Kansas Department of Agriculture Division of Water Resources

CHANGE: P/D WORKSHEET

1. File Number:	2. Status Change Date:	3. Change Num:	4. Field Office:	5. GMD:
3762	8-12-2022	C2	4	3
6. Status: ☐ Approved ☐ Deni	ed by DWR/GMD	Dismiss by Reques	t/Failure to Return	7. Filing Date of Change:
				6/21/2022
8a. Landowner, applicant,WUC New to system □	Person ID 58492 Add Seq#	8c. Landowne		PersonAdd Seq#
ZM FARMS INC Attn: CAROL ANN ZIMMI 15533 ROAD 27 SUBLETTE, KS 67877-80				
8b. Landowner(s), New to system □	Person IDAdd Seq#	8d. WUC New to sy	stem □	Person IDAdd Seq#
9. Documents and Enclosure(s): DV				Comply: 3/1/2023
☐ Anti-Reverse Meter ☐ Meter☐ ☐ Conservation Plan Date Require	Seal 🛛 Check Valve			iller Copy
10. Use Made of Water From:		To: _		
			Date Prepared: 8/12/20 Date Entered:	D22 Ву: МАМ Ву:

File No. 3	762		11. Co	unty: \$	SW	Ва	sin: CF	ROOK	ED CF	REEK			St	ream:								rmation Code	e:	Special Use:	
12. Points of CHK MOD DEL PD		ion																and Qu	uantity zed		Ad	dditional			
ENT		Qualifier		S	Т	R	ID	£	N	ʻW		Com	ment	(AKA L	_ine)		Rate gpm		Quantit af	у	Rate gpm	_		Overlap PD Files	
DEL 716	636																								
ENT	SW	SESW	8	3′	18	32W			168	36	556						1800)	1280		1800	1280)	NONE	
13. Storage:	: Rate _			N	F	Quar	ntity					ac/ft	Ad	ddition	al Rat	e			1	NF	Addi	tional Quanti	y		_ ac/ft
Limitatio	on:		a	f/yr at					gpm (_				cfs) wh	nen co	mbine	d with	file nu	umber(s)						
15. 5YR Allo	ocation:	Allocation	Туре _		Sta	rt Year		_	5 YR	Amou	nt _		Amo	unt Ur	nit	_	Base	Acres		_ Co	mment _				
16. Place of CHK	of Use					NE	Ξ1/4			NV	V ¹ / ₄			sv	V ¹ / ₄			S	E1/4		Total	Owner	Chg?	Overlap Files	
MOD DEL ENT PUS	SE S	STR	ID		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					
CHK 739																									
																	1.4								
Base Acres: Comments:		Year:		Mi	nimum	Reas	onable	Quar	ntity:																

Garden City Field Office 4532 W. Jones, Suite B Garden City, KS 67846



Phone: 620-276-2901 Fax: 620-276-9315 www.agriculture.ks.gov

Mike Beam, Secretary

Laura Kelly, Governor

August 12, 2022

ZM FARMS INC Attn: CAROL ANN ZIMMERMAN PRES 15533 ROAD 27 SUBLETTE, KS 67877-8091

RE:

Field Office Application for Change

Water Right, File No. 3762

Dear Sir:

Enclosed is an order executed by the designee of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, approving the applications for change under the above referenced file number.

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

Since the order modifies the original document referred to above, it should be recorded with the Register of Deeds as other instruments affecting real estate.

The abandoned well must be plugged in accordance with the requirements of Article 30 of the Rules and Regulations as adopted by the Kansas Department of Health and Environment.

Should you have any questions, please feel free contact this office. If you would prefer, you could arrange an appointment for additional assistance.

Sincerely,

Michael A. Meyer

Water Commissioner

MAM: enclosures

pc: GROUNDWATER MANAGEMENT DISTRICT NO. 3

CERTIFICATE OF SERVICE

On this 12th day of August 2022, I hereby certify that the foregoing Approval of Application for Change in Point of Diversion, Water Right, File No. 3,762 dated 12th day of August 2022 was mailed postage prepaid, first class, US mail to the following:

ZM FARMS INC Attn: CAROL ANN ZIMMERMAN PRES 15533 ROAD 27 SUBLETTE, KS 67877-8091

Pc:

GROUNDWATER MANAGEMENT DISTRICT NO. 3

Division of Water Resources Staff

Submit completed application to: Kansas Department of Agriculture Division of Water Resources Field Office for your area. Call for address:

> Topeka -- (785) 296-5733 Stafford -- (620) 234-5311 Stockton -- (785) 425-6787 Garden City -- (620) 276-2901 http://agriculture.ks.gov/dwr

DWR FIELD OFFICE APPLICATION FOR APPROVAL TO CHANGE THE PLACE OF USE AND/OR THE POINT OF DIVERSION



STATE OF KANSAS

Filing Fee Must Accompany the Application, K.S.A. 82a-708b(b), as amended. Fee Schedule is on the third page of this application form.

Paragraph Nos. 1, 2, 3 & 5 must be completed. Complete all other applicable portions. If change in point of diversion is greater than 100 feet, or if place of use will be changed, include a topographic map or detailed plat showing the authorized and proposed point(s) of diversion and/or place of use.

of d	liversion and/or p	lace of	use.		F	File No	. 3762										RI	ECEIVED 11:00 Am UN 21 2022
1.	Application is he	ereby n	nade fo	or appı		f the Clace of		nginee			the (ch		ne or b	oth):		D	Garde vision	n City Field Office of Water Resource
	under the water	right v	vhich is	the s	ubject	of this	applic	ation i	n acco	rdance	e with t	he cor	ndition	s desc	ribed k	pelow.		
	The source of s	upply is	s:		⊠ G	round	water			Surfac	ce wate	er						
2.	Name and addr 15533 ROAD 2 Phone Number: Name and addr	7, SUB	LETTE)	E, KS 6	67877-	8091		Email										
	Dhana Numban		`\					Emoil	addrag	20'								
2	Phone Number: The presently a	120	-					⊏IIIali	addres	55								
3.	Owner of Land																	
			ESS:															
	(If there is more th									sary.)								
/			NE			T		V ¹ / ₄			SV	V1/4	1.		SI	=1/4		TOTAL
Se	ec. Twp. Range	NE1/4		SW1/4	SE1/4	NE1/4	I	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	ACRES
					,													
4.	If this application Owner of Land (If there is more the	NA ADDR	AME: . ESS: .							\	ace of	use be	e chan	ged to	:			
			NE	Ξ1/4			N/	N1/4			SV	V1/4			SI	Ε1/4		TOTAL
Se	ec. Twp. Range	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW¼	SW1/4	SE1/4	NE*	NW1/4	SW1/4	SE1/4	ACRES
	· ·																	
	The T																	
	For Office Use	Only:	Code		Fe	e \$_ 2	00.0	O TR	#		Re	eceipt	Date	o-2	-29	Chec	k#	1000

5.	Presently authoriz	ed point of d	iversion:				
	One in the	SE	Quarter of the	SW	Quarter of the	NW	Quarter
	of Section	8	, Township	31	South, Range	32	W,
					4404 feet West of		
	Authorized Rate	No change	_ Authorized Quantity _	No change	Depth of well	590 (fee	t)
					feet North		
	•	•			No change, point better o		
	Proposed point of	diversion: (0	Complete only if chang	e is requeste	d or if existing point is	better describe	ed by GPS)
					Quarter of the		
					South, Range		
					3656 feet West of		
					Proposed well depth		
	This point is:	ditional Well	☐ Geo Center List of	ther water righ	ts that will use this point		
L							
3 [Presently authoriz	ed point of d	iversion:		/		
٠.	One in the		Quarter of the		Quarter of the		Quarter
	of Section		Township		South, Range		(E/W).
	in	Соц	nty Kansas	feet North	feet West of	Southeast corner	r of section.
	Authorized Rate		Authorized Quantity		Depth of well	(fee	t)
	(DWR use only: C	omputer ID I	No. GP:	S	feet North	feet We	st)
					No change, point better d		
					d or if existing point is		
					Quarter of the		
	of Section	/	Township		South, Range		(F/W)
	in	Соц	ntv Kansas	feet North	feet West of	Southeast corner	r of section.
	Proposed Rate		Proposed Quantity		Proposed well depth	(feet)	
					ts that will use this point		
L	11110 point 10	addional Fron		are water right	to that iiii doo tho point		·
7.	The changes hereir	are desired	for the following reasons	s?			
	(please be specific)				North	100 000	200
				300 PT	200 100 0	100 200	300 177779
		· · · · · · · · · · · · · · · · · · ·		E	' <u> </u>	' '	`∄
8.	If a well, is the test h	ole log attache	ed? 🛛 Yes 🗌 No	300	-1 + 1 + 1 =	1 L 1 L	200
				200	-1 + 1 + 1 =	1 + 1 +	200
9.	The change(s) (was)	(will be) comp	leted by?	E	-		1
				100	-1 + 1 + 1 =	+ + + +	100
10	If the point of diversi	on io o woll:		E	<u>=</u>		=
10.	If the point of diversi			W+0E1			
	(a) What are you go	oing to do with	the old well?	vvest 0		ntrochuratuoha	TITTE O East
				E	_		=
	(h) \/\(\bar{\bar{\bar{\bar{\bar{\bar{\bar{	a dama?		100	- + + =	1 + 1 +	100
	(b) When will this b	e done?		E			3
	0	15: (2)		10	 - + + +	1 1 1	1 = 3
11.	Groundwater Manag		recommendation attached	d? 200 =	1 + 1 + 1 =	1 + 1 +	200
	☐ Yes	P 140		E	=		크
12.	Assisted by mdf/GCI	FO		Ē			Trrry Erritr
				300	200 100 0 South	100 200 Scale: 1 hashmai	300 rk=10 ft
13a	a. If the proposed point	of diversion wi	Il be relocated more than 3	300			

a topographic map or aerial photograph. For groundwater sources, show all wells (including domestic) within one-half mile of the proposed point of diversion and the names and mailing addresses of the owners. For surface water sources, show the names and addresses of the landowner(s) one-half mile downstream and one-half mile upstream from your property lines

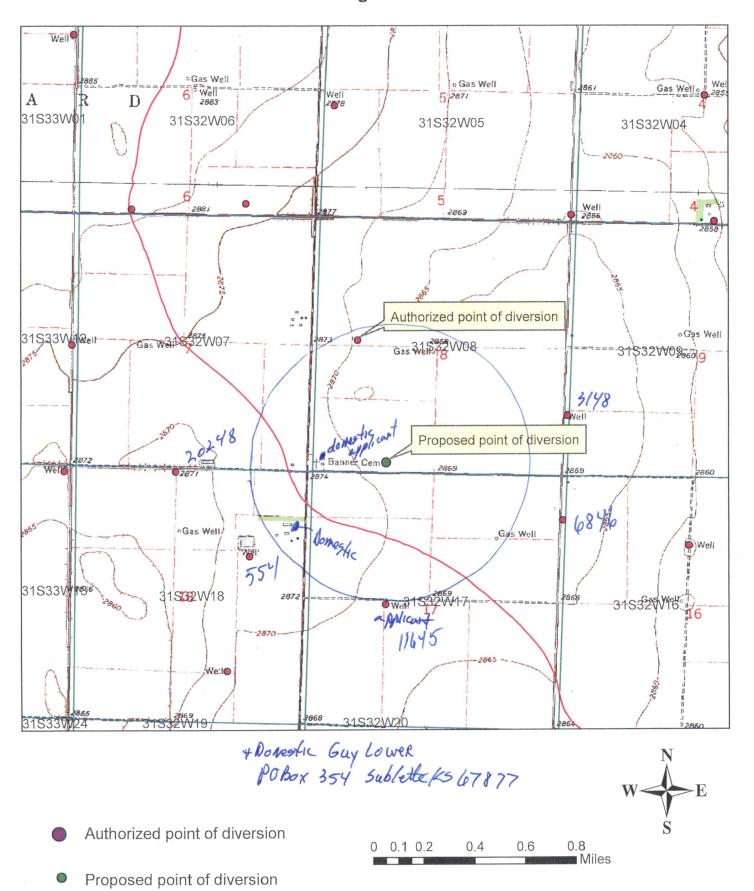
feet but within 2,640 feet of the existing point of diversion, attach 13b. If the proposed point of diversion will be relocated within 300 feet of the existing point of diversion, indicate its location on the diagram shown above in relation to the existing point of diversion. (PLEASE NOTE: The "X" in center of diagram above represents the presently authorized point of diversion.)

14. If the proposed groundwater point of diversion is 30	00 or fewer feet fro	m the exist	ing point of	diversion, complete	the following:
(a) Does the undersigned represent all owners of Yes No (If no, all owners m			e(s) of use i	dentified in this applic	cation?
(b) Will the ownership interest of any owner of th affected if this application is approved as reque ☐ Yes ☐ No (If yes, all owners not not provided in the control of	ested?		s) of use id	entified in this applic	cation be adversely
(c) If this application is not approved expeditiously ☐ Yes ☐ No (If no, all owners m			nage to pro	perty, public health o	r safety?
If the application proposes a surface water change in poor a change in place of use, the application must be sig agent (attach notarized statement authorizing represent	ned by all owners				
I hereby verify, being first duly sworn upon my age and the owner, the spouse of the owner, o their behalf, in regards to the water right(s) to contained in this application are true, correct a	r a duly authori which this app and complete.	zed agen dication p	t of the overtains.	vner(s) to make th I further verify tha	nis application on
Dated at Garden CH	, Kansas, this	2/5/	day of	June	. 20 23 .
	, Nariodo, tino			,,,,	
ZM Farms by Clark Frien	d			(Spouse)	
(Please Print)	7			(Please Print)	
(Owner)				(Spouse)	
(Please Print)				(Please Print)	
(Owner)				(Spouse)	
(Please Print)				(Please Print)	
State of Kansas County of SS					at
I hereby certify that the foregoing application of	was signed in r	ny presen	ce and sv	vorn to before me	this 21 day
JULIE JONES My Appointment Exp December 15, 202	119		7	Notary Public	4
My Commission Expires					
ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. accurate information; maps, if necessary, must be included; sign the appropriate fee must be paid.					
	FEE SCHEDU	LE			
Each application to change the place of use or the point forth in the schedule below: Make checks payable to: (1) Application to change a point of diversion 3 (2) Application to change a point of diversion makes	t of diversion unde Kansas Departme 00 feet or less nore than 300 feet	r this section	culture		\$100 \$200
(3) Application to change the place of use					\$200

SUMMARY ORDER APPROVING APPLICATION FOR CHANGE AND IMPOSING CONDITIONS

prov With limit	visions of the <i>Kansas Water Appropriation Law, K.S.A. 82a</i> - n the exception of those conditions expressly contained herein tations of File No. <u>3762</u>	8b, as amended, and K.A.R. 5-5-1, et seq. and other applicable 701 et. seq., and rules and regulations promulgated thereunder, n, this Summary Order does not change the terms, conditions and
1.	A change application was received on diversion authorized under the above-referenced file numbers.	requesting that the place of use and / or point of per be changed as described in the application.
2.	On and after the effective date of this summary order, the aut the topographic map accompanying the application to cha	thorized place(s) of use shall be located substantially as shown on nge the place of use. Applicable Not Applicable
3.	The change in point of diversion shall not impair existing right previously authorized. The point of diversion authorized by radius of the authorized point(s) of diversion. Applicable	nts and shall be limited to the same source or sources of water as by this summary order shall be located within a _360 foot le Not Applicable
4.	The point(s) of diversion described herein is administrative Positioning System (GPS), as described in the application	ely corrected to be more accurately described using the Global . Applicable Not Applicable
5.	The point(s) of diversion authorized herein shall not actually authorized point(s) of diversion. Applicable \(\Bar{\text{N}} \)	be located more than feet from the previously ot Applicable
6.	As required by K.A.R. 5-3-5d, if the works for diversion is a w or other device suitable for making water level measureme K.A.R. 5-6-13. ☐ Applicable ☐ Not Applicable	vell with a diversion rate of 100 gallons per minute or more, a tube nts shall be installed, operated and maintained in accordance with
	December 31, 20 or before the first use of water, operated and maintained in accordance with K.A.R. 5-1-4	operly install an acceptable water flow meter on or before whichever occurs first. The water flow meter shall be installed, through 5-1-12. As required by K.S.A. 82a-732, as amended, and the reading of the water flow meter and the total quantity of water ng the end of each calendar year.
8.	Installation of the works for diversion of water shall be authorized extension of time. By March 1, 20 the works for diversion has been completed, on the form proving Applicable Not Applicable	completed on or before December 31, 20 22, or within any applicant shall notify the Chief Engineer that construction of the ided by the Chief Engineer, as required by K.A.R. 5-8-4e.
9.	The completed well log shall be submitted with the requi	ired notice. Applicable Not Applicable
10.	with an in-line, automatic, quick-closing check valve capal	oreign substance will be injected into the water shall be equipped ble of preventing pollution of the source of the water supply. The in accordance with K.A.R. 5-3-5c. ⊠ Applicable ☐ Not Applicable
11.	Additional Conditions are attached.	
12.	water appropriated under the above-referenced file numb limitations, as amended and/or supplemented by this Sun Appropriation Law and the Rules and Regulations promu	.R. 5-5-14, all of the owners of the authorized place(s) of use of oper are responsible for compliance with its terms, conditions and nmary Order, and with applicable provisions of the <i>Kansas Water</i> algated thereunder. Failure to comply with these provisions may be ended, and/or the suspension or revocation and dismissal of the ons authorized by law.
1	Administrative Appeal and Effective Date of Order	FOR OFFICE USE ONLY
If yo	ou are aggrieved by this order, pursuant to K.S.A. 82a-1901,	APPLICATION APPROVED AND SUMMARY ORDER ISSUED
	may request an evidentiary hearing before the Chief ineer or request administrative review by the Secretary of	SOMMANT ONDER ISSUED
Agri	culture. A request for hearing by the Chief Engineer must be	By: Muller of the
adm	within 15 days of service of this Order and a request for hinistrative review by the Secretary must be filed within 30	Duly Authorized Designee of the Chief Engineer
day	s pursuant to K.S.A. 77-531. Any request for administrative ew must state a basis for review pursuant to K.S.A. 77-527.	(Print Name):
File	any request with Kansas Department of Agriculture, al Division, 1320 Research Park Drive, Manhattan, KS	Date of Issuance: August 1/1,2022
665	02. Failure to timely request a hearing or review may	State of Kansas
pred	clude review under the Kansas Judicial Review Act. For Use by Register of Deeds	County of _ County
		Acknowledged before me on Acknowledged befor
		by Michael A. Meyer.
		Signature: Notary Public JULIE JONES My Appointment Expires (Ngtasyberga, 2022

Change in point of diversion for water right 3762



All wells within 1/2 mile are on this map.

X_____

Downey Drilling Inc.



CUSTOMER NAME: ZM FARMS

TH #1

LEGAL: SW 1/4 8-31S-32W

COUNTY: HASKELL CO, KS

GPS: 37.359338

-100.828233

FROM	то	ТҮРЕ	DIEGO & RO	COLOR	SPEED	WO:	22-675 OTHER / DRILLING
						DOWN	ACTION
0	2	TOP SOIL	SOFT	BROWN	FAST		SMOOTH
2	13	BROWN SILTY CLAY	SOFT	BROWN WHITE &	FAST		SMOOTH
13	20	CALICHE W/ SANDY CLAY	FIRM	ITAN	FAST		CHOPPY & SMOOTH
20	29	SANDY CLAY	SOFT	ORANGE	FAST		SMOOTH
29	34	GRAY CLAY LAYER	SOFT	GRAY BROWN &	FAST		SMOOTH
34	55	SANDY CLAY W/ CEMENTED SAND	FIRM	WHITE	FAST		SMOOTH & CHOPPY
55	87	FINE-MED-COARSE SAND W/ FINE GRAVEL	FIRM		FASTER		FAST CHATTER
87	104	FINE-MED GRAVEL W/ FINE-MED-COARSE SAND	STIFF		FAST		CHATTER
104	117	FINE-MED-COARSE SAND W/ FINE GRAVEL	FIRM		FAST		FAST CHATTER
117	119	BROWN CLAY	SOFT	BROWN	FAST		SMOOTH
119	124	FINE-MED-COARSE SAND W/ FINE GRAVEL & CEMENTED SAND LEDGES	STIFF		SEMI SLOW		CHATTER
124	190	FINE-MED GRAVEL W/ FINE-MED-COARSE SAND	STIFF		FAST		FAST CHATTER
190	232	FINE-MED-COARSE SAND W/ FINE GRAVEL	FIRM		FAST		CHOPPY
232	236	SANDY CLAY	SOFT	YELLOW & BROWN	FAST		SMOOTH
236	285	FINE-MED-COARSE SAND W/ FINE GRAVEL	FIRM		FAST		СНОРРУ
285	352	FINE-MED-COARSE SAND W/ FINE-MED-COARSE GRAVEL	STIFF		FAST		FAST CHATTER
352	354	CLAY	SOFT	BROWN	FAST		SMOOTH
354	379	FINE-MED-COARSE SAND	FIRM		FAST		FAST CHATTER
379	381	GREEN CLAY	SOFT	GREEN	FAST		SMOOTH
381	407	FINE-MED-COARSE SAND W/ FINE-MED GRAVEL	STIFF		FAST		FAST CHATTER
407	418	SANDY W/ CEMENTED SAND	STIFF	WHITE	SEMI		CHATTER
418	426	LIME ROCK	STIFF	WHITE	SEMI		CHATTER
426	450	SANDY CLAY W/ FINE SAND & BROWN STICKY CLAY LEDGES	SOFT	TAN & BROWN	FAST		SMOOTH & VIBRATION
450	482	BROWN STICKY CLAY	STICKY	BROWN	FAST		SMOOTH
	1						SMOOTH &
482	489	SANDY CLAY W/ FINE SAND	SOFT	TAN &	SEMI		VIBRATION
489	495	SANDY CLAY W/ FINE SAND & CEMENTED SAND	FIRM	TAN &	SLOW	-	SMOOTH & CHOPPY
495	508	SANDY CLAY W/ FINE SAND & BROWN ROCK	FIRM	BROWN	FAST		SMOOTH & CHOPP
508	586	TAN SANDSTONE W/ BROWN ROCK & FINE SAND (BIG DRINK)	-		FAST		FAST CHATTER
586	620	RED BED	SOFT	RED	SLOW	-	SMOOTH
		QG - 15					
		SA - 1/2	RECE	TIVEL	7		
		WL - 2	4444	2022			
		HOLE PLUG - 2	JUN 7	C O LUCE			
		CS - 1	Garden Ci	ty Field C	office		
		BRAN - 2	vision of V	Valer Kes	041023		





ZM FARMS

COMPANY

: DOWNEY DRILLING INC

WELL

: 7M FARMS TH#1

LOCATION/FIELD

COUNTY

: HASKELL

LOCATION

: SW 1/4

SECTION

DEPTH DRILLER

LOG BOTTOM

LOG TOP

BIT SIZE

: 8

TOWNSHIP

: 318

OTHER SERVICES:

RANGE: 32W

DATE

: 06/13/22

: 620

: 620.30 : 0.90

PERMANENT DATUM : GL

: 1903

LOG MEASURED FROM: GL DRL MEASURED FROM: GL KB DF

GL

CASING DIAMETER: 10.

CASING TYPE

CASING THICKNESS:

LOGGING UNIT FIELD OFFICE

RECORDED BY

: DDI : ROCFKY

FILE : ORIGINAL

MAGNETIC DECL. : 0

MATRIX DENSITY : 2.71

: 6.25

NEUTRON MATRIX: LIMESTON

BOREHOLE FLUID

RM TEMPERATURE

MATRIX DELTA T

: 49

: MUD

TYPE : 8144A

LGDATE: 06/13/22

LGTIME: 16:13:

THRESH: 99999

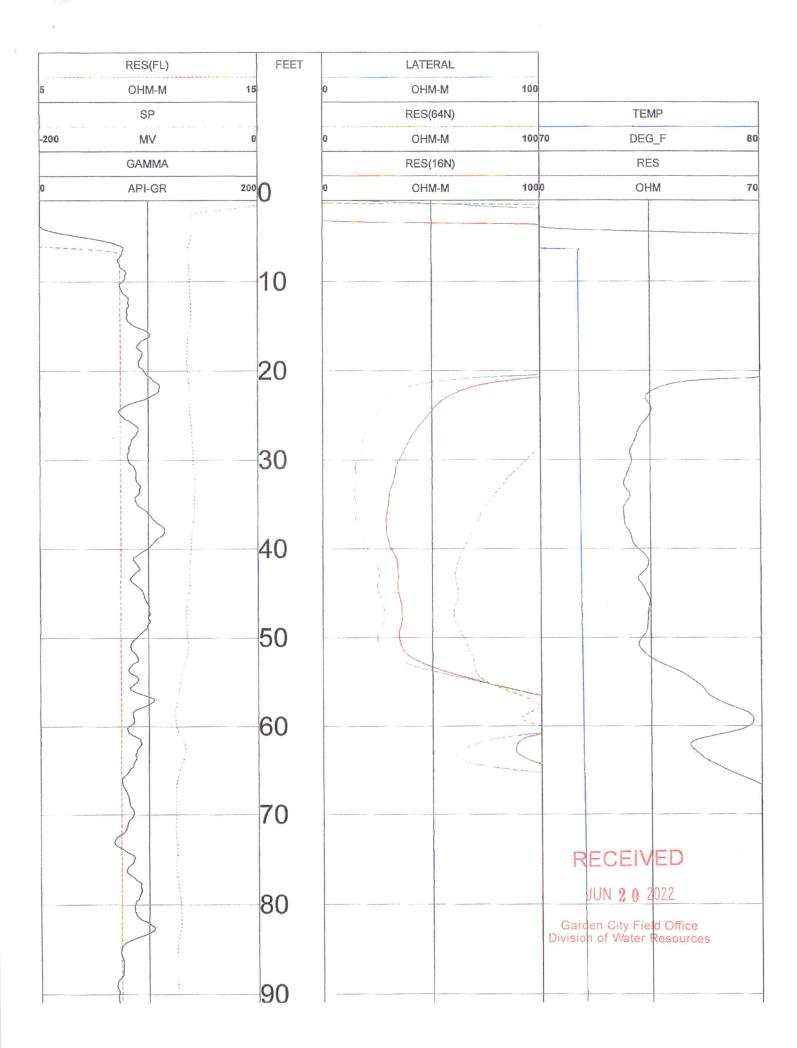
N 37.35933

W-100.82823

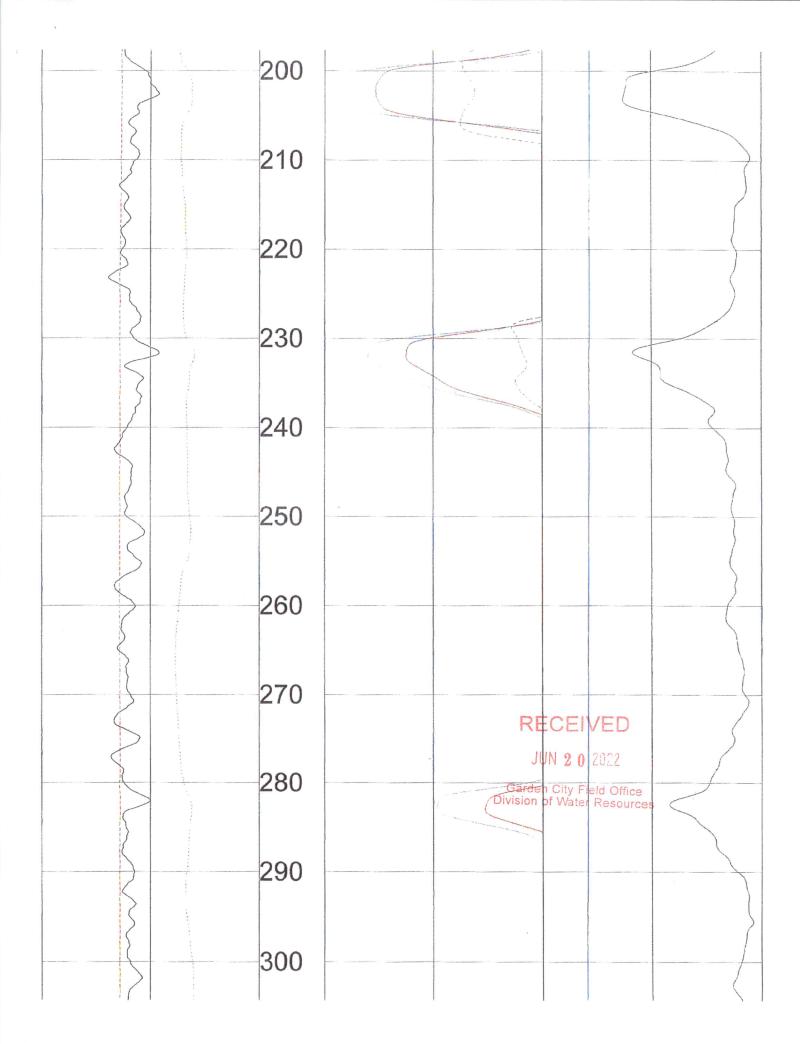
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

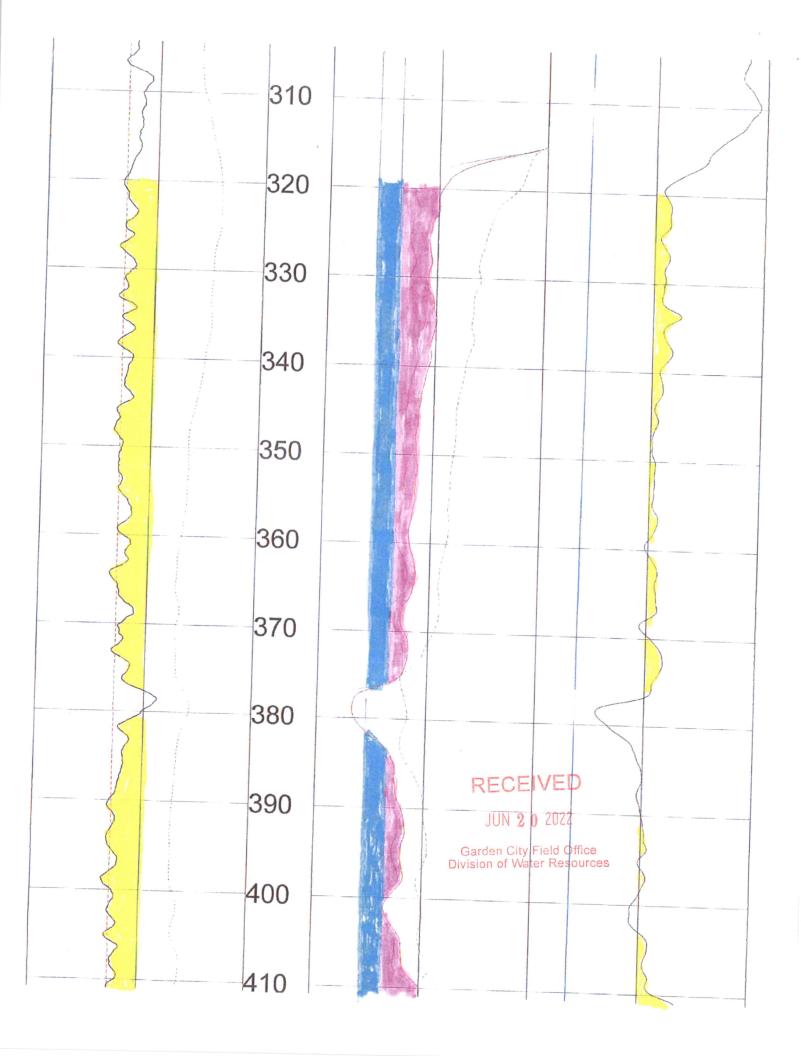
RECEIVED

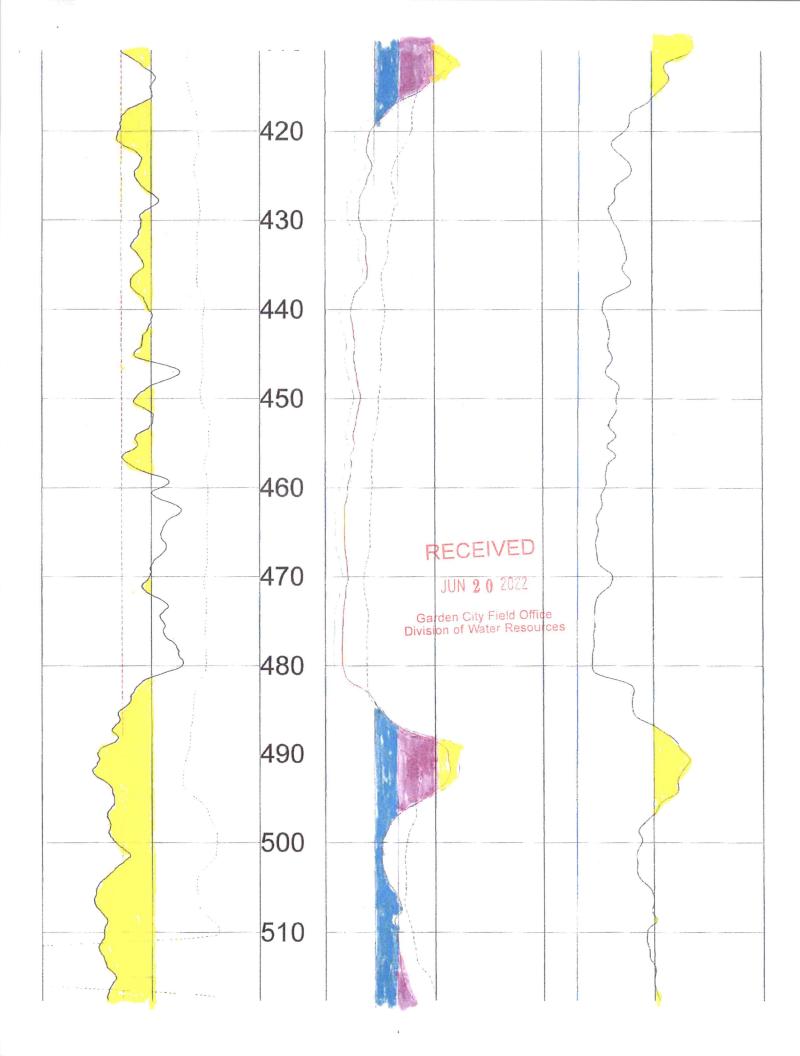
JUN 2 0 2022

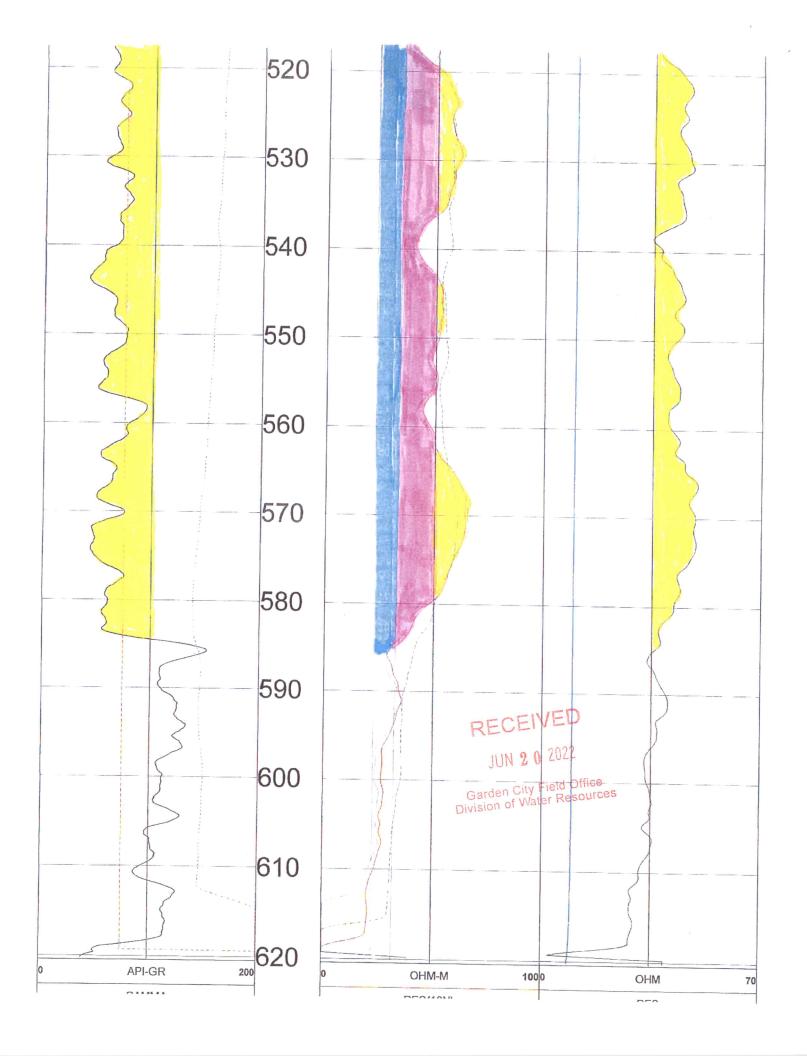


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1	10		
1	20		
1	30		
1	40		
1	50		
1	60		
1	70	JUN 2 0 2022	1. 1.
1	80	Garden Dity Field Office Division of Water Resources	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
1	90		A CO MAN CONTRACTOR OF THE CO.









	GAMMA	1			KES(16N)	-	RES	
-200	MV	0		0	ОНМ-М	100	70 DEG_F	80
	SP				RES(64N)		TEMP	
5	ОНМ-М	15		0	ОНМ-М	100		
	RES(FL)		FEET		LATERAL			

RECEIVED

JUN 2 0 2922

	TOOL CALIE TOOL 8144/ SERIAL NUN						
	DATE	TIME	SENSOR	ST	ANDARD	RES	SPONSE
1 2 3 4 5	Feb08,18 Feb08,18 Jul12,17 Jul12,17 Jan14,22 Jan14,22 Jan14,22 Jan14,22 Jan14,22	07:51:35 07:51:35 13:24:17 13:24:17 08:32:51 08:32:51 08:33:01 08:33:01 08:33:10	GAMMA GAMMA RES(FL) RES(FL) SP SP RES(16N) RES(16N) RES(64N)	1.000 340.000 1.330 42.700 0.000 381.500 0.000 1951.500 0.000	[API-GR] [API-GR] [OHM-M] [OHM-M] [MV] [MV] [OHM-M] [OHM-M]	4.000 290.000 7595.000 64820.000 327768.000 164650.000 3453.000 448089.000	[CPS] [CPS] [CPS] [CPS] [CPS] [CPS] [CPS] [CPS]
6	Jan14,22 Jul12,17 Jul12,17 Jan14,22 Jan14,22	08:33:10 13:17:49 13:17:49 08:33:36 08:33:36	RES(64N) TEMP TEMP RES RES	1994.000 33.400 102.200 0.000 944.000	[OHM-M] [DEG_F] [DEG_F] [OHM] [OHM]	449170.000 66910.000 270930.000 21285.000 190148.000	[CPS] [CPS] [CPS] [CPS] [CPS]

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Theis evaluation of proposed change in point of diversion, File No. 3762

A 50-year Theis analysis was used to evaluate the potential increase in dynamic drawdown as a result of the proposed change in point of diversion for one well authorized by File No. 3762. The change proposes relocating the well approximately 2,557 feet South and 748 feet East of the currently authorized location (Figure 1).

The GMD No. 3 groundwater model and was used in conjunction with lithology plots to achieve a projected future (2068) saturated thickness (182.52 ft). The average of model cells located within Township 31 South, Range 32 West, Sections 8, 9, 16, 17, and 18 was used.

The transmissivity was estimated based on lithological logs from the Kansas Geological Survey's Water Well Completion Records Database (WWC5). The lithological log supplied with the change application was also considered. WWC5 records within 1 mile of the proposed point of diversion were used. Records that were within that area, but did not include lithological data, were not drilled to bed rock, or had poor lithological descriptions were excluded. Hydraulic conductivity assumptions were based on the calibrated values used for the GMD No. 3 groundwater model (Figures 2 and 3). In all, six lithological logs were evaluated (Figure 4-6, Tables 1-6), with an average transmissivity of 4,991 square feet per day. An assumed specific storage (1×10⁻⁵ for the Ogallala Aquifer and 1×10⁻⁶ for the Dakota Aquifer) and the projected saturated thickness was used to determine the assumed storativity of 0.00129.

Drawdown was evaluated at 2 nearby existing wells authorized by File Nos. 554 and 11645-D1 and 1 domestic well (KGS# 77729) (Tables 7-9). A quantity of 1,280 acre-feet (AF) at a rate of 1,800 gallons per minute (gpm) was compared to the average historic use (354.4 AF, 2012-2021) at the rate (450 gpm) reported in the 2022 compliance check. The maximum net drawdown occurred at the domestic well (KGS# 77729). The net drawdown at that distance was 30.6 feet, or 16.7% of the projected future saturated thickness.

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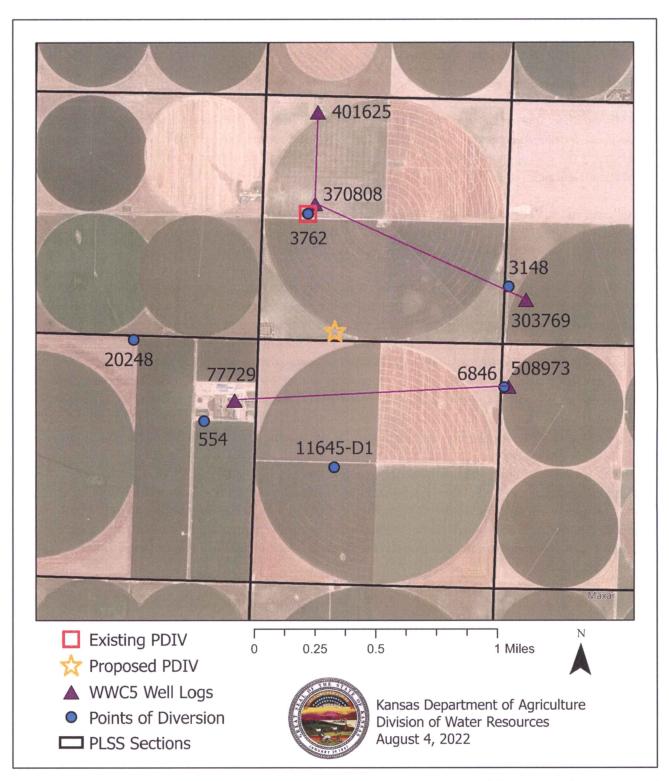


Figure 1: Location of current and proposed point of diversion, surrounding points of diversion, and WWC5 records

Synonymy	Lithology	Synonymy	Lithology	Synonymy	Lithology
sh	Shale	sc	Sandy Clay or Silty Sand	fand	Fine Sand
C	Clay	fds	Fine Sandy Silt	fringsrid	Fine to Medium Sand
coal	Coal	fmds	Fine to Medium Sandy Silt	fmand	Fine to Medium Sand
br	Bedrock	forsds	Fine to Coarse Sandy Silt	snd	Sand
rb	Red Bed	ds	Sandy Silt	forssnd	Fine to Coarse Sand
r	Rock	mds	Medium Sandy Silt	msnd	Medium Sand
sst	Siltstone	gc	Gravelly Clay	mcrssnd	Medium to Coarse Sand
ca	Limestone/caliche	morsds	Medium to Coarse Sandy Silt	cg	Clayey Gravel
0	Overburden	crsds	Coarse Sandy Silt	crssnd	Coarse Sand
ts	Topsoil	cesd-cg	Cemented Sand and/or Gravel	sg	Sifty Gravel
fs	Fine Silt	fss	Fine Silty Sand	fsdg	Fine Sand and Gravel
fsc	Fine Sandy Clay	fmss	Fine to Medium Silty Sand	fmsdg	Fine to Medium Sand and Gravel
fmsc	Fine to Medium Sandy Clay	88	Sitty Sand	msdg	Medium Sand and Gravel
m	Marl or Ochre	mss	Medium Silty Sand	sdg	Sand and Gravel
msc	Medium Sandy Clay	fcrsss	Fine to Coarse Silty Sand	fcrssdg	Fine to Coarse Sand and Gravel
S	Silt	mcrsss	Medium to Coarse Silty Sand	mcrssdg	Medium to Coarse Sand and Gravel
Crssc	Coarse Sandy Clay	crsss	Coarse Silty Sand	crssdg	Coarse Sand and Gravel
fcrssc	Fine to Coarse Sandy Clay	u	Unknown (most likely unintelligible)	fg	Fine Gravel
mcrssc	Medium to Coarse Sandy Clay			fmg	Fine to Medium Gravel
				fcrsg	Fine to Coarse Gravel
				fcrssg	Fine to Coarse Gravel
				g	Gravel
				mg	Medium Gravel
				mcrsg	Medium to Coarse Gravel
				crsg	Coarse Gravel

Figure 2: Synonymy codes and lithology descriptions. Source: KGS OFR 2010-18

Synonymy	K	SY	Synonymy	K (ft/d)	Sy	Synonymy	K (ft/d)	Sy
sh	0.00004	0.05	sc	4.4	0.08	fsnd	15	0.24
C	0.00004	0.05	fds	4.4	0.08	fmgsnd	15	0.24
coal	0.00004	0.05	fmds	4.4	0.08	fmsnd	15	0.24
br	0.00004	0.05	fcrsds	4.4	0.08	snd	63	0.24
rb	0.00004	0.05	ds	4.4	0.08	fcrssnd	63	0.24
r	0.00004	0.05	mds	4.4	0.08	msnd	63	0.24
sst	0.00004	0.05	gc	4.4	0.08	mcrssnd	63	0.24
ca	0.0001	0.08	mcrsds	4.4	0.08	cg	63	0.24
0	0.0001	0.08	crsds	4.4	0.08	crssnd	63	0.29
ts	0.0001	0.08	cesd-cg	14.5	0.16	sg	63	0.29
fs	0.0001	0.08	fss	14.5	0.16	fsdg	299	0.29
fsc	0.0001	0.08	fmss	14.5	0.16	fmsdg	299	0.29
fmsc	0.0001	0.08	SS	14.5	0.16	msdg	299	0.29
m	0.0001	0.08	mss	14.5	0.16	sdg	299	0.29
msc	0.0001	0.08	fcrsss	14.5	0.16	fcrssdg	299	0.29
S	0.0001	0.08	mcrsss	14.5	0.16	mcrssdg	299	0.29
crssc	0.0001	0.08	crsss	14.5	0.16	crssdg	299	0.29
fcrssc	0.0001	0.08	u	14.5	0.16	fg	299	0.29
mcrssc	0.0001	0.08				fmg	299	0.29
						fcrsg	299	0.29
						fcrssg	299	0.29
						g	299	0.29
						mg	299	0.29
						mcrsg	299	0.29
						crsg	299	0.29

Figure 3: Calibrated hydraulic conductivity values. Source: KGS OFR 2010-18

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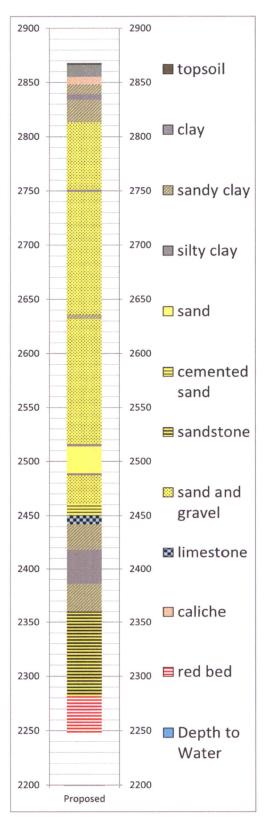


Figure 4: lithology log of proposed location

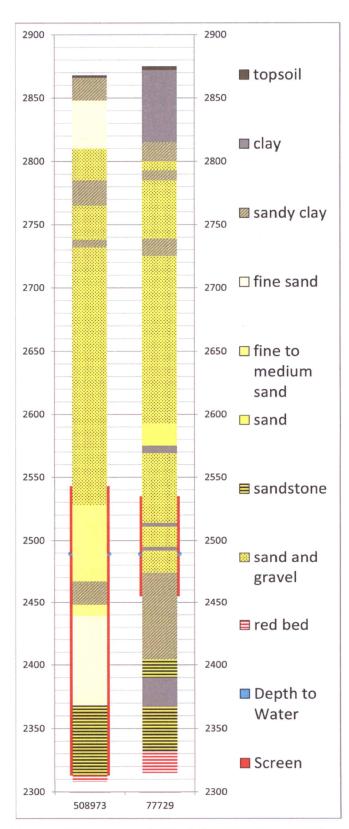


Figure 5: lithology log of KGS Wells on South transect line

Fridan Uth, Frida Uthauser Timbert - Watschessterser

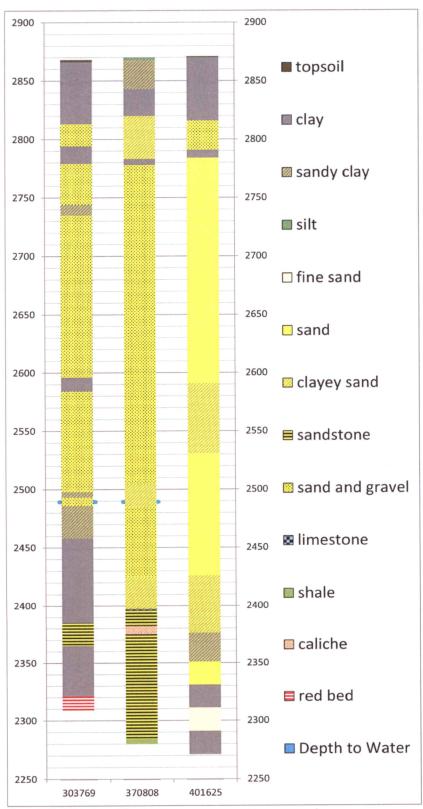


Figure 6: lithology log of KGS Wells on North transect line

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Table 1: Lithology, proposed location

			Saturated	
	Synonymy		Thickness	Transmissivity
Driller's Description	Codes	Percentages	(Feet)	(feet²/day
top soil				
Brown silty clay				
caliche w/ sandy clay				
sandy clay				
gray clay layer				
sandy clay w/ cemented sand				
fine-med-coarse sand w/ fine gravel				
fine-med gravel w/ fine-med-coarse				
sand				
fine-med-coarse sand w/ fine gravel				
brown clay		Ahoyo wa	ater surface	
fine-med-coarse sand w/ fine gravel		Above wa	ater surface	
& cemented sand ledges				
fine-med gravel w/ fine-med-coarse				
sand				
fine-med-coarse sand w/ fine gravel				
sandy clay				
fine-med-coarse sand w/ fine gravel				
fine-med-coarse sand w/ fine-med-				
coarse gravel				
clay				
fine-med-coarse sand	_			
green clay	С	100	2	0.0
fine-med-coarse sand w/ fine-med				
gravel	snd, fmg	70, 30	26	3478.8
sandy w/ cemented sand	snd, cesd-cg	70, 30	11	533.0
lime rock	ca ca	100	8	0.0
sandy clay w/ fine sand & brown		200		
sticky clay ledges	sc, fsnd, c	60, 20, 20	24	135.4
brown sticky clay	C	100	32	0.0
sandy clay w/ fine sand	sc, fsnd	70, 30	7	53.3
sandy clay w/ fine sand &	sc, fsnd,	70,00	1	
cemented sand	cesd-cg	60, 20, 20	6	51.2
sandy clay w/ fine sand & brown	2200 08	-5, 25, 25		31.7
rock	sc, fsnd, r	60, 20, 20	13	73.3
	30, 13110, 1	50, 20, 20	15	73.5
tan sandstone w/ brown rock & fine	ds r fend	60 20 20	78	439
	ds, r, fsnd	60, 20, 20 100	78 34	439.9



Table 2: Lithology, KGS Well ID 508973

	Synonymy		Saturated Thickness	Transmissivity						
Driller's Description	Codes	Percentages	(Feet)	(feet²/day)						
topsoil										
brown sandy clay										
fine sand with couple clay stringers										
fine to medium coarse sand; small,										
medium, few large gravel										
red sandy clay	All and make a surface									
brown sandy clay	– Above water surface									
fine to medium coarse sand and										
small gravel										
brown sandy clay										
fine to medium coarse sand with										
few small gravel										
fine to medium coarse sand	fcrssnd	100	22	1386.0						
brown sandy clay with many sand										
strips	sc, snd	80, 20	19	306.3						
fine to medium sand with few clay										
stringers	fmsnd, c	80, 20	9	108.0						
fine sand with few clay stringers	fsnd, c	80, 20	55	660.0						
fine sand with few small lime rock										
strips	fsnd, ca	80, 20	16	192.0						
sandstone with few soapstone										
ledges	ds, s	70, 30	27	83.2						
sandstone	ds .	100	28	123.2						
red bed	rb	100	5	0.0						
		Total	Transmissivity:	2858.6						

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Table 3: Lithology, KGS Well ID 77729

Duille de Description	Synonymy	Davasatassa	Saturated	Transmissivity
Driller's Description	Codes	Percentages	Thickness (Feet)	(feet²/day
top soil	_			
brown clay				
brown sandy clay				
sand fine to med coarse, small to				
med gravel				
brown sandy clay				
sand fine to med coarse, small to				
med gravel				
brown sandy clay, sand st				
sand fine to med coarse, small to				
med gravel				
sand fine to med, few small gravel,				
cemented sand st				
sand fine to med coarse, small to	1			
med gravel, loose, used water				
sand fine to med coarse, small to	1	A l		
med gravel, loose, used water		Above	e water surface	
sand fine to med coarse, small to	1			
med gravel, loose, used water				
sand fine to med, loose, used	1			
water, clay st				
mixed clay with sand st				
sand fine to med coarse, small to	1			
med gravel, loose, used water				
sand fine to med coarse, small to	1			
med gravel, loose, clay st				
sand fine to med coarse, small to	-			
med gravel, loose, used water				
clay, sand st	-			
sand fine, to med coarse, small to	-			
med gravel, loose used water				
clay	-			
sand fine to med coarse, small to	fcrssnd,			
large gravel, loose, used water	fcrsg	60, 40	15	2361.
brown sandy clay, lime rock st, very	10136	50, 40	13	2501.
	sc, ca, ds	70, 20, 10	70	246.
ow canditione st	sc, ca, us	70, 20, 10	/0	240.
few sandstone st				
sandstone, good, used water,	de	100	1.4	61
sandstone, good, used water, drilled loose	ds	100	14	
sandstone, good, used water, drilled loose brown clay and sandstone st	ds c, ds	100 80, 20	14 23	
sandstone, good, used water, drilled loose brown clay and sandstone st sandstone, good, used water,	c, ds	80, 20	23	61. 20.
sandstone, good, used water, drilled loose brown clay and sandstone st				

Table 4: Lithology, KGS Well ID 303769

Table 4: Lithology, KGS Well ID 3037	69									
			Saturated							
	Synonymy		Thickness	Transmissivity						
Driller's Description	Codes	Percentages	(Feet)	(feet²/day)						
top soil										
brown clay										
fine to medium sand and gravel –										
clay streak										
brown clay										
fine to medium sand and gravel										
brown sandy clay										
fine to medium sand and gravel –		Above	water surface							
loose										
brown clay										
fine to medium sand and gravel	1									
fine to medium sand and gravel –	7									
small clay strip 10%										
fine to medium sand and gravel										
brown sandy clay										
fine to medium sand and gravel	fmsnd, g	60, 40	3	385.8						
brown sandy clay cemented sand	sc, cesd-									
mixed – tight	cg	60, 40	15	126.6						
brown sandy clay	sc	100	13	57.2						
brown clay – sticky	С	100	30	0.0						
brown clay	С	100	26	0.0						
yellow clay – 10% yellow sandstone	c, ds	90, 10	17	7.5						
yellow sandstone – loose	ds	100	2	8.8						
yellow sandstone – tight	ds	100	18	79.2						
yellow clay – 15% sandstone – hard										
pull down 400	c, ds	85, 15	27	17.8						
yellow red clay – 15% sandstone –				-						
hard pull down 400	c, ds	85, 15	17	11.2						
red bed – hard pull down 500	rb	100	13	0.0						
		Total	Transmissivity:	694.1						

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Table 5: Lithology, KGS Well ID 370808

Table 5: Lithology, KGS Well ID 370	7000								
			Saturated	Torrest to the					
	Synonymy		Thickness	Transmissivity					
Driller's Description	Codes	Percentages	(Feet)	(feet²/day)					
silt									
clay caliche sand									
clay limestone									
sand clay gravel	Above water surface								
clay		7							
sand gravel									
sand gravel rock									
sand clay	snd, c	60, 40	4	151.2					
sand fine gravel	snd, fg	60, 40	19	2990.6					
sand fine gravel	snd, fg	60, 40	26	4092.4					
sand fine gravel clay	snd, fg, c	50, 30, 20	15	1818.0					
sand clay	snd, c	60, 40	28	1058.4					
limestone	ca	100	1	0.0					
sandstone caliche	ds, ca	60, 40	14	37.0					
caliche shale sandstone	ca, sh, ds	50, 30, 20	7	6.2					
sandstone caliche	ds, ca	60, 40	10	26.4					
sandstone caliche	ds, ca	60, 40	20	52.8					
sandstone caliche	ds, ca	60, 40	16	42.2					
sandstone	ds	100	6	26.4					
sandstone caliche	ds, ca	60, 40	28	73.9					
sandstone	ds	100	11	48.4					
shale	sh	100	4	0.0					
		Total	Transmissivity:	10423.9					

Table 6: Lithology, KGS Well ID 401625

Table of Ethiology, Ros Well 15 161			Saturated								
	Cunonumu		Thickness	Transmissivity							
	Synonymy										
Driller's Description	Codes	Percentages	(Feet)	(feet²/day)							
surface											
clay											
sand and gravel		Above water surface									
clay		Above water surface									
sand											
sand and clay streaks											
sand	snd	100	63	3969.0							
sand and clay streaks	snd, c	80, 20	50	2520.0							
clay and sand streaks	c, snd	80, 20	25	315.0							
sand	snd	100	20	1260.0							
clay	С	100	20	0.0							
fine sand	fsnd	100	20	300							
clay, tan	С	100	20	0.0							
	8364.0										

Table 7: Theis drawdown evaluated at File No. 554; $T = 4,991 \text{ ft}^2/\text{day}$, S = 0.00129

Scenario	Distance (FT)	Pump Rate (GPM)	Volume (AF)	Drawdown (FT)	Drawdown (%ST)
Proposed	3453.9	1800.0	1280.0	36.5	20.0%
Baseline	5034.2	450.0	354.4	8.5	4.7%
			Net:	28.0	15.3%

Table 8: Theis drawdown evaluated at domestic well (KGS# 77729); T = 4,991 ft²/day, S = 0.00129

Scenario	Distance (FT)	Pump Rate (GPM)	Volume (AF)	Drawdown (FT)	Drawdown (%ST)
Proposed	2639.5	1800.0	1280.0	39.5	21.6%
Baseline	4333.9	450.0	354.4	8.9	4.9%
***************************************			Net:	30.6	16.7%

Table 9: Theis drawdown evaluated at File No.11645-D1; T = 4,991 ft²/day, S = 0.00129

Scenario	Distance (FT)	Pump Rate (GPM)	Volume (AF)	Drawdown (FT)	Drawdown (%ST)
Proposed	2955.6	1800.0	1280.0	38.2	20.9%
Baseline	5528.6	450.0	354.4	8.2	4.5%
			Net:	30.0	16.4%



Southwest Kansas Groundwater Management District No. 3 2009 E. Spruce Street Garden City, Kansas 67846

(620) 275-7147 phone (620) 275-1431 fax www.gmd3.org

July 8, 2022

Mike A Meyer Division of Water Resources 4532 W Jones Ave., Suite B Garden City, Kansas 67846

RE:

Application for Change in Point of Diversion

Water Right, File No. 3762

Dear Mike:

We have completed a review of the application for the above referenced water right. The proposed change in point of diversion is in accordance with current area rules, K.A.R. 5-23-3, as it pertains to minimum spacing to neighboring wells and distance moved.

Well evaluations were conducted to estimate possible effects of the proposal on the supply of other wells with water rights prior to the proposal per K.S.A. 82a-708b, and our management program. Under K.S.A. 82a-708b, an applicant requesting a change in point of diversion must demonstrate to the chief engineer that any proposed change is reasonable and will not impair. The enclosed report is an analysis performed by the GMD on behalf of our membership. Under this analysis, the proposed change is considered to be reasonable and unlikely to impair if either the net in-season well-to-well effect of the proposed change is less than a strict maximum allowable threshold (3.5 ft on the sections saturated thickness ranging 150-200 ft), or if no well with a net well-to-well effect exceeding the threshold is identified as critical. Critical wells are identified as wells that are expected to either lose or greatly diminish water supply over the next 25 years. The attached review information is based on a Theis analysis using inputs from the GMD3 aquifer model, which is considered to be the best information on well and aquifer data readily and easily available to the public. If either the applicant or the neighbors believe they have better data that might change the result of the analysis, they should contact GMD3. Conclusions of the well analysis may change if better information on well and aquifer data can be made available.

Every neighboring well within 1 mile of the proposed move was evaluated. Evaluations showed that several of the neighboring wells exceeded the net effect above the maximum allowable threshold and needed further evaluation. There could be the potential for critical wells in the area. The evaluations from our data showed that the effects could be mitigated with limitations to the proposed well. We did not receive any comments from neighbor notices. Therefore, GMD3 sees this move as meeting current rules and would recommend approval with possible limitations or better information given to ensure that neighboring wells are not adversely affected. If aquifer conditions change or there is a change to the water right in the future, we would be happy to evaluate the effects at that time.

Thank you for the opportunity to review the applications and to provide a recommendation. If you have any questions, please don't hesitate to contact us.

Sincerely,

Jason L. Norquest

Assistant Manager

GMD3 Change Review

File No(s).: _3762. DWR office: GC. App filed to change: PD. Is Landowner(s) correct in WRIS: ZM Farms Inc. %Carol Ann Zimmerman. If NO, is documentation included? Is Water Use Correspondent correct in WRIS? ___. If NO, is documentation included? Regulation(s) Reviewed: KAR 5-23-3 Point of diversion ID No(s) <u>02</u> being changed. ft. North ft. West Authorized PD 2725 4404 Sect 8-31-32 Proposed PD 168 3656 Difference 2557 s 748 e a2 + b2 = c26538249 559504 2664.161 GPS for proposed PD: Lat: 37.359338 Long: -100.828233. Is proposed PD stacking on existing WRs? No. Is Proposed PU overlapping existing WRs? No Change. Neighboring certified well(s) notified: ___. Name Guy William Lower, Bill (554,3148, domestic). Address PO Box 354. Zip Sublette, KS 67877. Email: guy.w.lower@gmail.com Phone: 620-353-8534. Name Clawson Land Partnership (6846, 20248). Address PO Box 279. Zip Plains, KS 67869. Email: jeanne@clawsonoffice.com Phone: 620-563-6112. Domestic well(s) notified: . . Name Mike & Donne White (NE of 7). Address PO Box 548. Sublette, KS 67877. Zip Base Acres: . Perfected Acres: ___. Irr. Return-Flow ____% **Seward County** Authorized 1280AF @ 1800gpm. Reported water use (2012-2021): 350.9AF/year average Reported 600gpm on 2017 WUR 2016 GMD3 inspection showed 550gpm calculated.

GMD3 Change Review

Current well around 590'

Proposed well to 620'

Is a waiver needed: GPS from GMD3 inspection shows move is less than half mile. Minimum spacing to neighboring wells appears met. Analysis did take further calculation and determined that there could be critical wells in the area if proposed well is operated at full authority. Did not receive any comments from notices.

Recommendation: After review of all available information, it appears current area rules are met. There is possible critical wells in the area according to the analysis, which was run a full authorized rate/quantity. Recommend approval is State is confident that chances of impairment is minimized.

12

Water Rights and Points of Diversion Within 1 mile of point defined as:

168 Feet N and 3656 Feet W of the Southeast Corner of Section 8 Twp 31S Rng 32W

Located at: 100.828233 West Longitude and 37.359233 North Latitude

Both	SURFACE	WATER	and	GROUNDWATER
DOCIL	DOMETICE	MATTER	CILLA	GIOOMDMAILIN

Both	SURFACE	S W	ATER	and	d GROUND	WATER										23	00	0. 4		
File	Number		Use	ST	SR Dist	(ft)	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Batt	Auth_Quan	Add_Quan	
Unit A	554	00	IRR	NK	G	3503	NC	N2	S2	NE	3454	1136	18	31	32W	2		1200.00	1200.00	
AF	3148	00	IRR	NK	G	3910	4	NW	SW	SW	1235	5205	9	31	32W	2		558.00	558.00	
AF	2762	00	TDD	NIZ	C+ / ->	2662		CE	CM	NTD.	2725	4404	0	21	2011	2	2.0	1280.00	1000.00	
A_AF	3/62	00	IKK	NK	G*	2002	7	SE	SW	NW	2/25	4404	8	31	3ZW	2	7.70	630.00	1280.00	
AF																				
		D1	IRR	NK	G	2918		NW	NE	SW	2590	3530	17	31	32W	1		702.00	702.00	
A	20248	00	IRR	NK	G	4385	<u>-</u> _	NE	NE	NW	5234	2653	18	31	32W	4		528.00	528.00	
AF																				

Total Net Quanti	ties Au	thor	ized:	Direct	Storage
Total Requested	Amount	(AF)	=	.00	.00
Total Permitted	Amount	(AF)	=	.00	.00
Total Inspected	Amount	(AF)	=	.00	.00
Total Pro_Cert	Amount	(AF)	=	.00	.00
Total Certified	Amount	(AF)	=	4898.00	.00
Total Vested	Amount	(AF)	=	.00	.00
TOTAL AMOUNT		(AF)	==	4898.00	.00

An * after the source of supply indicates a pending application for change under the file number. An * after the ID indicates a 15 AF exemption was granted under the file number.

A "G" in the Batt column indicates the GEO CTR of a battery. A "B" indicates a well in the

The number in the Batt column is the number of wells in the battery.

Water Rights and Points of Diversion Within 1 mile of point defined as:

168 Feet North and 3656 Feet West of the Southeast Corner of Section 8 Twp 31S Rng 32W Located at: 100.828233 West Longitude and 37.359233 North Latitude Both SURFACE WATER and GROUNDWATER

WATER USE CORRESPONDENTS:

File Number Use ST SR > GUY WILLIAM LOWER > AKA BILL LOWER > PO BOX 354 > SUBLETTE KS 67877	454	
> GUY WILLIAM LOWER > AKA BILL LOWER > PO BOX 354 > SUBLETTE KS 67877	2144	
> ZM FARMS INC > CAROL ANN ZIMMERMAN PRES > 15533 ROAD 27 > SUBLETTE KS 67877	3767	Application
> CLAWSON LAND PARTNERSHIP > PO BOX 279 > PLAINS KS 67869	6946	
> ZM FARMS INC	1164501	

>	CAROL ANN ZIMMERMAN P	RES /
>	15533 ROAD 27	Milan.
>	SUBLETTE KS 67877	11
>-		
>	CLAWSON SEWARD CO	
>		- aud
>	PO BOX 279	20248
>	PLAINS KS 67869	,
>-		

SAIGSE	INPUTS		
	Longitude	Latitude	
Point 1	-100.829990	37.366230	Current 3762
Point 2	-100.828233	37.359338	Proposed 3762

Degrees Longitude per Foot Degrees Latitude per Foot 3.44060123E-06 2.74639304E-06

Distance Between Points (ft)

2561

Tropic.

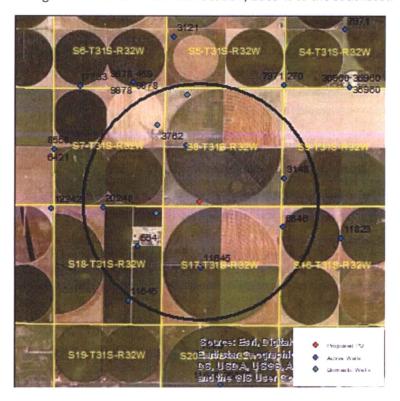
Compute Distance Between Points

Instructions

- 1. Enter Longitudes and Latitudes of the two points (both must be in the same datum, NAD27 or NAD83).
- 2. Click "Compute Distance Between Points" button.

Evaluation of proposed move for Water Right No. 3762

Proposed: Move water right no. 3762 to a new well location, 2609 ft to the southeast.



Wells within 1 mile: 3148, 20248, 554, 11645, 6846, a domestic well in section 7-31-32, a domestic well in section 8-31-32, and a domestic well in section 18-31-32.

The saturated thickness at the proposed well location is estimated to be 162 ft, based upon the GMD3 model. For saturated thickness between 150 ft and 200 ft, the drawdown allowance is 3.5 ft.

50 year Theis Analysis: The following values were used to run the analysis:

S = 0.1869, T = 11,411 ft²/day, $tp_{current} = 144$ days, $Q_{current} = 550$ gpm, $tp_{proposed} = 161$ days, $Q_{proposed} = 1800$ gpm

Theis drawdowns were calculated as follows:

3148: Drawdown from current location = 1.52 ft

Drawdown from proposed location = 6.09 ft

Net drawdown = 4.6 ft

20248: Drawdown from current location = 1.51 ft

Drawdown from proposed location = 5.68 ft

Net drawdown = 4.2 ft

554:

Drawdown from current location = 1.45 ft

Drawdown from proposed location = 6.55 ft

Net drawdown = 5.1 ft

11645:

Drawdown from current location = 1.37 ft

Drawdown from proposed location = 7.14 ft

Net drawdown = 5.8 ft

6846:

Drawdown from current location = 1.34 ft

Drawdown from proposed location = 6.11 ft

Net drawdown = 4.8 ft

Domestic 7-31-32:

Drawdown from current location = 2.80 ft

Drawdown from proposed location = 6.05 ft

Net drawdown = 3.3 ft

Domestic 8-31-32:

Drawdown from current location = 2.32 ft

Drawdown from proposed location = 5.41 ft

Net drawdown = 3.1 ft

Domestic 18-31-32:

Drawdown from current location = 1.85 ft

Drawdown from proposed location = 8.70 ft

Net drawdown = 6.8 ft

Net drawdown exceeds the drawdown allowance of 3.5 ft for all irrigation wells within 1 mile of the proposed location, and the domestic well in section 18-31-32. Critical well analysis was performed on those wells.

Critical Well Evaluation:

3148:

Water Column = 154 ft

DP = 4.6 ft (Net drawdown from the proposal indicated above)

DE = 52.1 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 74.8 ft (S = 0.2412, T = 38,781 gpd/ft, Q = 1184 gpm, tp = 66 days, efficiency = 70%)

DT = 131.5 ft

Economic Drawdown Constraint (EDC) = 0.4 * 154 ft = 61.6 ft

Physical Drawdown Constraint (PDC) = 154 ft - 60 ft = 94 ft

Total drawdown of 131.5 ft is greater than the EDC and PDC, so this well is critical.

20248:

Water Column = 171 ft

DP = 4.2 ft (Net drawdown from the proposal indicated above)

DE = 52.0 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 51.2 ft (S = 0.1376, T = 43,530 gpd/ft, Q = 859 gpm, tp = 80 days, efficiency = 70%)

DT = 107.4 ft

Economic Drawdown Constraint (EDC) = 0.4 * 171 ft = 68.4 ft

Physical Drawdown Constraint (PDC) = 171 ft - 60 ft = 111 ft

Total drawdown of 107.4 ft is greater than the EDC, so this well is critical.

554:

Water Column = 171 ft

DP = 5.1 ft (Net drawdown from the proposal indicated above)

DE = 52.0 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 56.0 ft (S = 0.1376, T = 43,530 gpd/ft, Q = 944 gpm, tp = 75 days, efficiency = 70%)

DT = 113.1 ft

Economic Drawdown Constraint (EDC) = 0.4 * 171 ft = 68.4 ft

Physical Drawdown Constraint (PDC) = 171 ft - 60 ft = 111 ft

Total drawdown of 113.1 ft is greater than the EDC and PDC, so this well is critical.

11645:

Water Column = 159 ft

DP = 5.8 ft (Net drawdown from the proposal indicated above)

DE = 51.2 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 35.5 ft (S = 0.1982, T = 63,607 gpd/ft, Q = 850 gpm, tp = 115 days, efficiency = 70%)

DT = 92.5 ft

Economic Drawdown Constraint (EDC) = 0.4 * 159 ft = 63.6 ft

Physical Drawdown Constraint (PDC) = 159 ft - 60 ft = 99 ft

Total drawdown of 92.5 ft is greater than the EDC, so this well is critical.

6846:

Water Column = 152 ft

DP = 4.8 ft (Net drawdown from the proposal indicated above)

DE = 42.0 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 57.4 ft (S = 0.2453, T = 41,948 gpd/ft, Q = 957 gpm, tp = 93 days, efficiency = 70%)

DT = 104.2 ft

Economic Drawdown Constraint (EDC) = 0.4 * 152 ft = 60.8 ft

Physical Drawdown Constraint (PDC) = 152 ft - 60 ft = 92 ft

Total drawdown of 104.2 ft is greater than the EDC and PDC, so this well is critical.

Domestic 18-31-32:

Water Column = 171 ft

DP = 6.8 ft (Net drawdown from the proposal indicated above)

DE = 51.8 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DT = 58.6 ft

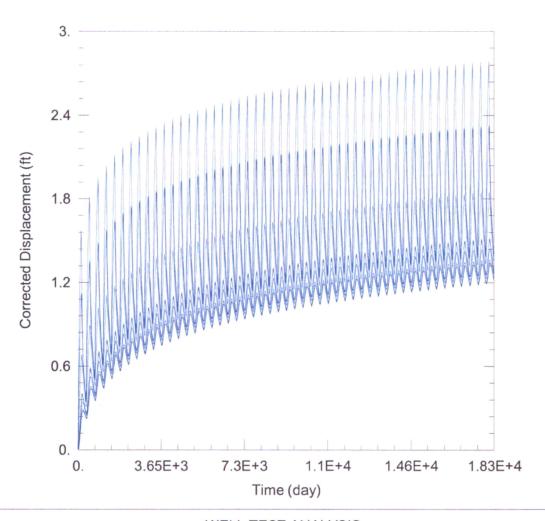
Economic Drawdown Constraint (EDC) = 0.4 * 171 ft = 68.4 ft

Physical Drawdown Constraint (PDC) = 171 ft -20 ft = 151 ft

Total drawdown of 58.6 ft is less than the EDC and PDC, so this well is not critical.

Conclusion:

The proposed move is in an area currently supporting strong wells, but with water level declines projected to exceed 2 ft per year. These declines are likely to diminish the pumping capacity of local wells over the next 25 years. If the proposed well were to pump its full authorized authority, there would likely be a noticeable drawdown effect on most of the neighboring wells. Critical well analysis shows that most of the neighboring wells are critical because after accounting for well drawdown effects, more than 40% of the remaining aquifer will be lost over the next 25 years. Concerned neighbors can contact GMD3 at (620) 275-7147 or the Division of Water Resources at (620) 276-2901.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\3762\3762 Current.aqt

Date: 06/30/22 Time: 14:15:30

PROJECT INFORMATION

Company: GMD 3 Project: 3762

Location: Seward County

WELL DATA

Pumping Wells		
Well Name	X (ft)	Y (ft)
3762	-8996	178879

vveil Name	Χ (π)	Υ (π)
	-8996	178879
3148	-4608	177385
² 20248	-12747	176080
□ 554	-11178	174339
11645	-8330	173391
□ 6846	-4667	175200
 Domestic 7-31-32 	-10284	179788
 Domestic 8-31-32 	-8954	181108

-10328

175819

Observation Wells

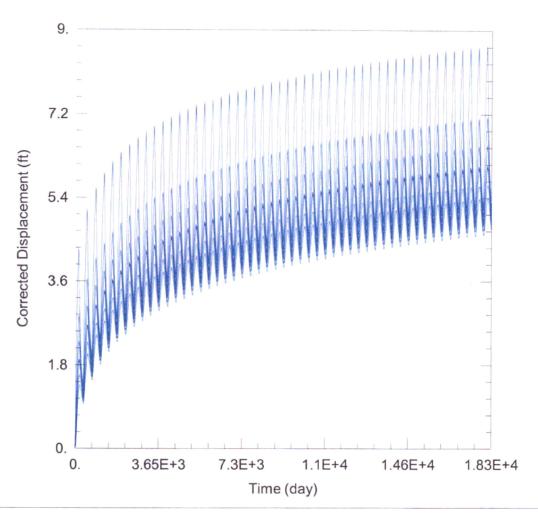
SOLUTION

Domestic 18-31-32

Aquifer Model: Unconfined

Solution Method: Theis

 $= 1.141E+4 \text{ ft}^2/\text{day}$ S = 0.1869



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\3762\3762 Proposed.aqt

Date: 06/30/22 Time: 15:31:46

PROJECT INFORMATION

Company: GMD 3 Project: 3762

Well Name

3762

Location: Seward County

WELL DATA

Pumping Wells

X (ft) Y (ft)

-8367 176347

Observation Wells X (ft)

Well Name	X (ft)	Y (ft)
	-8367	176347
3148	-4608	177385
20248	-12747	176080
□ 5 54	-11178	174339
- 11645	-8330	173391
□ 6846	-4667	175200
 Domestic 7-31-32 	-10284	179788
 Domestic 8-31-32 	-8954	181108
 Domestic 18-31-32 	-10328	175819

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

 $T = 1.141E+4 \text{ ft}^2/\text{day}$

S = 0.1869

Meyer, Mike [KDA]

From:

Meyer, Mike [KDA]

Sent:

Wednesday, June 29, 2022 2:36 PM

To:

Norquest, Jason

Subject:

File No. 3762 pending app

fill lower called, file no. 554 asking about the pending application. wanted to know the distance to his irrigation well (didn't seem concerned on the domestic well (that is why we sent him a letter)). he was glad there would be add evaluation, and said there would be drawdowns, but would let the process play out. mostly wanted to know the distance from his irrigation well.

fyi

Mike

Garden City Field Office 4532 W. Jones, Suite B Garden City, KS 67846



Phone: 620-276-2901 Fax: 620-276-9315 www.agriculture.ks.gov

Mike Beam, Secretary

Laura Kelly, Governor

June 22, 2022

SOUTHWEST KANSAS GROUNDWATER MANAGEMENT DISTRICT NO. 3 2009 E SPRUCE ST GARDEN CITY KS 67846

Re:

Request for Recommendation

Water Right, File No. 3762

Dear Mr. Norquest:

This is to advise you that ZM Farms has filed an application for approval of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, to change the point of diversion. The applications meet all rules and regulations.

We are delaying action on the change applications to allow you time to review and provide a recommendation. Please submit a recommendation within 15 days from the date of this letter.

Thank you and as always feel free to contact this office at any time.

Sincerely,

Michael A. Meyer

Water Commissioner

MAM Enclosures Garden City Field Office 4532 W. Jones, Suite B Garden City, KS 67846



Phone: 620-276-2901 Fax: 620-276-9315 www.agriculture.ks.gov

Mike Beam, Secretary

Laura Kelly, Governor

June 22, 2022

GUY LOWER PO BOX 354 SUBLETTE KS 67877

Re:

Water Right, File No. 3762

Dear Sir:

This is to advise you that ZM Farms Inc has filed an application for approval of the Chief Engineer, Division of Water Resources, Kansas Department of Agriculture, for change in point of diversion under the above referenced applications.

You can find the complete application posted by water right file number as referenced above at www.agriculture.ks.gov/divisions-programs/dwr/water-appropriation/notices

You are notified of each proposed point of diversion (well) so that you may furnish this office with any comments or other information you may want to submit. Such comments or other information must be received in this office within 15 days from the date of this letter.

Should you have any questions, please feel free to call this office. If you would prefer, an appointment could be arranged for additional assistance. Please refer to the file number when you contact us if you wish to discuss a specific file. Sincerely,

Sincerely,

Michael A. Meyer

Water Commissioner

MAM

pc:

GMD3

