

NOTICE

This scan only represents the application as filed. The information contained herein meets the requirements of K.A.R. 5-3-1 or K.A.R. 5-5-1, and has been found acceptable for filing in the office of the Chief Engineer. The application should not be considered to be a complete application as per K.A.R. 5-3-1b or K.A.R. 5-5-2a.

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

File Number 49912
This item to be completed by the Division of Water Resources.

APPLICATION FOR PERMIT TO
APPROPRIATE WATER FOR BENEFICIAL USE

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

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HAGS
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To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture,
1320 Research Park Drive, Manhattan, Kansas 66502

1. Name of Applicant (Please Print): Leavenworth Water
Address: 601 Cherokee
City: Leavenworth State KS Zip Code 66048
Telephone Number: (913) 682-1513

2. The source of water is: surface water in _____ (stream)
OR groundwater in Missouri River (drainage basin)

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

3. The maximum quantity of water desired is 637.10 acre-feet OR _____ gallons per calendar year, to be diverted at a maximum rate of 666.67 gallons per minute OR _____ cubic feet per second.

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

4. The water is intended to be appropriated for (Check use intended):
(a) Artificial Recharge (b) Irrigation (c) Recreational (d) Water Power
(e) Industrial (f) Municipal (g) Stockwatering (h) Sediment Control
(i) Domestic (j) Dewatering (k) Hydraulic Dredging (l) Fire Protection
(m) Thermal Exchange (n) Contamination Remediation

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

For Office Use Only:
F.O. 1 GMD — Meets K.A.R. 5-3-1 (YES/NO) Use MUN Source G S County LV By DW Date 9/22/17
Code RE3 Fee \$ 380 TR # _____ Receipt Date 9/22/17 Check # 53836

9/27/2017 ULM

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

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

- (A) One in the SE quarter of the SW quarter of the SE quarter of Section 8, more particularly described as being near a point 491 feet North and 1527 feet West of the Southeast corner of said section, in Township 9 South, Range 23 East West (circle one), Leavenworth County, Kansas.
- (B) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.
- (C) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.
- (D) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____ East/West (circle one), _____ County, Kansas.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter (1/4) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

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

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

_____ (name, address and telephone number)

_____ (name, address and telephone number)

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

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

Executed on _____, 20____. _____
Applicant's Signature

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

7. The proposed project for diversion of water will consist of one horizontal collector well
(number of wells, pumps or dams, etc.)

and (was) will be completed (by) _____
(Month/Day/Year - each was or will be completed)

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

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- 9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?
 Yes No If "yes", a check valve shall be required.

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

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

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

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

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

- (a) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) should be plotted as described in Paragraph No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section.
- (b) If the application is for groundwater, please show the location of any existing water wells of any kind within 1/2 mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within 1/2 mile, please advise us.
- (c) If the application is for surface water, the names and addresses of the landowner(s) 1/2 mile downstream and 1/2 mile upstream from your property lines must be shown.
- (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.
- (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use.

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

- 12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application.

WR File No. 27613

WR LV2-00

WR No. 3578

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

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

Test Hole No. 2-99 (near well 5A on attached map)

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled	5/7/99			
Total depth of well	73'			
Depth to water bearing formation	23'			
Depth to static water level	14'			
Depth to bottom of pump intake pipe	--			

14. The relationship of the applicant to the proposed place where the water will be used is that of

municipal / rural provider
(owner, tenant, agent or otherwise)

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

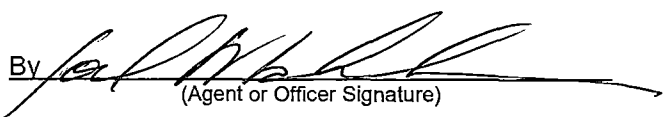
(name, address and telephone number)

(name, address and telephone number)

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

Dated at LEAVENWORTH, Kansas, this 14TH day of SEPTEMBER, 2017.
(month) (year)

(Applicant Signature)

By 
(Agent or Officer Signature)

JOEL MAHUKEN
(Agent or Officer - Please Print)

Assisted by _____ Date: _____
(office/title)

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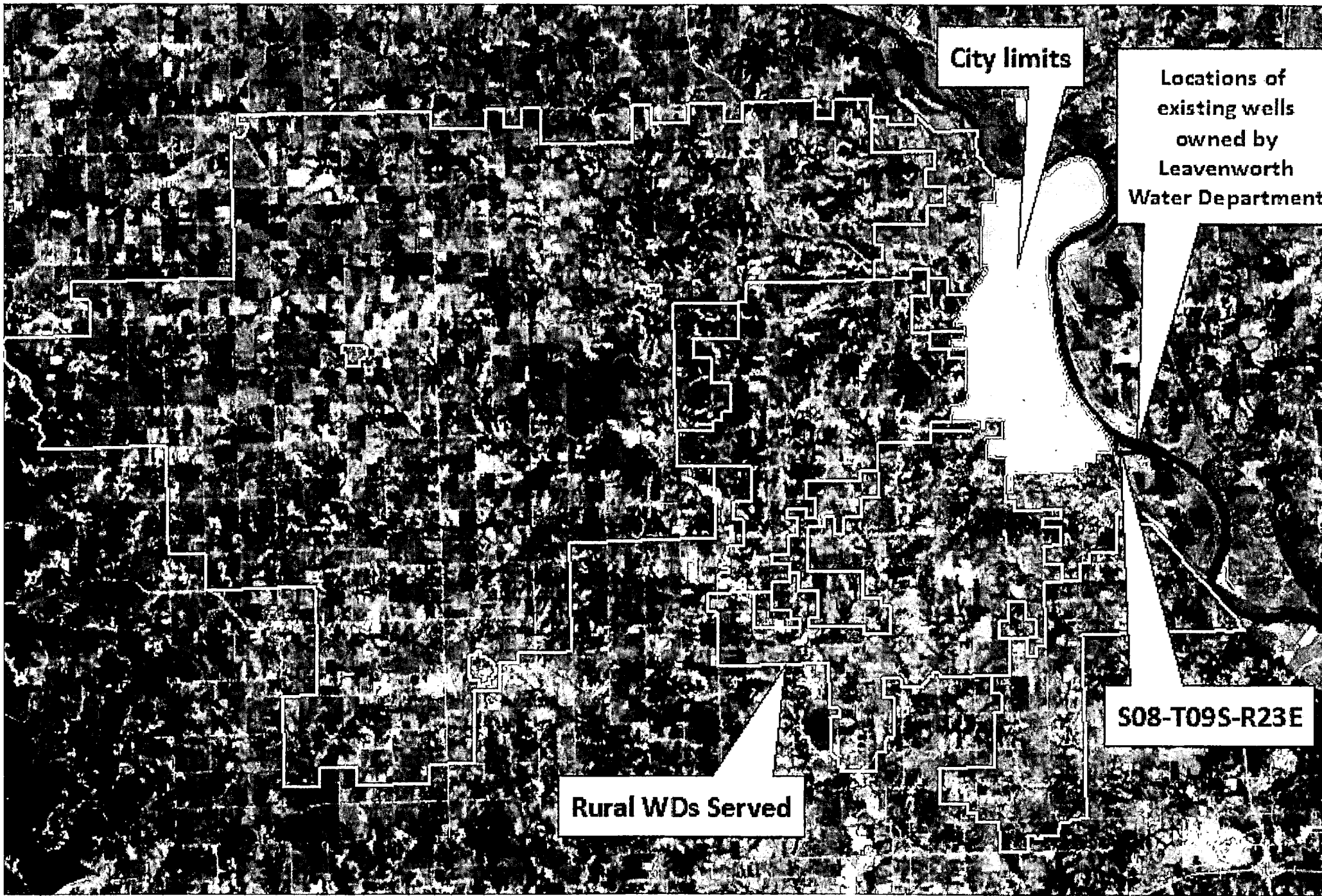
SECTION 6: AREA TO BE SERVED

Describe the area to be served or provide the legal description of the location where the water is to be used including any other city of water supply system (i.e. Rural Water District):

For municipal use in the City of Leavenworth, Kansas and its immediate vicinity; within the boundaries of Lan-Del Water District, Leavenworth County, Kansas and its immediate vicinity; within the boundaries of Consolidated Rural Water District No. 1, Leavenworth and Wyandotte County, Kansas and its immediate vicinity; within the boundaries of Rural Water District Nos. 1, 2, 5, and 8 Leavenworth County, Kansas and their immediate vicinity; within the boundaries of Rural Water District No. 12 Jefferson County, Kansas and its immediate vicinity; and within the boundaries of Fort Leavenworth, Kansas and the Lansing Correctional Facility in Lansing, Kansas and their immediate vicinity.

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City limits

**Locations of
existing wells
owned by
Leavenworth
Water Department**

Rural WDs Served

S08-T09S-R23E



MEMORANDUM

Leavenworth Water
Water Supply

B&V Project 195857
B&V File
June 27, 2017

**Subject: Surface Water and Groundwater Percentages
for the Proposed Horizontal Collector Well**

Purpose

Leavenworth Water has recently submitted applications to the Kansas Department of Agriculture, Division of Water Resources (DWR) for new water appropriations from a proposed horizontal collector well to be constructed along the Missouri River. One application is submitted for the portion of water that is considered surface water (induced directly from the river by the collector well), and one application is submitted for the portion of water that is considered groundwater (such as groundwater underflow from the aquifer on the landward side of the collector well, groundwater underflow beneath the river, and direct precipitation recharge). This memorandum provides the basis for determining the percentages of surface water and groundwater being requested in the two applications.

Groundwater Flow Model

A conceptual three-dimensional groundwater flow model was developed in 2016 for Leavenworth for the purposes of evaluating the yield of the City's wellfield at the location shown on Figure 1. The Groundwater Modeling System (GMS, Version 10.0.5), which serves as a pre- and post-processor for the US Geological Survey's MODFLOW program, was used to develop the model of the Missouri River alluvial aquifer located to the southeast of the City of Leavenworth. The extents of the groundwater model along about 5.3 river miles are indicated on Figure 2.

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Leavenworth Water

B&V Project 195857

27 June 2017

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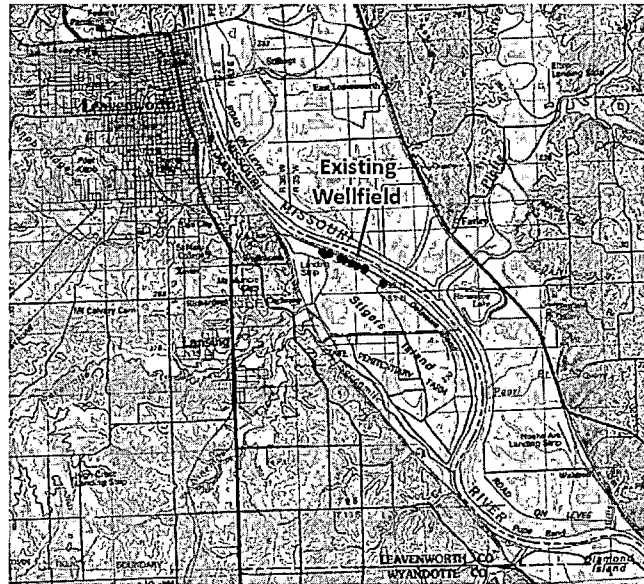


Figure 1. Existing Wellfield Location



Figure 2. Model Bounds

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Groundwater Model Results

The model was used to simulate the estimated Year 2037 average annual water needs of 7.11 million gallons per day (MGD) on a steady-state basis during normal river conditions. Figure 3 shows how the aquifer was divided into zones to give the ability to analyze the contributing sources of water to the collector well (additional model zones were created, however, these particular zones provide the most important water budget information from the model). These zones represent the upper alluvial deposits that are hydraulically connected with the river.

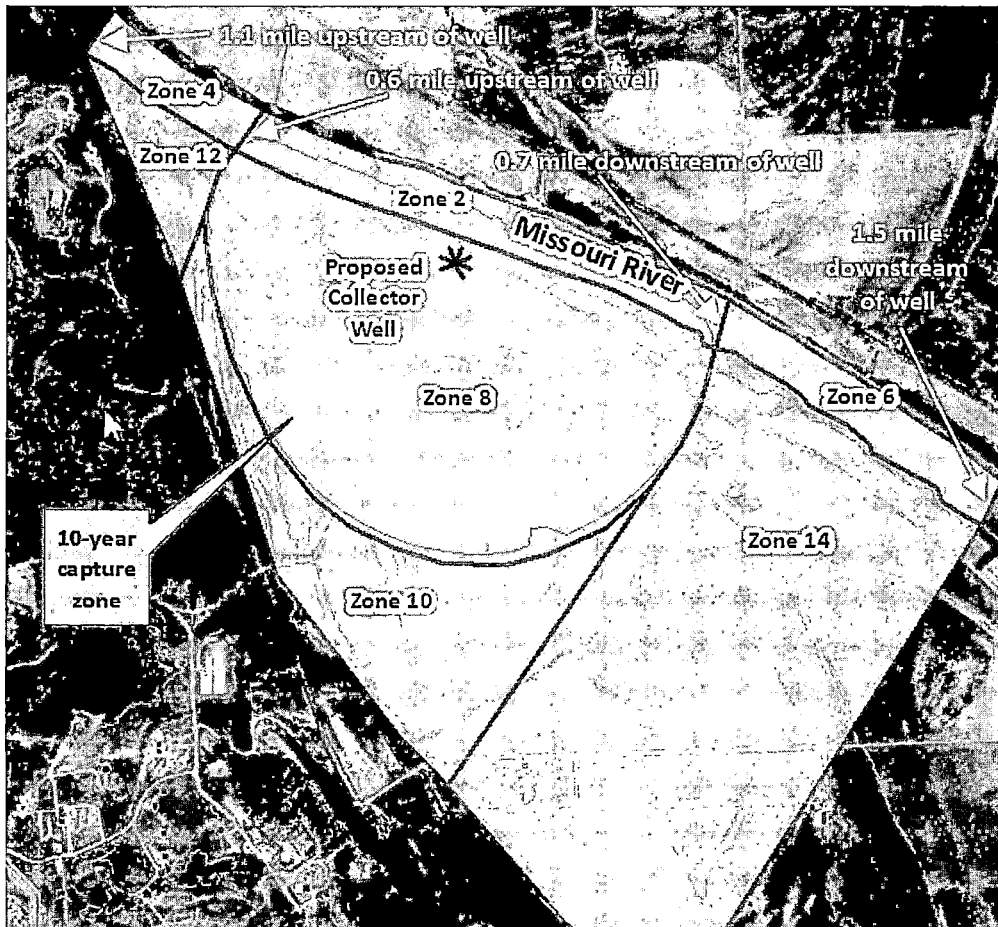


Figure 3. Zones for Water Budget Evaluation

The 10-year capture zone for the well, indicated by the light blue shading on the figure, gives an indication of the portions of the river and aquifer that contribute the greatest amount of water to the well. Figure 4 provides the resulting groundwater heads surrounding the well at 7.11 MGD.

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Figure 4. Resulting Steady-State Groundwater Elevations

The model results indicate the collector well induces water from the river into each alluvial aquifer zone as follows:

- Zone 2 = 6.09 MGD
- Zone 8 = 0.35 MGD
- Zone 4 = 0.066 MGD
- Zone 6 = 0.03 MGD
- Zone 14 = 0.0065 MGD
- Zone 12 = 0.0041 MGD
- Total = 6.55 MGD, or approximately 92 percent of the total pumping rate of 7.11 MGD¹

The steady-state model output is provided in Attachment 1. For sections of the river located upstream and downstream of the zones indicated on the figure, the model results indicate the river returns to a gaining stream. The remaining 8 percent of flow to the collector well comes from groundwater in the aquifer on the landward side of the well, groundwater underflow beneath the river from the north, and direct precipitation recharge to the valley.

¹ For the collector well, the applications for surface water and groundwater appropriations request 92% and 8%, respectively, of 7.11 MGD (equivalent to 7326.61 acre-feet per year for surface water and 637.10 acre-feet per year for groundwater).

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Attachment 1

Steady-State Model Output in cubic feet per day

Zone Zone

Budget Term	Flow (ft ³ /d)	Budget Term	Flow (ft ³ /d)
Flow Budget for Zone 2		Flow Budget for Zone 4	
IN:		IN:	
CONSTANT HEAD	0.0	CONSTANT HEAD	0.0
WELLS	0.0	WELLS	0.0
RIVER LEAKAGE	816708.76429071	RIVER LEAKAGE	10770.746313737

Zone Zone

Budget Term	Flow (ft ³ /d)	Budget Term	Flow (ft ³ /d)
Flow Budget for Zone 6		Flow Budget for Zone 8	
IN:		IN:	
CONSTANT HEAD	0.0	CONSTANT HEAD	0.0
WELLS	0.0	WELLS	0.0
RIVER LEAKAGE	12493.065901589	RIVER LEAKAGE	46751.797939416

Zone Zone

Budget Term	Flow (ft ³ /d)	Budget Term	Flow (ft ³ /d)
Flow Budget for Zone 12		Flow Budget for Zone 14	
IN:		IN:	
CONSTANT HEAD	0.0	CONSTANT HEAD	0.0
WELLS	0.0	WELLS	0.0
RIVER LEAKAGE	549.78358056396	RIVER LEAKAGE	863.5699189892

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KANSAS DEPARTMENT OF AGRICULTURE
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

SWORN STATEMENT
PURSUANT TO K.S.A. 82a-709

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

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

Executed on SEPTEMBER 20, 2017.

A handwritten signature in black ink, appearing to be "J. M. Barfield", written over a horizontal line.

Applicant's Signature

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

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LEAVENWORTH WATER DEPARTMENT


P.O. Box 576 • 601 Cherokee Street

Leavenworth, Kansas 66048-0576

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Alex Whitesell
Division of Water Resources
Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502

66502-500020





1320 Research Park Drive
Manhattan, Kansas 66502
Jackie McClaskey, Secretary

Phone: (785) 564-6700
Fax: (785) 564-6777
Email: ksag@kda.ks.gov
www.agriculture.ks.gov
Sam Brownback, Governor

September 27, 2017

FILE COPY

LEAVENWORTH WATER
601 CHEROKEE
LEAVENWORTH KS 66048

RE: Application
File No. 49912

Dear Sir or Madam:

Your application for permit to appropriate water in 8-9S-23E in Leavenworth County, was received and has been assigned the file number noted above.

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

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

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

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

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

If you have any questions, please contact 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,

Kristen A. Baum
New Applications Unit Supervisor
Water Appropriation Program

BAT: dlw
pc: TOPEKA Field Office
GMD