

# 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.

WATER RESOURCES  
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1:49

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# THE STATE OF KANSAS



**KANSAS DEPARTMENT OF AGRICULTURE**  
Mike Beam, Secretary of Agriculture

**DIVISION OF WATER RESOURCES**  
Earl D. Lewis Jr., Chief Engineer

**50891**

File Number \_\_\_\_\_  
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.)

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): Jerry Klein  
Address: 11777 21<sup>st</sup> Road  
City: Udall State KS Zip Code 67146  
Telephone Number: (620) 229-3194 - Cell (620) 782-3823 - Home

2. The source of water is:  surface water in \_\_\_\_\_ (stream)  
OR  groundwater in Arkansas 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 186 acre-feet OR \_\_\_\_\_ gallons per calendar year, to be diverted at a maximum rate of 800 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. Code	<u>2</u>	GMD		Meets K.A.R. 5-3-1 (YES/NO)	<input type="checkbox"/>	Use	<b>IRR</b>	Source	<u>G/S</u> County		By	<b>ALB</b>	Date	<b>10/18/22</b>
				Fee \$	<u>500</u>	TR #		Receipt Date	<u>10/17/22</u>	Check #	<u>3014</u>			

3074

11/2/2022  
LMoody

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 SW quarter of the NE quarter of the NW quarter of Section 17, more particularly described as being near a point 4,020 feet North and 3,921 feet West of the Southeast corner of said section, in Township 32 South, Range 3 East, Cowley County, Kansas.

(B) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section 17, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township 32 South, Range 3 East, Cowley County, Kansas.

(C) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section 17, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township 32 South, Range 3 East, Cowley County, Kansas.

(D) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section 17, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township 32 South, Range 3 East, Cowley 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 Oct. 13, 2022. Jerry P. Chis  
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 Battery of 4 Wells, 1 Pump, 1 Pivot  
(number of wells, pumps or dams, etc.)  
and will be completed ASAP  
(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 ASAP  
(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 N/A
- If no, explain here why a Water Structures permit is not required N/A

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 ½ 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 ½ mile, please advise us.
- (c) If the application is for surface water, the names and addresses of the landowner(s) ½ mile downstream and ½ 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.

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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

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled	<u>10/26/21</u>	_____	_____	_____
Total depth of well	<u>29</u>	_____	_____	_____
Depth to water bearing formation	<u>2</u>	_____	_____	_____
Depth to static water level	<u>8.1</u>	_____	_____	_____
Depth to bottom of pump intake pipe	<u>29</u>	_____	_____	_____

14. The relationship of the applicant to the proposed place where the water will be used is that of owner  
(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 1 PM, Kansas, this 13 day of Oct., 2022.  
(month) (year)

Jerry Klein  
(Applicant Signature)

By \_\_\_\_\_  
(Agent or Officer Signature)

Jerry Klein  
(Please Print)

Assisted by JNE \_\_\_\_\_ SFFO/ESII \_\_\_\_\_ Date: 08/25/2022  
(office/title)



Household wells in area of KOL Family Farm LLAC

# 1 Jerry Klein, 11777 21<sup>st</sup> Road Udall KS 67146

#2 Beau Conklin 15456 11<sup>th</sup> Road Oxford KS 67119

#3 Cory Dreiling #7 Tromstav Lane Kilispell MT 59901

# 4 Richard Smythe, 15574 11<sup>th</sup> Road Oxford KS 67119

# 5 Mark Hasselbring, 15804 11<sup>th</sup> Road Oxford KS 67119

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3

Wilson Farms Schaeffer's

2

3

4

5

Google Earth

2000 ft



## FEE SCHEDULE

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic use, shall be (see paragraph No. 2 below if requesting storage):

ACRE-FEET	FEE
0-100	\$200.00
101-320	\$300.00
More than 320	\$300.00 plus \$20.00 for each additional 100 acre-feet or any part thereof.

2. The fee for an application in which storage is requested, except for domestic use, shall be:

ACRE-FEET	FEE
0-250	\$200.00
More than 250	\$200.00 plus \$20.00 for each additional 250 acre-feet of storage or any part thereof.

Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for a permit to appropriate water for water power or dewatering purposes shall be \$100.00 plus \$200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of \$400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of \$200.00.

### **MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE**

#### **ATTENTION**

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

#### **CONVERSION FACTORS**

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet

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2. Please complete the following information for the description of the operation for the irrigation project. Attach supplemental sheets as needed.

a. Indicate the soils in the field(s) and their intake rates:

Soil Name	Percent of field (%)	Intake Rate (in/hr)	Irrigation Design Group
Brewer Silty Clay loam	19.9	.00 - .20	6220 3
Dale S.H loam	80.1	.60 - 2.00	6240 5
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Total:	100 %		

b. Estimate the average land slope in the field(s): .5 %

Estimate the maximum land slope in the field(s): 1 %

c. Type of irrigation system you propose to use (check one):

- Center pivot       Center pivot - LEPA       "Big gun" sprinkler  
 Gravity system (furrows)       Gravity system (borders)       Sideroll sprinkler

Other, please describe: \_\_\_\_\_

d. System design features:

i. Describe how you will control tailwater: will not have tailwater

ii. For sprinkler systems:

(1) Estimate the operating pressure at the distribution system: 35 psi

(2) What is the sprinkler package design rate? 800 gpm

(3) What is the wetted diameter (twice the distance the sprinkler throws water) of a sprinkler on the outer 100 feet of the system? 50 feet

(4) Please include a copy of the sprinkler package design information.

e. Crop(s) you intend to irrigate. Please note any planned crop rotations:

corn, beans, wheat, cotton

f. Please describe how you will determine when to irrigate and how much water to apply (particularly important if you do not plan a full irrigation).

Crop Consultant

You may attach any additional information you believe will assist in informing the Division of the need for your request.

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## IRRIGATION USE SUPPLEMENTAL SHEET

File No. \_\_\_\_\_

Name of Applicant (Please Print): Jerry Klein

1. Please supply the name and address of each landowner, the legal description of the lands to be irrigated, and designate the actual number of acres to be irrigated in each forty acre tract or fractional portion thereof:

**Landowner of Record** NAME: KOL Family Farm LLAC  
 ADDRESS: 11777 21<sup>st</sup> Rd, Udall, KS 67146

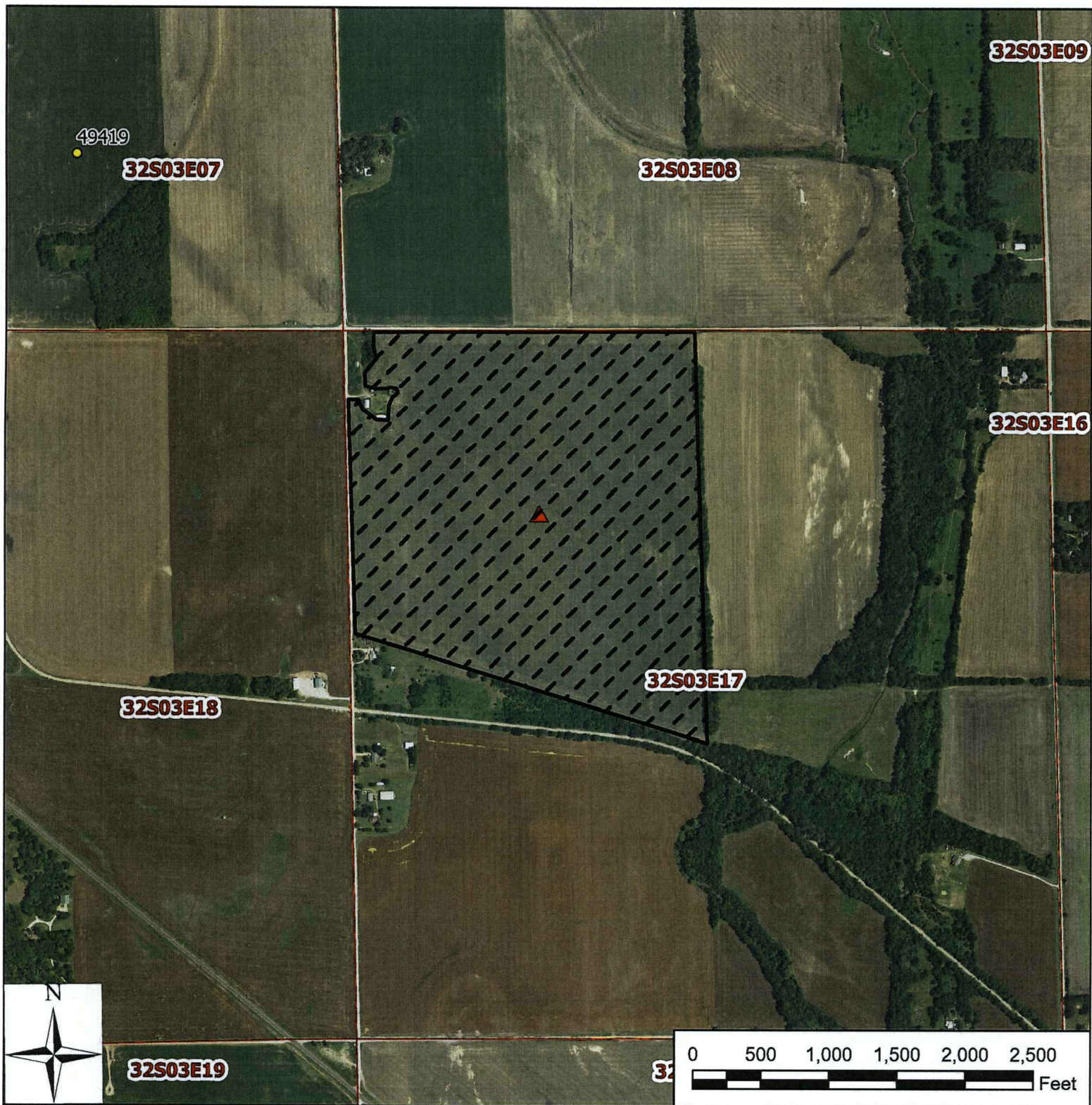
S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
<u>17</u>	<u>32</u>	<u>35</u>					40.0	33.5	33.5	40.0	8.0							155.00	
<del>24</del>	<del>31</del>	<del>28</del>																	

**Landowner of Record** NAME: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

**Landowner of Record** NAME: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_

S	T	R	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	



**Legend**

- Water Appropriation
- ▲ Battery Well
- ⊙ Proposed Point of Diversion
- ⊕ Section Corner
- ▭ Section Line
- ▨ Proposed Place of Use

**Application, File No. \_\_\_\_\_**  
**17-32-3E // Cowley County**

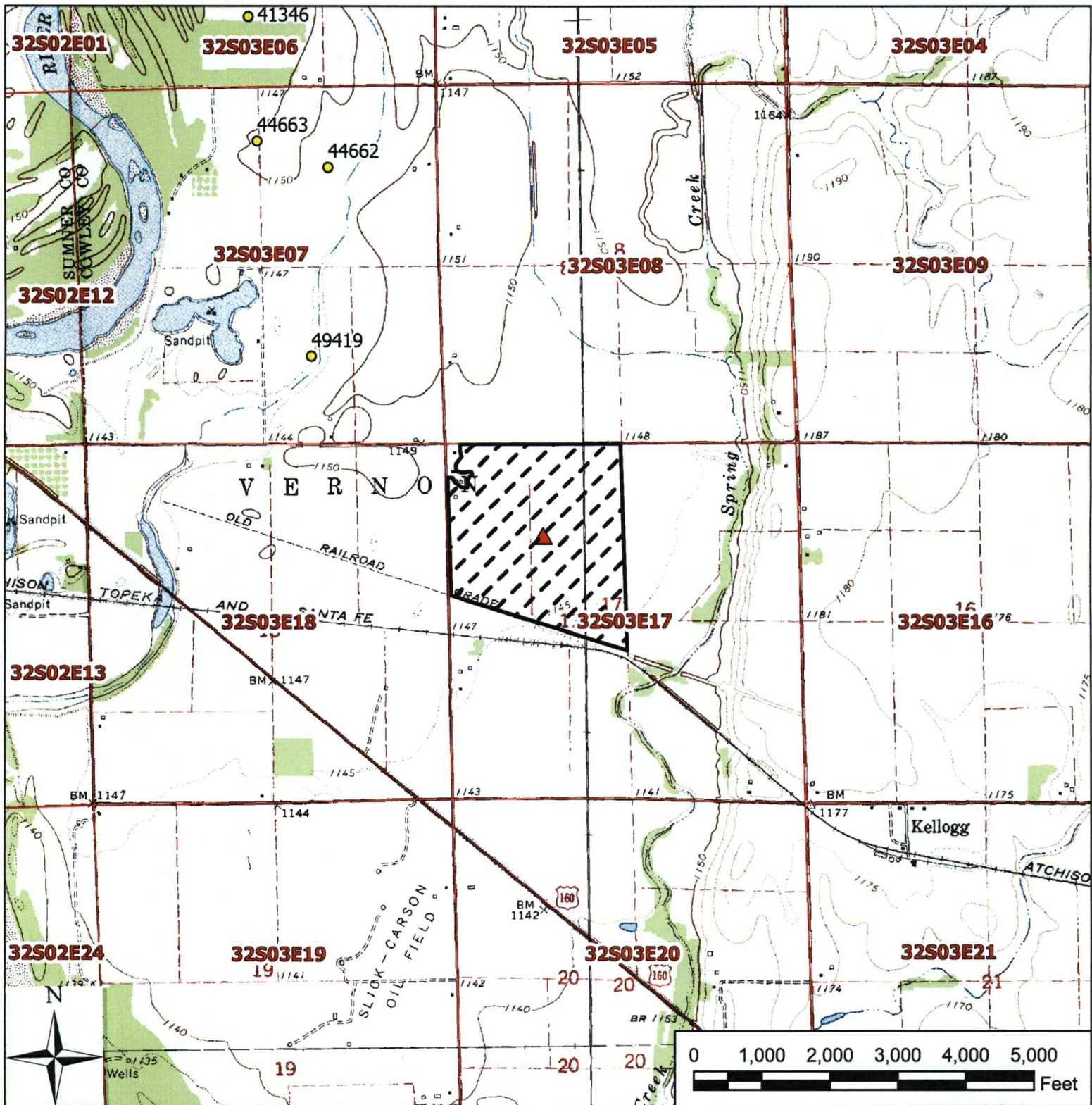
To the best of my knowledge, all points of diversion within one-half mile of the proposed point of diversion have been shown.

*Jerry Ker*  
 \_\_\_\_\_  
 Signature / Date

Oct. 17 2022

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08/25/2022 JNE/SFFO 1:12,000



**Legend**

- Water Appropriation
- ▲ Battery Well
- Proposed Point of Diversion
- ⊕ Section Corner
- ▭ Section Line
- ▨ Proposed Place of Use

**Application, File No.** \_\_\_\_\_  
 17-32-3E // Cowley County

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To the best of my knowledge, all points of diversion within one-half mile of the proposed point of diversion have been shown.

*Jerry Kay* Oct. 13-2022  
 Signature / Date KS DEPT OF AGRICULTURE  
 08/25/2022 JNE/SFFO 1:24,000

CLARKE WELL & EQUIPMENT, INC.  
 FORMATION TEST HOLE / 2" OB WELL

FORMATION TEST ONLY   
 PLUGGED

1123

JOB NUMBER 16200

WELL OWNER Jerry Klein

WELL NO. TH-1-21

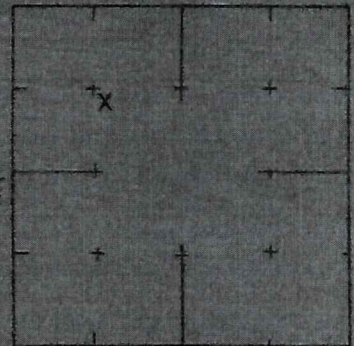
WELL USE Formation Test

APPR. NO. \_\_\_\_\_

LEGAL NW 1/4 NW 1/4 SE 1/4 NW 1/4 Sect 17 Twp 32 S Rng 3 E Cowley KS  
 COUNTY STATE

FSL \_\_\_\_\_ FEL \_\_\_\_\_

GPS - 666035 E 4126354 N Zone 14 NAD 27



Formation Log SIZE HOLE 5 " DIA. Electric Log  SWL 8.10 FGL \_\_\_\_\_ SECTION 17

FROM	TO	FEET	FORMATION / COMMENTS	SAMPLES TAKEN
0	2		Topsoil	
2	9		Clay, dark brown	
9	27		Sand, coarse to fine, with fine to medium gravel	
27	29		Shale, gray, green	

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(Well Construction on Other Side) DRILLED BY Edward Cass DATE 10-26-2021

# WELL CONSTRUCTION

JOB # 16200 WELL OWNER Jerry Klein WELL NO. TH-1-21

HOLE DIA. 5 " TD 29  REAMED OUT FROM \_\_\_\_\_ " DIA HOLE DRILLING METHOD Mud Rotary  
 SIZE CASING 2 " DIA. .154 WALL WT. .70 LBS/FT PVC MATERIAL  
 SIZE SCREEN 2 " DIA. .154 WALL: PVC MATERIAL  
 SCREEN TYPE Mill Slot

### CASING AND SCREEN

DESCRIPTION	FROM	TO	FEET	OPENING
PVC Casing	0	17	17	
PVC Screen	17	27	10	.032
Casing left above ground			2	
Total Casing and Screen			29	

### GRAVEL PACK / ANNULAR SEAL

MATERIAL	FROM	TO	FEET	QTY
Bentonite Chips	0	15	15	
Well Pack (Ark River Sand)	15	29	14	

### Water Samples

FROM	TO	Cl (ppm)	OTHER TESTS

### Development

Method	Hours
Air	1

Disinfected with \_\_\_\_\_ Quantity \_\_\_\_\_

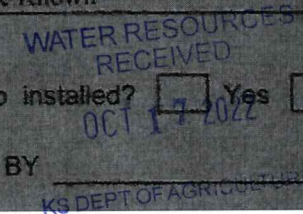
What is the nearest source of possible contamination? None Known

Direction from well \_\_\_\_\_ How many feet \_\_\_\_\_

Water level measurement tube installed?  Yes  No Locking cap installed?  Yes  No

NOTE All measurements are from ground level

DESIGNED BY \_\_\_\_\_



**WATER WELL RECORD Form WWC-5**

Division of Water Resources App. No.

Well ID TH-1-21

Original Record  Correction  Change in Well Use

**1 LOCATION OF WATER WELL:** County: Cowley Fraction NW 1/4 NW 1/4 SE 1/4 NW 1/4 Section Number 17 Township Number T 32 S Range Number R 3 E W

**2 WELL OWNER:** Last Name: Klein First: Jerry Street or Rural Address where well is located (if unknown, distance and direction from nearest town or intersection): If at owner's address, check here:   
 Business: \_\_\_\_\_ Address: 11777 21st Rd. Approximately 2 miles east of Oxford.  
 Address: \_\_\_\_\_ City: Udall State: KS ZIP: 67146

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

N

	NW	NE	
W	X		E
	SW	SE	
	S		

----- 1 mile -----

**4 DEPTH OF COMPLETED WELL:** 29 ft.  
 Depth(s) Groundwater Encountered: 1) 8.1 ft.  
 2) \_\_\_\_\_ ft. 3) \_\_\_\_\_ ft. or 4)  Dry Well  
**WELL'S STATIC WATER LEVEL:** 8.10 ft.  
 below land surface, measured on (mo-day-yr) 10/26/2021  
 above land surface, measured on (mo-day-yr) \_\_\_\_\_  
 Pump test data: Well water was \_\_\_\_\_ ft.  
 after \_\_\_\_\_ hours pumping \_\_\_\_\_ gpm  
 Well water was \_\_\_\_\_ ft.  
 after \_\_\_\_\_ hours pumping \_\_\_\_\_ gpm  
 Estimated Yield: 0 gpm  
 Bore Hole Diameter: 5 in. to 29 ft. and \_\_\_\_\_ in. to \_\_\_\_\_ ft.

**5 Latitude:** 37.270806 (decimal degrees)  
**Longitude:** -97.127409 (decimal degrees)  
 Datum:  WGS 84  NAD 83  NAD 27  
 Source for Latitude/Longitude:  
 GPS (unit make/model: \_\_\_\_\_) (WAAS enabled?  Yes  No)  
 Land Survey  Topographic Map  
 Online Mapper: \_\_\_\_\_  
**6 Elevation:** \_\_\_\_\_ ft.  Ground Level  TOC  
 Source:  Land Survey  GPS  Topographic Map  
 Other \_\_\_\_\_

**7 WELL WATER TO BE USED AS:**

1. Domestic: <input type="checkbox"/> Household <input type="checkbox"/> Lawn & Garden <input type="checkbox"/> Livestock 2. <input type="checkbox"/> Irrigation 3. <input type="checkbox"/> Feedlot 4. <input type="checkbox"/> Industrial	5. <input type="checkbox"/> Public Water Supply: well ID _____ 6. <input type="checkbox"/> Dewatering: how many wells? _____ 7. <input type="checkbox"/> Aquifer Recharge: well ID _____ 8. <input type="checkbox"/> Monitoring: well ID _____ 9. Environmental Remediation: well ID _____ <input type="checkbox"/> Air Sparge <input type="checkbox"/> Soil Vapor Extraction <input type="checkbox"/> Recovery <input type="checkbox"/> Injection	10. <input type="checkbox"/> Oil Field Water Supply: lease _____ 11. Test Hole: well ID <u>TH-1-21</u> <input checked="" type="checkbox"/> Cased <input type="checkbox"/> Uncased <input type="checkbox"/> Geotechnical 12. Geothermal: how many bores? _____ a) Closed Loop <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical b) Open Loop <input type="checkbox"/> Surface Discharge <input type="checkbox"/> Inj. of Water 13. <input type="checkbox"/> Other (specify): _____
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Was a chemical/bacteriological sample submitted to KDHE?  Yes  No If yes, date sample was submitted: \_\_\_\_\_  
 Water well disinfected?  Yes  No

**8 TYPE OF CASING USED:**  Steel  PVC  Other \_\_\_\_\_ CASING JOINTS:  Glued  Clamped  Welded  Threaded  
 Casing diameter 2 in. to 17 ft., Diameter \_\_\_\_\_ in. to \_\_\_\_\_ ft., Diameter \_\_\_\_\_ in. to \_\_\_\_\_ ft.  
 Casing height above land surface 24 in. Weight 70 lbs./ft. Wall thickness or gauge No. 154

**TYPE OF SCREEN OR PERFORATION MATERIAL:**  
 Steel  Stainless Steel  PVC  Other (Specify) \_\_\_\_\_  
 Brass  Galvanized Steel  None used (open hole)  
**SCREEN OR PERFORATION OPENINGS ARE:**  
 Continuous Slot  Mill Slot  Gauze Wrapped  Torch Cut  Drilled Holes  Other (Specify) \_\_\_\_\_  
 Louvered Shutter  Key Punched  Wire Wrapped  Saw Cut  None (Open Hole)  
**SCREEN-PERFORATED INTERVALS:** From 17 ft. to 27 ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
**GRAVEL PACK INTERVALS:** From 15 ft. to 29 ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**9 GROUT MATERIAL:**  Neat cement  Cement grout  Bentonite  Other \_\_\_\_\_  
 Grout Intervals: From 0 ft. to 15 ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
**Nearest source of possible contamination:**  No potential source of contamination within 200 ft.  
 Septic Tank  Lateral Lines  Pit Privy  Livestock Pens  Insecticide Storage  
 Sewer Lines  Cess Pool  Sewage Lagoon  Fuel Storage  Abandoned Water Well  
 Watertight Sewer Lines  Seepage Pit  Feedyard  Fertilizer Storage  Oil Well/Gas Well  
 Other (Specify) \_\_\_\_\_  
 Direction from well? \_\_\_\_\_ Distance from well? \_\_\_\_\_ ft.

10 FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	2	Topsoil			
2	9	Clay, dark brown			
9	27	Sand, coarse to fine,			
9	27	with fine to medium gravel			
27	29	Shale, gray, green			

**Notes:**  
 Grouting modified due to shallow groundwater.

**11 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION:** This water well was  constructed,  reconstructed, or  plugged under my jurisdiction and was completed on (mo-day-year) 10/26/2021 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 185 This Water Well Record was completed on (mo-day-year) 11/1/2021 under the business name of Clarke Well & Equipment, Inc.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of \$5.00 for each constructed well.  
 KS Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-3565.  
 Visit us at <http://www.kdheks.gov/waterwell/index.html>

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 OCT 17 2022  
 KSA 82a-1212  
 KS DEPT OF AGRICULTURE

INPUTS	
Target Section Definition	
Section	17
Township	32
Range	3
Range Direction	E
Target Point Coordinates (NAD27 or NAD83)	
Target Longitude	-97.127409
Target Latitude	37.270806

Load Data and Compute

- Instructions**
1. Enter values for section, township, range and range direction.
  2. Enter **NAD27** or **NAD83** longitude and latitude of target point.
  3. Click "Load Data and Compute" button.
  4. Use feet distances corresponding to datum of target point.

17-32-3E  
Klein KOL

Loaded Section Data From LEOBASE using <b>NAD83</b>		
Corner	Corner Latitudes	Corner Longitudes
SW	37.26015666	-97.13218359
NW	37.27462147	-97.13230664
NE	37.27443858	-97.11445318
SE	37.25979087	-97.11425419
Degrees Longitude per Foot		3.43625023E-06
Degrees Latitude per Foot		2.74643849E-06
Target Point Distances from Corners using NAD83		
Corner	Feet North(+)/South(-)	Feet East(-)/West(+)
SW	3878	-1389
NW	-1389	-1425
NE	-1323	3770
SE	4011	3828

Loaded Section Data From LEOBASE using <b>NAD27</b>		
Corner	Corner Latitudes	Corner Longitudes
SW	37.26013200	-97.13186600
NW	37.27459700	-97.13198900
NE	37.27441400	-97.11413600
SE	37.25976600	-97.11393700
Degrees Longitude per Foot		3.43624911E-06
Degrees Latitude per Foot		2.74598553E-06
Target Point Distances from Corners using NAD27		
Corner	Feet North(+)/South(-)	Feet East(-)/West(+)
SW	3887	-1297
NW	-1381	-1333
NE	-1314	3863
SE	4020	3921

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Oct 13 2022

(Date)

Kansas Department of Agriculture  
Division of Water Resources  
David W. Barfield, Chief Engineer  
1320 Research Park Drive  
Manhattan, Kansas 66502

Re: Application  
File No. \_\_\_\_\_

Minimum Desirable Streamflow

Dear Sir:

I understand that a Minimum Desirable Streamflow requirement has been established by the legislature for the source of supply to which the above referenced application applies.

I understand that diversion of water pursuant to this application will be subject to regulation any time Minimum Desirable Streamflow requirements are not being met.

I also understand that if this application is approved, there could be times, as determined by the Division of Water Resources, when I would not be allowed to divert water. I realize that this could affect the economics of my decision to appropriate water.

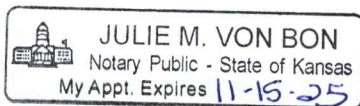
I am aware of the above factors, and with the knowledge thereof, request that the Division of Water Resources proceed with processing and approval, if possible, of the above referenced application.

Jerry Klein  
Signature of Applicant

Jerry Klein  
(Print Applicant's Name)

State of Kansas )  
County of Cowley ) ss

I hereby certify that the foregoing instrument was signed in my presence and sworn to before me this 13th day of October, 2022.



Julie M. Von Bon  
Notary Public

My Commission Expires:

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**MINIMUM DESIRABLE STREAMFLOW FORM TO BE USED WHEN  
APPLICABLE WHEN FILING AN APPLICATION FOR PERMIT  
TO APPROPRIATE WATER FOR BENEFICIAL USE**

The Kansas Legislature has established minimum desirable streamflows for the streams listed below. If your proposed diversion of water is going to be from one of these watercourses or adjacent alluvial aquifers, please complete the back side of this page and submit it along with your application for permit to appropriate water.

Arkansas River  
Big Blue River  
Chapman Creek  
Chikaskia River  
Cottonwood River  
Delaware River  
Little Arkansas River  
Little Blue River  
Marais des Cygnes River  
Medicine Lodge River  
Mill Creek (Wabaunsee Co. area)  
Neosho River

Ninnescah River  
North Fork Ninnescah River  
Rattlesnake Creek  
Republican River  
Saline River  
Smoky Hill River  
Solomon River  
South Fork Ninnescah  
Spring River  
Walnut River  
Whitewater River

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Valley Dealer

**INMAN IRRIGATION**  
892 ARAPAHO ROAD  
INMAN, KS 67546-8002  
United States

Customer

**Jerry Kline**  
11777 21st rd  
Udall, KS 67146-7455  
US

Dealer No.

00003440

Field Name

Kline KOL

Parent Order No.  
Sprinkler Order No. **Kline KOL**  
  
Plant **VALLEY SHIPPING**

Dealer PO  
Order Date **09/30/2022**  
Load Date **10/05/2022**  
Method Of Shipment **UPSG**

7 Span Valley Standard Pivot 8000  
Machine Flow 800 (GPM)  
Pivot Pressure 35 (PSI)

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**Valley Standard Pivot 8000 Machine Summary**

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Span and Overhang

Model	Qty	Length (ft)	Pipe	Coupler	D. U.		
			O.D. (in)	Spacing (in)	Qty	Profile	Tire
8000	1	184.8	6 5/8	108	21	Standard	11.2 x 38
8000	3	180.0	6 5/8	108	20	Standard	11.2 x 38
8000	3	160.0	6 5/8	108	18	Standard	11.2 x 38
8000	1	36.0	6 5/8	110	6		

Field Area

128.5 (Ac) Total
111.3 (Ac) Pivot 360°
17.2 (Ac) EG on 100%
1242.0 (ft) Machine Length
92.5 (ft) End Gun Radius

Flow

800 (GPM)
6.23 (GPM per Acre)
0.33 (in per day) App Rate
0.184 (in) App Depth @ 100%
105.3 (GPM) End Gun

Messages

**Caution:**  
 1. I-Wob, Orbitor, Twister and Nutator sprinklers require at least 24 in (61 cm) of drop hose. Do not use slip weights or rigid drop materials. Do not  
 2. install integrated weights on drop with double I-Wob or Nutator sprinklers.  
**Dealer:**  
 None






Pressure

35 (PSI) Pivot Pressure
Inlet Pressure
0.0 (ft) Highest Elevation
0.0 (ft) Lowest Elevation

LRDU Drive Train

34 RPM Center Drive @ 60 Hz freq.
11.2 x 38 Tire
52:1 Wheel GB Ratio, LRDU Dist 1205.8 (ft)
13.4 Hrs/360° @ 100% 9.45 (Ft per Min)
13.4 Hrs/360° @ 100%

Sprinkler -- Available Outlets

Sprinkler Configuration	Range (ft)	
Senninger U-Pipe 6(in) Plastic 3/4 M NPT x 3/4 M Hose	Outlets 3,21,1	
Blue Premium Hose Drop Variable Length 72(in) Ground Clr	22,135 137,138	
Valley Regulator PSR-2 10(PSI) 3/4 F NPT	140,141	
Senninger Magnum-Threaded Integrated Weight 0.85		
Senninger I-Wob2 - UP3 Std Angle 3/4 M NPT		

1140.61 (ft) Total Drop Hose Length

Parent Order No

Dealer **INMAN IRRIGATION**

Sprinkler Order No **Kline KOL**

Customer **Jerry Kline**


Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Summary**

**Pressure Loss**

Pipe Length (ft)	Pipe I.D. (in)	Pipe Finish	C-Factor	Loss (PSI)
1223.9	6.42	Galvanized	150	9.0
18.1	3.79	Galvanized	150	0.3
<b>Total =</b>				<b>9.3</b>

**End Gun(s) & Booster Pump Information**



**Primary End Gun**

**Nelson SR75 End Gun**  
**0.7 Nozzle**  
**Berkeley 2 HP Booster Pump**

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**Span Flow**

Span Number	Irrigated Length (ft)	Area (Ac)	Rqd (GPM)	Act (GPM)	Rqd (GPM per Acre)	Act (GPM per Acre)	% Deviation
1	170.2	2.5	15.2	15.9	6.14	6.44	4.9
2	180.1	7.2	44.0	43.9	6.14	6.12	-0.3
3	180.1	11.8	72.8	73.0	6.14	6.16	0.3
4	180.1	16.5	101.5	101.4	6.14	6.14	-0.2
5	160.0	18.6	114.3	114.1	6.14	6.14	-0.2
6	160.0	22.3	137.0	137.1	6.14	6.15	0.1
7	159.8	25.9	159.4	159.3	6.14	6.14	-0.1
O/H	36.2	6.4	40.4	40.7	6.32	6.36	0.7
EG	92.5	17.2	107.2	105.3	6.24	6.12	-1.8
<b>Totals</b>		<b>128.4</b>		<b>790.7</b>			
<b>Drain Sprinkler</b>			<b>10.6</b>	<b>10.1</b>			
<b>Total Machine Flow</b>				<b>800.8</b>			


**Advanced Options**

Drain Sprinkler = Senninger Directional  
 Last Sprinkler Coverage = 1 ft  
 Sprinkler Coverage Length = 1243 ft  
 Use Last Coupler= YES  
 Minimum Mainline Pressure = 6 PSI

**Shipping Options**

Ship Drop Hardware  
 Ship Endgun Nozzle  
 Ship Endgun & Hardware  
 Do not ship Endgun Valve / Nozzle Valve Hardware  
 Do not ship Boosterpump Hardware

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Std (GPM)	Act (GPM)
1	5.4			<b>Gauge</b>									
2	14.4			<b>Plug</b>									
<b>Sprinkler : Senninger Iwob2 - Up3</b> 													
3	23.4	<b>1</b>		<b>6</b>	<b>Gold</b>	I-Wob2 - UP3	Std Angle Black	95	PSR-2 10A	34.3	11.4	0.4	0.9
4	32.4			<b>Plug</b>									
5	41.4	<b>2</b>	18.0	<b>6</b>	<b>Gold</b>	I-Wob2 - UP3	Std Angle Black	105	PSR-2 10A	33.8	11.4	0.6	0.9
6	49.9			<b>Plug</b>									
7	58.3	<b>3</b>	16.9	<b>6</b>	<b>Gold</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	33.3	11.4	0.9	0.9
8	66.8			<b>Plug</b>									
9	75.3	<b>4</b>	16.9	<b>7</b>	<b>Lime</b>	I-Wob2 - UP3	Std Angle Black	117	PSR-2 10A	33.0	11.4	1.2	1.2
10	84.3			<b>Plug</b>									
11	93.3	<b>5</b>	18.0	<b>8</b>	<b>Lavender</b>	I-Wob2 - UP3	Std Angle Black	119	PSR-2 10A	32.7	11.4	1.5	1.5
12	102.3			<b>Plug</b>									
13	111.3	<b>6</b>	18.0	<b>8.5</b>	<b>Lavender Notched</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	32.5	11.4	1.7	1.7
14	119.7			<b>Plug</b>									
15	128.1	<b>7</b>	16.8	<b>9</b>	<b>Grey</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	32.4	11.4	1.9	1.9
16	136.5			<b>Plug</b>									
17	145.0	<b>8</b>	16.9	<b>9.5</b>	<b>Grey Notched</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	32.4	11.4	2.2	2.2
18	154.0			<b>Plug</b>									
19	163.0	<b>9</b>	18.0	<b>10.5</b>	<b>Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	101	PSR-2 10A	32.5	11.3	2.6	2.6
20	172.0			<b>Plug</b>									
21	181.0	<b>10</b>	18.0	<b>9.5</b>	<b>Grey Notched</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	32.7	11.4	2.2	2.2
185.6 Tower Number : 1 Span Length(ft) : 184.6													
22	190.3	<b>11</b>	9.3	<b>8</b>	<b>Lavender</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	32.6	11.4	1.5	1.5
23	199.3	<b>12</b>	9.0	<b>8</b>	<b>Lavender</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	32.2	11.4	1.6	1.5
24	208.3	<b>13</b>	9.0	<b>8.5</b>	<b>Lavender Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	31.9	11.4	1.7	1.7
25	217.3	<b>14</b>	9.0	<b>8.5</b>	<b>Lavender Notched</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	31.7	11.4	1.7	1.7
26	226.3	<b>15</b>	9.0	<b>8.5</b>	<b>Lavender Notched</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	31.4	11.4	1.8	1.7
27	235.3	<b>16</b>	9.0	<b>9</b>	<b>Grey</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	31.2	11.4	1.9	1.9
28	244.3	<b>17</b>	9.0	<b>9</b>	<b>Grey</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	31.0	11.4	1.9	1.9

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Customer **Jerry Kline**

Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Req (GPM)	Act (GPM)
29	253.3	<b>18</b>	9.0	<b>9</b>	<b>Grey</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	30.8	11.4	2.2	1.9
30	262.3	<b>19</b>	9.0	<b>9.5</b>	<b>Grey Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	30.6	11.4	2.2	2.2
31	271.3	<b>20</b>	9.0	<b>9.5</b>	<b>Grey Notched</b>	I-Wob2 - UP3	Std Angle Black	123	PSR-2 10A	30.5	11.4	2.2	2.2
32	280.2	<b>21</b>	8.9	<b>9.5</b>	<b>Grey Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	30.4	11.4	2.2	2.2
33	289.2	<b>22</b>	9.0	<b>10</b>	<b>Turquoise</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	30.4	11.4	2.3	2.4
34	298.2	<b>23</b>	9.0	<b>10</b>	<b>Turquoise</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	30.3	11.4	2.4	2.4
35	307.2	<b>24</b>	9.0	<b>10</b>	<b>Turquoise</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	30.3	11.4	2.5	2.4
36	316.2	<b>25</b>	9.0	<b>10</b>	<b>Turquoise</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	30.3	11.3	2.5	2.4
37	325.1	<b>26</b>	8.9	<b>10.5</b>	<b>Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	30.3	11.3	2.6	2.6
38	334.1	<b>27</b>	9.0	<b>10.5</b>	<b>Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	30.4	11.3	2.7	2.6
39	343.1	<b>28</b>	9.0	<b>10.5</b>	<b>Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	30.5	11.3	2.7	2.6
40	352.1	<b>29</b>	9.0	<b>11</b>	<b>Yellow</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	30.6	11.3	2.8	2.9
41	361.1	<b>30</b>	9.0	<b>11</b>	<b>Yellow</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	30.7	11.3	2.9	2.9
365.8		Tower Number : 2 Span Length(ft) : 180.1											
42	370.4	<b>31</b>	9.3	<b>11.5</b>	<b>Yellow Notched</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	30.6	11.3	3.0	3.2
43	379.4	<b>32</b>	9.0	<b>11</b>	<b>Yellow</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	30.3	11.3	3.0	2.9
44	388.4	<b>33</b>	9.0	<b>11.5</b>	<b>Yellow Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	30.0	11.3	3.1	3.2
45	397.4	<b>34</b>	9.0	<b>11.5</b>	<b>Yellow Notched</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	29.7	11.3	3.2	3.2
46	406.4	<b>35</b>	9.0	<b>11.5</b>	<b>Yellow Notched</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	29.5	11.3	3.2	3.2
47	415.4	<b>36</b>	9.0	<b>12</b>	<b>Red</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	29.3	11.3	3.3	3.4
48	424.4	<b>37</b>	9.0	<b>12</b>	<b>Red</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	29.1	11.3	3.4	3.4
49	433.4	<b>38</b>	9.0	<b>12</b>	<b>Red</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	28.9	11.3	3.5	3.4
50	442.4	<b>39</b>	9.0	<b>12</b>	<b>Red</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	28.8	11.3	3.5	3.4
51	451.4	<b>40</b>	9.0	<b>12</b>	<b>Red</b>	I-Wob2 - UP3	Std Angle Black	123	PSR-2 10A	28.7	11.3	3.6	3.4
52	460.3	<b>41</b>	8.9	<b>12.5</b>	<b>Red Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	28.6	11.3	3.7	3.7
53	469.3	<b>42</b>	9.0	<b>12.5</b>	<b>Red Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	28.5	11.3	3.7	3.7
54	478.3	<b>43</b>	9.0	<b>12.5</b>	<b>Red Notched</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	28.5	11.3	3.8	3.7
55	487.3	<b>44</b>	9.0	<b>13</b>	<b>White</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	28.5	11.3	3.9	4.1
56	496.3	<b>45</b>	9.0	<b>13</b>	<b>White</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	28.5	11.3	3.9	4.1
57	505.2	<b>46</b>	8.9	<b>13</b>	<b>White</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	28.6	11.3	4.0	4.1
58	514.2	<b>47</b>	9.0	<b>13</b>	<b>White</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	28.7	11.2	4.1	4.1
59	523.2	<b>48</b>	9.0	<b>13</b>	<b>White</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	28.8	11.2	4.2	4.1
60	532.2	<b>49</b>	9.0	<b>13.5</b>	<b>White Notched</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	28.9	11.2	4.2	4.4

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Customer **Jerry Kline**

Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rad (GPM)	Act (GPM)
61	541.2	<b>50</b>	9.0	<b>13.5</b>	<b>White Notched</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	29.0	11.2	4.4	4.4
	545.9		Tower Number : 3		Span Length(ft) : 180.1								
62	550.5	<b>51</b>	9.3	<b>13.5</b>	<b>White Notched</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	29.0	11.2	4.5	4.4
63	559.5	<b>52</b>	9.0	<b>13.5</b>	<b>White Notched</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	28.7	11.2	4.5	4.4
64	568.5	<b>53</b>	9.0	<b>14</b>	<b>Blue</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	28.4	11.2	4.5	4.7
65	577.5	<b>54</b>	9.0	<b>14</b>	<b>Blue</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	28.1	11.2	4.6	4.7
66	586.5	<b>55</b>	9.0	<b>14</b>	<b>Blue</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	27.9	11.2	4.7	4.7
67	595.5	<b>56</b>	9.0	<b>14</b>	<b>Blue</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	27.7	11.2	4.8	4.7
68	604.5	<b>57</b>	9.0	<b>14</b>	<b>Blue</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	27.5	11.2	4.8	4.7
69	613.5	<b>58</b>	9.0	<b>14.5</b>	<b>Blue Notched</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	27.4	11.2	4.9	5.0
70	622.5	<b>59</b>	9.0	<b>14.5</b>	<b>Blue Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	27.3	11.2	5.0	5.0
71	631.5	<b>60</b>	9.0	<b>14.5</b>	<b>Blue Notched</b>	I-Wob2 - UP3	Std Angle Black	123	PSR-2 10A	27.2	11.2	5.0	5.0
72	640.4	<b>61</b>	8.9	<b>14.5</b>	<b>Blue Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	27.1	11.2	5.1	5.0
73	649.4	<b>62</b>	9.0	<b>14.5</b>	<b>Blue Notched</b>	I-Wob2 - UP3	Std Angle Black	122	PSR-2 10A	27.1	11.2	5.2	5.0
74	658.4	<b>63</b>	9.0	<b>15</b>	<b>Dark Brown</b>	I-Wob2 - UP3	Std Angle Black	120	PSR-2 10A	27.0	11.1	5.3	5.4
75	667.4	<b>64</b>	9.0	<b>15</b>	<b>Dark Brown</b>	I-Wob2 - UP3	Std Angle Black	118	PSR-2 10A	27.1	11.1	5.3	5.4
76	676.4	<b>65</b>	9.0	<b>15</b>	<b>Dark Brown</b>	I-Wob2 - UP3	Std Angle Black	115	PSR-2 10A	27.1	11.1	5.4	5.4
77	685.3	<b>66</b>	8.9	<b>15</b>	<b>Dark Brown</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	27.2	11.1	5.4	5.4
78	694.3	<b>67</b>	9.0	<b>15</b>	<b>Dark Brown</b>	I-Wob2 - UP3	Std Angle Black	107	PSR-2 10A	27.3	11.1	5.5	5.4
79	703.3	<b>68</b>	9.0	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	27.4	11.1	5.6	5.7
80	712.3	<b>69</b>	9.0	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	27.5	11.1	5.7	5.7
81	721.3	<b>70</b>	9.0	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	90	PSR-2 10A	27.7	11.1	5.9	5.7
	726.0		Tower Number : 4		Span Length(ft) : 180.1								
82	730.6	<b>71</b>	9.3	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	27.7	11.1	5.9	6.1
83	739.6	<b>72</b>	9.0	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	27.4	11.1	5.9	5.7
84	748.6	<b>73</b>	9.0	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	27.2	11.1	6.0	6.1
85	757.6	<b>74</b>	9.0	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	27.1	11.1	6.0	6.1
86	766.6	<b>75</b>	9.0	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	106	PSR-2 10A	26.9	11.1	5.9	5.7
87	775.1	<b>76</b>	8.5	<b>15.5</b>	<b>Dark Brn Notched</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	26.8	11.1	5.8	5.7
88	783.5	<b>77</b>	8.4	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	26.6	11.1	5.8	6.1
89	792.0	<b>78</b>	8.4	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	26.6	11.1	5.9	6.1
90	800.5	<b>79</b>	8.5	<b>16</b>	<b>Orange</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	26.5	11.1	6.2	6.1
91	809.5	<b>80</b>	9.0	<b>16.5</b>	<b>Orange Notched</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	26.4	11.0	6.5	6.5

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Customer **Jerry Kline**

Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
92	818.5	<b>81</b>	9.0	<b>16.5</b>	<b>Orange Notched</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	26.4	11.0	6.5	6.5
93	827.5	<b>82</b>	9.0	<b>16.5</b>	<b>Orange Notched</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	26.4	11.0	6.5	6.5
94	836.5	<b>83</b>	9.0	<b>17</b>	<b>Dark Green</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	26.4	11.0	6.8	6.8
95	845.3	<b>84</b>	8.9	<b>16.5</b>	<b>Orange Notched</b>	I-Wob2 - UP3	Std Angle Black	106	PSR-2 10A	26.5	11.0	6.5	6.5
96	854.3	<b>85</b>	9.0	<b>17</b>	<b>Dark Green</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	26.6	11.0	6.8	6.8
97	863.3	<b>86</b>	9.0	<b>17</b>	<b>Dark Green</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	26.6	11.0	6.9	6.8
98	872.3	<b>87</b>	9.0	<b>17</b>	<b>Dark Green</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	26.8	10.9	7.0	6.8
99	881.3	<b>88</b>	9.0	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.9	10.9	7.2	7.2
886.0		Tower Number : 5 Span Length(ft) : 160.0											
100	890.7	<b>89</b>	9.3	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.9	10.9	7.2	7.2
101	899.7	<b>90</b>	9.0	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	26.7	10.9	7.2	7.2
102	908.7	<b>91</b>	9.0	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	26.5	10.9	7.2	7.2
103	917.7	<b>92</b>	9.0	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	26.3	10.9	7.3	7.2
104	926.7	<b>93</b>	9.0	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	106	PSR-2 10A	26.2	10.9	7.2	7.2
105	935.2	<b>94</b>	8.5	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	26.0	10.9	7.0	7.3
106	943.6	<b>95</b>	8.4	<b>17</b>	<b>Dark Green</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	25.9	11.0	7.0	6.8
107	952.0	<b>96</b>	8.4	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.9	10.9	7.1	7.3
108	960.5	<b>97</b>	8.5	<b>17.5</b>	<b>Dark Grn Notched</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.8	10.9	7.4	7.2
109	969.5	<b>98</b>	9.0	<b>18</b>	<b>Purple</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	25.8	10.8	7.7	7.7
110	978.5	<b>99</b>	9.0	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.8	10.8	7.8	8.1
111	987.5	<b>100</b>	9.0	<b>18</b>	<b>Purple</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	25.8	10.8	7.9	7.6
112	996.5	<b>101</b>	9.0	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	25.8	10.8	7.9	8.1
113	1005.4	<b>102</b>	8.9	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	106	PSR-2 10A	25.9	10.8	8.0	8.1
114	1014.4	<b>103</b>	9.0	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	26.0	10.8	8.1	8.1
115	1023.4	<b>104</b>	9.0	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	26.1	10.8	8.2	8.1
116	1032.4	<b>105</b>	9.0	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	26.2	10.8	8.2	8.1
117	1041.4	<b>106</b>	9.0	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.4	10.8	8.5	8.5
1046.0		Tower Number : 6 Span Length(ft) : 160.0											
118	1050.7	<b>107</b>	9.3	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.4	10.7	8.5	8.5
119	1059.7	<b>108</b>	9.0	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	26.2	10.8	8.5	8.5
120	1068.7	<b>109</b>	9.0	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	26.0	10.7	8.5	8.5
121	1077.7	<b>110</b>	9.0	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	25.9	10.7	8.6	8.5
122	1086.7	<b>111</b>	9.0	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	106	PSR-2 10A	25.7	10.7	8.4	8.5

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Customer **Jerry Kline**

Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
123	1095.2	<b>112</b>	8.5	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	25.6	10.8	8.5	8.5
124	1103.6	<b>113</b>	8.4	<b>18.5</b>	<b>Purple Notched</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	25.6	10.8	8.5	8.5
125	1112.0	<b>114</b>	8.4	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.5	10.8	8.5	8.5
126	1120.5	<b>115</b>	8.5	<b>19</b>	<b>Black</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.5	10.7	8.5	8.5
127	1129.5	<b>116</b>	9.0	<b>19.5</b>	<b>Black Notched</b>	I-Wob2 - UP3	Std Angle Black	112	PSR-2 10A	25.5	10.7	9.0	8.9
128	1138.5	<b>117</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	111	PSR-2 10A	25.5	10.7	9.1	9.4
129	1147.5	<b>118</b>	9.0	<b>19.5</b>	<b>Black Notched</b>	I-Wob2 - UP3	Std Angle Black	110	PSR-2 10A	25.5	10.7	9.2	8.9
130	1156.5	<b>119</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	108	PSR-2 10A	25.6	10.6	9.2	9.4
131	1165.4	<b>120</b>	8.9	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	105	PSR-2 10A	25.6	10.7	9.2	9.4
132	1174.4	<b>121</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	25.7	10.6	9.4	9.4
133	1183.4	<b>122</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	99	PSR-2 10A	25.9	10.6	9.4	9.4
134	1192.4	<b>123</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	94	PSR-2 10A	26.0	10.6	9.5	9.3
135	1201.4	<b>124</b>	9.0	<b>20</b>	<b>Dark Turquoise</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.2	10.6	9.5	9.3
136	1205.2			<b>B.P.</b>									
	1205.8												
Tower Number : 7 Span Length(ft) : 159.8													
137	1210.2	<b>125</b>	8.8	<b>20.5</b>	<b>Drk Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	89	PSR-2 10A	26.2	10.6	9.6	9.8
138	1219.4	<b>126</b>	9.2	<b>20.5</b>	<b>Drk Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	93	PSR-2 10A	26.1	10.6	9.8	9.8
139	1222.9			<b>Plug</b>									
140	1228.3	<b>127</b>	8.9	<b>20.5</b>	<b>Drk Turq Notched</b>	I-Wob2 - UP3	Std Angle Black	97	PSR-2 10A	25.9	10.6	9.9	9.8
141	1237.5	<b>128</b>	9.2	<b>22</b>	<b>Maroon</b>	I-Wob2 - UP3	Std Angle Black	102	PSR-2 10A	25.7	10.3	11.1	11.2
<b>Sprinkler : Senninger Spray</b>													
-----													
142	1241.0	<b>129</b>		<b>17</b>	<b>Dark Green</b>	Directional				25.6	25.6	10.6	10.1
	1242.0												
Overhang Span Length(ft) : 36.2													
<b>Sprinkler : Nelson Endgun</b>													
-----													
143	1242.0	<b>130</b>		<b>0.7</b>		SR75				25.6	54.5	107.2	105.3



Primary Endgun Arc Settings: Forward Angle: **45** Reverse Angle: **80**

800.8

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Parent Order No

Dealer **INMAN IRRIGATION**

Sprinkler Order No **Kline KOL**

Customer **Jerry Kline**

Field Name **Kline KOL**

**Valley Standard Pivot 8000 Machine Sprinkler Chart**

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
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WATER RESOURCES RECEIVED

OCT 17 2022

KS DEPT OF AGRICULTURE

Dealer **INMAN IRRIGATION**  
 Customer **Jerry Kline**  
 Field Name **Kline KOL**



Sprinkler Order No **Kline KOL**  
 Parent Order No

**Valley Standard Pivot 8000 Percent Timer Data**

**Setup Information - Valley Computer Control Panel Water Application Constants: Minimum Application = 0.184 (in) Hours/360° = 13.4**

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Based on IN		
IN Per 360 degrees	Pivot % Timer	Hours Per 360 degrees
0.184	100.0	13.4
0.20	92.2	14.5
0.30	61.5	21.8
0.40	46.1	29.1
0.50	36.9	36.3
0.60	30.7	43.6
0.70	26.3	51.0
0.80	23.1	58.0
0.90	20.5	65.4
1.00	18.4	72.8
1.25	14.8	90.5
1.50	12.3	108.9
1.75	10.5	127.6
2.00	9.2	145.7
2.50	7.4	181.1
3.00	6.1	219.7
3.50	5.3	252.8

Based on % Timer		
Pivot % Timer	IN Per 360 degrees	Hours Per 360 degrees
100.0	0.184	13.4
90.0	0.20	14.9
80.0	0.23	16.8
70.0	0.26	19.1
60.0	0.31	22.3
50.0	0.37	26.8
45.0	0.41	29.8
40.0	0.46	33.5
35.0	0.53	38.3
30.0	0.61	44.7
25.0	0.74	53.6
20.0	0.92	67.0
17.5	1.05	76.6
15.0	1.23	89.3
12.5	1.48	107.2
10.0	1.84	134.0
7.5	2.46	178.7
5.0	3.69	268.0

Field Area	Flow	Pressure	LRDU Drive Train
128.5 (Ac) Total	800 (GPM)	35 (PSI) Pivot Pressure	34 RPM Center Drive @ 60 Hz freq.
111.3 (Ac) Pivot 360°	6.23 (GPM per Acre)	Inlet Pressure	11.2 x 38 Tire
17.2 (Ac) EG on 100%	0.33 (in per day) App Rate	0.0 (ft) Highest Elevation	52:1 Wheel GB Ratio, LRDU Dist 1205.8 (ft)
1242.0 (ft) Machine Length	0.184 (in) App Depth @ 100%	0.0 (ft) Lowest Elevation	13.4 Hrs/360° @ 100% ( 9.45 ) (Ft per Min)
92.5 (ft) End Gun Radius	105.3 (GPM) End Gun		13.4 Hrs/360° @ 100%

**Disclaimer**  
 The information presented in the attached Percent Timer Report is based on variables which cannot be totally controlled by Valmont (including, but not limited to; pivot pressure, inside pipeline surface, end gun throw, end gun arc setting, tire slippage, tire pressure, field slopes, soil variations, sprinkler package installation, well capacity, center drive motor voltage, center drive motor frequency, climatic conditions and other elements and circumstances beyond Valmont's reasonable control). Valmont recommends monitoring the machine for at least one pass through field to obtain an accurate rotation time.



United States  
Department of  
Agriculture

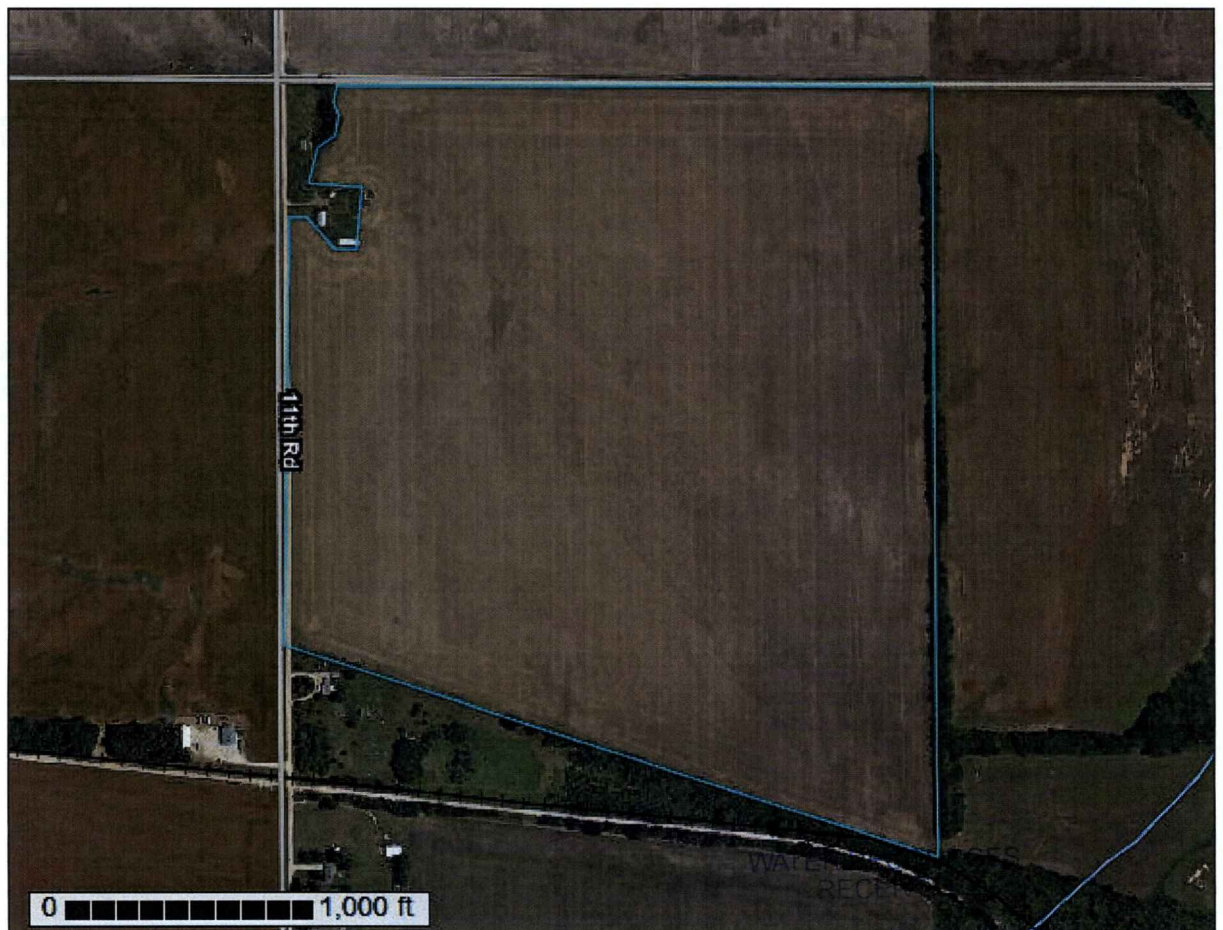
**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Cowley County, Kansas**

**Kline KOL**



OCT 17 2022

September 30, 2022

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# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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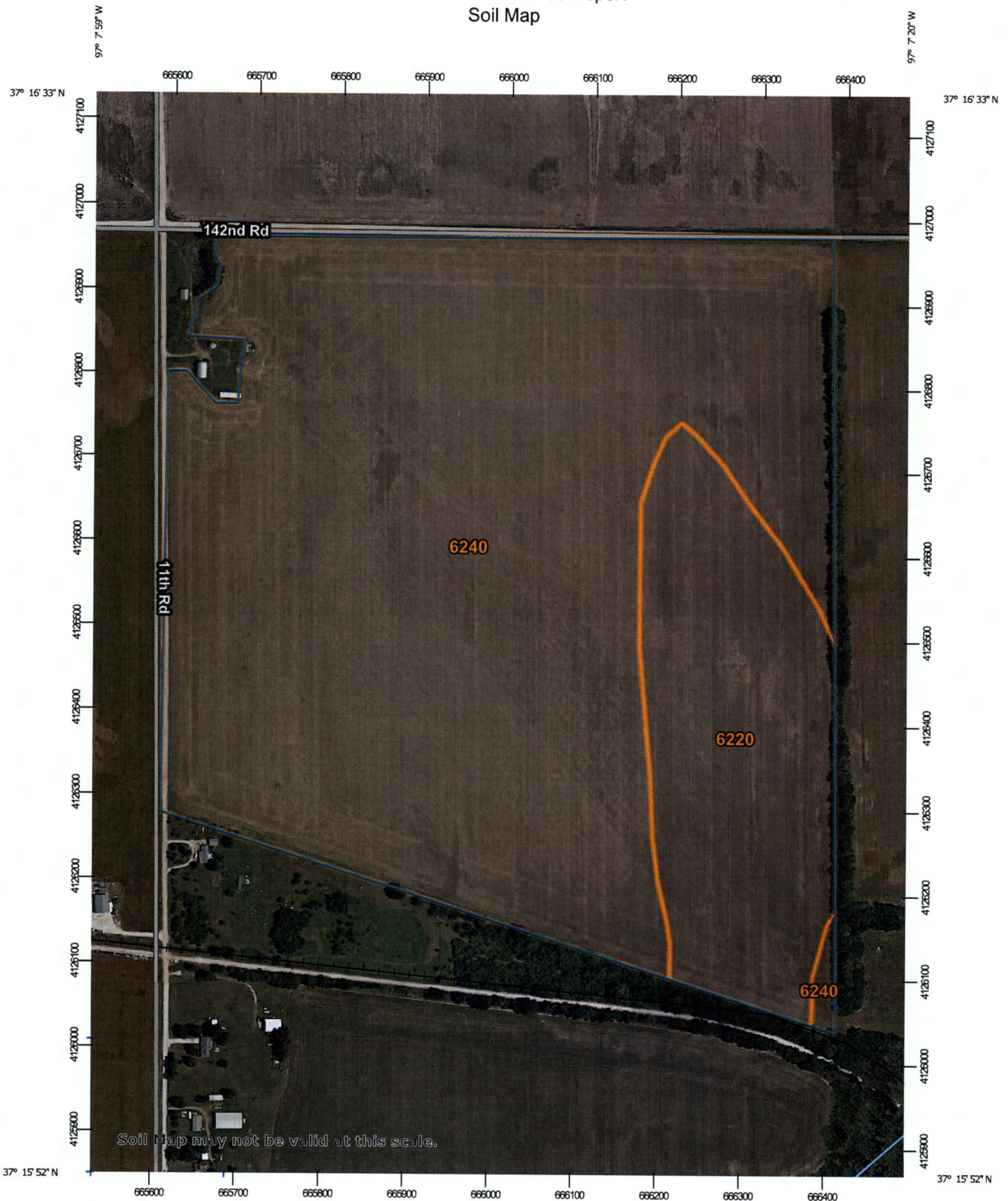
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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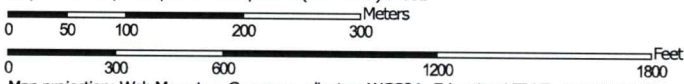
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map



Soil Map may not be valid at this scale.

Map Scale: 1:6,230 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84




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### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cowley County, Kansas  
 Survey Area Data: Version 18, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 4, 2020—Jun 5, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6220	Brewer silty clay loam, rarely flooded	31.5	19.9%
6240	Dale silt loam, rarely flooded	126.6	80.1%
<b>Totals for Area of Interest</b>		<b>158.0</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Cowley County, Kansas

### 6220—Brewer silty clay loam, rarely flooded

#### Map Unit Setting

*National map unit symbol:* 2wtx9  
*Elevation:* 980 to 1,660 feet  
*Mean annual precipitation:* 31 to 38 inches  
*Mean annual air temperature:* 54 to 57 degrees F  
*Frost-free period:* 175 to 200 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Brewer, rarely flooded, and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Brewer, Rarely Flooded

##### Setting

*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium

##### Typical profile

*Ap - 0 to 12 inches:* silty clay loam  
*Bt - 12 to 42 inches:* silty clay  
*BC - 42 to 79 inches:* silty clay loam

##### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* High (about 9.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 1  
*Land capability classification (nonirrigated):* 1  
*Hydrologic Soil Group:* C  
*Ecological site:* R076XY113KS - Loamy Lowland  
*Hydric soil rating:* No

#### Minor Components

##### Verdigris, occasionally flooded

*Percent of map unit:* 10 percent  
*Landform:* Flood plains

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*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R076XY113KS - Loamy Lowland  
*Hydric soil rating:* No

### **Osage, ponded**

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R076XY104KS - Clay Lowland  
*Hydric soil rating:* Yes

## **6240—Dale silt loam, rarely flooded**

### **Map Unit Setting**

*National map unit symbol:* 2ylqq  
*Elevation:* 870 to 1,370 feet  
*Mean annual precipitation:* 31 to 39 inches  
*Mean annual air temperature:* 59 to 63 degrees F  
*Frost-free period:* 187 to 232 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Dale, rarely flooded, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Dale, Rarely Flooded**

#### **Setting**

*Landform:* Flood plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium

#### **Typical profile**

*Ap - 0 to 7 inches:* silt loam  
*A - 7 to 21 inches:* silt loam  
*Bw - 21 to 40 inches:* silt loam  
*Ck - 40 to 79 inches:* silt loam

#### **Properties and qualities**

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches

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*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 9 percent  
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* High (about 10.8 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* 1  
*Land capability classification (nonirrigated):* 1  
*Hydrologic Soil Group:* B  
*Ecological site:* R080AY050OK - Loamy Bottomland  
*Hydric soil rating:* No

### **Minor Components**

#### **Canadian, rarely flooded**

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R080AY024KS - Sandy Terrace (PE 24-32)  
*Hydric soil rating:* No

#### **Lesho, occasionally flooded**

*Percent of map unit:* 4 percent  
*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R080AY032KS - Subirrigated (PE 24-32)  
*Hydric soil rating:* No

#### **Aquolls, occasionally ponded**

*Percent of map unit:* 1 percent  
*Landform:* Depressions on flood plains  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Ecological site:* R080AY090OK - Ponded Bottomland  
*Hydric soil rating:* Yes

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## References

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American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelp20101043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

**DATA ENTRY SYSTEM ID NUMBER SHEET**

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<b>APPLICANT PERSON ID &amp; SEQ #</b>	<b>89864</b>	<b>PDIV ID</b>	<b>BATTERY ID</b>
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