating well as:

Date Sampled	Chloride Value
June 29, 2015	130 mg/L
September 1, 2015	126 mg/L
June 30, 2016	106 mg/L
October 25, 2016	65.6 mg/L
July 12, 2007	91.3 mg/L
November 8, 2017	70.0/mg/L
June 12, 2018	89.9 mg/L

The data collected from the proposed irrigation well authorized by Water Permit No. 48417 indicates a decreasing trend in chloride concentrations. The data further indicates that chloride concentrations may be higher during more active irrigation times, as the chloride values are higher for samples collected during the summer months compared to the samples collected during the fall.

STAFF RECOMMENDATIONS:

Based on the following District findings that:

- 1) The application complies with the District's Revised Management Program (effective May 1, 1995), and Rules and Regulations K.A.R. 5-22-1 through 5-22-17;
- 2) The application is subject to District metering regulation K.A.R. 5-22-4a;
- 3) The well proposed by the application is the irrigation well authorized by Water Permit No. 48417. The proposed place of use identically overlaps the place of use proposed by the change application filed on Water Permit No. 48417.
- 4) The District Board of Directors reviewed Application No. 48417 on May 13, 2014, and recommended it for approval, subject to several conditions.
- 5) Current hydrologic conditions, including chloride concentrations, in the area of the application are similar to the hydrologic conditions when the Board reviewed Application No. 48417.
- 6) Water quality data obtained from water samples collected from the proposed irrigation well authorized by Water Permit No. 48417 indicates a decreasing trend in chloride concentrations at the well site.

Staff recommends that the application for approval subject to:

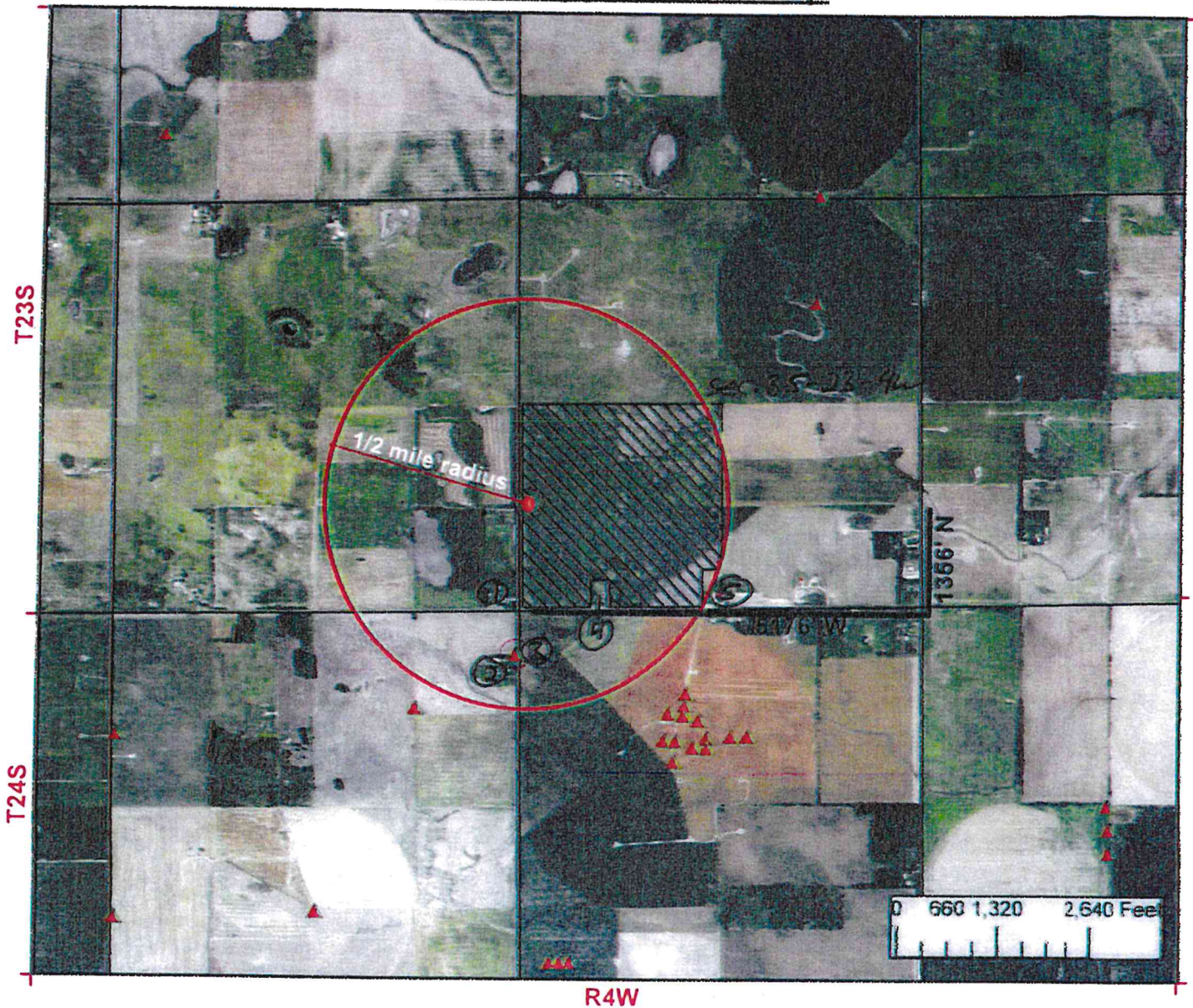
1. The proposed well shall comply with the well construction standards adopted by the Kansas Department of Health and Environment for the Burrton Intensive Groundwater Use Control Area.
2. The constructed well be equipped with a sample port or ports for water sample collection.
3. The point of diversion be restricted to the aquifer's uppermost zone with the lower screen limit of the proposed well to be set at or above the first encountered significant clay layer (approximately 40 feet below land surface).
4. The applicant submit biannual water samples collected from the point of diversion to be collected at the start and end of each pumping season and analyzed by a State accredited water quality laboratory for chloride and specific conductance.
5. Water sample collection shall be conducted by trained and qualified persons as determined by the Division of Water Resources and the Equus Beds Groundwater Management District. The collection and water quality analysis of each sample shall be completed at the applicant's expense.
6. Any application for change in point of diversion to modify the well to a depth greater than the first encountered significant clay layer (approximately 40 feet below land surface), shall be subject to District Board review.
7. The permit shall be subject to Board review if chloride concentrations from the point of diversion equal or exceed 250 mg/L;
8. The approved water permit is subject to the provisions of the June 1, 1984, Burrton Intensive Groundwater Use Control Area order or any revisions thereof.

Additionally, staff recommends the change in place of use application filed on Water Permit No. 48417 for approval, subject to the approval of Application No. 50026.

FIGURE 1

50026

New Application Map



I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotted on the application map.

Mary A. McLeary
Signature

3-22-18
Date

- New Application**
- Application No. To Change:**
 - Point of Diversion
 - Place of Use
 - Use Made of Water

- Proposed Point of Diversion
- Existing Points of Diversion
- Authorized Place of Use
- Proposed Place of Use



MAR 28 2018

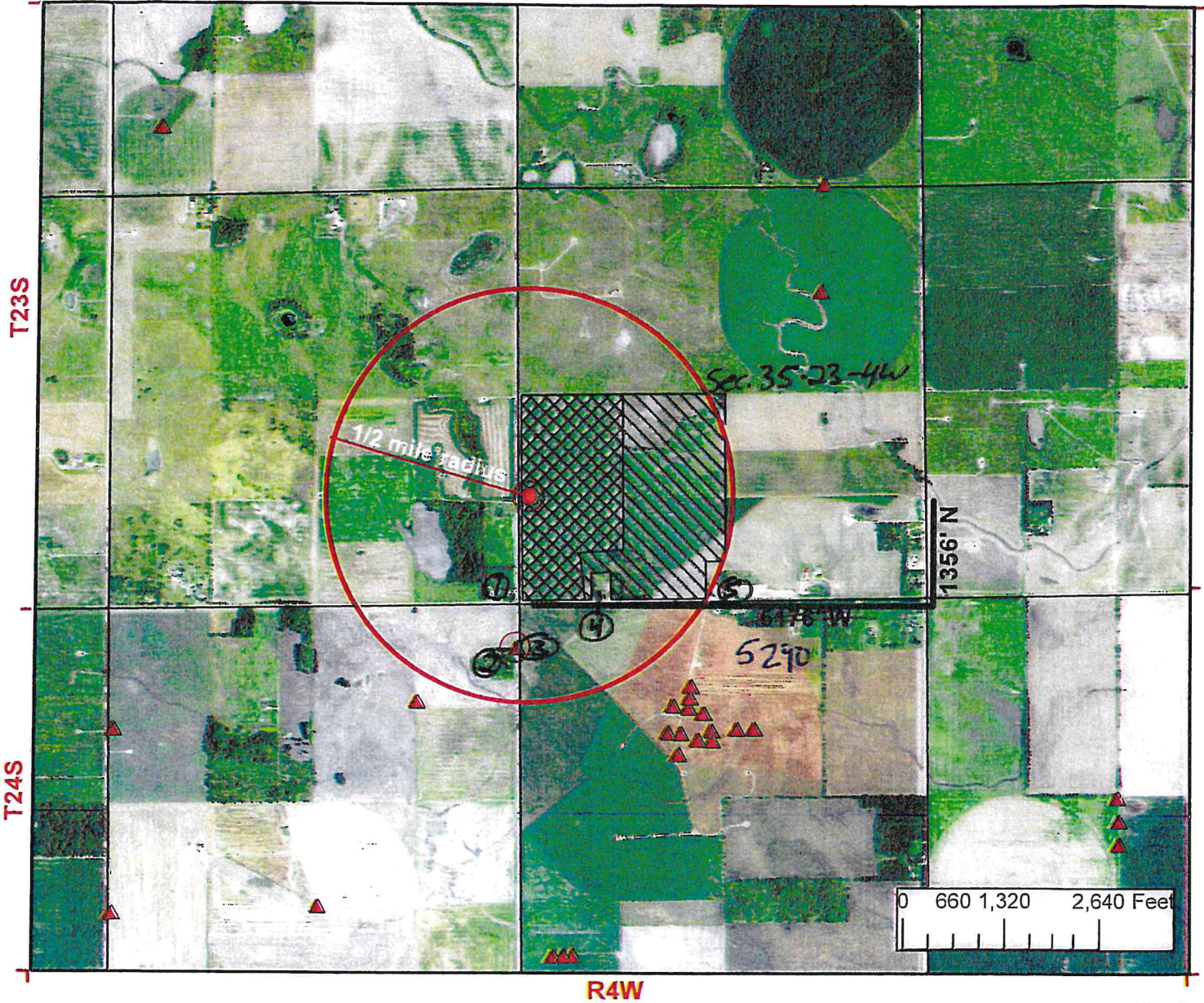
See attached list for well owners within 1/2 mile.

FIGURE 1

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FIGURE 2

Change in Place of Use Map - No. 48417



I declare that all water wells or diversion sites using the same source of supply and within 1/2 mile of the proposed point of diversion have been plotten on the application map.

Mary S. McCurry
Signature

3-22-18
Date

- New Application
- Application No. To Change:
 - Point of Diversion
 - Place of Use
 - Use Made of Water
- Proposed Point of Diversion
- Existing Points of Diversion
- Authorized Place of Use
- Proposed Place of Use

Water Resources
Received

MAR 29 2018

RECEIVED See attached list for well owners within 1/2 mile.

OCT 18 2018

KS Dept Of Agriculture

Completed By GMD2 Staff
S. Flaherty - 3/8/2018

Equus Beds GMD #2 **SCANNED**



FIGURE 2

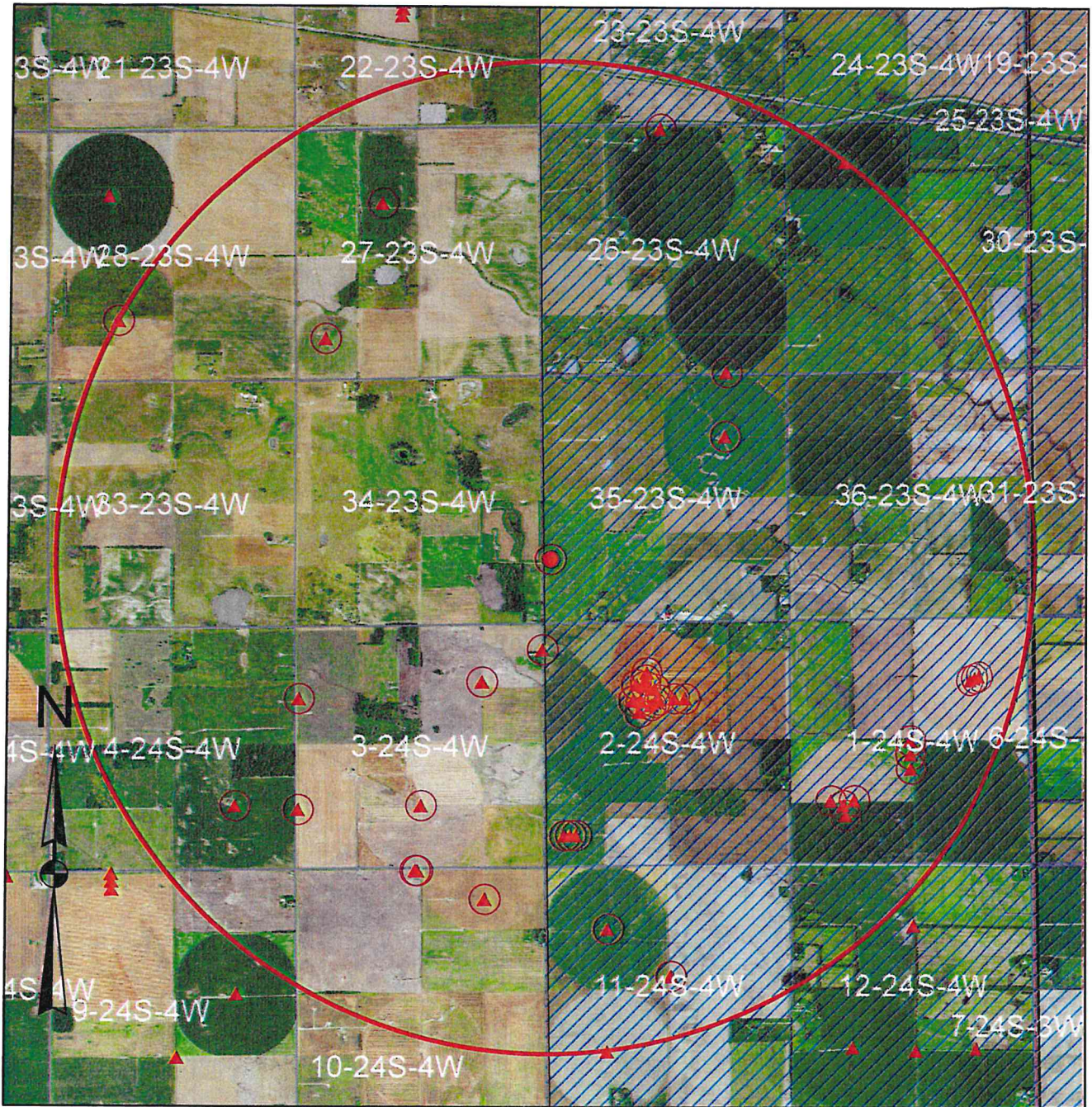
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Equus Beds Groundwater Management District No. 2

Safe Yield Evaluation #50026 - Mary S. McCurry

SWNWSW (1356'N & 5176'W) 35-23S-04W, Reno County

Prepared By: T. Boese Date: 11/30/2018



Map Legend	
	Proposed Point of Diversion
	Area of Consideration Boundary
	Points of Diversion
	Monitoring Wells
	District Boundary
	Major Highway
	Other Roadway
	Major Stream
	Other Water Feature
	County Boundary
	City Boundary

0.45 0.225 0 0.45 Miles

Equus Beds Groundwater Management District No. 2
313 Spruce Street, Halstead, KS 67056
316-835-2224, equusbeds@gmd2.org

FIGURE 3

SAFETYIELD EVALUATION - NO. 50026 - MARY S. MCCURRY LOCATION: SWNWSW (1356'N & 5176'W) 35-235-04W, Reno County SPECIAL USE AREA: BURRTON IGUCA EVALUATION DATE:- 11/30/2018 Total Areas: 8,042 acres; Area in 3 inch discharge zone: 0 acres; Area in 6 inch discharge zone: 8,042 acres							
FILE_ID	WELL_ID	TOWNSHIP	RANGE	SECTION	QUALIFIER	USE	AUTHQUANTITY
A02631100	568	24S	04W	3	36505260	IRR	115
A02741600	3975	24S	04W	1	39491251	IRR	166
A02741600	3976	24S	04W	1	39101363	IRR	0
A02741600	3977	24S	04W	1	39871138	IRR	0
A03112400	1273	24S	04W	2	34762936	IRR	171
A03112400	1274	24S	04W	2	35153400	IRR	0
A03112400	1267	24S	04W	2	41103100	IRR	0
A03112400	1268	24S	04W	2	38303135	IRR	0
A03112400	1269	24S	04W	2	37602940	IRR	0
A03112400	1270	24S	04W	2	35003235	IRR	0
A03112400	1271	24S	04W	2	35302840	IRR	0
A03112400	1272	24S	04W	2	34153015	IRR	0
A03112400	1277	24S	04W	2	35502280	IRR	0
A03112400	3787	24S	04W	2	39613130	IRR	195
A03112400	3788	24S	04W	2	32703270	IRR	0
A03112400	1275	24S	04W	2	38603330	IRR	0
A03112400	1276	24S	04W	2	35502510	IRR	0
A03321800	1011	24S	04W	11	39603975	IRR	186
A03521100	931	24S	04W	10	46201320	IRR	120
A03696300	1814	24S	04W	10	52302746	IRR	90
A03770500	679	23S	04W	27	8904590	IRR	41
A03825700	1157	23S	04W	28	13203795	IRR	198
A03831600	1362	23S	04W	27	36953365	IRR	74
A04028500	398	24S	04W	10	52402787	IRR	97
A04169200	2180	23S	04W	35	39401333	IRR	137
A04190000	2219	23S	04W	26	601278	IRR	168
A04305200	2514	24S	04W	11	29362618	IRR	197
A04309100	2521	23S	04W	26	52332677	IRR	149
A04325800	2685	24S	04W	1	26142686	IRR	0
A04325800	2686	24S	04W	1	20132675	IRR	0
A04325800	2545	24S	04W	1	23142677	IRR	174
A04325800	3266	24S	04W	1	23152671	IRR	0
A04347600	3158	24S	04W	2	6774894	IRR	0
A04347600	3159	24S	04W	2	6774647	IRR	0
A04347600	2603	24S	04W	2	6774771	IRR	54
A04366900	2666	24S	04W	1	12354130	IRR	195
A04366900	2718	24S	04W	1	13394403	IRR	0
A04366900	2719	24S	04W	1	10264089	IRR	0
A04366900	2971	24S	04W	1	13393899	IRR	0
A04390400	2715	24S	04W	3	13402661	IRR	154
A04395600	2734	23S	04W	25	44364052	IRR	186
A04428200	2787	24S	04W	3	12755292	IRR	84
A04841700	4141	23S	04W	35	13565176	IRR	105
A04844700	4096	24S	04W	4	13701320	IRR	190.4
A04923000	4267	24S	04W	3	39601340	IRR	98
A04964700	4928	24S	04W	3	46380044	IRR	98
A05002600P	5228	23S	04W	35	13565176	IRR	110.6
Allowable Appropriations	4,021.00	Total Existing Appropriation				3,553.00	
Small User Quantity	0	Non Consumptive Appropriations				0	
Remaining SUQ	45	Consumptive Appropriations				3,553.00	
Note- Values are in acre-feet		Available Appropriations				468	

Equus Beds Groundwater Management District No. 2

Spacing Evaluation #50026 - Mary S. McCurry

SWNWSW (1356'N & 5176'W) 35-23S-04W, Reno County

Prepared By: T. Boese Date: 11/30/2018

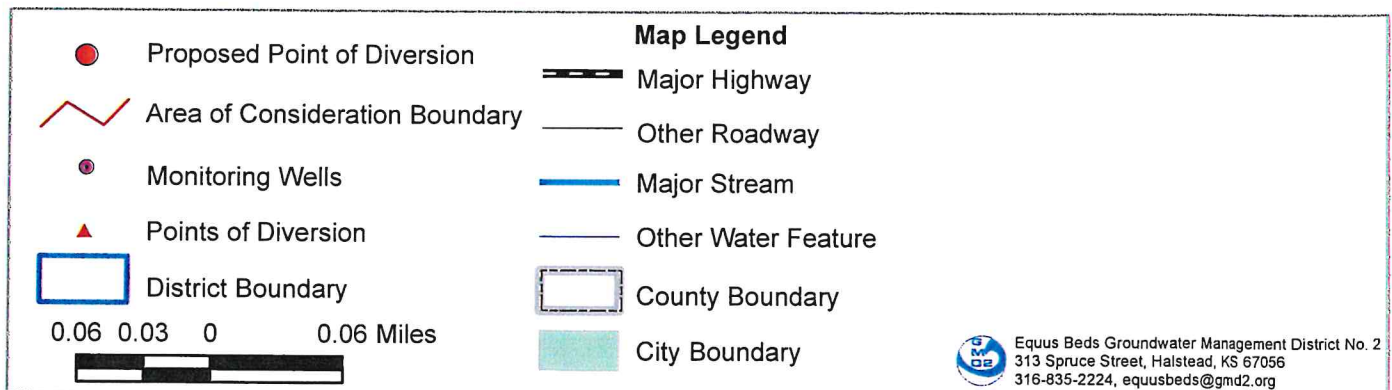


FIGURE 4

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Equus Beds Groundwater Management District No. 2
Chloride, N-Nitrate Spec Cond Query
of Water Quality Data Base

30-Nov-18

FIGURE 5

OwnerID	WellID	TTRDRSS	SubSection	SAMPLE DEPTH	DATE SAMPLED	CHLORIDE	NITRATE-N	SPEC COND
EB	044A	23S-04W-26	SE-SE-SW	52	9/6/1983	156	NA	1160
EB	044A	23S-04W-26	SE-SE-SW	52	3/20/1986	88.0	0.18	677
EB	044A	23S-04W-26	SE-SE-SW	52	4/21/1987	217.0	0.20	1140
EB	044A	23S-04W-26	SE-SE-SW	52	6/29/1988	92.3	1.85	762
EB	044A	23S-04W-26	SE-SE-SW	52	11/14/1989	86.5	NA	735
EB	044A	23S-04W-26	SE-SE-SW	52	10/24/1990	103.0	NA	740
EB	044A	23S-04W-26	SE-SE-SW	52	9/17/1991	97.9	NA	763
EB	044A	23S-04W-26	SE-SE-SW	52	11/16/1992	48.1	NA	601
EB	044A	23S-04W-26	SE-SE-SW	52	11/10/1993	33.2	NA	592
EB	044A	23S-04W-26	SE-SE-SW	52	10/4/1994	35.56	NA	608
EB	044A	23S-04W-26	SE-SE-SW	52	10/10/1995	37	NA	560
EB	044A	23S-04W-26	SE-SE-SW	52	10/15/1996	40	NA	540
EB	044A	23S-04W-26	SE-SE-SW	52	9/30/1997	34	NA	550
EB	044A	23S-04W-26	SE-SE-SW	52	10/13/1998	39	NA	560
EB	044A	23S-04W-26	SE-SE-SW	52	11/9/1999	36	.1	550
EB	044A	23S-04W-26	SE-SE-SW	52	9/19/2000	31	NA	540
EB	044A	23S-04W-26	SE-SE-SW	52	10/22/2001	28	NA	540
EB	044A	23S-04W-26	SE-SE-SW	52	9/30/2002	28	NA	550
EB	044A	23S-04W-26	SE-SE-SW	52	9/17/2003	34	NA	540
EB	044A	23S-04W-26	SE-SE-SW	52	10/18/2004	31	0.21	585
EB	044A	23S-04W-26	SE-SE-SW	52	9/28/2005	31	ND	563
EB	044A	23S-04W-26	SE-SE-SW	52	9/19/2006	27	ND	541
EB	044A	23S-04W-26	SE-SE-SW	52	8/28/2007	38	ND	588
EB	044A	23S-04W-26	SE-SE-SW	52	9/9/2008	42	ND	542
EB	044A	23S-04W-26	SE-SE-SW	52	9/14/2009	28	ND	535
EB	044A	23S-04W-26	SE-SE-SW	52	9/8/2010	44	NA	608
EB	044A	23S-04W-26	SE-SE-SW	52	9/14/2011	43	NA	635
EB	044A	23S-04W-26	SE-SE-SW	52	9/25/2012	20.2	NA	512
EB	044A	23S-04W-26	SE-SE-SW	52	7/22/2013	20	NA	544
EB	044A	23S-04W-26	SE-SE-SW	52	8/20/2014	38	NA	623
EB	044A	23S-04W-26	SE-SE-SW	52	8/26/2015	27	NA	486
EB	044A	23S-04W-26	SE-SE-SW	52	8/17/2016	22	NA	495
EB	044A	23S-04W-26	SE-SE-SW	52	9/27/2017	41	NA	645
EB	044A	23S-04W-26	SE-SE-SW	52	9/19/2018	28	NA	541

Explanation: N/A = Not analyzed, ND = None detected
 Sample depth - feet; Results expressed in - milligrams/liter;
 Spec Cond - Micro Mhos/cm

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Equus Beds Groundwater Management District No. 2

Chloride, N-Nitrate Spec Cond Query

of Water Quality Data Base

30-Nov-18

FIGURE 6

OwnerID	WellID	TTRRRDSS	Subsection	SAMPLE DEPTH	DATE SAMPLED	CHLORIDE	NITRATE-N	SPEC COND
EB	044B	23S-04W-26	SE-SE-SW	90	12/5/2000	22	.1	520
EB	044B	23S-04W-26	SE-SE-SW	90	10/2/2001	21	NA	510
EB	044B	23S-04W-26	SE-SE-SW	90	9/30/2002	22	NA	500
EB	044B	23S-04W-26	SE-SE-SW	90	9/17/2003	25	NA	470
EB	044B	23S-04W-26	SE-SE-SW	90	10/18/2004	30	0.22	516
EB	044B	23S-04W-26	SE-SE-SW	90	9/28/2005	27	ND	511
EB	044B	23S-04W-26	SE-SE-SW	90	9/19/2006	42	ND	542
EB	044B	23S-04W-26	SE-SE-SW	90	8/28/2007	59	ND	580
EB	044B	23S-04W-26	SE-SE-SW	90	9/9/2008	67	ND	521
EB	044B	23S-04W-26	SE-SE-SW	90	9/14/2009	45	ND	549
EB	044B	23S-04W-26	SE-SE-SW	90	9/8/2010	48	NA	564
EB	044B	23S-04W-26	SE-SE-SW	90	9/14/2011	53	NA	585
EB	044B	23S-04W-26	SE-SE-SW	90	9/25/2012	45.1	NA	572
EB	044B	23S-04W-26	SE-SE-SW	90	7/22/2013	49	NA	620
EB	044B	23S-04W-26	SE-SE-SW	90	8/20/2014	56	NA	608
EB	044B	23S-04W-26	SE-SE-SW	90	8/26/2015	73	NA	569
EB	044B	23S-04W-26	SE-SE-SW	90	8/17/2016	72	NA	608
EB	044B	23S-04W-26	SE-SE-SW	90	9/27/2017	85	NA	688
EB	044B	23S-04W-26	SE-SE-SW	90	9/19/2018	66	NA	627

Explanation: N/A = Not analyzed, ND = None detected
 Sample depth - feet; Results expressed in - milligrams/liter;
 Spec Cond - Micro Mhos/cm

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Equus Beds Groundwater Management District No. 2
Chloride, N-Nitrate Spec Cond Query
of Water Quality Data Base

30-Nov-18

FIGURE 7

OwnerID	WellID	TTRRSS	SubSection	SAMPLE DEPTH	DATE SAMPLED	CHLORIDE	NITRATE-N	SPEC COND
EB	044C	23S-04W-26	SE-SE-SW	182	9/7/1983	114	NA	257
EB	044C	23S-04W-26	SE-SE-SW	182	3/20/1986	124.0	0.07	1735
EB	044C	23S-04W-26	SE-SE-SW	182	4/21/1987	136.0	ND	NA
EB	044C	23S-04W-26	SE-SE-SW	182	6/29/1988	101.8	0.08	1537
EB	044C	23S-04W-26	SE-SE-SW	182	11/14/1989	117.0	NA	1848
EB	044C	23S-04W-26	SE-SE-SW	182	10/24/1990	127.0	NA	1728
EB	044C	23S-04W-26	SE-SE-SW	182	9/24/1991	118.0	NA	1868
EB	044C	23S-04W-26	SE-SE-SW	182	11/16/1992	119.0		
EB	044C	23S-04W-26	SE-SE-SW	182	11/16/1992	119.0	NA	1835
EB	044C	23S-04W-26	SE-SE-SW	182	11/10/1993	126.0	NA	1840
EB	044C	23S-04W-26	SE-SE-SW	182	10/4/1994	122.88	NA	1920
EB	044C	23S-04W-26	SE-SE-SW	182	10/10/1995	137	NA	2500
EB	044C	23S-04W-26	SE-SE-SW	182	10/15/1996	123	NA	2180
EB	044C	23S-04W-26	SE-SE-SW	182	9/30/1997	125	.1	2220
EB	044C	23S-04W-26	SE-SE-SW	182	10/13/1998	132	NA	2330
EB	044C	23S-04W-26	SE-SE-SW	182	11/9/1999	129	.1	1880
EB	044C	23S-04W-26	SE-SE-SW	182	9/18/2000	118	NA	1900
EB	044C	23S-04W-26	SE-SE-SW	182	10/2/2001	130	NA	1920
EB	044C	23S-04W-26	SE-SE-SW	182	9/30/2002	130	NA	1880
EB	044C	23S-04W-26	SE-SE-SW	182	9/17/2003	122	NA	1750
EB	044C	23S-04W-26	SE-SE-SW	182	10/18/2004	120	ND	1950
EB	044C	23S-04W-26	SE-SE-SW	182	9/28/2005	120	ND	1850
EB	044C	23S-04W-26	SE-SE-SW	182	9/19/2006	100	ND	1900
EB	044C	23S-04W-26	SE-SE-SW	182	8/28/2007	120	ND	1830
EB	044C	23S-04W-26	SE-SE-SW	182	9/9/2008	120	ND	1480
EB	044C	23S-04W-26	SE-SE-SW	175	9/14/2009	120	ND	1990
EB	044C	23S-04W-26	SE-SE-SW	175	9/8/2010	110	NA	1790
EB	044C	23S-04W-26	SE-SE-SW	175	9/14/2011	98	NA	1640
EB	044C	23S-04W-26	SE-SE-SW	175	9/25/2012	108	NA	1590
EB	044C	23S-04W-26	SE-SE-SW	175	7/22/2013	106	NA	1970
EB	044C	23S-04W-26	SE-SE-SW	175	8/20/2014	106	NA	1730
EB	044C	23S-04W-26	SE-SE-SW	175	8/26/2015	109	NA	1340
EB	044C	23S-04W-26	SE-SE-SW	175	8/17/2016	111	NA	1510
EB	044C	23S-04W-26	SE-SE-SW	175	9/27/2017	119	NA	1580
EB	044C	23S-04W-26	SE-SE-SW	175	9/19/2018	118	NA	1580

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50026

WATER WELL RECORD

Form WWC-5

Division of Water Resources App. No.

48417

1 LOCATION OF WATER WELL: County: Reno	Fraction SW ¼ SW ¼ NW ¼ SW ¼	Section Number 35	Township No. T 23 S	Range Number R 4 <input type="checkbox"/> E <input checked="" type="checkbox"/> W
--	---------------------------------	----------------------	------------------------	--

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here
From 50 & Rayle Rd. 1 3/4 S ESR

Global Positioning System (GPS) information:
Latitude: 38.00321 (in decimal degrees)
Longitude: 097.73827 (in decimal degrees)
Elevation: 1473
Datum: WGS 84, NAD 83, NAD 27
Collection Method:
 GPS unit (Make/Model: Garmin 62S)
 Digital Map/Photo, Topographic Map, Land Survey
Est. Accuracy: <3 m, 3-5 m, 5-15 m, >15 m

2 WATER WELL OWNER: Andy McCurry
RR#, Street Address, Box #: 11913 E. Illinois Ave.
City, State, ZIP Code : Burton, Kansas 67020

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

N

W	--NW--	--NE--	E
	--SW--	--SE--	

S

1 mile

4 DEPTH OF COMPLETED WELL 41 ft.

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

WELL'S STATIC WATER LEVEL 6 ft. below land surface measured on mo/day/yr. 9/29/2014.....

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 40 in. to 41 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 .21 ft., Diameter..... in. to..... ft., Diameter..... in. to..... ft.
Casing height above land surface .24 in., Weight SCH40 lbs./ft., Wall thickness or gauge No. 500

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 .21 ft. to .41 ft., From..... ft. to..... ft.
From..... ft. to..... ft., From..... ft. to..... ft.
From..... ft. to..... ft., From..... ft. to..... ft.

GRAVEL PACK INTERVALS: From .41 ft. to .10 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 .10 ft. to 0 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 Fecdyard Fertilizer storage Oil well/gas well none

Direction from well..... Distance from well.....

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	2	Top soil			
2	6	Brown clay			
6	41	Med.-fine sand & gravel clean & loose			

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) 9/29/2014..... and this record is true to the best of my knowledge and belief.
Kansas Water Well Contractor's License No. 134..... This Water Well Record was completed on (mo/day/year) 9/30/2014.....
under the business name of Rosenkrantz-Bemis Ent...... by (signature) [Signature]

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks and check the correct answers. Send three copies (white, blue, pink) 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. I include fee of \$5.00 for each constructed well. Visit us at <http://www.kdheks.gov/waterwell/index.html>.

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DAVID STROBERG, PRESIDENT
 FRED SEILER, VICE PRESIDENT
 VIN KISSICK, SECRETARY
 MIKE MCGINN, TREASURER
 TIM BOESE, MANAGER
 THOMAS A. ADRIAN, ATTORNEY



DIRECTORS:
 ALAN BURGHART
 RAY FLICKNER
 JOE PAJOR
 BOB SEILER
 JEFF WINTER

EQUUS BEDS GROUNDWATER MANAGEMENT DISTRICT NO. 2

313 SPRUCE STREET • HALSTEAD, KANSAS 67056-1925 • PHONE (316) 835-2224 • FAX (316) 835-2225 • equusbeds@gmd2.org • www.gmd2.org

May 16, 2014

Chief Engineer, Division of Water Resources
 Attn: Erin McGrogan
 109 SW 9th Street, 2nd Floor
 Topeka, Kansas 66612-1283

Re: Application No. 48417 – Andrew McCurry

Dear Ms. McGrogan:

The referenced application was reviewed by the Equus Beds Groundwater Management District No. 2, Board of Directors at the May 13, 2014, meeting. District staff and the applicant presented information regarding the application. A copy of the District's Application Review Information report is enclosed for your information.

Upon review of the information presented and discussed at the meeting, and based on findings that:

1. The application complies with the District's Revised Management Program (effective May 1, 1995), and Rules and Regulations K.A.R. 5-22-1 through 5-22-17;
2. The application is subject to District metering regulation K.A.R. 5-22-4a;
3. One test log was submitted by the applicant with the application, completed at 39 feet below land surface. The water quality analysis from the test well returned a chloride value of 65 mg/L at a depth of 39 feet bls. Because the test well was not completed to bedrock, the location and thickness of underlying clay layers could not be determined;
4. Water quality data indicates that chloride concentrations are the highest in the middle (B) zone, except where clay lenses inhibit storage and migration;
5. Chloride levels in the shallow zone of the aquifer (AA) near the proposed point of diversion appear to be below the fresh and useable standard of 500 mg/L and below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L;
6. The proposed application does not appear to be down-gradient of an area of maximum contamination in the shallow (AA) zone if the current hydraulic gradient is maintained;
7. Sample data indicate the chloride contamination plume is likely moving down-gradient eastward or east-southeast and should remain east of the proposed point of diversion;
8. The shallow zone of the aquifer (AA) at this location may not contain an adequate saturated thickness for the proposed rate and quantity;
9. Nearby monitoring wells water quality information indicate chloride levels in the upper zone (A) of the aquifer near the proposed point of diversion are below the fresh and useable standard of 500 mg/L and below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L;
10. Nearby monitoring wells water quality information suggests that chloride levels in the middle zone (B) of the aquifer near the proposed point of diversion are near or below the fresh and useable standard of 500 mg/L and may be near or above the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L;
11. Nearby monitoring wells water quality information suggests chloride levels in the lower zone (C) of the aquifer near the proposed point of diversion are below the fresh and useable standard of 500 mg/L and may be below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L; and

EXHIBIT B

12. There are several domestic wells downgradient of the proposed point of diversion.

It was the decision of the Board of Directors to recommend to the Chief Engineer that the application be recommended for approval, subject to:

1. The proposed well shall comply with the well construction standards adopted by the Kansas Department of Health and Environment for the Burrton Intensive Groundwater Use Control Area;
2. The constructed well be equipped with a sample port or ports for water sample collection;
3. The point of diversion be restricted to the aquifer's uppermost zone with the lower screen limit of the proposed well to be set at or above the first encountered significant clay layer (approximately 40 feet below land surface);
4. The drilling and construction of the proposed irrigation well is witnessed by District Staff;
5. Water samples be collected from the point of diversion prior to initial operation, and analyzed by a State accredited water quality laboratory to include inorganic analysis comprised of metals and minerals and including specific conductance and irrigation suitability interpretation;
6. The applicant submit biannual water samples collected from the point of diversion to be collected at the start and end of each subsequent pumping season and analyzed by a State accredited water quality laboratory for chloride and specific conductance;
7. Water sample collection shall be conducted by trained and qualified persons as determined by the Division of Water Resources and the Equus Beds Groundwater Management District. The collection and water quality analysis of each sample shall be completed at the applicant's expense;
8. Any application for change in point of diversion to modify the well to a depth greater than 40 feet below land surface shall be subject to District Board review;
9. The permit shall be subject to Board review if chloride concentrations from the point of diversion equal or exceed 250 mg/L; and
10. The approved water permit is subject to the provisions of the June 1, 1984, Burrton Intensive Groundwater Use Control Area order or any revisions thereof.

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 the date of this notification, pursuant to K.A.R. 5-22-12.

Please contact the District if you have any questions regarding the District's findings or recommendation.

Sincerely,
EQUUS BEDS GROUNDWATER
MANAGEMENT DISTRICT NO. 2



Tim Boese
Manager

TDB/DDB/db

Enclosure

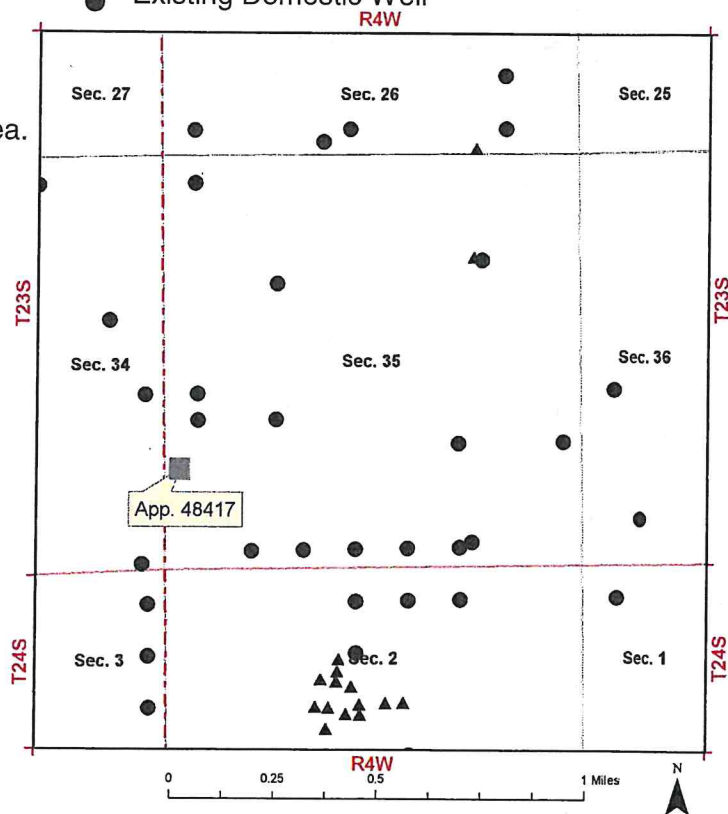
pc: Andrew McCurry, Applicant
Jeff Lanterman, Division of Water Resources, Stafford

APPLICATION REVIEW INFORMATION

NAME <u>Andrew McCurry</u>	APPLICATION NO. <u>48417</u>
ADDRESS <u>11913 E Illinois Ave</u>	NEW APPL. <u>X</u>
<u>Burrton, KS 67020</u>	COUNTY <u>Reno</u> TRACT <u>NW-SW</u>
	WELL LOCATION <u>S 35 T 23S R 4W</u>
	CHG. P/U _____
	CHG. P/D _____
	CHG. USE _____
	QUANT <u>105</u> AF/Y RATE <u>800</u> GPM
	WELL SPACING <u>D>660', ND>1320'</u>

- Proposed Well
- ▲ Existing Non-Domestic Well
- Existing Domestic Well

ISSUE: Board review of an application for a water permit in the Burrton Intensive Groundwater Use Control Area.



BACKGROUND INFORMATION:

JUN 1, 1984 - Chief Engineer, DWR, ordered the establishment of the Control Area as a result of deterioration of the quality of groundwater occurring within the Control Area. The Control Area was established and corrective control provisions initiated in order to protect the public interest. All applications to appropriate groundwater in the Control Area are reviewed on a case by case basis

April 13, 2004 – The Board of Directors, by approved motion, implemented the following criteria to be utilized for future reviews of applications filed in the Burrton IGUCA:

- 1) Applications filed for proposed points of diversion located down gradient of the maximum contamination areas of the saltwater plumes shall not be recommended for approval; and
- 2) Applications filed for proposed points of diversion located up gradient of the maximum contamination areas of the saltwater plumes shall be reviewed on a case-by-case basis by the District Board of Directors to determine site specific effects on the aquifer and prior appropriations.

January 7, 2013 – The applicant filed a new water permit application for a single point of diversion located in the Southwest quarter of the Northwest quarter of the Southwest quarter, (1356'N & 5176'W), Section 35, Township 23 South, Range 4 West, Reno County.

September 18, 2013 – The District received a request from DWR to review and make a recommendation on the application.

October 22, 2013 – The District requested an extension of time to review the application, as the application was incomplete and did not include a test well log or water quality data from the test well.

December 6, 2013 – The District received additional hydrogeologic data from the applicant, including a test well log completed to 39 feet below land surface and water quality data from the test well.

May 06, 2014 – The District notified the applicant that the application would be reviewed by the District Board of Directors at the May 13, 2014, meeting.

FINDINGS: The application is subject to the Revised Management Program, and Rules and Regulations adopted by the Board of Directors.

The application is for a proposed irrigation well located in the extreme western portion of the Burrton IGUCA.

The application is subject to the District's metering regulation K.A.R. 5-22-4a.

The application requests 105 acre-feet of water at a rate of 800 GPM for irrigation use from a well located in the Southwest quarter of the Northwest quarter of the Southwest quarter of Section 35, Township 23 South, Range 4 West, Reno County (Figure 1). The proposed place of use is 75 acres located in the Northwest quarter of the Southwest quarter and 35 acres in the Southwest quarter of the Southwest quarter of Section 35, Township 23 South, Range 4 West. (Figure 2)

The application complies with Safe Yield Regulation 5-22-7. The District safe-yield analysis found that the application with existing appropriations within the area of consideration (2 mile radius circle) totaled 3065.00 AF/Y (Figure 3). The maximum allowable quantity was 4021.00 AF/Y.

The application complies with Well Spacing Regulation 5-22-2 (Figure 4).

There are several domestic wells located downgradient of the proposed well.

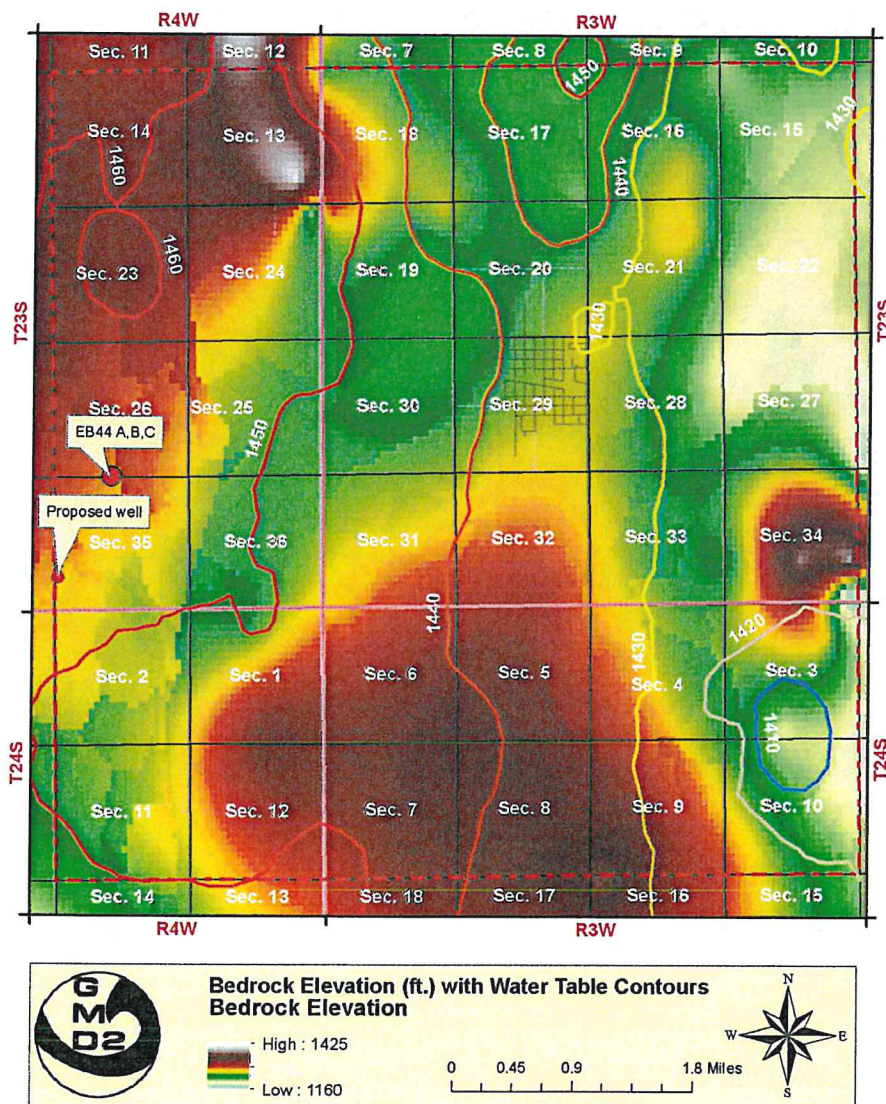
Geology and Hydrogeology

Lithologic data from nearby monitoring wells indicate that bedrock at the proposed well location is approximately 180 feet below land surface (bls) (Figure 5). Bedrock consists of the Ninnescah Shale and the Stone Corral Formation in this region.

The Ninnescah Shale is a 300 ft thick red silty carbonate that may yield low quality water in southeastern Reno County, the unit is known to have a high salt content (Management Program, 1995, O’conner, 1968). This unit is considered as the lower confining unit.

The Stone Corral Formation consists of mostly gray anyhydrite, gypsum, and salt. This unit has a low hydraulic conductivity and is considered the lower confining unit for the Equus Beds Aquifer in the Burrton IGUCA and surrounding region.

Depth to bedrock in the Burrton IGUCA ranges from 38 to 285 ft bls. Elevationally low areas (Figure 5) are associated with paleo channel development from the McPherson and Ancestral Arkansas River Channels. These paleo channels trend from north to south.



Map By: S. Flaherty

Figure 5 Bedrock elevation overlain by water table contours averaged from 2011 data.

The bedrock surface has been scoured by fluvial processes and filled by fine grained Pleistocene sand and other fluvial deposits associated with channel development and migration 290 Mya. This 'fill' acts as the main portion of the Equus Beds Aquifer in the Burrton IGUCA region. Fluvial sediments are overlain by eolian deposits (Figure 6) of the Recent Stage 5000 ya and extend to a depth of approximately 20 feet bgs. Infiltration rates and volumes through clayey units are lower than sandy units. These clayey materials help to retard chloride transportation. Hydrologic data from nearby well EB44A indicate depth to water is approximately 7 feet bls in the winter months, creating a calculated saturated thickness of approximately 173 feet.

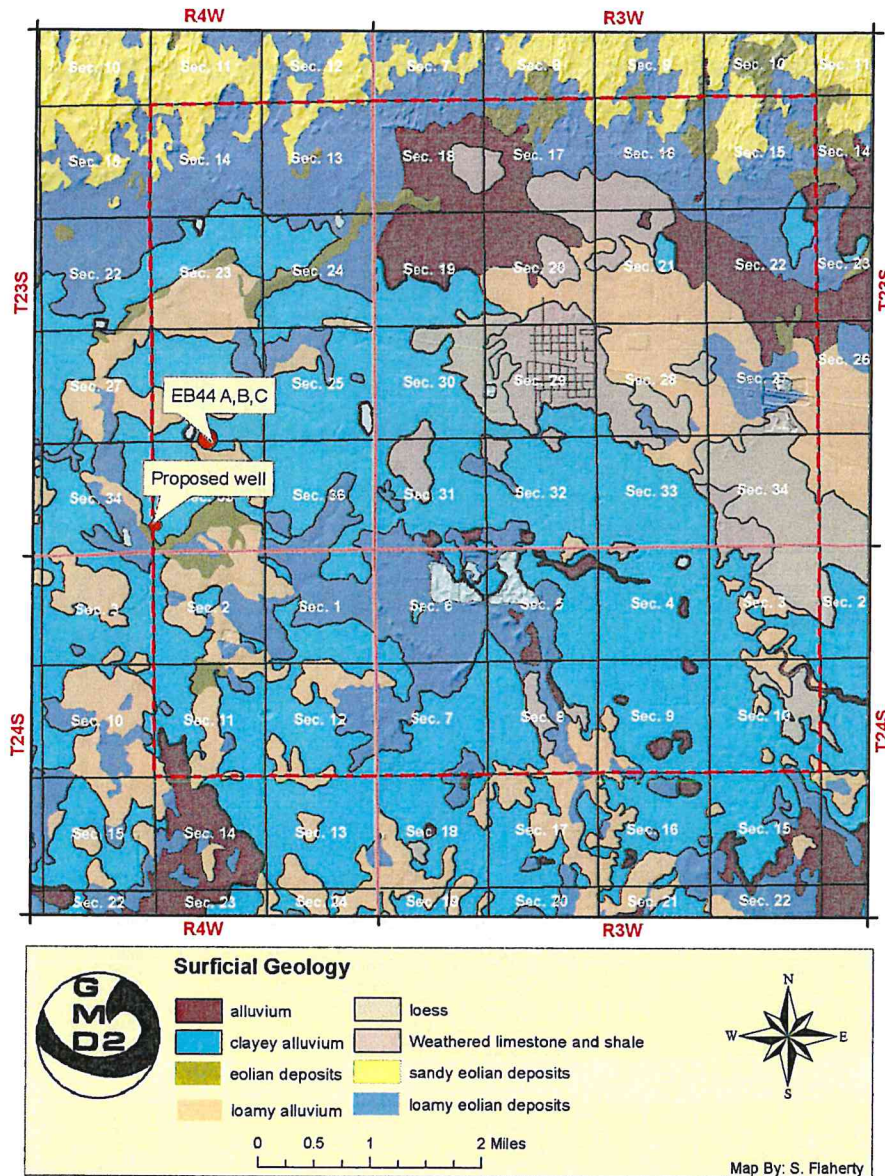
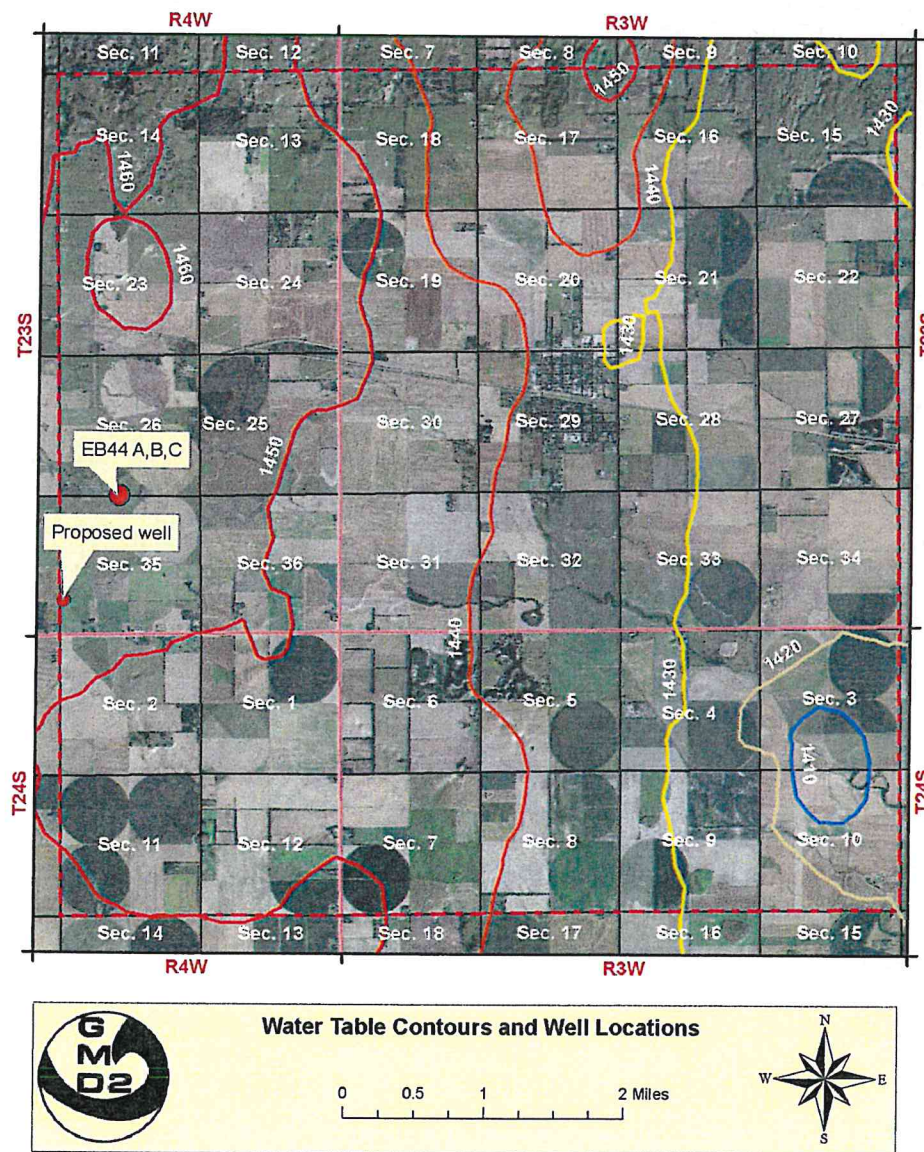


Figure 6. The surficial geology of the Burrton IGUCA region is heavily influenced by eolian and fluvial processes. The proposed well location is located in clayey alluvium intermittently capped by loess and additional sandy and loamy materials. The application permit is approximately 4 miles south of a pronounced east-west trending sand dune tract.

The application contained one water well log along with water quality analysis results from the test well (Attachment A). The water quality analysis from the test well returned a chloride value of 65 mg/L at a depth of 39 feet bls. Because the test well was not completed to bedrock, the location and thickness of underlying clay layers could not be determined.

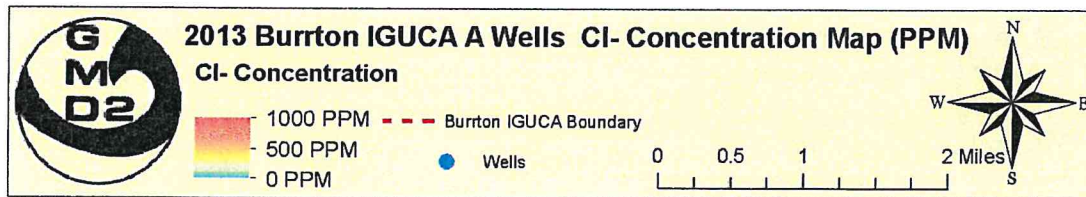
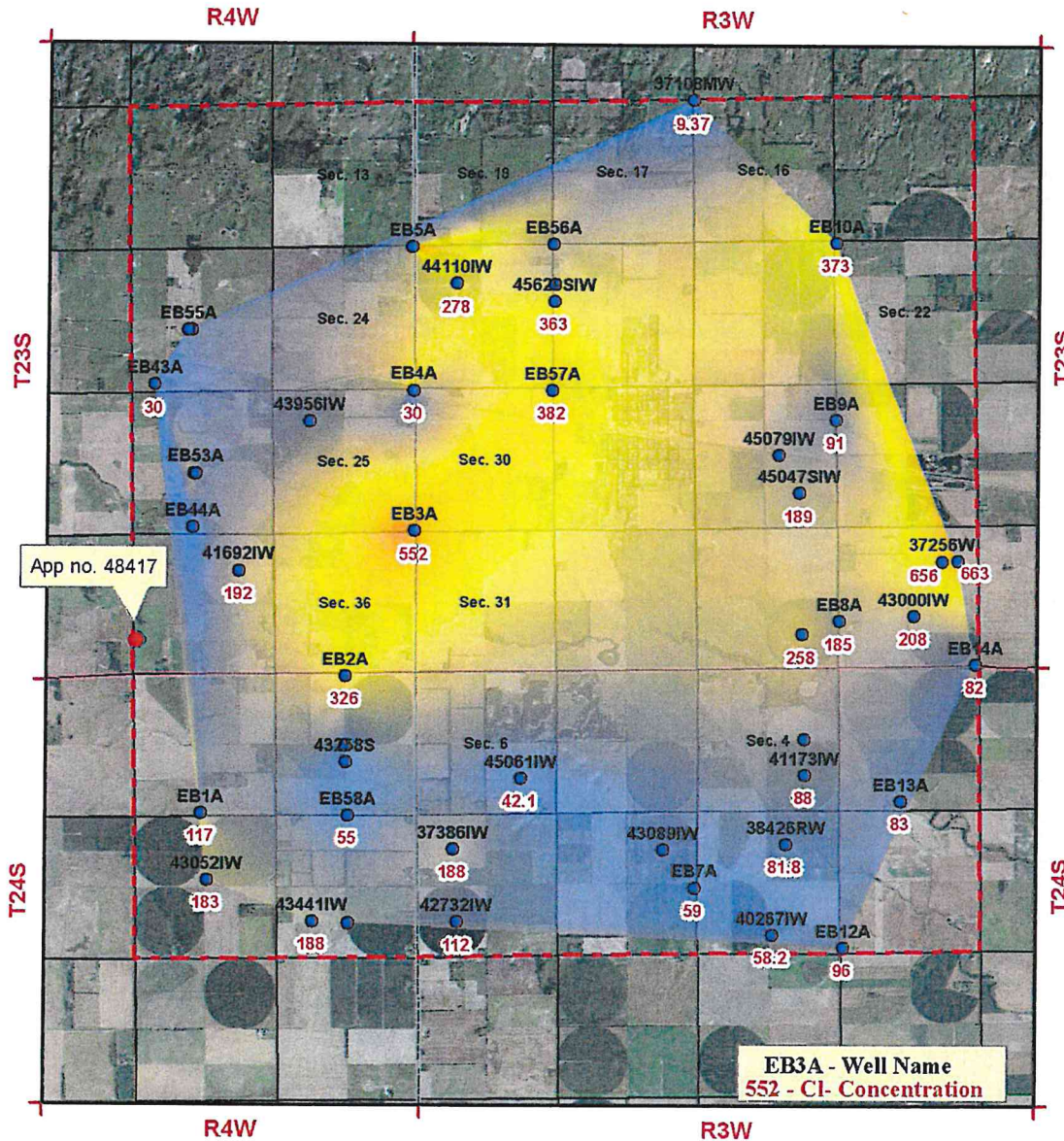
In the area of consideration, a full lithologic log validates sufficient underlying confining material. Confining materials retard the transportation of Chlorides. The applicant's test log stops at 39 ft bls and does not capture the thickness of a lower confining unit. Further, this log does not indicate chloride concentrations in underlying zones.

The application is located in an area where Chloride concentrations are often above 500 mg/l. This area is believed to be contaminated from development of the Burrton Oil Field at the turn of the 20th century. The application is located up gradient of several saltwater contamination plumes at varying depths in the aquifer (Figures 8-11).



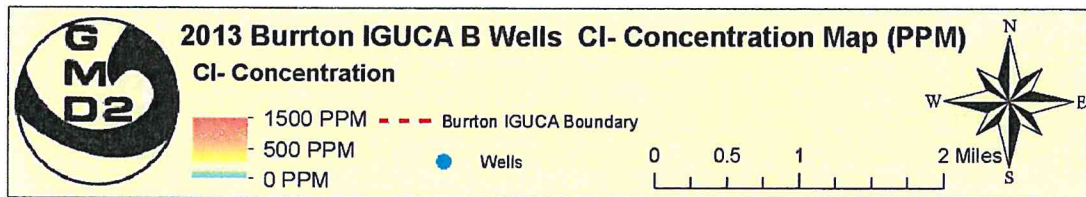
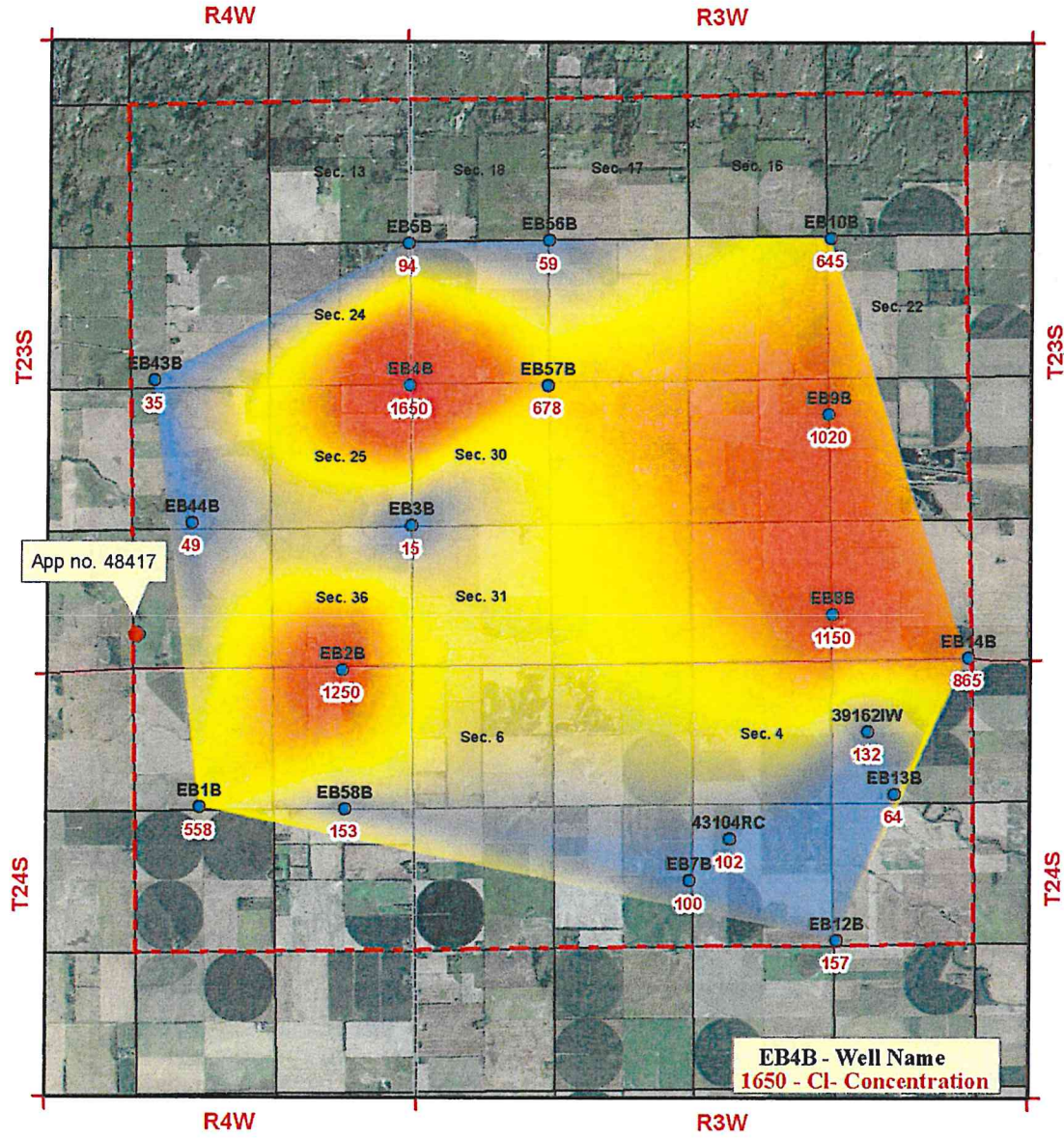
Map By: S. Flaherty

Figure 7. 2012 satellite imagery overlain by water table contours.



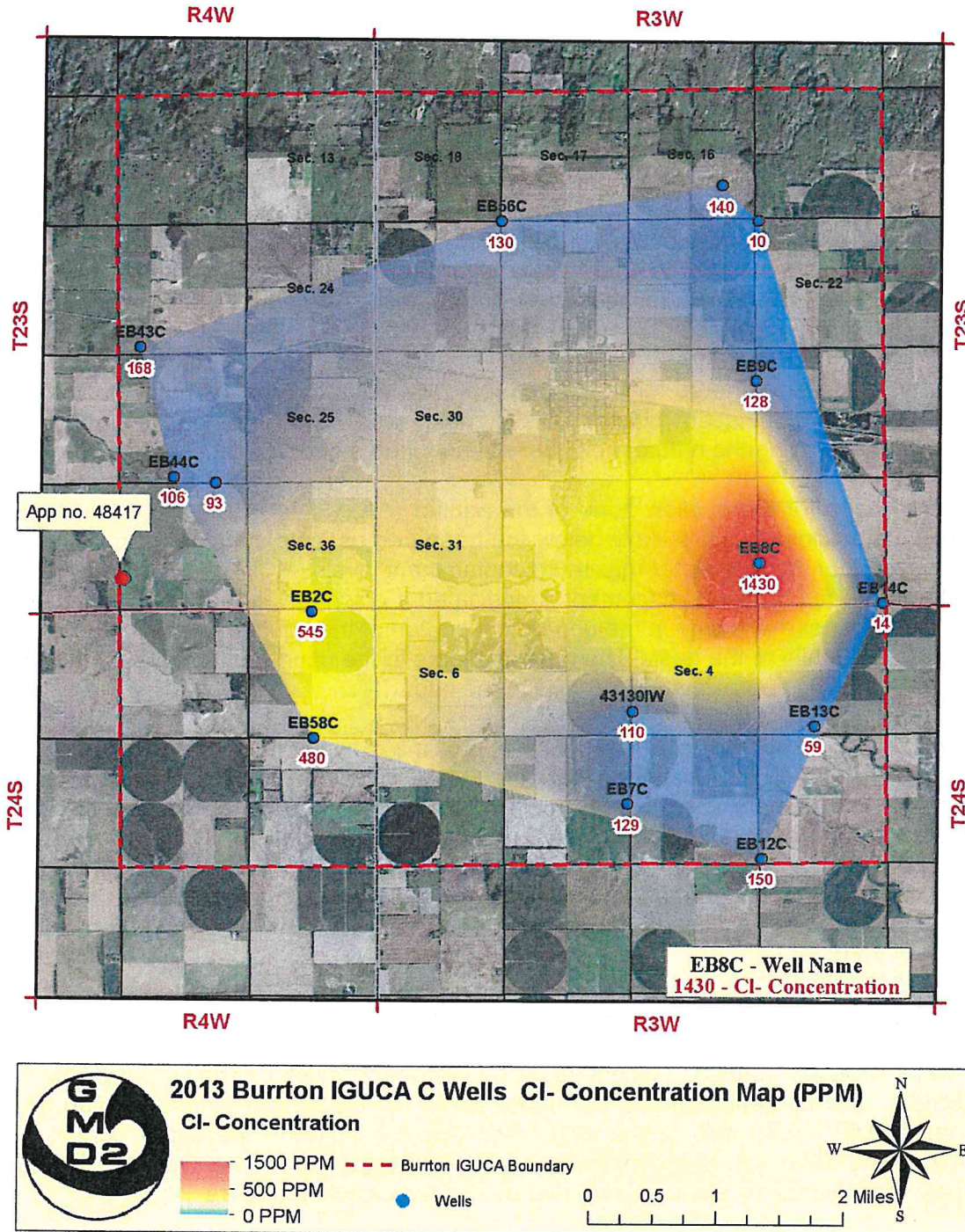
Map By: S. Flaherty

Figure 9. Chloride Concentrations in the upper zone (Below AA) isolated by clay layers.



Map By: S. Flaherty

Figure 10. Chloride concentrations in B zone (Below A) separated by a discontinuous clay layer.



Map By: S. Flaherty

Figure 11. Chloride levels in lowermost zone of aquifer.

Water quality data was gathered from monitoring wells and permits throughout and near the Burrton IGUCA to produce estimated contamination maps for each zone of the aquifer.

Water Quality Upper Zones (A and AA):

The uppermost zone of the aquifer (AA Zone) is described as being above a clay lense averaging 50 feet bls. A large percentage of the permits within the boundaries of the Burrton IGUCA are completed and screened in this zone to avoid underlying saltwater contamination.

The application is located on the western edge of Burrton IGUCA. The applicant's test well (Attachment A) indicate medium to coarse sand overlying clay and medium sand. The shallow zone of the aquifer (AA) at this location may not contain an adequate thickness of yielding aquifer material for the proposed rate and quantity.

Water quality data was gathered for the uppermost (AA) zone to produce maps indicating the extent of each contamination plume. These data were then interpolated to produce contamination maps using the natural neighbor method, and a generated cell size of 10 meters.

Water quality maps for the shallow zone of the aquifer (AA) (Figure 8) indicate that the area surrounding the proposed well is likely below the fresh and useable standard of 500 mg/L and below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L. Test well submitted with the application (Attachment A) indicated a chloride value of 65 mg/L at a depth of 39 feet bls. The nearest plume in the uppermost portion of the aquifer exceeding 250 mg/L is approximately 0.75 mile to the east. The nearest plume in the uppermost portion of the aquifer exceeding 500 mg/L is approximately 1.5 mile to the east.

Water level data was utilized to illustrate the approximate hydraulic gradient for the shallow aquifer zone and define locations that are up/down-gradient of maximum saltwater contamination. The primary direction of groundwater flow in the Burrton IGUCA AA zone is approximately west to east.

Insufficient head data from the AA zone in this area inhibits the generation of a hydraulic gradient. The proposed application appears to be up-gradient of the maximum contamination area in the AA zone.

Water quality maps for the upper aquifer zone (A) (Figure 9, 18) suggest that the area near the proposed well is below the fresh and useable standard of 500 mg/L and below the secondary drinking water MCL of 250 mg/L. Recent sampling from nearby well EB44A returned below 200 mg/L chloride. The nearest plume in the upper portion of the aquifer exceeding 250 mg/L is approximately 0.50 - 0.75 mile to the east. The nearest plume in the upper portion of the aquifer exceeding 500 mg/L is approximately 1.25 - 1.5 mile to the east. Data for the EB44A well indicate that chloride levels are slowly decreasing through time (Figure 12).

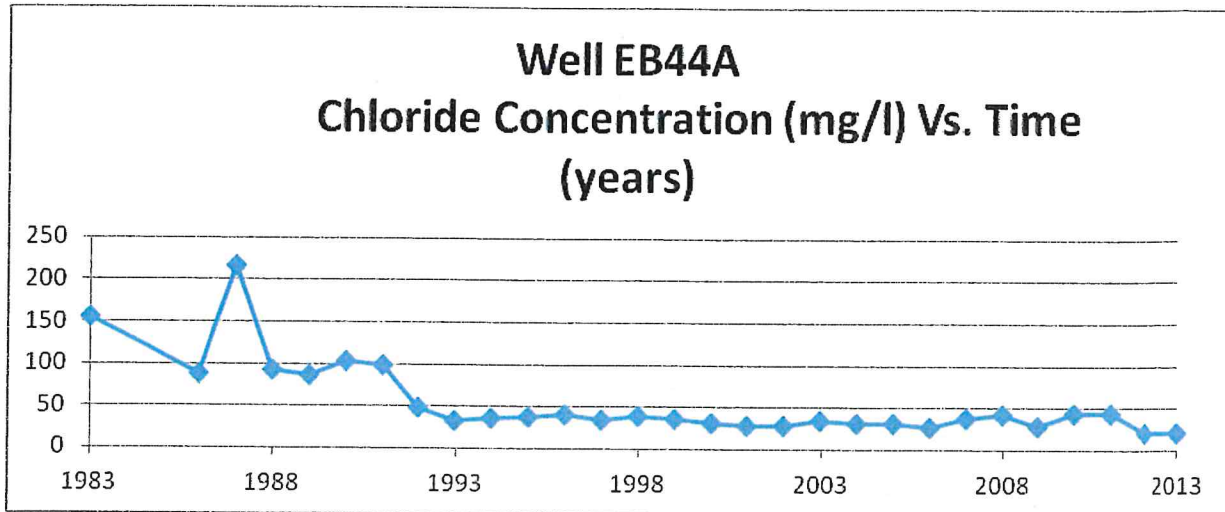


Figure 12. Chloride concentrations through time at EB44A (see Figure 2 for location).

Water level data (December of 2010 through February 2011) suggest the hydraulic gradient for the upper aquifer zone (Zone A) is from west to east-northeast. Insufficient data inhibits satisfactory delineation of the hydraulic gradient in the shallow zone. However, Burrton IGUCA chloride contamination appears to largely be migrating east or east-southeast according to 2011 and 2013 chloride maps.

The proposed application appears to be up-gradient of the maximum contamination area in the A zone.

Water Quality Middle Zone (B):

Water quality data was gathered for wells assigned and completed in the middle zone (B) of the aquifer to produce maps indicating the extent of contamination plumes. Data were interpolated to produce contamination maps using the Natural Neighbor method.

A water quality map for the middle zone of the aquifer (Zone B) (Figure 10, 19) suggests that the area near the proposed well location is near or below the fresh and useable standard of 500 mg/L and may be near or above the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.

Nearby monitoring well EB44B samples from 2013 indicate that aquifer (Zone B) contains 49 mg/l (Figure 13), and is increasing in chloride concentration with time. However, water quality data from monitoring wells to the east, south, and west all indicate chloride levels exceeding 500 mg/L in the middle aquifer zone

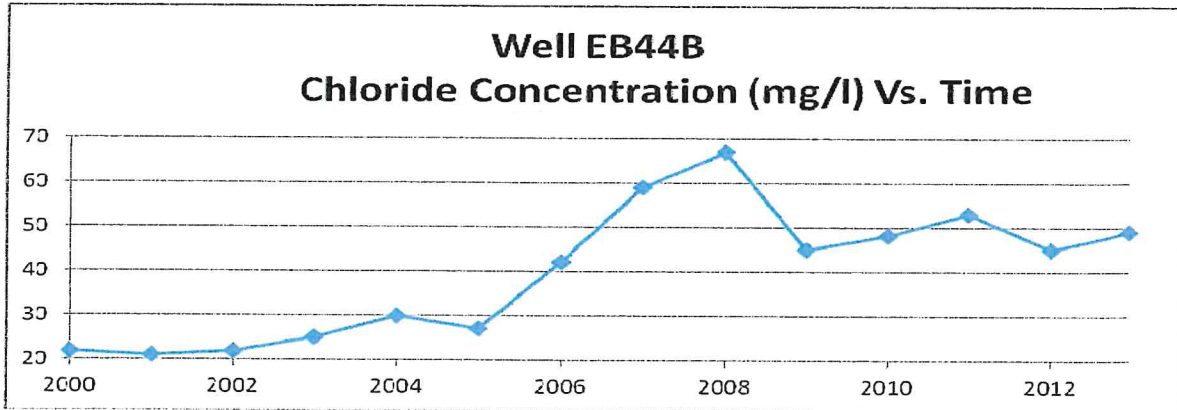


Figure 13. Chloride concentrations at EB44B (see Figure 2 for location).

Water Quality Lower Zone (C):

Water quality data was gathered for wells assigned and completed in the lower most zone (Zone C) of the aquifer to produce maps indicating the extent of contamination plumes. Data was then interpolated to produce contamination maps using the Natural Neighbor method, with an output cell size of 10 meters.

A water quality map for the lower zone of the aquifer (C) (Figure 11, 20) suggests that the area near the proposed well location is below the fresh and useable standard of 500 mg/L and may be below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.

Water quality data from nearby monitoring site EB44C indicate a chloride concentration of 106 mg/L (Figure 14). Decreasing chloride concentration with time coupled with the hydraulic gradient (Figure 7) suggests that the contamination may be slowly migrating eastward (away from the proposed well location).

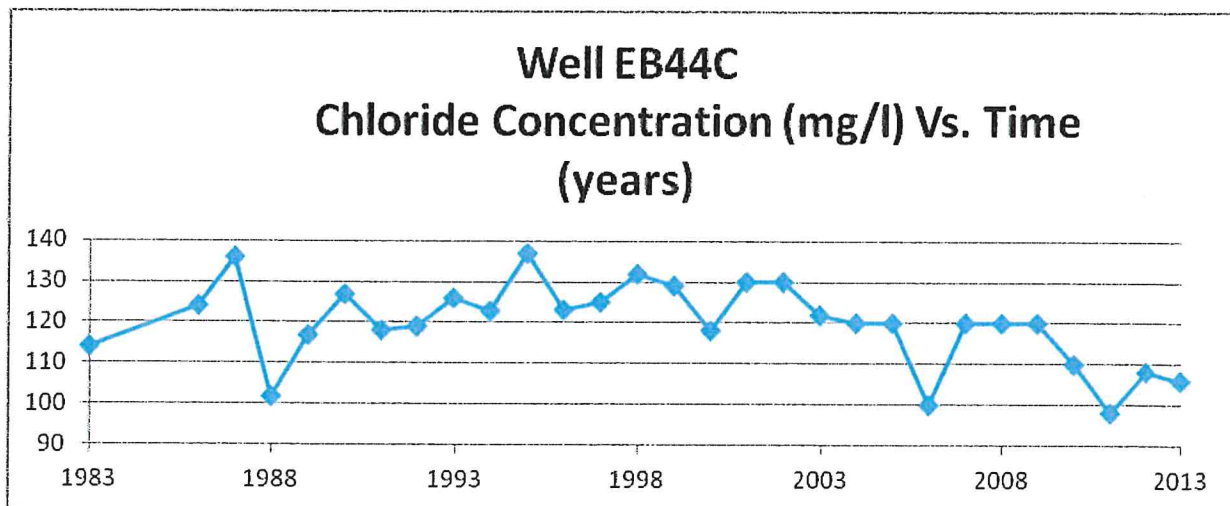


Figure 14. Chloride concentrations at EB44C (see Figure 2 for location).

Water Levels:

Hydrographs of the EB44 series of monitoring wells are shown below. The EB44 monitoring well site is located approximately 4700 feet northeast of the application (Figure 2).

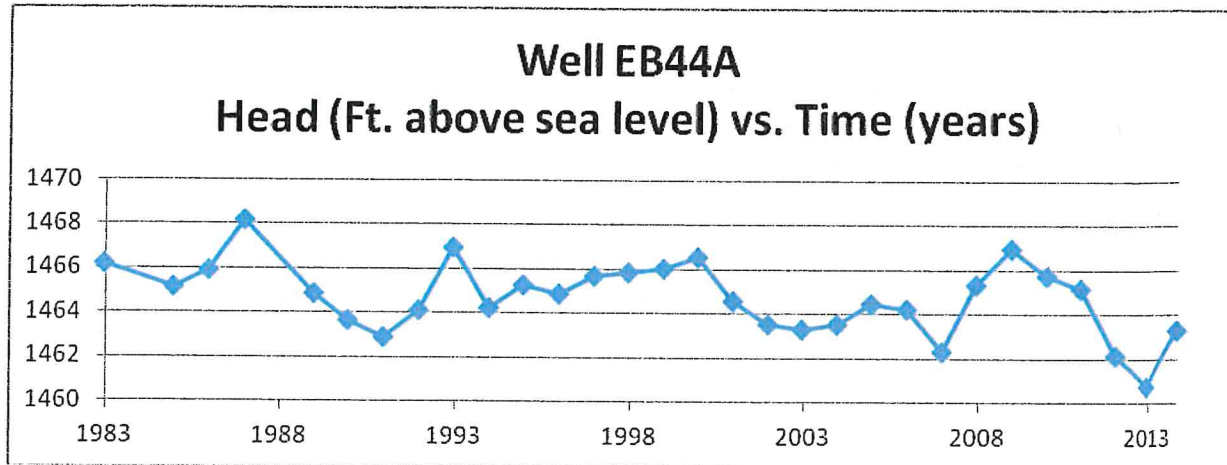


Figure 15. Head through time

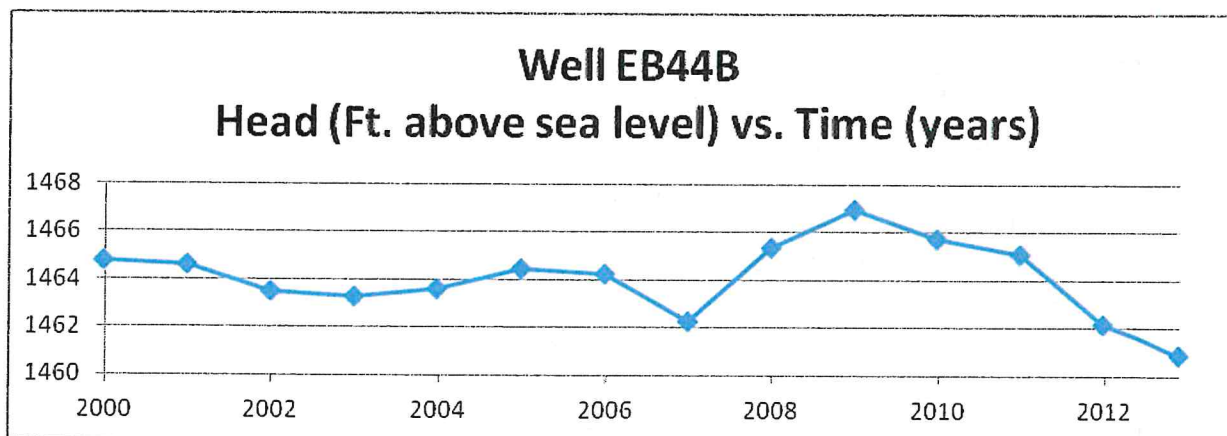


Figure 16. Head through time

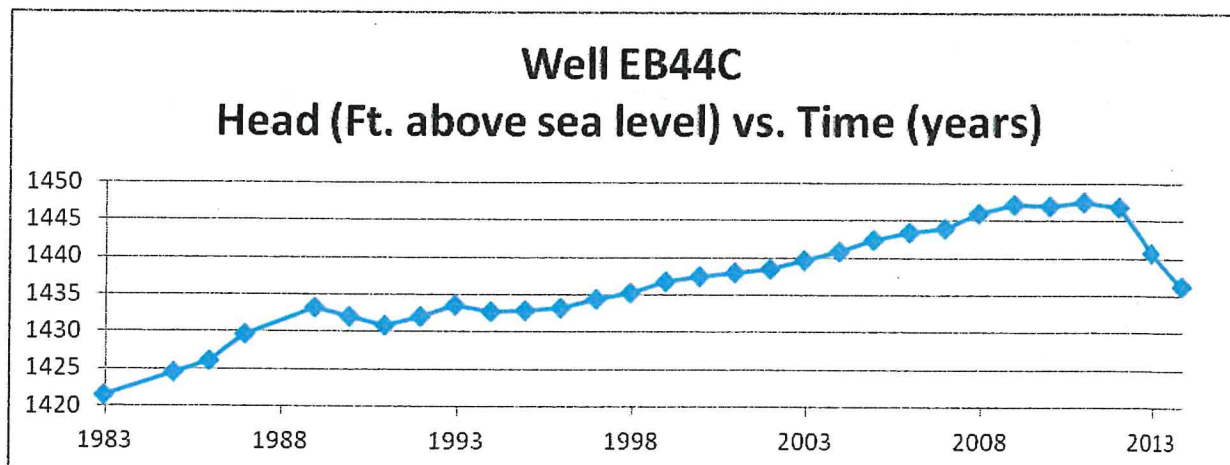


Figure 17. Head through time

The application at the proposed rate and quantity (800 GPM and 105 acre-feet) will create additional drawdown from pumping at the proposed well site. The primary direction of groundwater flow in the Burrton IGUCA is east-southeast. A well at the proposed location may influence the migration of chloride contamination by altering the sensitive natural groundwater gradient.

A single well computer drawdown simulation (Figure 21) was prepared for the proposed well. The drawdown simulation was based on the following hydrologic assumptions and variables: 1) maximum diversion rate of 800 GPM; 2) a transmissivity value of 21,000 gpd/ft; 3) a specific yield of 0.15; 4) a drawdown distance of 1320 feet; and 5) a continuous pumping period of 29.7 days (29.7 days represented the continuous pumping time required to pump 105 acre-feet at a diversion rate of approximately 800 GPM).

The 29.7 day continuous pumping simulation at 800 GPM (Figure 21), found that aquifer drawdown was 5.4 feet at a distance of 660ft, 1.4 feet at a distance of 1,320 feet, and 0.02 feet at a distance of 2640 feet from the pumping well.

STAFF RECOMMENDATIONS:

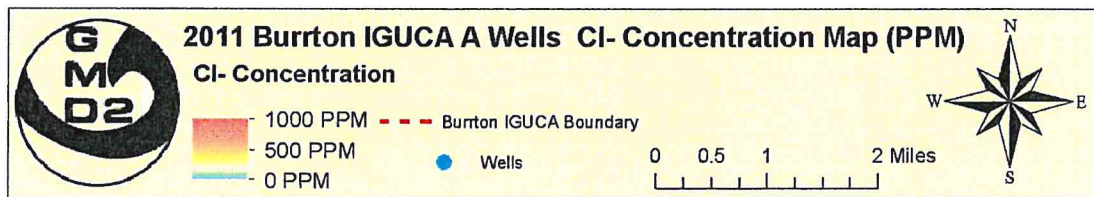
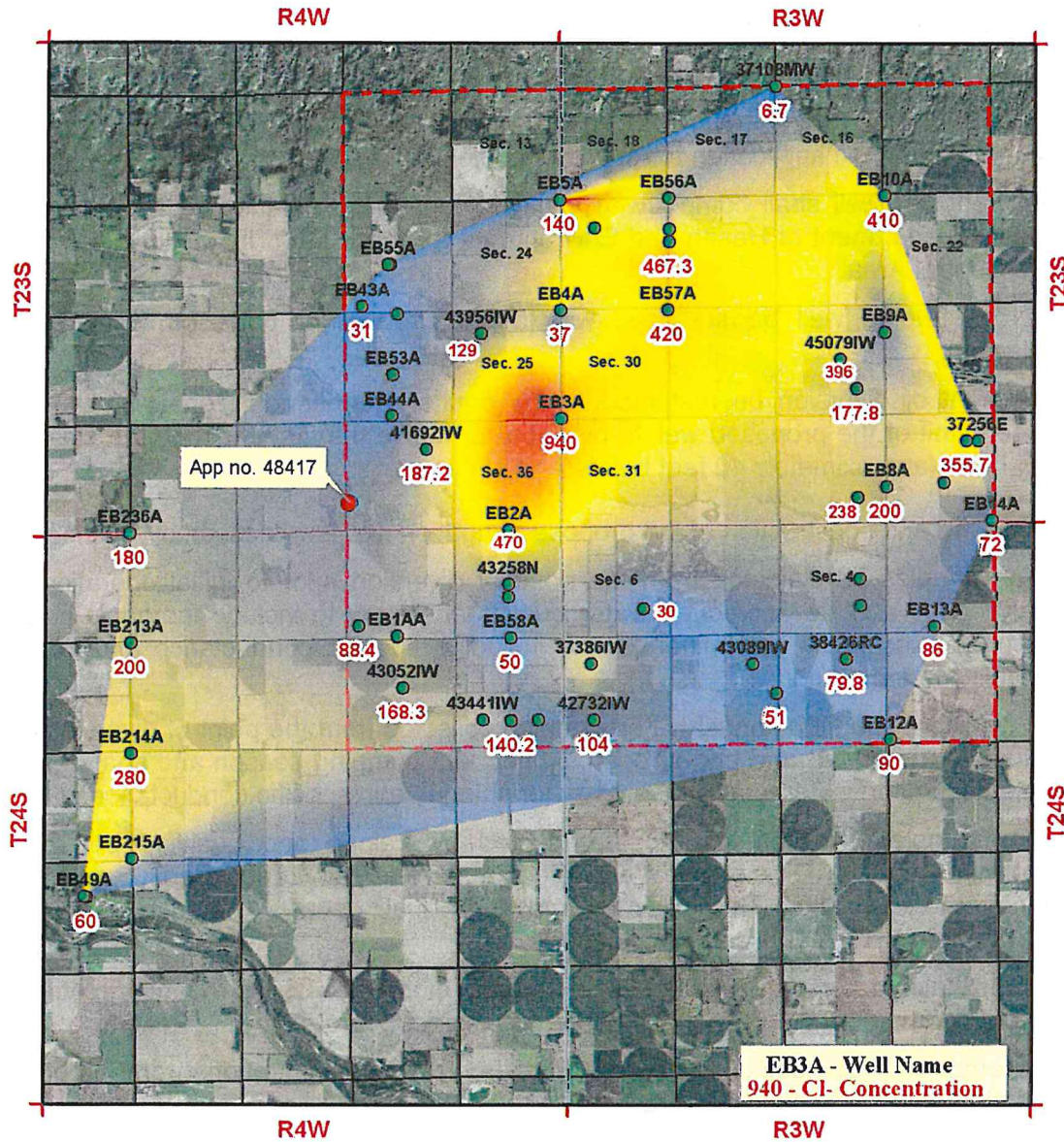
Based on the following District findings that:

- 1) The application complies with the District's Revised Management Program (effective May 1, 1995), and Rules and Regulations K.A.R. 5-22-1 through 5-22-17;
- 2) The application is subject to District metering regulation K.A.R. 5-22-4a;
- 3) One test log was submitted by the applicant with the application, completed at 39 feet below land surface. The water quality analysis from the test well returned a chloride value of 65 mg/L at a depth of 39 feet bls. Because the test well was not completed to bedrock, the location and thickness of underlying clay layers could not be determined.
- 4) Water quality data indicates that chloride concentrations are the highest in the middle (B) zone, except where clay lenses inhibit storage and migration;
- 5) Chloride levels in the shallow zone of the aquifer (AA) near the proposed point of diversion appear to be below the fresh and useable standard of 500 mg/L and below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.
- 6) The proposed application does not appear to be down-gradient of an area of maximum contamination in the shallow (AA) zone if the current hydraulic gradient is maintained.
- 7) Sample data indicate the chloride contamination plume is likely moving down-gradient eastward or east-southeast and should remain east of the proposed point of diversion.
- 8) The shallow zone of the aquifer (AA) at this location may not contain an adequate saturated thickness for the proposed rate and quantity.
- 9) Nearby monitoring wells water quality information indicate chloride levels in the upper zone (A) of the aquifer near the proposed point of diversion are below the fresh and useable standard of 500 mg/L and below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.
- 10) Nearby monitoring wells water quality information suggests that chloride levels in the middle zone (B) of the aquifer near the proposed point of diversion are near or below the fresh and useable standard of 500 mg/L and may be near or above the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.

- 11) Nearby monitoring wells water quality information suggests chloride levels in the lower zone (C) of the aquifer near the proposed point of diversion are below the fresh and useable standard of 500 mg/L and may be below the secondary drinking water maximum contaminant levels (MCL) of 250 mg/L.
- 12) There are several domestic wells downgradient of the proposed point of diversion.

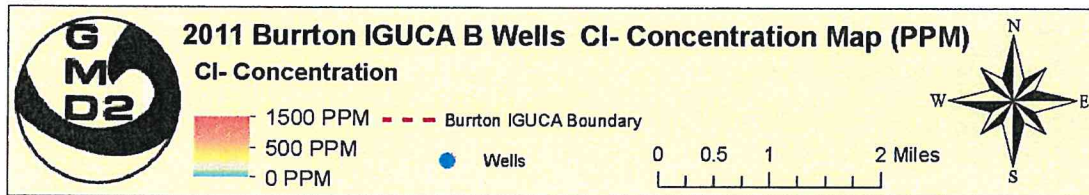
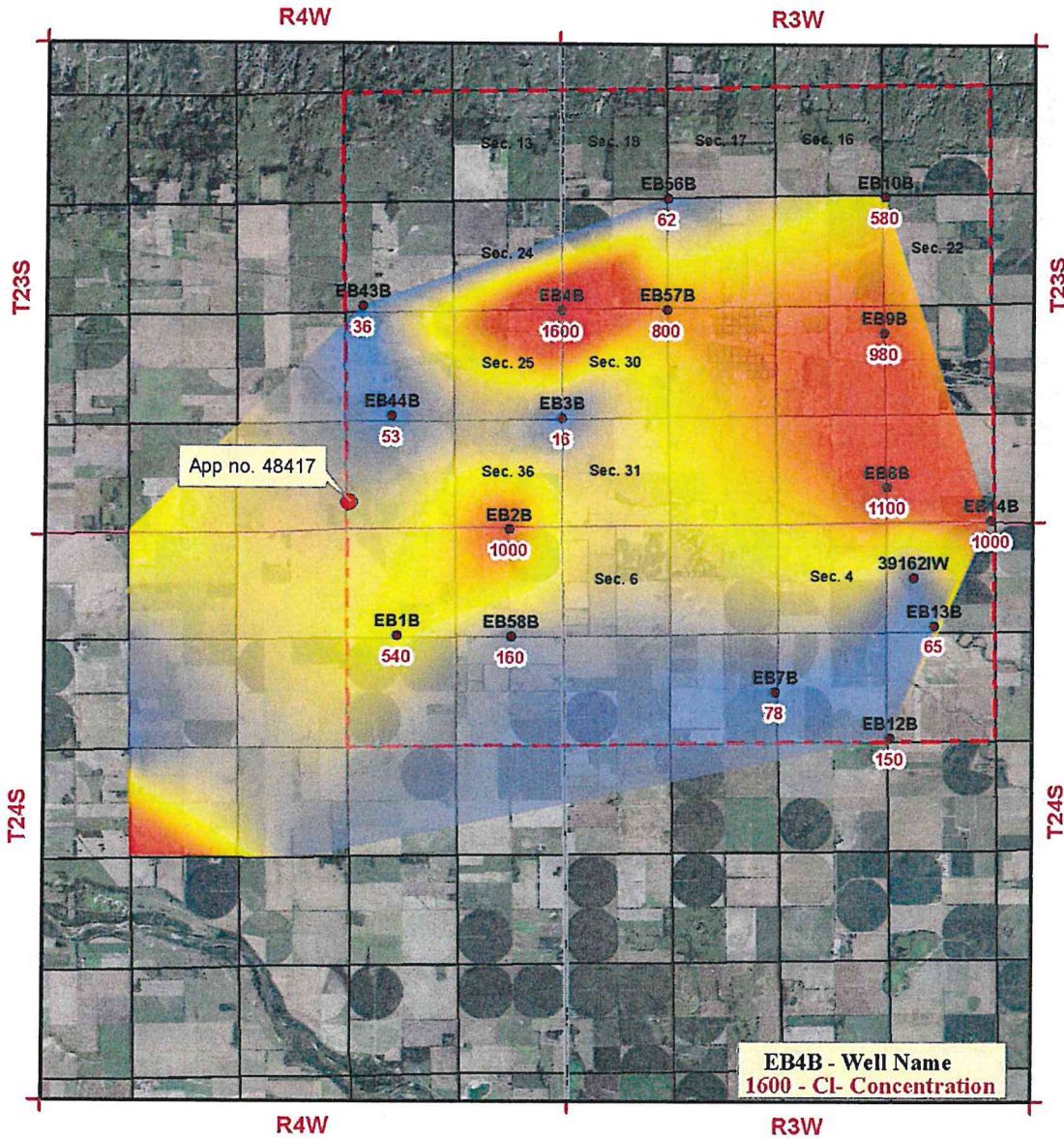
Staff recommends that the application for approval subject to:

1. The proposed well shall comply with the well construction standards adopted by the Kansas Department of Health and Environment for the Burrton Intensive Groundwater Use Control Area.
2. The constructed well be equipped with a sample port or ports for water sample collection.
3. The point of diversion be restricted to the aquifer's uppermost zone with the lower screen limit of the proposed well to be set at or above the first encountered significant clay layer (approximately 40 feet below land surface).
4. The drilling and construction of the proposed irrigation well is witnessed by District Staff;
5. Water samples be collected from the point of diversion prior to initial operation, and analyzed by a State accredited water quality laboratory to include inorganic analysis comprised of metals and minerals and including specific conductance and irrigation suitability interpretation.
6. The applicant submit biannual water samples collected from the point of diversion to be collected at the start and end of each subsequent pumping season and analyzed by a State accredited water quality laboratory for chloride and specific conductance.
7. Water sample collection shall be conducted by trained and qualified persons as determined by the Division of Water Resources and the Equus Beds Groundwater Management District. The collection and water quality analysis of each sample shall be completed at the applicant's expense.
8. Any application for change in point of diversion to modify the well to a depth greater than 40 feet below land surface shall be subject to District Board review.
9. The permit shall be subject to Board review if chloride concentrations from the point of diversion equal or exceed 250 mg/L;
10. The approved water permit is subject to the provisions of the June 1, 1984, Burrton Intensive Groundwater Use Control Area order or any revisions thereof.



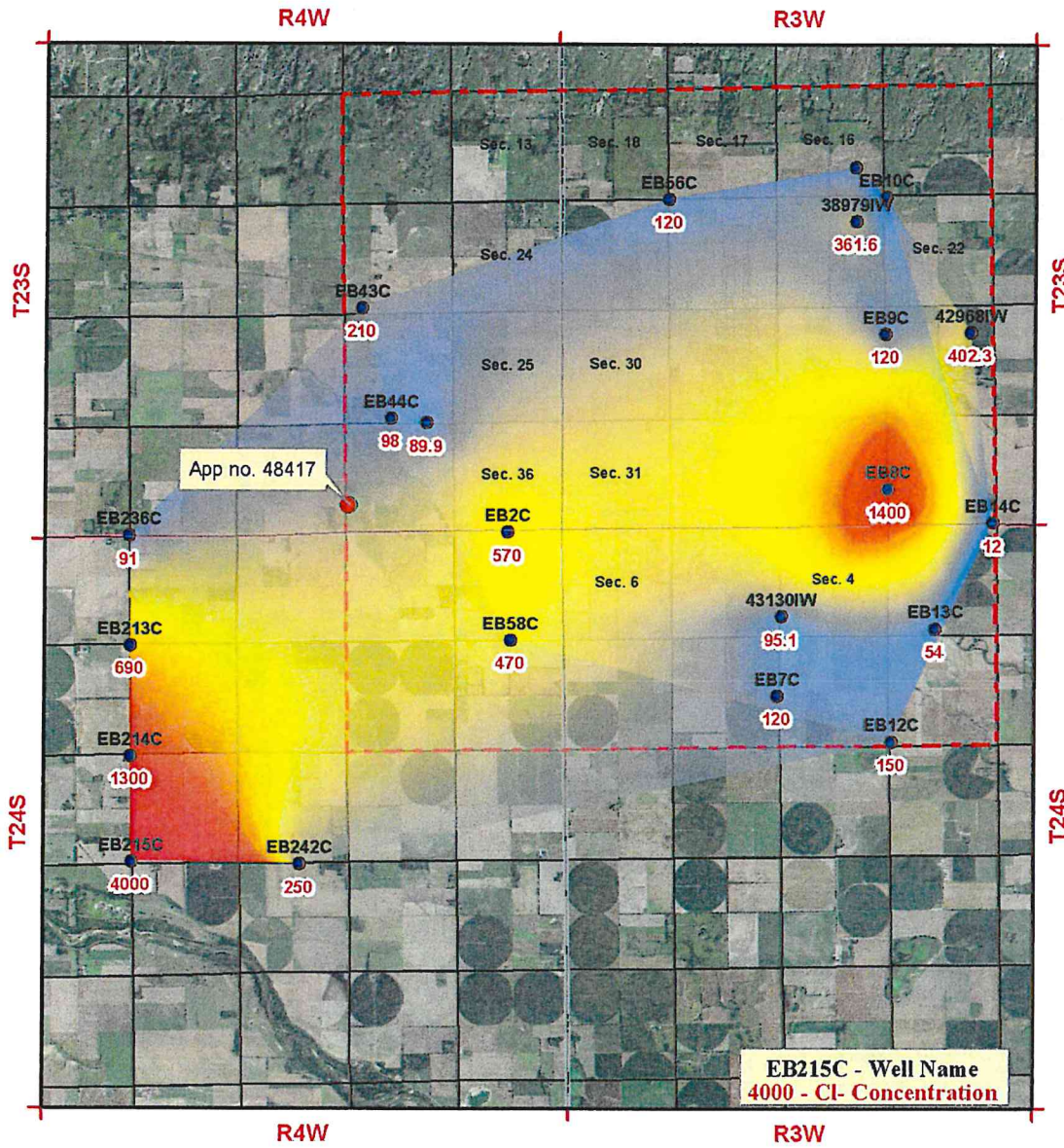
Map By: S. Flaherty

Figure 18.

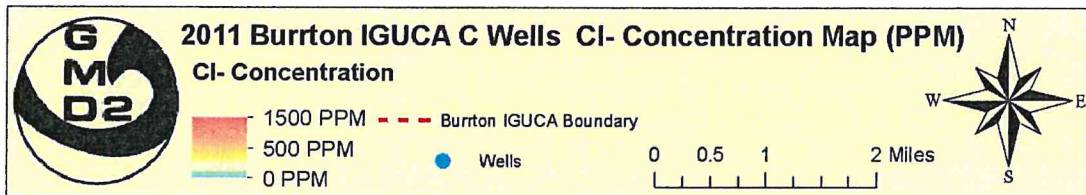


Map By: S. Flaherty

Figure 19.



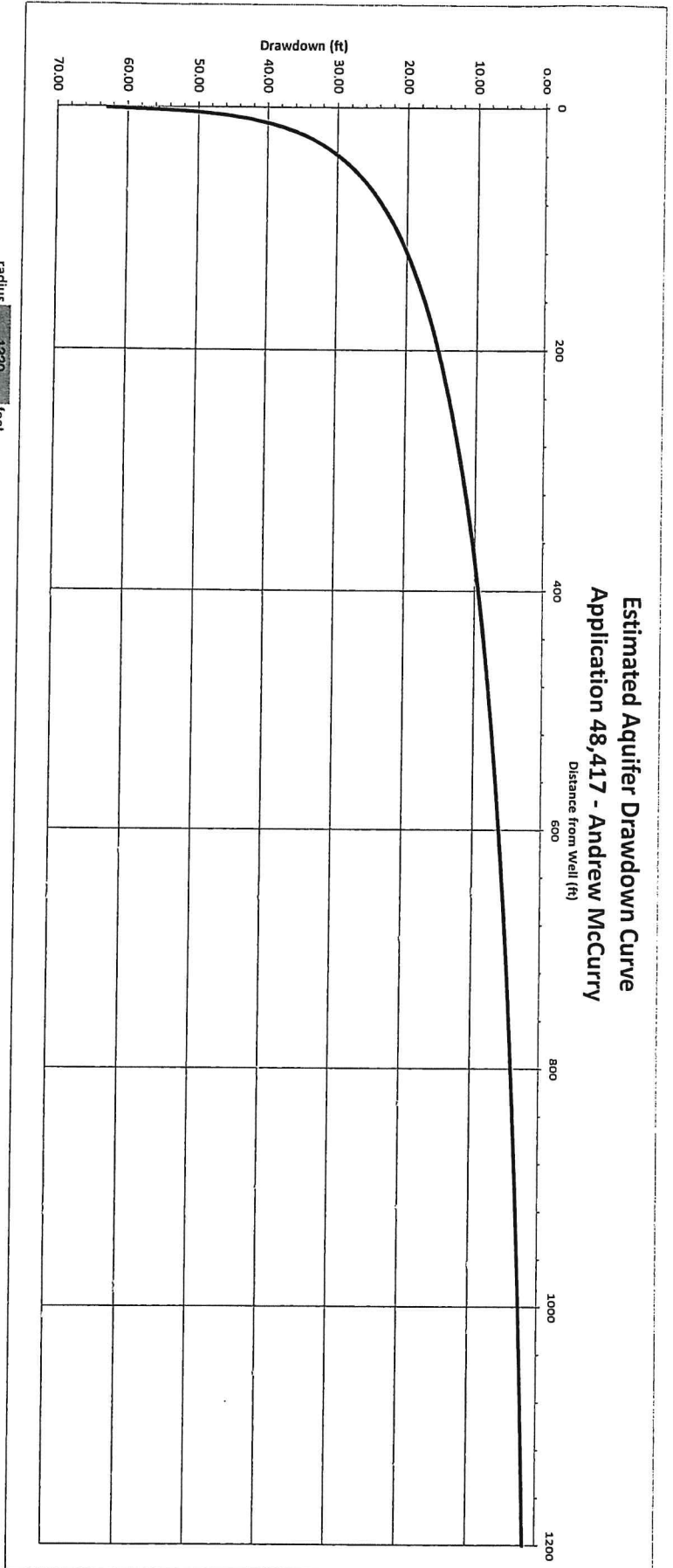
EB215C - Well Name
4000 - CI- Concentration



Map By: S. Flaherty

Figure 20.

EXHIBIT B



radius	1320	feet
S	0.15	NA
T	2,790	ft ² /d
Q	154,001	ft ³ /d
time	30	days

Figure 21

$$u = \frac{r^2 S}{4Tt} = \frac{1320^2 \cdot 0.15}{4 \cdot 2790 \cdot 30} = 8.08E-01$$

$$dh = \frac{Q \cdot W(u)}{4 \cdot 3.14 \cdot T} = \frac{154001 \cdot 1.39}{4 \cdot 3.14 \cdot 2790} = 0.31 \text{ feet}$$

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1320 Research Park Drive
Manhattan, KS 66502
785-564-6700
www. agriculture.ks.gov



900 SW Jackson, Room 456
Topeka, KS 66612
785-296-3556

Mike Beam, Secretary

Laura Kelly, Governor

MARY S MCCURRY
ANDREW J & MARY S MCCURRY TRUST
11913 E ILLINOIS AVE
BURRTON KS 67020

RE: Appropriation of Water, File No. 50,026

Dear Mrs. M^cCurry :

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 the permit, with specific reference to the conditions described in Paragraph Nos. 18 - 24 for the Burrton Intensive Groundwater Use Control Area, and the additional limitation in Paragraph No. 25 of the permit. A water meter is required, and you must install this prior to water being put to beneficial use in order for you to maintain accurate records of the water used. The meter should be used to provide the information required on the annual water use report.

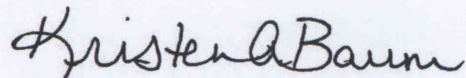
Enclosed is a form which may be used to notify the Chief Engineer that the proposed diversion works have been completed. Please submit this form with the required fee which is currently \$400.00. Failure to notify the Chief Engineer of the Division of Water Resources of the completion of the diversion works within the time allowed, or within any authorized extension of time thereof, will result in the dismissal of this permit.

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 me at 785-564-6640, or our staff at the Stafford Field Office, 785-234-5311. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,



Kristen A. Baum
New Applications Unit Supervisor
Water Appropriation Program

KAB:LI:li:

Enclosures

pc: Stafford Field Office
Groundwater Management District No. 2
Charles E. Rudicel III

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Christopher W. Beightel, Acting Chief Engineer

APPROVAL OF APPLICATION and PERMIT TO PROCEED

(This Is Not a Certificate of Appropriation)

This is to certify that I have examined Application, **File No. 50,026** of the applicant

MARY S MCCURRY
11913 E ILLINOIS AVE
BURRTON KS 67020

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 **March 28, 2018**.
2. That the water sought to be appropriated shall be used for irrigation use on land described in the application as follows:

Sec. Twp. Range	NE $\frac{1}{4}$				NW $\frac{1}{4}$				SW $\frac{1}{4}$				SE $\frac{1}{4}$				TOTAL
	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	
35 23S 4W									40.0	40.0	38.0	36.0					154.0

3. That the authorized source from which the appropriation shall be made is groundwater, to be withdrawn by means of a one (1) well located in the Southwest Quarter of the Northwest Quarter of the Southwest Quarter (SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$) of Section 35, more particularly described as being near a point 1,325 feet North and 5,290 feet West of the Southeast corner of said section, in Township 23 South, Range 4 West, Reno County, located substantially as shown on the topographic map accompanying the application.

4. That this appropriation 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 **215.6 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, 2021**, 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, 2025**, 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 with the 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 all wells with a diversion rate of 100 gallons per minute or more drilled under the authority of this permit shall have a tube or other device installed in a manner acceptable to, and in accordance with specifications adopted by, the Chief Engineer. This tube or device shall be suitable for making water level measurements and shall be maintained in a condition satisfactory to the Chief Engineer.

14. 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.

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

16. 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.

17. 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.

18. That the point of diversion be restricted to the aquifer's uppermost zone with the lower screen limit of the proposed well to be set at or above the first encountered clay layer (approximately 40 feet below land surface).

19. That the construction of the proposed well shall be equipped with a sample port of ports for water collection.

20. That the applicant shall submit biannual (twice a year) water samples to be collected at the start and end of each subsequent pumping season and analyzed by a state accredited water quality laboratory for chloride and specific conductance.

21. Water sample collection shall be conducted by trained and qualified persons as determined by the Division of Water Resources and the Equus Beds Groundwater Management District. The collection and water quality analysis of each sample shall be completed at the applicant's expense.

22. That the permit shall be subject to review by the Board of the Equus Beds Groundwater Management District No. 2, if chloride concentrations from the point of diversion equal or exceed 250 mg/L.

23. That any application for a change in point of diversion to modify the well to a depth greater than 40 feet below land surface shall be subject to the Equus Beds Groundwater Management District No. 2 Board review.

24. That the proposed well shall comply with the well construction standards adopted by the Kansas Department of Health and Environment for the Burrton Intensive Groundwater Use Control Area.

25. That the approved water permit is subject to the provisions of the June 1, 1984 Burrton Intensive Groundwater Use Control Area order or any revisions thereof.

26. That the quantity of water and rate of diversion approved under this permit is further limited to the quantity and rate which combined with Appropriation of Water, File No. 48,417, will provide a total not to exceed **215.6 acre-feet** of water per calendar year to be diverted at a maximum diversion rate not in excess of **800 gallons per minute** (1.78 c.f.s.) from the point of diversion described herein.

Ordered this 6th day of May, 2020, in Manhattan, Riley County, Kansas.



Chris Beightel
Christopher W. Beightel, P.E.
Acting Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
County of Riley) SS

The foregoing instrument was acknowledged before me this 6th day of May 2020, by, Christopher W. Beightel, P.E., Acting Chief Engineer, Division of Water Resources, Kansas Department of Agriculture.



Katie N. Anderson
Notary Public

RIGHT TO A HEARING AND TO ADMINISTRATIVE REVIEW

If you are aggrieved by this Order, then pursuant to K.S.A. 82a-1901, you may:

- 1) request an evidentiary hearing before the Chief Engineer, or
- 2) request administrative review by the Secretary of Agriculture.

Failure to request an evidentiary hearing before the Chief Engineer does not preclude your right to administrative review by the Secretary.

To obtain an evidentiary hearing before the Chief Engineer, a written request for hearing must be filed within 15 days after service of this Order as provided in K.S.A. 77-531 (i.e., **within a total of 18 days after this Order was mailed to you**), with: Kansas Department of Agriculture, Attn: Legal Section, 1320 Research Park Drive, Manhattan, KS 66502, FAX (785) 564-6777.

If you do not file a request for an evidentiary hearing before the Chief Engineer, you may petition for administrative review of the Order by the Secretary of Agriculture. A petition for review shall be in writing and state the basis for requesting administrative review. The request for hearing may be denied if the request fails to clearly establish factual or legal issues for review. See K.S.A. 77-527. The petition must be filed within 30 days after service of this Order as provided in K.S.A. 77-531 (i.e., **within a total of 33 days after this Order was mailed to you**), and be filed with: Secretary of Agriculture, Attn: Legal Division, Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, KS 66502, FAX (785) 564-6777.

If neither a request for an evidentiary hearing nor a petition for administrative review is filed as set forth above, then this Order shall be effective and become a final agency action as defined in K.S.A. 77-607(b). Failure to timely request either an evidentiary hearing or administrative review may preclude further judicial review under the Kansas Judicial Review Act.

Any request for a 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.

CERTIFICATE OF SERVICE

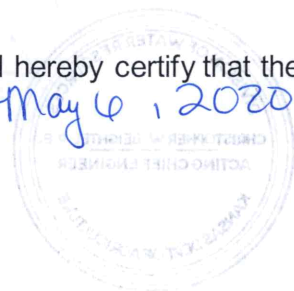
On this 11th day of May, 2020, I hereby certify that the foregoing Approval of Application and Permit to Proceed, File No. 50,026, dated May 6, 2020 was mailed postage prepaid, first class, US mail to the following:

MARY S MCCURRY
11913 E ILLINOIS AVE
BURRTON KS 67020

With photocopies to:

CHARLES E RUDICEL III
3604 N MAPLE ST
HUTCHINSON KS 67502

Stafford Field Office
Groundwater Management District No. 2



Katie Anderson
Division of Water Resources