

File No **42,733** 11. County: **LV** Basin **KANSAS RIVER** Stream: **NA** Formation Code: **632** Special Use:

12. Points of Diversion										Rate and Quantity					
MOD	DEL	PDIV	Qualifier	S	T	R	ID	'N	'W	Comment	Authorized		Additional		Overlap PD Files
ENT											Rate gpm	Quantity MGY	Rate gpm	Quantity MGY	
ENT	86197		SE SE NW	22	11	22	E	2696	2792		90	24	90	8.9	41844 39287
DEL	60519		SE SE NW	22	11	22	E 8	2678	2705						

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

14. Limitation: _____ Limitation: _____ when combined with file number(s) _____

15. 5YR Allocation: Allocation Type _____ Start Year _____ 5 YR Amount _____ Amount Unit _____ Base Acres _____ Comment _____

16. Place of Use										NE¼				NW¼				SW¼				SE¼				Total	Owner	Chg?	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	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼						
No changes to pu																													

Comments *GW monitoring well*

KANSAS DEPARTMENT OF AGRICULTURE
Division of Water Resources

M E M O R A N D U M

TO: Files

DATE: June 20, 2017

FROM: Brent A. Turney

RE: Water Right
File No. 39,287
Appropriation of Water
File Nos. 41,844 and 42,733

Applications to change the authorized point of diversion have been filed under the above referenced water rights. The applications propose to change the existing battery of four wells under File Nos. 39,287 and 41,844 and the single well authorized under Appropriation of water File No. 42,733, to a new single well.

There is one municipal well and numerous domestic wells, located within one half mile of the proposed point of diversion. Because the change is proposing a move of less than 300 feet, no notices were sent. Comments were received from Leavenworth County Rural Water District No. 7 opposing to the change to a single well. All of the submitted information was reviewed by John Munson, Environmental Scientist, DWR, and it was found that converting the existing battery of four wells and the single well to one well should not cause impairment to Rural Water District No. 7 Leavenworth County.

The source of supply for the existing well appears to be the Stranger formation, there should be no change in the local source of supply.

In an e-mail dated June 20, 2017, Katie Tietsort, Water Commissioner of the Topeka Field Office, recommended approval of the applications.

A water flow meter will be required on each point of diversion. A check valve will be required if any chemical or foreign substance is injected into the water through the diversion works.

Based on the above discussion, that the change is reasonable, that impairment to existing water rights is unlikely, that no change in the local source of supply will occur, it is recommended that the referenced applications be approved.


Brent A. Turney

Change Application Unit Supervisor

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



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

Jackie McClaskey, Secretary

Governor Sam Brownback

June 26, 2017

SUBURBAN WATER INC
TRAVIS MILES
PO BOX 588
BASEHOR KS 66007

FILE COPY

RE: Water Right
File No. 39,287
Appropriation of Water
File Nos. 41,844 and 42,733

Dear Mr. Miles:

Enclosed are the orders executed by the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, approving the applications for change under the above referenced file numbers.

Your attention is directed to the enclosures and to the terms, conditions, and limitations specified in the approvals for change. A condition of the approvals is that an acceptable water flow meter must be installed on the diversion works authorized under the referenced file numbers. Please return the required notification of completion of the diversion works and installation of the required meters as soon as these actions are completed.

Since the order under Water Right, File No. 39,287, modifies the original certificate, it should be recorded with the Register of Deeds as other instruments affecting real estate.

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

Sincerely,



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

BAT
Enclosures
pc: Topeka Field Office



KANSAS DEPARTMENT OF AGRICULTURE
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

FILE COPY

APPROVAL OF APPLICATION FOR CHANGE IN POINT OF DIVERSION APPROPRIATION OF WATER, FILE NO. 42,733

The Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, after due consideration of the written application of Travis J. Miles, President and CEO, of Suburban Water Incorporated, 1216 North 155th Street, PO Box 588, Basehor, Kansas 66007, received in the office of the Chief Engineer on November 2, 2016, for approval of a change in the location of the point of diversion under the permit to appropriate water for beneficial use, finds that the change is reasonable and will not impair existing rights, that the change relates to the same local source of supply and that the application should be and is hereby approved.

The effective date of the change shall be the date this order is executed by the Chief Engineer, after which the authorized location of the points of diversion shall be:

One (1) well located in the Southeast Quarter of the Southeast Quarter of the Northwest Quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 22, more particularly described as being near a point 2,696 feet North and 2,792 feet West of the Southeast corner of said section, in Township 11 South, Range 22 East, Leavenworth County, Kansas,

located substantially as shown on the aerial map accompanying the application to change the point of diversion.

That the water right owner shall install and maintain a groundwater monitoring well at a location specified and approved by the Chief Engineer. Such observation well shall be installed and equipped to allow monitoring of water levels. Installation of the groundwater monitoring well and the associated equipment shall be at the expense of the water right owner.

That the groundwater monitoring well shall be located substantially located near the following point:

one (1) groundwater monitoring well in the Southeast Quarter of the Southeast Quarter of the Northwest Quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 22, more particularly described as being near a point 2,794 feet North and 2,929 feet West of the Southeast corner of said section in Township 11 South, Range 22 East, Leavenworth County, Kansas.

That the groundwater monitoring well shall be constructed and developed to ensure that it is hydraulically connected to the same aquifer as the well authorized by this water right and the well must be advanced to the bedrock surface. The observation well required herein shall be maintained, by the water right owner, in a condition that is satisfactory to the Chief Engineer.

That the applicant shall provide access for representatives of the Chief Engineer, to the observation well for measurements as may be necessary to document aquifer conditions.

That the applicant shall take and maintain readings from an installed transducer, owned and maintained at the expense of the applicant, on an hourly basis and shall keep those records available to the representatives of the Chief Engineer, permanently.

That the applicant shall provide the Division of Water Resources with an overview/summary of the data and/or a graph of the data monthly, by the 15th day of the following month.

Installation of the works for diversion of water shall be completed on or before December 31, 2017, or within any authorized extension of time. The applicant shall notify the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, when construction of the works for diversion has been completed.

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

All wells with a diversion rate of 100 gallons per minute or more drilled under the authority of this order 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.

All diversion works 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.

The water right owner shall properly install an acceptable water meter on the diversion works authorized under this water right, prior to the use of water, in strict accordance with the Kansas Administrative Regulations 5-1-4 through 5-1-12 adopted by the Chief Engineer. The water right owner shall notify the Chief Engineer when installation of the water meter has been completed. The water right owner shall maintain the water meter in an operating condition satisfactory to the Chief Engineer, at all times during diversion of water and shall maintain records from which the total quantity of water diverted may be determined. The water right owner shall also report the reading of said water meter and the total quantity of water diverted annually to the Chief Engineer. Such records shall be furnished to the Chief Engineer by March 1 following the end of each calendar year.

In all other respects, the Approval of Appropriation, File No. 42,733, for permit to appropriate water for beneficial use, is as stated and set forth in the approval dated August 18, 1997, as modified and amended by the aforementioned orders.

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

CERTIFICATE OF SERVICE

On this 26th day of June, 2017, I hereby certify that the attached Approval of Application for Change in Point of Diversion under Appropriation of Water, File No. 42,733, dated June 22nd, 2017 was mailed postage prepaid, first class, US mail to the following:

Suburban Water, Inc.
Travis J. Miles, President / CEO
1216 N. 155th St
PO Box 588
Basehor, KS 66007-0588

With photocopies sent to:

Topeka Field Office



Division of Water Resources

Submit To: CHIEF ENGINEER
Division of Water Resources
Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, Kansas 66502
http://agriculture.ks.gov/dwr

**APPLICATION FOR APPROVAL TO
CHANGE THE PLACE OF USE, THE
POINT OF DIVERSION OR THE USE
MADE OF THE WATER UNDER AN
EXISTING WATER RIGHT**



State of Kansas

Filing Fee Must Accompany the Application
(Please refer to Fee Schedule on signature page of application form.)

Paragraph Nos. 1, 2, 3, 4 & 8 must be completed. Complete all other applicable portions. A topographic map or detailed plat showing the authorized and proposed points(s) of diversion and /or place of use must accompany this application.

1. Application is hereby made for approval of the Chief Engineer to change the

- Place of Use
(Check one or more) Point of Diversion
 Use Made of Water

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12:47
KS DEPT OF AGRICULTURE

File No. 42733-00

2. Name of applicant: Suburban Water, Inc.

Address: PO BOX 588

City, State and Zip: Basehor, Kansas 66007

Phone Number: (913) 724-1800 E-mail address: travis@suburbanwaterinc.com

What is your relationship to the water right; owner tenant agent other? If other, please explain. _____

Name of water use correspondent: Travis J Miles

Address: PO BOX 588

City, State and Zip: Basehor, Kansas 66007

Phone Number: (913) 238-0040 E-mail address: travis@suburbanwaterinc.com

3. The change(s) proposed herein are desired for the following reasons (please be specific): Consolidate 3 water rights into 1 single point of diversion. Completion of 1 single municipal water well.

The change(s) (was) (will be) completed by December 31st, 2016
(Date)

For Office Use Only:							
F.O. Code	<u>1</u>	GMD	<u>CLT</u>	Meets K.A.R. 5-5-1 (YES/NO)	<u>(YES)</u>	Use	<u>MUN</u>
				Source	<u>(G)S</u>	County	<u>LV</u>
				Fee \$	<u>100</u>	TR #	<u>17010516</u>
				Receipt Date	<u>11/2/16</u>	By	<u>AW</u>
				Check #	<u>1446</u>	Date	<u>11/2/16</u>

11/7/2016 LM

4. The presently authorized place of use is:

Owner of Land — NAME: Grace Meadows U
 ADDRESS: 16821 158th Street, Bonner Springs, KS 66012-7241

Sec.	Twp.	Range	NE¼				NW¼				SW¼				SE¼				TOTAL ACRES
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
22	11	22E		X															

List any other water rights that cover this place of use. 42733 + 41844

Owner of Land — NAME: _____
 ADDRESS: _____

Sec.	Twp.	Range	NE¼				NW¼				SW¼				SE¼				TOTAL ACRES
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

List any other water rights that cover this place of use. _____

(If there are more than two landowners, attach additional sheets as necessary.)

5. It is proposed that the place of use be changed to: No Change

Owner of Land — NAME: _____
 ADDRESS: _____

Sec.	Twp.	Range	NE¼				NW¼				SW¼				SE¼				TOTAL ACRES
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

List any other water rights that cover this place of use. _____

Owner of Land — NAME: _____
 ADDRESS: _____

Sec.	Twp.	Range	NE¼				NW¼				SW¼				SE¼				TOTAL ACRES
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

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List any other water rights that cover this place of use. _____

6. The presently authorized point(s) of diversion (is) (are) 1-POD - 1 Water Well
(Provide description and number of points)
7. The proposed point(s) of diversion (is) (are) 1-POD - 1 Municipal Well
(Provide description and number of points)

List all presently authorized point(s) of diversion:

8. **Presently authorized point of diversion:**

One in the SE Quarter of the SE Quarter of the NW Quarter of Section 22, Township 11 South, Range 22 (E/W), in Leavenworth County, Kansas, 2678 feet North 2705 feet West of Southeast corner of section. Authorized Rate 90 Authorized Quantity 27.313

(DWR use only: Computer ID No. _____ GPS _____ feet North _____ feet West)

This point will not be changed This point will be changed as follows:

Proposed point of diversion: (Complete only if change is requested)

One in the SE Quarter of the NE Quarter of the NE Quarter of Section 22, Township 11 South, Range 22 (E/W), in Leavenworth County, Kansas, 2696 feet North 2792 feet West of Southeast corner of section. Proposed Rate 390 Proposed Quantity 414 Acre Feet

This point is: Additional Well Geo Center List other water rights that will use this point _____

9. **Presently authorized point of diversion:**

One in the _____ Quarter of the _____ Quarter of the _____ Quarter of Section _____, Township _____ South, Range _____ (E/W), in _____ County, Kansas, _____ feet North _____ feet West of Southeast corner of section. Authorized Rate _____ Authorized Quantity _____

(DWR use only: Computer ID No. _____ GPS _____ feet North _____ feet West)

This point will not be changed This point will be changed as follows:

Proposed point of diversion: (Complete only if change is requested)

One in the _____ Quarter of the _____ Quarter of the _____ Quarter of Section _____, Township _____ South, Range _____ (E/W), in _____ County, Kansas, _____ feet North _____ feet West of Southeast corner of section. Proposed Rate _____ Proposed Quantity _____

This point is: Additional Well Geo Center List other water rights that will use this point _____

10. **Presently authorized point of diversion:**

One in the _____ Quarter of the _____ Quarter of the _____ Quarter of Section _____, Township _____ South, Range _____ (E/W), in _____ County, Kansas, _____ feet North _____ feet West of Southeast corner of section. Authorized Rate _____ Authorized Quantity _____

(DWR use only: Computer ID No. _____ GPS _____ feet North _____ feet West)

This point will not be changed This point will be changed as follows:

Proposed point of diversion: (Complete only if change is requested)

One in the _____ Quarter of the _____ Quarter of the _____ Quarter of Section _____, Township _____ South, Range _____ (E/W), in _____ County, Kansas, _____ feet North _____ feet West of Southeast corner of section. Proposed Rate _____ Proposed Quantity _____

This point is: Additional Well Geo Center List other water rights that will use this point _____

11. Describe the current condition of and future plans for any point(s) of diversion which will no longer be used. Plug 5 Existing Water Wells and Complete 1 single water well.

IF MORE SPACE IS NEEDED, ATTACH ADDITIONAL SHEETS AS NECESSARY WATER RESOURCES RECEIVED

12. The presently authorized use of water is for Municipal purposes.
It is proposed that the use be changed to Municipal purposes.

13. If changing the place of use and/or use made of water, describe how the consumptive use will not be increased.

(Please show any calculations here.)

14. It is requested that the maximum annual quantity of water be reduced to _____ (acre-feet or million gallons).

15. It is requested that the maximum rate of diversion of water be reduced to _____ gallons per minute (____ c.f.s.).

16. The application must include either a topographic map or detailed plat. A U.S. Geological Survey Topographic Map, scale 1:24,000, is available through the Kansas Geological Survey, 1930 Constant Avenue, University of Kansas, Lawrence, Kansas 66047-3726 (www.usgs.gov). The map should show the location of the presently authorized point(s) of diversion. Distances North and West of the Southeast corner of the section must be shown. The presently authorized place of use should also be shown. Identify the center of the section, the section lines and the section corners and show the appropriate section, township, and range numbers on the map. In addition the following information must also be shown on the map.

a. If a change in the location of the point(s) of diversion is proposed, show:

- 1) The location of the proposed point(s) of diversion. Distances North and West of the Southeast corner of the section must be shown. Please be certain that the information shown on the map agrees with the information shown in Paragraph Nos. 9, 10 and 11 of the application.
- 2) If the source of supply is groundwater, please show the location of existing water wells of any kind, including domestic wells, within 1/2 mile of the proposed well or wells. Identify each well as to its use and furnish name and mailing address of the property owner or owners. If there are no wells within 1/2 mile, please indicate so on the map.
- 3) If the source of supply is surface water, the names and mailing addresses of all landowner(s) 1/2 mile downstream and 1/2 mile upstream from your property lines must be shown.

b. If a change in the place of use is desired, show the proposed place of use by crosshatching on the map. Please be certain that the information shown on the map agrees with the information shown in Paragraph No. 5 of the application.

17. Attach documentation to show the change(s) proposed herein will not impair existing water rights and relates to the same local source of supply as to which the water right relates. This information may include statements, plats, geology reports, well logs, test hole logs, and other information as necessary information to show the above. Additional comments may be made below.

18. If the proposed change(s) does not meet all applicable rules and regulations of the Kansas Water Appropriation Act, please identify the rules and regulations for which you request a waiver. State the reason why a waiver is needed and why the request should be granted. Attach documentation showing that granting the request will not impair existing water rights and will not prejudicially and unreasonably affect the public interest.

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IF MORE SPACE IS NEEDED, ATTACH ADDITIONAL SHEETS AS NECESSARY AGRICULTURE

SCANNED

Any use of water that is not as authorized by the water right or permit to authorize water **before** the chief engineer approves this application is a violation of the Kansas Water Appropriation Act for which criminal or civil penalties may be assessed. Such violation is a class C misdemeanor, punishable by a fine not to exceed \$500 and/or a term of confinement not to exceed one month in the county jail. K.S.A. 82a-728(b). Civil penalties shall be not less than \$100 nor more than \$1,000 per violation. In the case of a continuing violation, each day such violation continues may be deemed a separate violation. In addition to these penalties the water right may be modified or suspended. K.S.A. 82a-737, as amended.

The application must be signed by all owners of the place of use authorized under the water right and his or her spouse, if married. Please indicate if there is no spouse. If land is being purchased under contract, the seller must sign as landowner until such time as the contract is completed.

In the event that all applicants cannot appear before one notary public, they may as necessary sign separate copies of the application before any notary public conveniently available to them. All copies signed in this manner shall be considered to be valid parts of the application.

If the request is signed on behalf of any Owner by someone with legal authority to do so (for example, an agent, one who has power of attorney, or an executor, executrix, conservator), it will be necessary to attach proper documents showing such authority.

I declare that I am an owner of the currently authorized place of use as identified herein, or that I represent all such owners and am authorized to make this application on their behalf, and declare further that the statements contained herein are true, correct, and complete. By filing this application I authorize the chief engineer to permanently reduce the quantity of water and/or rate of diversion as specified in sections 14 and 15 of this application.

Dated at 1216 N 15th St, Berchaw, Kansas, this 1st day of November, 20 16.

~~Travis J Miles, President Suburban Water, Inc.~~
(Owner) (Spouse)

~~Travis J Miles, President Suburban Water, Inc.~~
(Please Print) (Please Print)
(Owner) (Spouse)

Travis J Miles, President Suburban Water, Inc.
(Please Print) (Please Print)

(Owner) (Spouse)

(Please Print) (Please Print)

State of Kansas }
County of Leavenworth } SS

I hereby certify that the foregoing application was signed in my presence and sworn to before me this 1st day of November, 20 16.

Patricia A. Peterson
Notary Public

My Commission Expires 1-3-2019



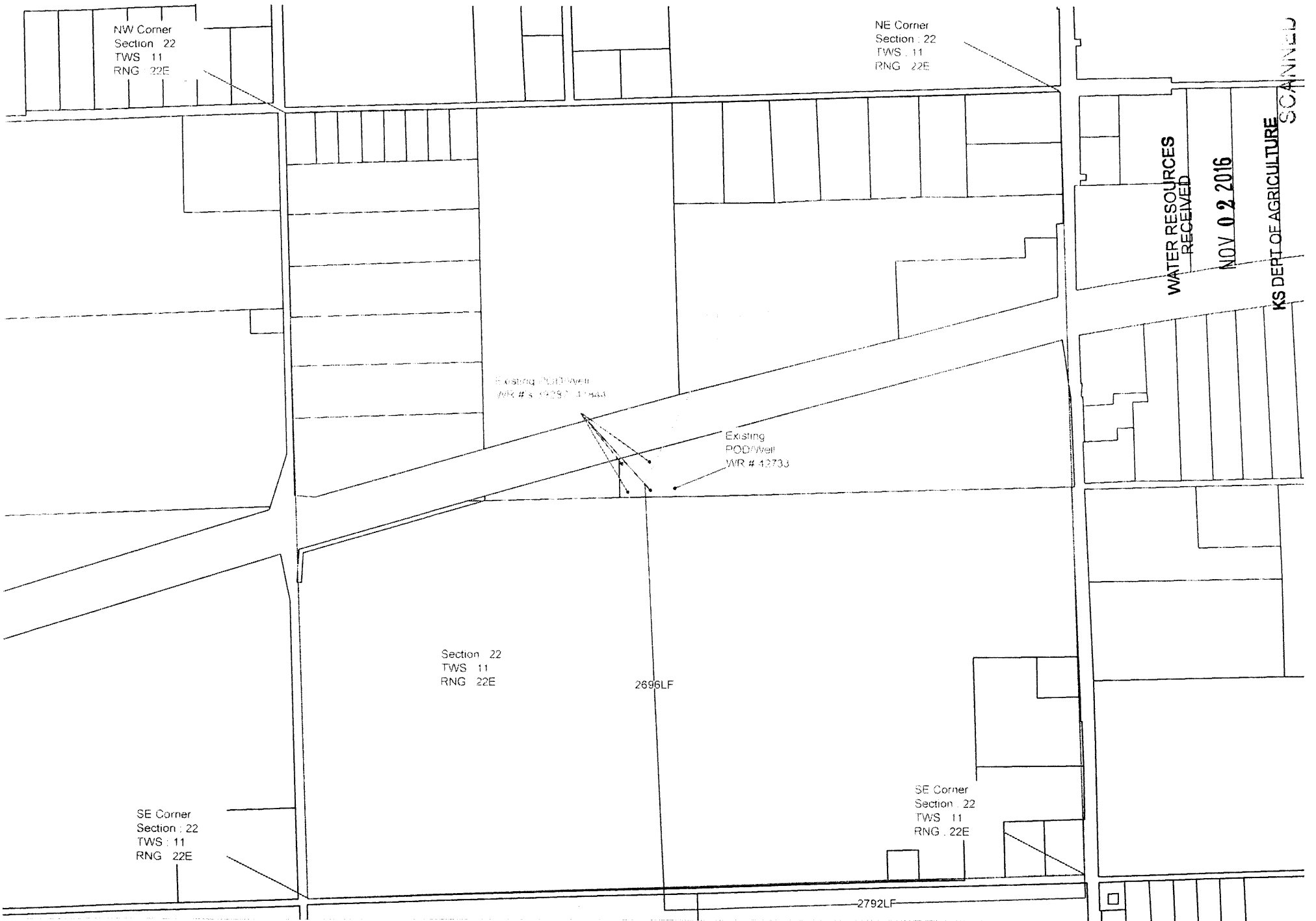
FEE SCHEDULE

Each application to change the place of use, the point of diversion or the use made of the water under this section shall be accompanied by the application fee set forth in the schedule below:

- (1) Application to change a point of diversion 300 feet or less \$100
- (2) Application to change a point of diversion more than 300 feet \$200
- (3) Application to change the place of use \$200
- (4) Application to change the use made of the water \$300

Make check payable to **Kansas Department of Agriculture.**

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KS DEPT OF AGRICULTURE
SCANNED



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



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

Jackie McClaskey, Secretary

Governor Sam Brownback

FILE COPY

November 4, 2016

SUBURBAN WATER INC
PO BOX 588
BASEHOR, KS

RE: File No. 42733

Dear Sir or Madam:

An application for approval of the Chief Engineer to change the following condition or conditions of the file number referred to above has been received:

- place of use PD
- point of diversion
- use made of water

As a matter of record, the Division of Water Resources has on hand a large number of applications awaiting processing. Therefore to be fair to all concerned, and so that we can process those applications on hand in the order they were received, we intend to concentrate on the backlog of applications until the issue is resolved. You will be contacted regarding this application as soon as it has been examined.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water prior to approval of the application is unlawful. You should not proceed and divert water as indicated by your plans in your application for a change for this file until you receive approval for this change from the Chief Engineer. Once approved, compliance with the terms, conditions and limitations of the permit is necessary. Conservation of the water resources of Kansas is required.

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

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

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

If you have any questions, please contact me at (785) 564-6645. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

A handwritten signature in cursive script that reads "Brent A. Turney".

Brent A Turney, L.G.
Change Applications Unit Supervisor
Water Appropriation Program

BAT: dlw

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



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

Jackie McClaskey, Secretary

Governor Sam Brownback

pc: TOPEKA Field Office GMD

Suburban Water Inc, requests that the Application to Change the Authorized Point of Diversion under File No. 42,733, be withheld from processing until September 1, 2017. This will allow them to evaluate the replacement well for well number 3 of the battery of 4 wells under File Nos. 39,287 and 41,844. After September the application will be further evaluated.

*W. J. Johnson P.E.
Consulting Engineer
Feb 13, 2017
@ 3:02 PM*

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FEB 13 2017

KS DEPT OF AGRICULTURE

Turney, Brent

From: Tietsort, Katie
Sent: Tuesday, June 20, 2017 9:01 AM
To: Turney, Brent
Subject: RE: 39287 Suburban chg pd 2

Brent,

I agree with your recommendation for approval as the pending application has been sufficiently vetted to consider nearby concerns from LV RWD 07 and as conditioned to make sure we can monitor the situation. As we just discussed, the language of the well condition should be adjusted to reflect appropriate conditions. Thanks for all of your efforts on this change application, it was a considerably difficult package.

Have a great day, Katie

Katie Tietsort

Kansas Department of Agriculture
6531 SE Forbes Ave Ste B
Topeka, KS 66619
katie.tietsort@ks.gov
Phone 785-296-5733

From: Turney, Brent
Sent: Tuesday, June 20, 2017 8:18 AM
To: Tietsort, Katie <Katie.Tietsort@ks.gov>
Subject: 39287 Suburban chg pd 2

Katie,
Can you give me a recommendation?
Brent

Turney, Brent

From: Tietsort, Katie
Sent: Thursday, June 15, 2017 12:25 PM
To: Turney, Brent
Cc: Munson, John
Subject: Suburban

OK, I talked to Travis this AM, the transducer is installed in the monitoring well now, so we are ready to proceed, how about these for the Suburban conditioning:

#xx1. That the applicant shall maintain, at the applicant's expense, the observation well located in the Southeast Quarter of the Southeast Quarter of the Northwest Quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 22, more particularly described as being near a point 2,794 feet North and 2,929 feet West of the Southeast corner of said section in Township 11 South, Range 22 East, Leavenworth County, Kansas, in a condition that is satisfactory to the Chief Engineer.

#xx2. That the applicant shall provide access for representatives of the Chief Engineer, to the observation well for measurements as may be necessary to document aquifer conditions.

#xx3. That the applicant shall take and maintain readings from an installed transducer, owned and maintained at the expense of the applicant, on an hourly basis and shall keep those records available to the representatives of the Chief Engineer, permanently.

#xx4. That the applicant shall provide the Division of Water Resources with an overview/summary of the data and/or a graph of the data monthly, by the 15th day of the following month.

Katie

Katie Tietsort

Kansas Department of Agriculture
6531 SE Forbes Ave Ste B
Topeka, KS 66619
katie.tietsort@ks.gov
Phone 785-296-5733

Technical Evaluation Proposed Change in Points of Diversion Suburban Water Company File Nos. 39,287; 41,844; and 42,733

November 2, 2016 the Suburban Water Company filed changes in points of diversion to combine their three water rights from the Moran well field from 5 wells and propose to pump all of the water from these three water rights from only one new larger capacity well. The new larger capacity well is to be located 50 feet northwest of existing Well No. 3 and they plan to plug all of the five existing old small capacity Well Nos, 1, 2, 3, 4 and 5.

Nearby Rural Water District No. 7 complained about the proposed new well in this area of limited water availability. RWD 7 obtained LEGGETTE, BRASHEARS & GRAHAM, INC., Professional Groundwater and Environmental Engineering Services, to review the proposal and concluded that an increase in withdrawal from the Suburban Moran well field would negatively impact water levels and production of the RWD 7 supply well.

Figure 1 shows the five Suburban Water Company wells in the Moran well field and the observation well located in the center of the field. The proposed location of the new well 50 feet northwest of Well No. 3 is shown on the map. Pumping rates in gallons per minute for each well are 48 gpm for Well 1, 76 gpm for Well 2, 68 gpm for Well 3 and 67 gpm for Well 4. The maximum yield of the well field is 290 gallons per minute when all wells are pumping at the same time.

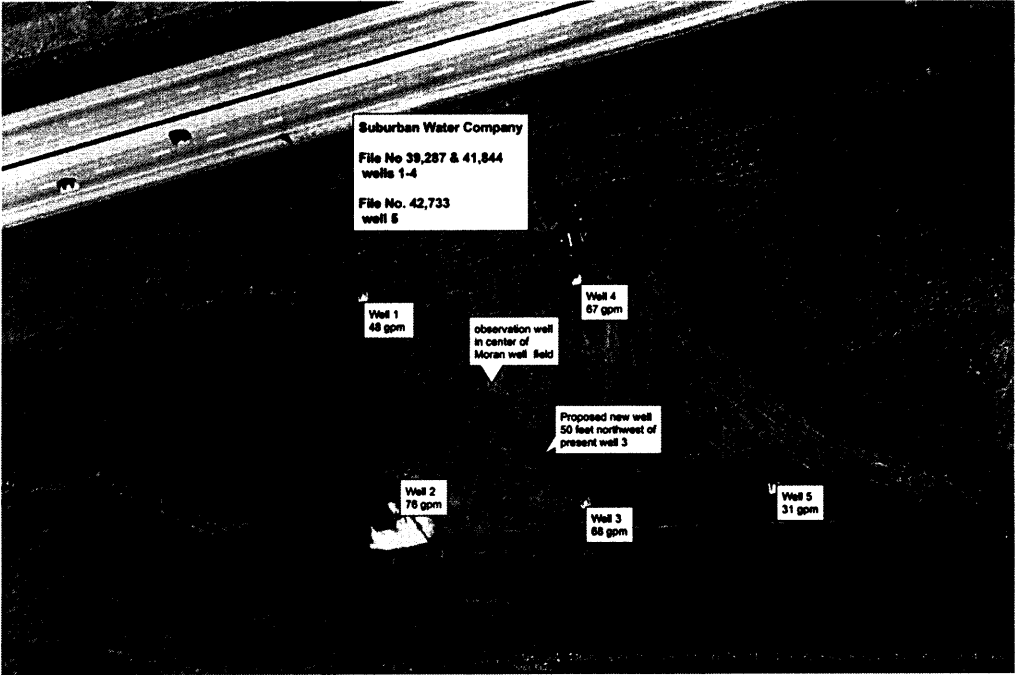


Figure 1 - Present locations and pumping rates of the five Suburban Water Company wells, the location of the observation well in the Moran well field and the proposed location of the new large capacity well 50 feet northwest of Well No. 3.

In January of 2006 DWR conducted a 30-hour aquifer test pumping all five of the Suburban wells and measuring drawdown in the observation well. All wells were pumped at their maximum rates and the total yield was 290 gallons per minute. The saturated thickness of the aquifer was 19 feet. The theoretical cone of depression generated by the wells based on the aquifer properties only extended a few feet deep into the limited saturated thickness of 19 feet at the end of the 30-hour test. **Figure 2**

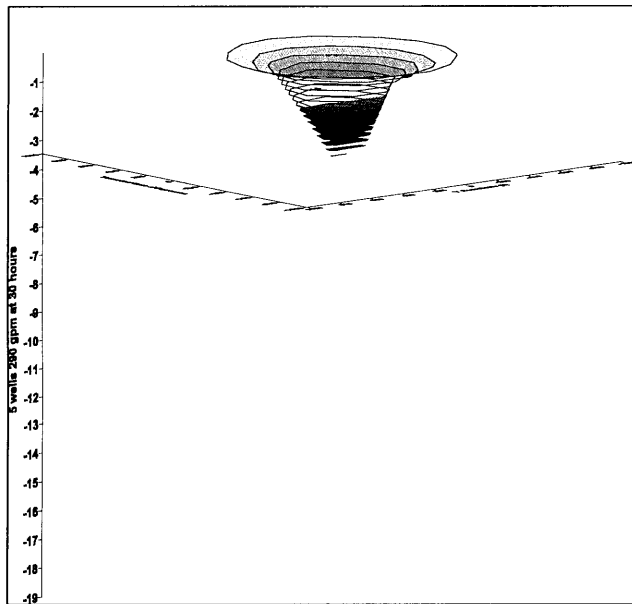


Figure 2 – Depth of theoretical cone of depression due to aquifer properties at end of the 30-hour aquifer test relative to measured saturated total thickness of the aquifer.

From May 2009 to March 2011 DWR had a water level transducer and data logger installed in the observation well recording water level measurements every 30 minutes. During this period depths to water were between 46 and 55 feet below ground level. **Figure 3** The supply wells are about 70 feet deep so measured saturated thickness of the aquifer ranged from about 15 to 24 feet for an average saturated thickness of about 19 feet.

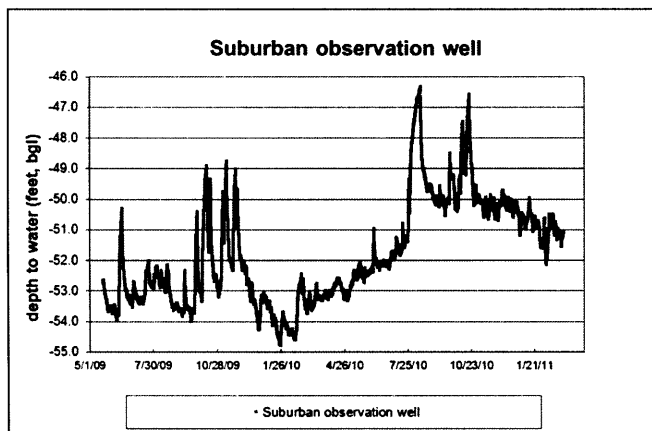


Figure 3 - Depths to water measured at the Suburban observation well during May of 2009 to March of 2011.

The monitoring period of 2010 was the second largest water use year over the last 10 years. The reported water use for Suburban in 2010 was 67.5 million gallons. **Figure 4** During 2010 the average daily use was about 185,000 gallons per day or 128 gallons per minute.

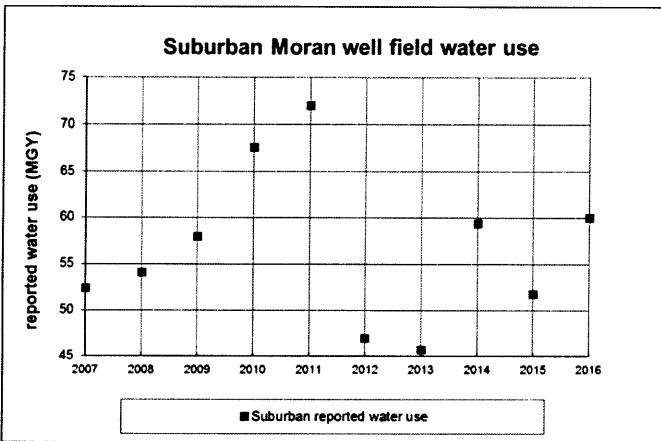


Figure 4 - Reported water use for the Suburban wells over the last 10 years.

The theoretical cone of depression produced by pumping Well No. 1 at 48 gpm and Well No. 2 at 76 gpm continuously at 124 gallons per minute for 365 days and 65 million gallons still only reaches a theoretical depth of about 31 percent of the total saturated thickness. **Figure 5**

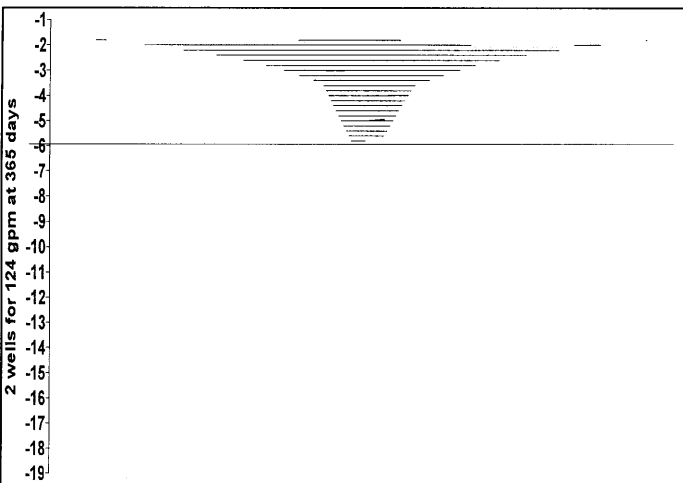


Figure 5 – Depth of theoretical cone of depression relative to total saturated thickness due to Suburban well field aquifer properties at the end of year pumping 124 gallons per minute continuously for 65 million gallons.

What the Theis simulated drawdown does not provide is the component of total drawdown due to well loss or drawdown at the wells due to factors other than simulated aquifer properties. The total drawdown at each Suburban well could not be measured during the aquifer test because of the way the wells were constructed without water level monitoring equipment. The supply wells at RWD 7 however have monitoring equipment installed to record the water levels at both Well No. 1 and Well No. 3. A six-hour pumping period on January 13, 2017 was chosen to analyze the data for aquifer properties and observed drawdown for well loss. **Figure 6**

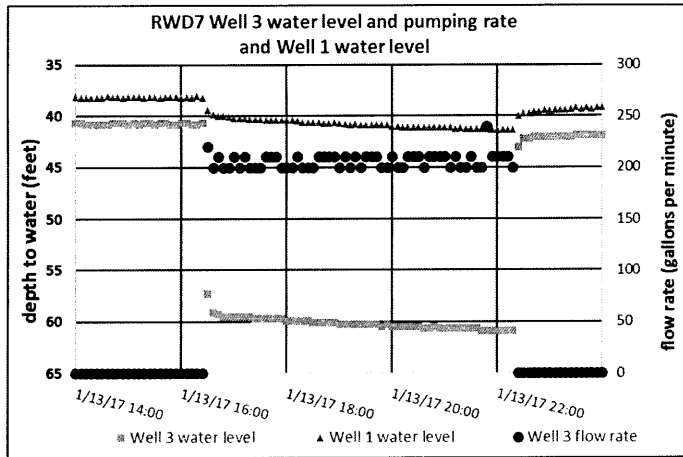


Figure 6 – RWD 7 Well No. 3 water level and pumping rate and Well No. 1 water level data that was analyzed for aquifer properties and observed drawdown.

Aquifer test analysis based on pumping RWD 7 Well No. 3 and water level change observed at Well No. 1 provides aquifer parameters to simulate theoretical drawdown at pumping Well No. 3. **Figure 7**

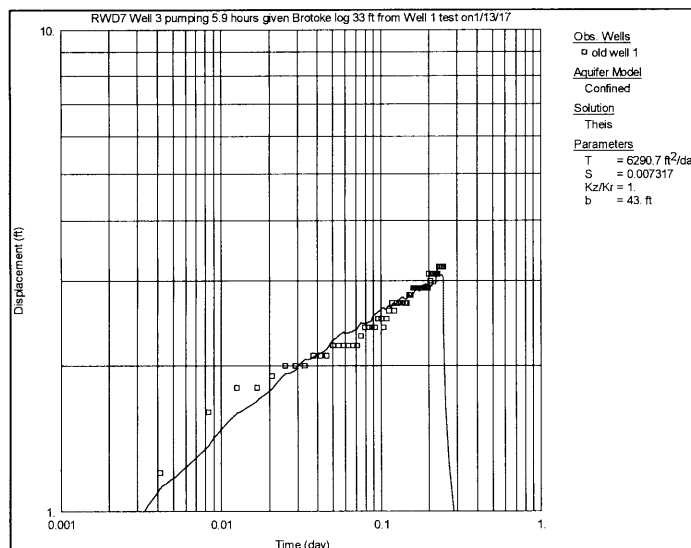


Figure 7 – Aquifer test analysis of pumping RWD 7 Well No. 3 and measured water levels at Well No. 1.

Measured water levels at RWD 7 Well No. 1 were used to determine aquifer properties for the aquifer test with the Theis solution by pumping nearby Well No. 3. While the maximum measured drawdown at Well No. 1 was 3.2 feet at the end of the test period the Theis theoretical maximum drawdown due to aquifer properties at pumping Well No. 3 at the end of the test period is only about 6.6 feet. **Figure 8**

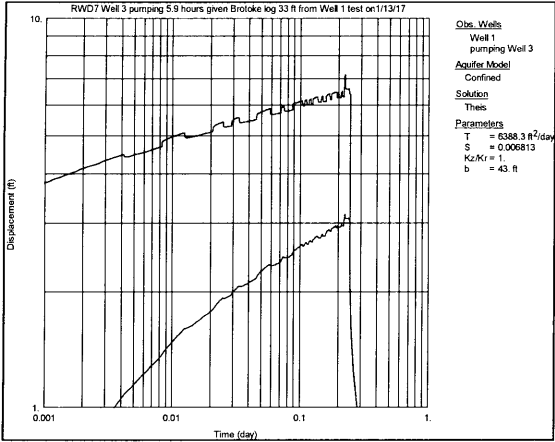


Figure 8 – RWD 7 aquifer test parameters simulated to show theoretical drawdown at pumping Well No. 3.

At the beginning of the aquifer test the depth to water at pumping Well No. 3 was 41 feet and by the end of the test the depth to water was 61 feet for a maximum drawdown of 20 feet. The theoretical drawdown of 6.6 feet at the end of the test is only about 33 percent of the actual measured drawdown of 20 feet. The difference between the Theis simulated drawdown due to aquifer properties and the total measured drawdown is viewed as well loss. This was unknown in the Suburban wells because water levels could not be measured at the pumping wells. The observed well loss at RWD 7 Well No. 3 is about 67 percent of the total measured drawdown. Adding well loss to the theoretical drawdown at the Suburban wells in their well field of limited saturated thickness essentially consumes the entire saturated thickness. The observed total drawdown of 20 feet at the RWD 7 well pumping only 6 hours at about 200 gallons per minute exceeds the saturated thickness of 19 feet at the Suburban well field.

Using the aquifer parameters determined in the aquifer test at the Suburban well field in 2006 the theoretical drawdown by pumping one well at 290 gallons per minute is about 78 percent of the total saturated thickness. **Figure 9** There does not appear to be enough saturated thickness to pump one well 290 gpm when addition drawdown due to well loss is considered.

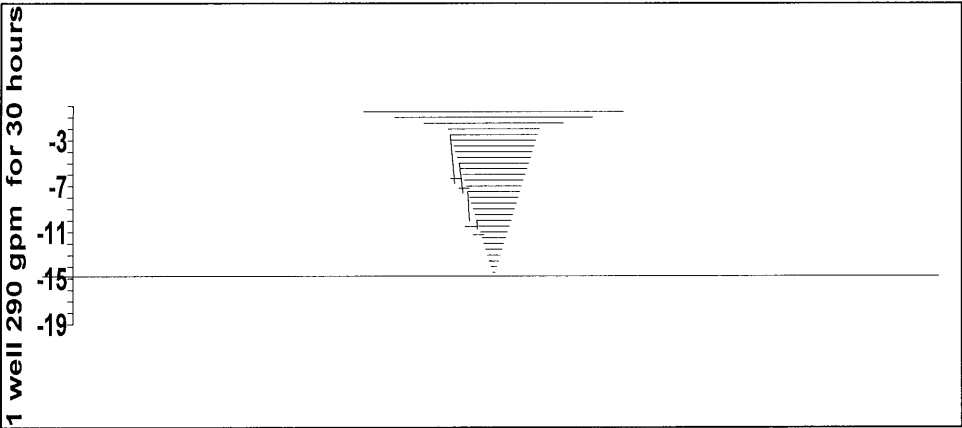


Figure 9 – Depth of theoretical cone of depression relative to total saturated thickness due to Suburban well field aquifer properties at the end of 30 hours pumping only one well 290 gallons per minute. Well loss is not shown here.

The total drawdown observed at the RWD 7 Well No. 3 is equal to theoretical drawdown of 6.6 feet divided by 33 percent. ($6.6 \text{ feet} / 0.33 = 20 \text{ feet}$) Assuming similar well loss the maximum theoretical drawdown at the Suburban well field at a limited saturated thickness of 19 feet would be about 6.3 feet. ($19 \text{ feet} \times 0.33 = 6.27 \text{ feet}$) Knowing the theoretical drawdown for a given pumping rate based on the aquifer test in 2006, assuming an average saturated thickness of 19 feet observed during monitoring in 2010 and measured at the aquifer test in 2006 and assuming theoretical drawdown at the Suburban well field is 33 percent of total drawdown as observed at RWD 7, the maximum pumping rate of one well pumping can be estimated. The pumping drawdown limit of 6.3 feet is reached by the end of a year pumping a rate of 84 gallons per minute. The pumping drawdown limit of 6.3 feet is reached in 21 days at a rate of 100 gallons per minute. The pumping drawdown limit of 6.3 feet is reached in 3 days at a rate of 115 gallons per minute and in 1 day at 126 gallons per minute. To pump a 6 hour period as observed at RWD 7 Well No. 3 the pumping rate would be limited to about 143 gallons per minute. **Table 1** This is likely the reason the Suburban Water Company has small wells ranging from only 31 gpm to 76 gpm in their well field.

Table 1 – Theoretical pumping rates and times a large capacity well may reach a drawdown limit in the Suburban Moran well field.

Pumping rate of new well	Pumping time to reach drawdown limit
85 gallons per minute	365 days
100 gallons per minute	21 days
115 gallons per minute	3 days
126 gallons per minute	1 day
143 gallons per minute	6 hours

The yield from the Suburban well field cannot be increased by pumping only one large capacity rather than pumping multiple small capacity wells. It appears that by reducing the well field from five small wells to one larger capacity well the potential for well interference between the senior water rights of Suburban and the junior water right of RWD 7 is reduced due to the limited saturated thickness of the aquifer at the Suburban well location.

Due to the apparent continued concern between RWD 7 and Suburban Water Company about the limited amount of water in this area, Suburban should install pressure transducers and log water levels in their new well and in their existing observation well. Depth to water readings at 30 minute intervals is an adequate frequency of data collection. Pumping rate data in gallons per minute should also be collected at the same frequency and maintained for future reference and reported each year in a data format that can be analyzed. RWD 7 monitors their supply Well No. 3 water levels and pumping rates and monitors Well No. 1 water levels in this manner and provided useful data for this analysis.

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