

January 2019 through December 2021

# T & O LLC

## Water Conservation Area Executive Summary

**WCA Acres:** 1,570 acres (additional 250 acres from previous WCA)

**Number of IRR Water Rights:** 8 (additional 2 water rights from previous WCA)

**Number of IRR Wells:** 8 (additional 2 wells from previous WCA)

### **Prior Conservation:**

- Renewal of previous WCA plan.
- A savings of 1,479 acre feet (AF) from the previous three (3) year WCA which is 33% of the unused WCA allocation. No specific unused quantity is being carried over to this new plan.
- Previous WCA - proposed 14.16 inches/acre
- Proposed WCA - 11.46 inches/acre (with additional land, wells, water rights)
- 2.7 inch/acre reduction with proposed WCA

### **WCA Allocation:**

- Total WCA allocation of 4,500 AF or 33.390 inches/acre over three years (52% reduction from the total authorized quantity) during the WCA period
- Basically, no change in the multi-year allocation average even though new plan includes 2 new wells, water rights and quarters.

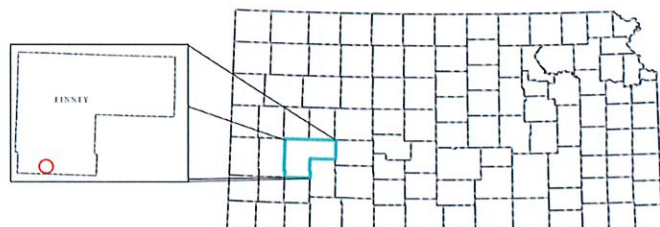
### **Corrective Controls:**

- All water rights cannot exceed authorized diversion rates.
- Water Right, File Nos. 5871, 28621-D1, 29858, 32473, 34371, 35902 & 42771 cannot exceed annual authorized quantities.

One Flexibility requested:

- Water Right, File Nos. 7517 & 34769 may exceed their annual authorized quantity, but they are both limited to a total combined annual allocation of 238 AF.
  - 238 AF is the total authorized annual quantity under the base water rights referenced above.
- The sum of water use under water right numbers (5871, 7517, 28621-D1, 29858, 32473, 34371, 34769, 35902 & 42771) combined shall be limited to no more than 4,500 acre-feet during the five year WCA.

WCA County Map:



*NOTE: Provided by KS Dept of Agriculture – Division of Water Resources  
Initial consultations with KDA-DWR began in December 2018*

## MANAGEMENT PLAN

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### For the Designation of a Water Conservation Area (WCA) T & O LLC WCA; Finney County, KS January 2019 through December 2021

In order to conserve and extend the productive life of the aquifer in our region and increase the value and viability of our water rights and water resources for future generations we, the undersigned water right owners propose the following management plan, pursuant to K.S.A. 82a-745 (WCA Law), to form the basis of a Consent Agreement and Order Designating a Water Conservation Area (WCA).

#### Expression of Conservation Goals

We, the water right owners of the T & O LLC WCA desire to conserve and extend the productive life of the aquifer in our region. We have concluded that conserving Ogallala aquifer water today will increase the value and viability of our water rights and water resources for future generations. Our goal is to extend the life aquifer in this immediate area for our future generations to continue the economic benefit of using groundwater for irrigation use. We have recently completed a previous WCA from 2016 to 2018 and saved 1,479 AF from our original agreement. That calculated to only using 67% of the total previous WCA allocation in the previous three-year period. This land is also enrolled in a water technology farm with the Kansas Water Office. The combination of adopting these local source corrective controls, based on our long view needs and supply within this WCA, and the technology farm continues to demonstrate irrigation efficiency that leads for future water conservation. At this time we, the water right owners, are seeking to continue in our goal to further conserve water by enrolling in another WCA agreement for three (3) more years.

We, the water right owners are consenting to the terms and conditions of this WCA and commit to holding our water use for three (3) years, to approximately 52% of the total authorized quantity of all water rights enrolled in this WCA. We ask to be given consideration for our savings in our previous WCA and understand that we plan to use less in this WCA plan resulting in an overall stricter allocation per acre.

#### Water Rights Enrolled and Geographic Boundaries

This WCA shall include the water rights listed in the attached document. This list includes details of all points of diversion associated with those water rights; as well as legal descriptions of the locations of the points of diversion and/or identification numbers.

The current total appropriations authorized for all water rights included in this WCA are 2,860 acre-feet (AF) per year, with an approximate 52% reduction from the total authorized quantity of all water rights, we are proposing a three (3) year WCA allocation of 34.39 inches per acre or 4,500 AF for the three (3) year period. This results in a conservative 1,500 AF per year on 1,570 authorized acres which is 11.46 inches per acre or 0.9554 AF per acre per year.

The geographic boundary for this WCA is shown on the attached map(s) and attached table defined by legal locations. This table includes total acres and legal definitions by section, township, and range of the WCA boundary.

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## Findings Regarding Groundwater Conditions

We understand that the WCA Law requires a finding that one of the following circumstances be present within the area geographic boundaries of this WCA; specified in K.S.A. 82a-1036 (a) through (d):

- a) Groundwater levels in the area in question are declining or have declined excessively;
- b) The rate of withdrawal of groundwater in the area equals or exceeds the rate of recharge within such area;
- c) Preventable waste of water is occurring or may occur within the area in questions; or
- d) Unreasonable deterioration of the quality of water is occurring or may occur within the area in question

and amendments thereto, exist, or include a finding or findings that the area within the geographic boundaries described in paragraph (1) has been closed to new appropriations by rule, regulation or order of the Chief Engineer.

We have been informed that the following conditions exist:

- Groundwater levels in the area in question are declining or have declined excessively;
- The rate of withdrawal of groundwater in the area equals or exceeds the rate of recharge within such area;

These conditions suggest the advisability of implementing this WCA.

See the attached maps and figures supporting these findings and observations. Such attached documents may include:

- Map with WCA geographic boundaries defined- **Attachment A**
- Detailed table with description of WCA geographic boundaries - **Attachment B**
- List of WRs with legal locations- **Attachment C**
- KGS Observation well(s) map and data- **Attachment D, E, F & G**
- KDA-DWR This analysis report- **Attachment H**

Per the Corrective Controls Provisions and Plan for Conservation Section under this WCA management plan it has been determined that the proposed provisions listed will not significantly affect nearby points of diversion. This has been determined by a Theis analysis conducted by the Kansas Department of Agriculture. The Theis report(s) for the water rights in question are included in the attached documents.

## Due Consideration for Past Conservation

We acknowledge that as described in the law, a water conservation area (WCA) management plan shall give due consideration to water users who have previously implemented reductions in water use resulting from voluntary conservation measures.

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With a savings of 1,479 AF in the previous three (3) year WCA we are requesting that consideration is given on that savings which is 33% of the unused WCA allocation. With this savings, we are requesting credit be given when evaluating our 1,500 AF per year or 4,500 AF over the three (3) year WCA.

### Corrective Control Provisions and Plan for Conservation

We acknowledge that the following corrective controls will be in effect within this WCA during the term of the WCA period listed:

1. Water rights, at the discretion of the owners, may be pumped as directed by the owner, provided that:
  - a) All water rights cannot exceed authorized diversion rates.
  - b) Water Right, File Nos. 5871, 28621-D1, 29858, 32473, 34371, 35902 & 42771 cannot exceed annual authorized quantities.
  - c) Water Right, File Nos. 7517 & 34769 may exceed their annual authorized quantity, but they are both limited to a total combined annual allocation of 238 AF.
  - d) The sum of water use under water right numbers (5871, 7517, 28621-D1, 29858, 32473, 34371, 34769, 35902 & 42771) combined shall be limited to no more than 4,500 acre-feet during the five year WCA.
2. The corrective control provisions of this WCA cannot conflict with the rules and regulations of the local GMD that result in greater overall conservation of water resources. If a Local Enhanced Management Area (LEMA) plan or an Intensive Groundwater Use Control Area (IGUCA) is formed after the initiation of this WCA, and the WCA is partially or wholly within the LEMA or IGUCA, the corrective control provisions that result in the greater overall conservation of water resources based on inches per acre and not based on percent reduction of average historical use shall prevail. However, any LEMA or IGUCA must give due consideration to the conservation achieved by WCA participants pursuant to 82a-745(a)(6). The Chief Engineer is authorized to amend the provision of the WCA to conform to any rules, regulations, or requirements that result in greater conservation of the water resource subject to the foregoing due consideration for past and current conservation.

We, the water right owners enrolling in this WCA understand we may gain the following additional incentive(s) in consideration for our WCA participation.

3. Up to the annual WCA allocation 1,500 AF may be carried over and added to a subsequent WCA period after 2021; if unused during the duration of this WCA period. For the carryover quantity to be included, all owners must enter into agreement to participate in a subsequent WCA by December 31st of the last year of this WCA period. Upon review, should a subsequent WCA be entered, the potential carryover will not allow any well to exceed its annual authorized quantity or the agreed upon corrective controls.

### Compliance Monitoring and Enforcement

We, the owners, understand that the following compliance monitoring and enforcement provisions are proposed. This section also includes any specific provisions regarding measuring or reporting water usage.

There is a KGS regional index observation well within the WCA boundary that has been measured for the last three years with real time data. There are two (2) other recognized observation wells within the

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T & O LLC WCA that have for many years been measured annually by the Kansas Geological Survey (KGS). See attached map for locations. The well(s) will continue to be measured annually and the data collected will help in evaluating the effectiveness of the WCA. An onsite observation well may be necessary to monitor the local water level more accurately.

We will submit an annual report no later than March 1st and maintain a spreadsheet detailing the following information for each well and all wells combined: beginning and ending meter readings, quantity of water diverted, acres irrigated, the inches per acre, and the quantity of water remaining for the WCA period listed. These records will be available to KDA-DWR upon request.

We will ensure backup measurements will be supported or an alternate measurement device will be available to be put into service in case the water flowmeter record for any given well is questionable or not reliable.

We acknowledge that water flowmeters within the WCA will be sealed to the measurement chamber by KDA-DWR during the duration of this management plan to ensure an accurate water use record.

We, water right owners within this WCA shall be responsible for ensuring the water flowmeters comply with state and local law(s). Any water right owner or authorized designee who finds a flow meter that is inoperable or inaccurate shall within 48 hours contact the KDA-DWR concerning the matter. Whenever an inoperable or inaccurate meter is repaired or replaced, the owner or authorized designee shall notify the KDA-DWR within seven (7) days on a form prescribed by the Chief Engineer of the water flowmeter installation and any water flowmeter repair or replacement event.

We acknowledge that failure to abide by the terms of this agreement may result in the termination of the WCA. Failure to abide by the terms, conditions, and limitations of the individual water rights will be subject to the civil penalties outlined in K.A.R. 5-14-10 and K.A.R. 5-14-12.

### Review of Effectiveness

We acknowledge that a review of this WCA shall be completed prior to November 1st of the final year of the WCA period listed to ensure the above terms remain appropriate and are achieving the stated goals of this WCA. Should the Chief Engineer find that the terms are no longer appropriate or that no progress has been made towards the stated goal, the Chief Engineer may refuse to renew a WCA and may suggest new terms and goals. We understand that upon review, and a finding by the Chief Engineer that the WCA has achieved or made progress towards its goals and that the same terms be included in a subsequent WCA for another designated period. The terms of the WCA may be continued as long as this WCA is in good standing with its most recent WCA period and upon formal approval by the Chief Engineer. The Chief Engineer shall issue findings addressing the terms and goals of the existing management plan prior to any renewal of a subsequent WCA.

We acknowledge that unless terminated under the provisions below (e.g. due to the development of a LEMA), the WCA will be in effect for the listed period with an evaluation at the end of every WCA period. We understand that KDA-DWR will conduct this evaluation to ensure compliance and conservation. The evaluation will determine total water use during the WCA period.

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We acknowledge that should an order of designation for a LEMA be implemented prior to end of this WCA period, an evaluation of this WCA will be conducted the year prior to the start of a LEMA. This evaluation may be used to determine an additional allocation amount of water to be carried over into a LEMA; should this be the case.

### Member addition, withdrawal, and removal

We acknowledge that the water right owners and their associated water right(s) and geographic boundaries may be added to the WCA upon written notification to the Chief Engineer by the owners of each enrolling water right with legal descriptions of the areas to be added. A member may withdraw from the WCA through written notification to the Chief Engineer signed by the owners of the participating water right or rights to be withdrawn from the WCA.

If the addition or withdrawal of water rights requires modification to the water allocation quantities, geographic boundaries, places of use, terms, or conditions of the original WCA, the management plan shall be revised to incorporate such changes and the associated consent agreement shall be reaffirmed by all parties, after opportunity for comment on the proposed revisions by the applicable GMD.

### Termination

We acknowledge this WCA agreement may be terminated by written notification, signed by all then-existing members of the WCA, to the Chief Engineer of the intent to terminate.

We also acknowledge that the Chief Engineer may terminate this WCA upon findings that it is not being upheld to its terms. Such termination shall give notice and require a full evaluation of the WCA and water rights associated to ensure follow up actions.

### State Law

We acknowledge that this WCA is subject to compliance with all other applicable state laws.

### Notification to Nearby Owners

We acknowledge that, by statute, the Chief Engineer is required to provide written notification to all water right owners with a point of diversion within ½ of a mile, or farther if deemed necessary, by a rule and regulation of the Chief Engineer, of the geographic boundaries of this WCA.

### Assurances

We acknowledge this WCA will not alter the terms, conditions, and limitations of the base water rights.

### Review of Other Applicable Requirements

We acknowledge that upon review, this WCA management plan was found to effect equal or greater overall conservation than applicable GMD regulations, LEMA, and IGUCA requirements.

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### Participant's Agreement

By signing below, we, the water right owners, agree that this management plan is fair and equitable. This management plan, provided to the Chief Engineer and water right owners, is the expressed written intent of the parties and the whole agreement between the parties. We, the water right owners agree to be bound by all the terms contained in this management plan and understand that the provisions of this agreement shall be construed to give effect to the provisions listed. We, the water right owners also agree that this management plan is the basis for a consent agreement among the Chief Engineer and the undersigned water right owners, and therefore any order and consent agreement issued by the Chief Engineer, designating this WCA, shall be binding upon all parties as the necessary formal implementation of this management plan.

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**FOR THE PARTICIPANTS:** All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Tom Willis

Date: 5-6-2019

T & O Farms LLC- Owner (Signature)

Water Right No(s). 5871, 7517, 28621-D1, 29858, 32473, 34371, 34769, 35902, 42771

901 APOLLO ST, LIBERAL KS 67901

Full Mailing Address

tom.willis@conestogaenergy.com

620 655-8228

Email Address

Phone Number

**ACKNOWLEDGMENT OF NOTARY**

State of Kansas )

) SS

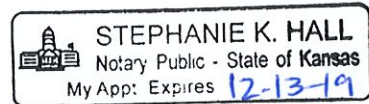
County of Seward )

Acknowledged before me on May 6, 2019

by Tom Willis

Signature: Stephanie K. Hall

Notary Public



My commission expires: 12-13-19

(Notary Seal)

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**CERTIFICATE OF SERVICE**

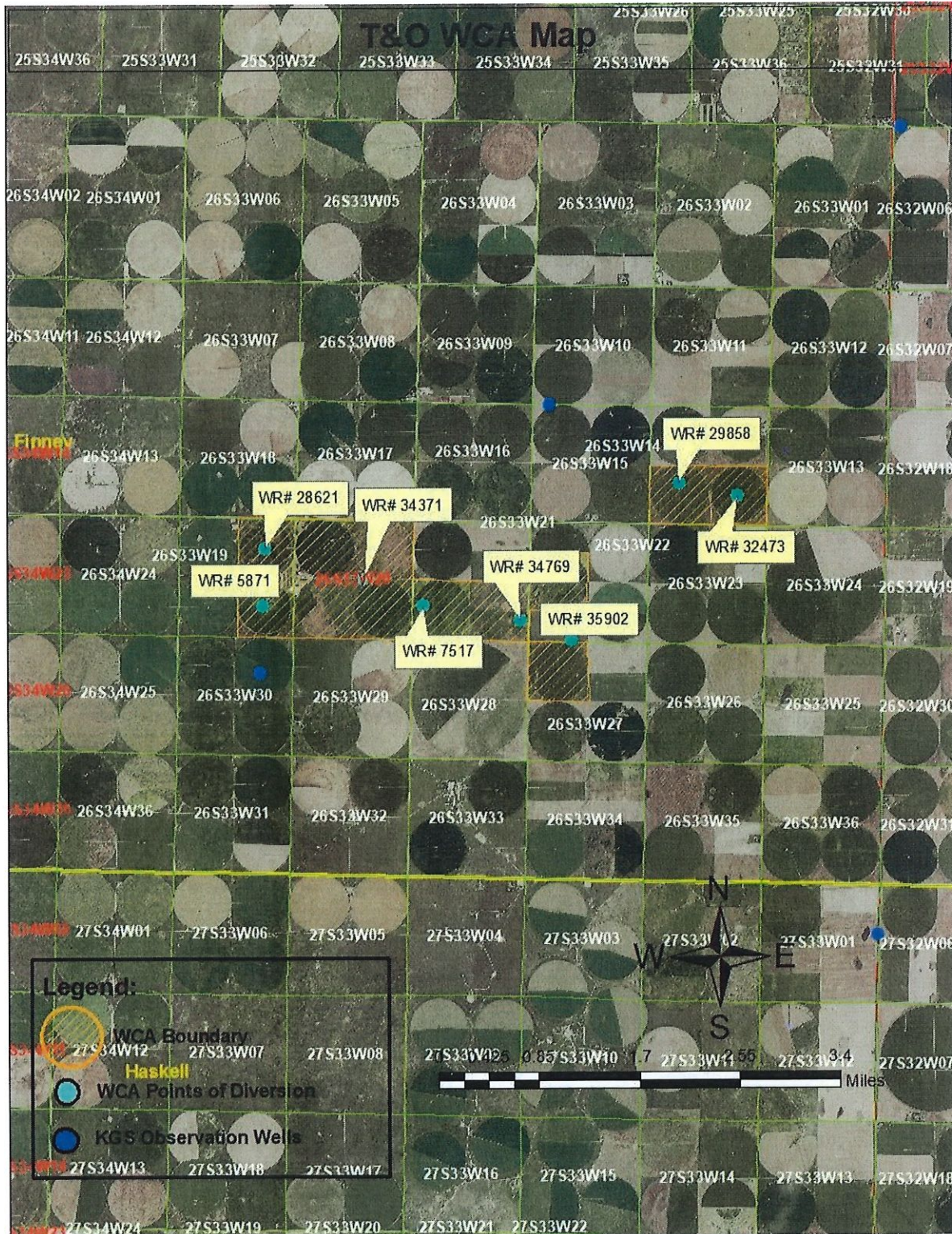
I hereby certify that on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ copies of the foregoing were sent via first class, U.S. mail, to the following:

T & O LLC  
901 APOLLO ST  
LIBERAL KS 67901

\_\_\_\_\_  
Kansas Department of Agriculture  
Staff Person

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### Attachment A - WCA Geographic boundaries



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**Attachment B - Detailed table with description of WCA geographic boundaries**

For Management Plan: *Copy from above after duplicated PU's removed*

Sec	T (S)	R (W)	WCA Boundary																Total Acres					
			NE (1/4)				NW (1/4)				SW (1/4)				SE (1/4)									
			NE (1/4)	NW (1/4)	SW (1/4)	SE (1/4)	NE (1/4)	NW (1/4)	SW (1/4)	SE (1/4)	NE (1/4)	NW (1/4)	SW (1/4)	SE (1/4)	NE (1/4)	NW (1/4)	SW (1/4)	SE (1/4)						
19	26	33	34	34	34	34													14	27	27	27	231	
20	26	33	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	520	
21	26	33																					260	
22	26	33								33.25	33.25	33.25	33.25										133	
27	26	33						32.5	32.5	32.5	32.5												130	
14	26	33										34	34	34	34					40	40	40	40	296
																Grand Total Acres	1570							

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**Attachment C- List of Water Rights with legal locations**

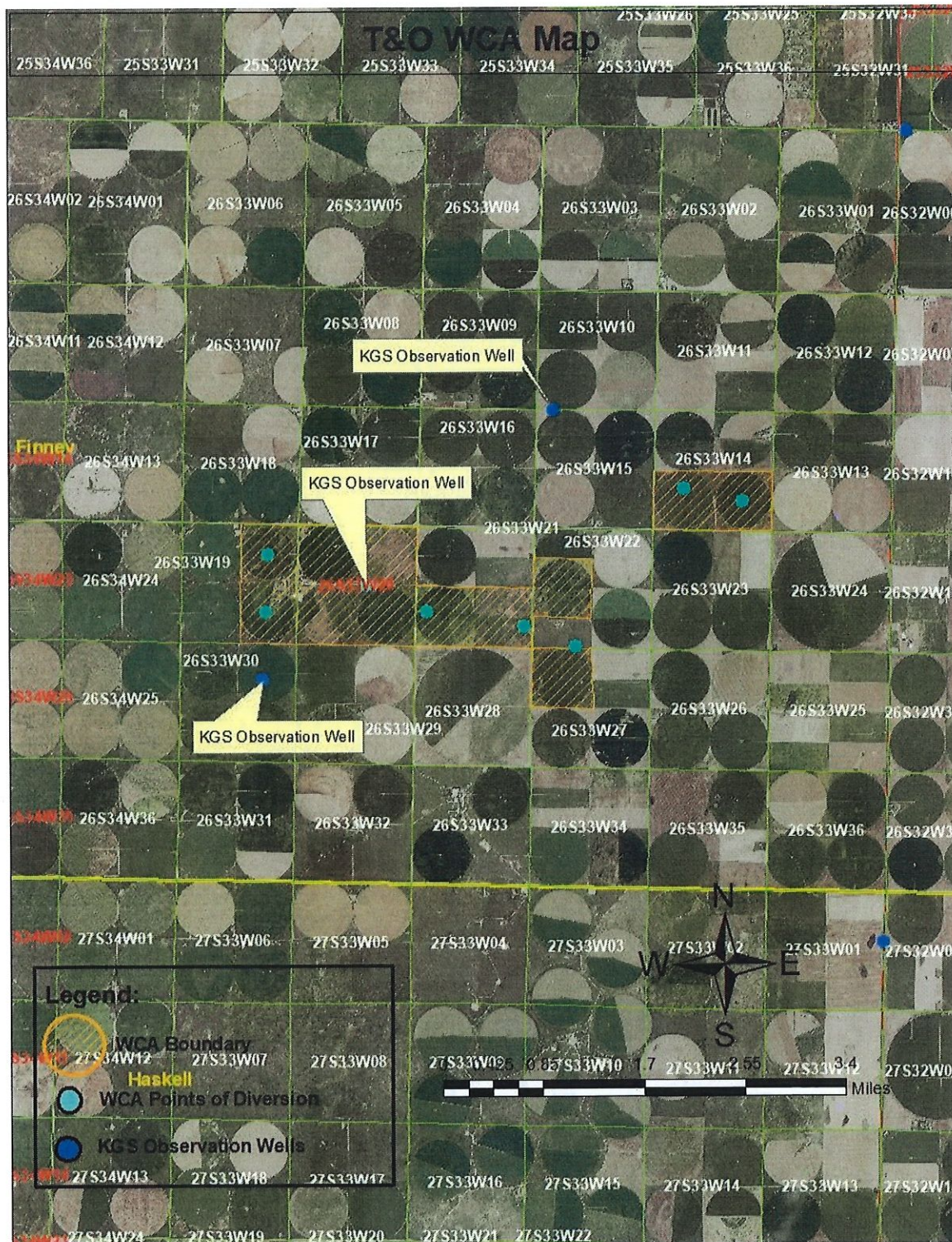
<b>WR #</b>	<b>ID#</b>	<b>PDIV#</b>	<b>Location (Sect, Twn, Range)</b>	<b>2018 Annual Auth Qty (AF)</b>
5871	5	38251	19-26S-33W	260.000
7517	1	17157	21-26S-33W	129.000
28621-D1	2	11652	19-26S-33W	260.000
34371	4	83429	20-26S-33W	990.000
34769	4	83430	21-26S-33W	109.000
35902	3	50251	22-26S-33W	520.000
29858	2	33811	14-16S-33W	272.000
32473	4	80774	14-26S-33W	320.000
42771	3	50251	22-26S-33W	*0
42771 limited to 520 AF when combined with File No. 35902				
(overlap in point of diversion (one well))				

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### Attachment D - KGS Observation well(s) Map



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## Attachment E - KGS Observation well Hydrograph

### General Well Site Information ?

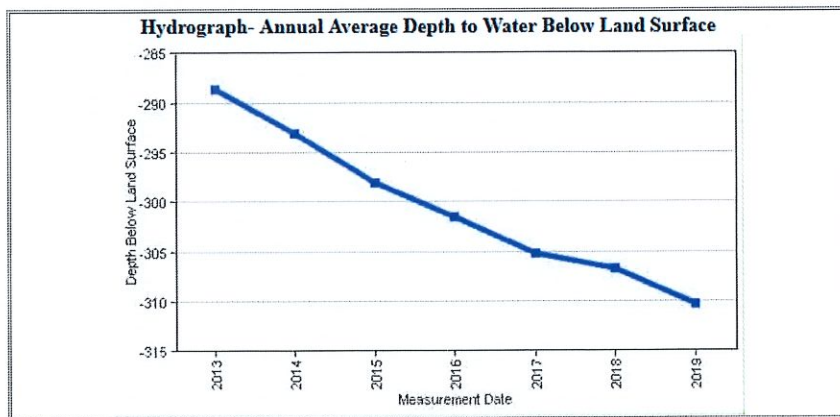
<b>USGS ID:</b>	374540100580101	<b>KGS Local Well ID:</b>	26S 33W 30ADC 01
<b>County:</b>	Finney	<b>PLSS Description:</b>	26S 33W 30 NCN2S2NE
<b>HUC 8 Code:</b>	11030003	<b>GMD:</b>	Southwest Kansas GMD #3
<b>Longitude:</b>	-100.966772	<b>Lat/Long Source:</b>	GPS (within 50 feet)
<b>Latitude:</b>	37.761496	<b>Lat/Long Accuracy:</b>	5 seconds
<b>Surface Elevation (ft):</b>	2955	<b>Depth of Well (ft):</b>	525
<b>Geological Unit Codes:</b>	TO	<b>USGS Map Name:</b>	Garden City SW

#### Water Level Measurements ?

374540100580101

Please Note- The 2019 KGS and DWR cooperative water level measurements have been loaded into WIZARD but are considered provisional at this time.

Note that depth to water is feet below land surface and all measurements for the well are included.



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## Attachment F - KGS Observation well Hydrograph

### General Well Site Information ?

<b>USGS ID:</b>	374624100570401	<b>KGS Local Well ID:</b>	26S 33W 20ACC 02
<b>County:</b>	Finney	<b>PLSS Description:</b>	26S 33W 20 SWSWNE
<b>HUC 8 Code:</b>	11030003	<b>GMD:</b>	Southwest Kansas GMD #3
<b>Longitude:</b>	-100.951034	<b>Lat/Long Source:</b>	GPS (within 50 feet)
<b>Latitude:</b>	37.77311	<b>Lat/Long Accuracy:</b>	1 seconds
<b>Surface Elevation (ft):</b>	2940	<b>Depth of Well (ft):</b>	532
<b>Geological Unit Codes:</b>	TO	<b>USGS Map Name:</b>	Garden City SW

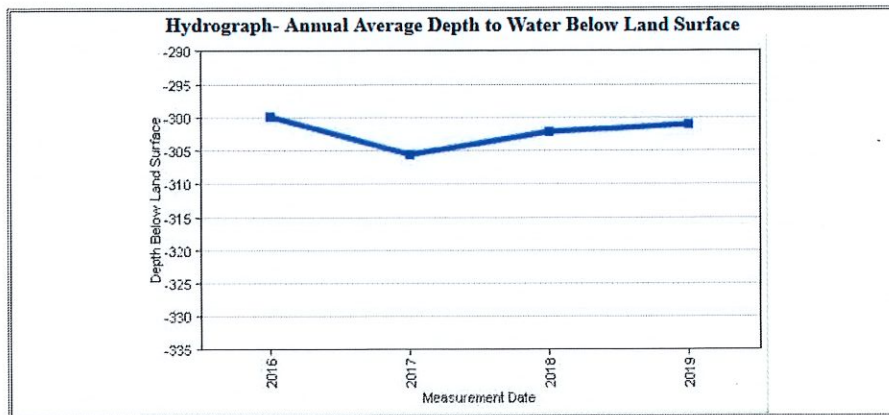
#### Water Level Measurements ?

374624100570401

[Continuous Water Level Measurements](#)

Please Note- The 2019 KGS and DWR cooperative water level measurements have been loaded into WIZARD but are considered provisional at this time.

Note that depth to water is feet below land surface and all measurements for the well are included.



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## Attachment G - KGS Observation well Hydrograph

### General Well Site Information ?

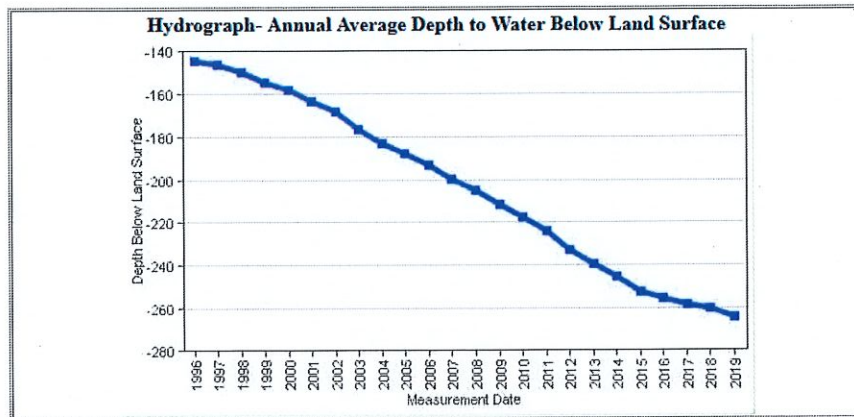
<b>USGS ID:</b>	374747100552101	<b>KGS Local Well ID:</b>	26S 33W 10CCD 01
<b>County:</b>	Finney	<b>PLSS Description:</b>	26S 33W 10 SESWSW
<b>HUC 8 Code:</b>	11030003	<b>GMD:</b>	Southwest Kansas GMD #3
<b>Longitude:</b>	-100.922543	<b>Lat/Long Source:</b>	GPS (within 50 feet)
<b>Latitude:</b>	37.794924	<b>Lat/Long Accuracy:</b>	5 seconds
<b>Surface Elevation (ft):</b>	2890	<b>Depth of Well (ft):</b>	Unknown
<b>Geological Unit Codes:</b>	QU TO	<b>USGS Map Name:</b>	GARDEN CITY SW

#### Water Level Measurements ?

374747100552101

Please Note- The 2019 KGS and DWR cooperative water level measurements have been loaded into WIZARD but are considered provisional at this time.

Note that depth to water is feet below land surface and all measurements for the well are included.



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## Attachment H - KDA-DWR Theis analysis report

### Theis analysis for impacts of pumping wells 7,517 and 34,769 at nearby well 34,954

A Theis analysis was performed to evaluate the drawdown caused by pumping the wells authorized by Water Right, File Nos. 7,517 and 34,769 at the neighboring well authorized by Water Right, File No. 34,954. The total annual water use of the pumping wells was limited to 238.00 acre-feet (AF). Both wells were assumed to operate at their authorized rates of 860 and 1000 gallons per minute for 7,517 and 34,769 respectively. Each well was evaluated individually at 238.00 acre-feet. Additionally, the worst-case of both wells pumping was evaluated. The worst-case combination of pumping on the two wells was determined using Excel's Solver. The net drawdown was compared to the net drawdown caused by pumping the 2003-2012 average annual water use at the authorized rates. Transmissivity and saturated thickness were estimated for year 2066 by the GMD No. 3 groundwater model. The storage coefficient was assumed to be the saturated thickness multiplied by  $10^{-5}$ .

**Table 1:** Aquifer properties used for analysis

Parameter	Value
Transmissivity (2066), T (gpd/ft)	14,252
Saturated Thickness (2066), ST (feet)	140.50
Storage Coefficient, S	0.0014

**Table 2:** Analysis scenarios and results for 7,517 and 34,769 individually

Pumping Well	Distance (Feet)	Rate	Volume (AF)		Maximum Drawdown		Diff.	Percent of ST
			Original	Proposed	Original	Proposed		
7,517	2,564	860	80.50	238.00	17.93	28.57	10.64	7.57 %
34,769	4,643	1,000	56.51	238.00	8.81	22.18	13.37	9.52 %

**Table 3:** Analysis scenario and results for 7,517 and 34,769 combined pumping

Pumping Well	Distance (Feet)	Rate	Volume (AF)		Maximum Drawdown		Diff.	Percent of ST
			Original	Proposed	Original	Proposed		
7,517	2,564	860	80.50	116.13	17.93	21.14	3.21	2.28 %
34,769	4,643	1,000	56.51	121.87	8.81	14.96	6.15	4.38 %
Total			137.01	238.00	26.74	36.10	9.36	6.66 %

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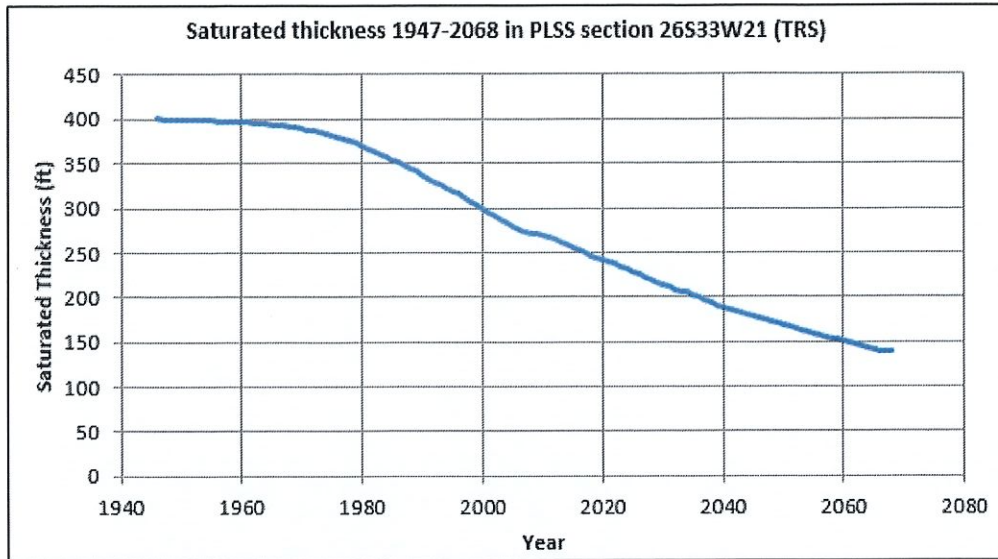


Figure 1 Projected saturated thickness (GMD No. 3 groundwater model)

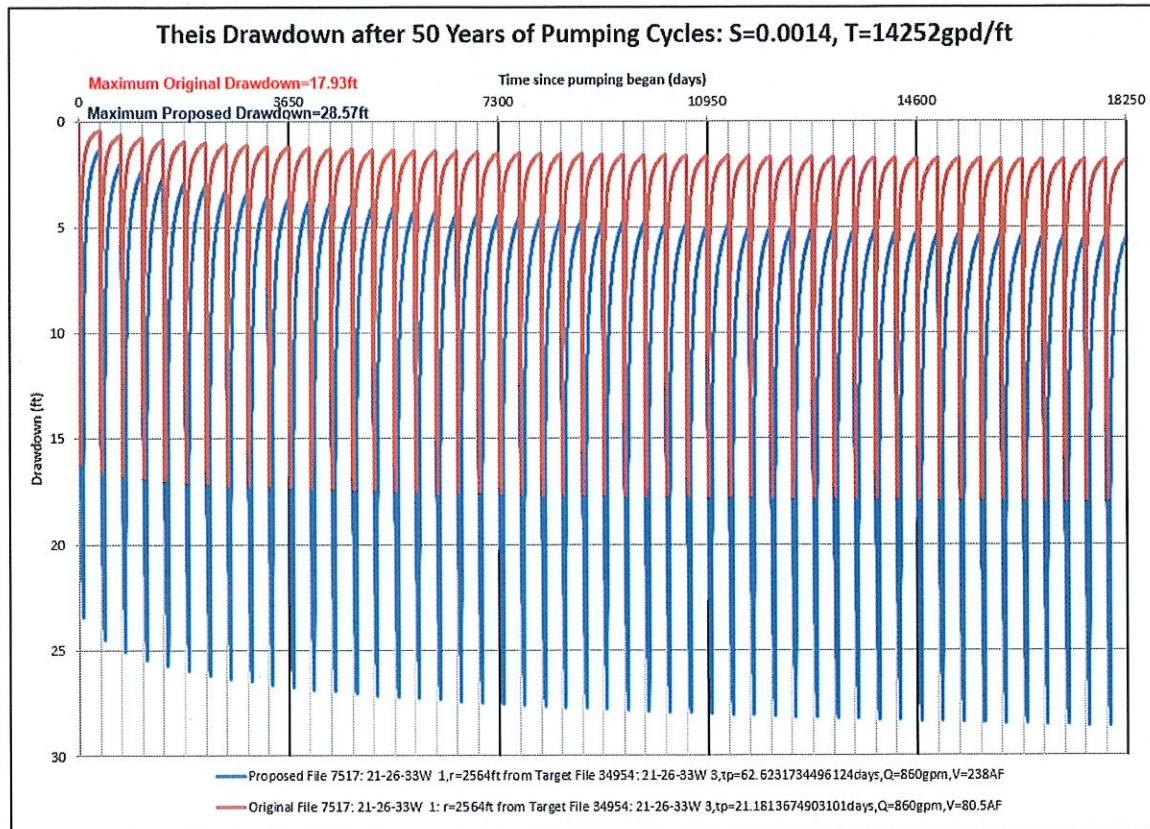


Figure 2: Theis drawdown of pumping 238 AF from well 7,517 at target well 34,954

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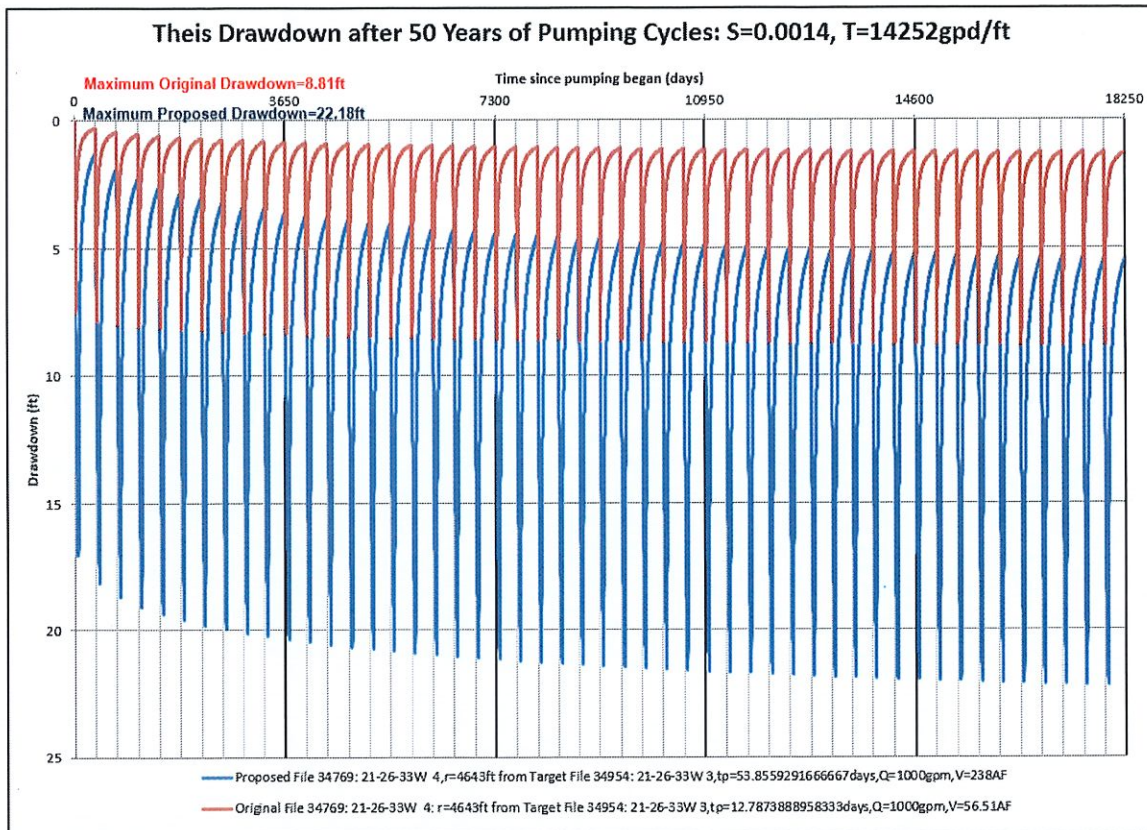


Figure 3: This drawdown of pumping 238 AF from well 34,769 at target well 34,954

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