

WATER PERMIT NO. 2078A-3

Name of Applicant: **Riverside Hutterian Brethren**

Address: **40361 200th St, Huron SD 57350**

Phone: **605 350-5768**

Amount of Water Claimed: **no additional**

Total Acres: **no additional**

Source of Water Supply: **groundwater**

Water to be used for: **irrigation**

County: **Beadle**

Type of Waste Disposal System:

Location: **approximately 9 miles north of Huron**

PRIORITY

Date Received: **1-22-15**

Application/License Fee: **\$ 300**

Corrected Application Received:

Period of Annual Use: **April 1 – October 31**

Remarks: **transfer 132 acres authorized by No. 2078-3 and add an additional well**

Diversion Point: **center of SW 1/4 Sec 17-T112N-
R61W**

Land to be Irrigated: **SW 1/4 Sec 17-T112N-R61W**

Depth of Well: **102 feet deep**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by: **Eric Gronlund**

			17		

Reviewed and the Number Assigned on: **1-23-15**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

FORM 2: Application for irrigation in South Dakota
(type or print)

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>2078A-3</u> (office use only) Hydrologic Unit <u>10160006</u>
	Basin <u>James River</u>
	Newspaper <u>Plainsman</u> <u>605-353-7401</u>
	<u>PO Box 1278, Huron 57350</u>

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JAN 22 2015
WATER RIGHTS
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Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 2078-3
(Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Transfer 132 acres authorized by WR No. 2078-3 from the NW 1/4 Section 27 to the SW 1/4 Section 17;
T121N, R61W and add an additional well

1. Name to Appear on Irrigation Permit Riverside Hutterian Brethren

(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 40361 200th Street Huron SD 57350
(Address) (City) (State) (Zip Code)

Home Phone 352-7462 Cell 350-5768 Email benwaldner@santel.net

2. Amount of water claimed No add *CFS or no add'l **GPM ***AF Total Acreage no add'l
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Groundwater

4. Location of point of diversion approximate center of the SW 1/4 Section 17, T112N, R61W
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County Beadle

5. County or counties where water will be used Beadle

6. Annual period during which water is to be used April 1 - October 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NW 1/4 SW 1/4 Section 17, T112N, R61W	33		
NE 1/4 SW 1/4 Section 17, T112N, R61W	33		
SW 1/4 SW 1/4 Section 17, T112N, R61W	33		
SE 1/4 SW 1/4 Section 17, T112N, R61W	33		

8. Give a description of the project. (Attach sheet if more space is needed)

Riverside plans to transfer this acres to this one quarter section and drilling an additional well to Water Right No. 2078-3. Riverside is reconfiguring the nozzles on its center pivots to 650 gpm each so that the 8.69 cfs (3900 gpm) diversion rate authorized by Water Right No. 2078-3 is not exceeded.

The NW 1/4 of Section 27 is now authorized for irrigation from the James River.

I, Bennett Waldner, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

SOUTH DAKOTA
WATER PERMIT NO. 2078A-3 FOR IRRIGATION

Date of first receipt of application January 22, 2015.

The Water Management Board approved Water Permit No. 2078A-3 on May 7, 2015 for Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th St, Huron SD 57350 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2078A-3 amends Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Water Right No. 2078-3 appropriates 8.69 cubic feet of water per second (cfs) from five wells to irrigate 924 acres located in the NW 1/4 Section 21, Section 28, W 1/2 Section 27; all in T112N-R61W. This permit authorizes the transfer of the irrigation of 132 acres located in the NW 1/4 Section 27 two miles northwest to irrigate 132 acres located in the SW 1/4 Section 17-T112N-R61W. The additional well will be completed into the Tulare:Western Spink Hitchcock Aquifer (102 feet deep) located in the approximate center of the SW 1/4 Section 17-T112N-R61W. No increase in the diversion rate or number of acres is authorized by this permit.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is April 3, 1974.
4. One-fifth of the construction is to be completed on or before November 7, 2017.
5. All construction is to be completed on or before May 7, 2020.
6. Water is to be put to beneficial use on or before May 7, 2024.
7. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The wells approved under Water Right No. 2078-3 and Water Permit No. 2078A-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 2078A-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. A water meter with a readily accessible read out must be installed at the six well sites authorized under Water Right No. 2078-3 and Water Permit No. 2078A-3. Records must be kept for the meters and reported on the annual irrigation questionnaire.

(continued)

4. Riverside Hutterian Brethren shall submit a plan with documentation to DENR for review and approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cubic feet of water per second (3,900 gpm). DENR shall review the plan and approve the plan with or without modifications. If the plan or documentation is unacceptable, DENR will return to the permit holder with an explanation of insufficiencies. The well in the SW ¼ Section 17, T112N, R61W and the irrigation system in this quarter section shall not be constructed until DENR approval of the plan is granted.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
6. Permit No. 2078A-3 is subject to compliance with the Notice of Order to comply with Water Rights No. 2078-3 issued to Riverside Hutterian Brethren on February 4, 2015.
7. The unauthorized well located in the NE ¼ NE ¼ Section 28, T112N, R61W must be plugged in accordance to the Well Construction Standards ARSD 74:02:04 by June 1, 2015. Riverside Hutterian Brethren must notify the Chief Engineer when the well is plugged to allow an inspector access to verify the plugging is complete.

WATER MANAGEMENT BOARD

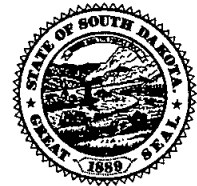
By: _____

Jeanne Goodman

Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUN 11 2015

date



Supplemental Information

(type or print)

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MAY - 9 2014

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1. Well Information (check one or both as applicable) ☒ Drilling new well(s) ☐ Using existing well(s)

a) If new wells, how many 1 Have test holes been drilled ☒ Yes ☐ No Drilled by Pullman's Drilling
(if yes, please provide copies of logs)

b) If existing wells, how many Provide copy of log(s), if available. Drilled by

c) Well Depth 102 Depth to Top of Water Bearing Material 55 Depth to Water from Surface 32

d) Distance to nearest existing domestic well:

On applicant's property 2 Miles (Artesian) On property owned by others 2000 ft (Artesian)

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field)

b) System Capacity (gallons) Year Constructed

c) Connected to the City of Sanitary System

3. Dugout Information

a) Surface Dimensions Depth

b) Depth to water (ground surface to water level)

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

b) Freeboard

c) Crest Width

Crest Length

d) Height

e) Primary Outlet Capacity

If pipe, diameter

f) Secondary Spillway Capacity

Spillway Width

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

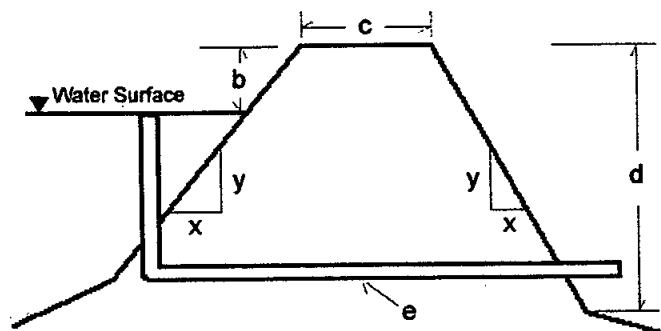
Upstream

Downstream

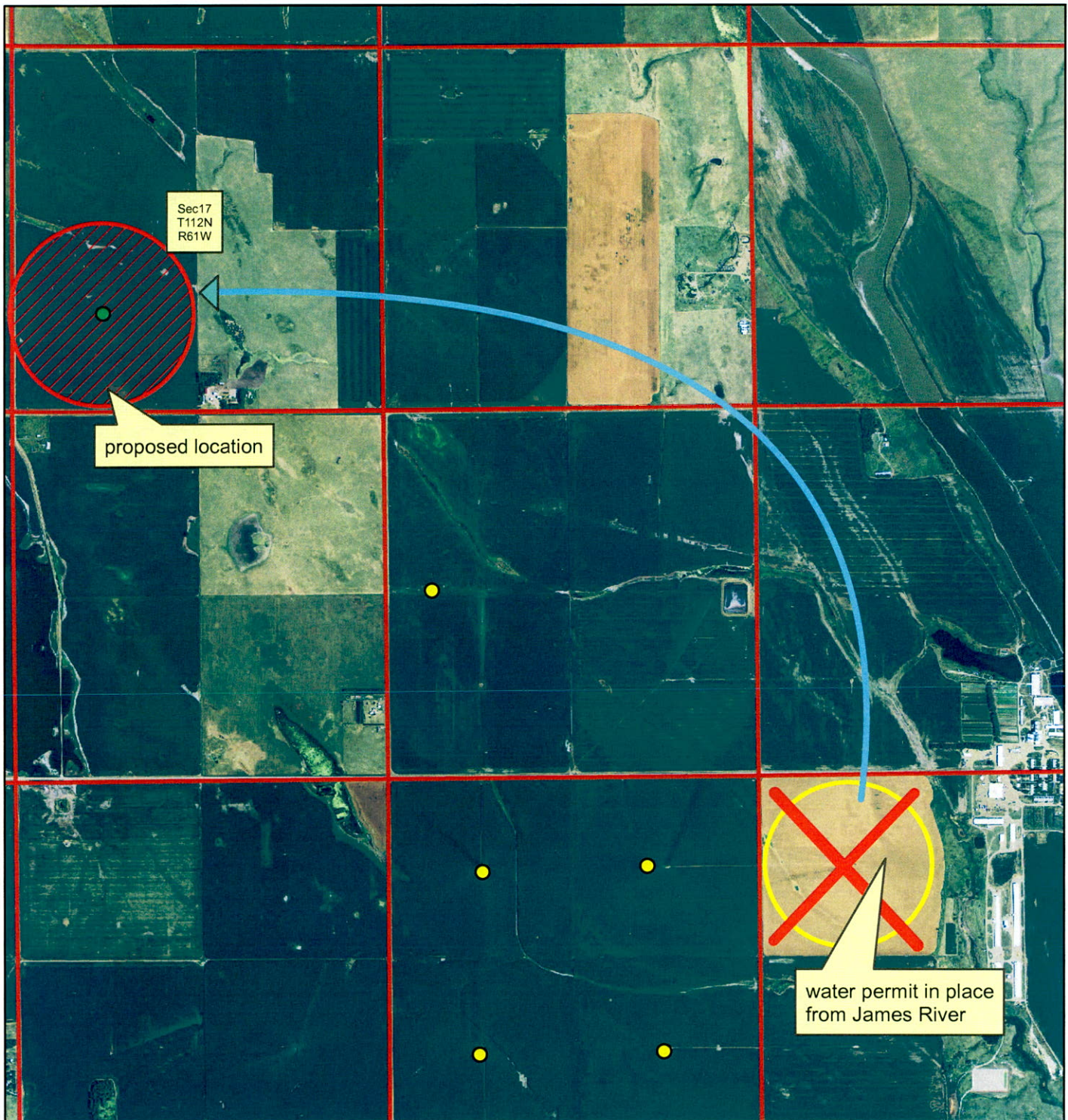
h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres



WATER PERMIT APPLICATION TO TRANSFER A PORTION OF WATER RIGHT NO. 2078-3
RIVERSIDE HUTTERIAN BRETHREN



0 800 1,600 3,200 4,800 6,400
Feet



● PROPOSED ADDITIONAL WELL

● EXISTING AUTHORIZED WELLS


Eric Gronlund
Water Rights Program, DENR



United States Department of Agriculture
Farm Service Agency

February 21, 2013



PLSS: 17_112N_61W Beadle County, SD
Farm: 6998
1 inch equals 717 feet

Wetland Determination Identifiers

-  Restricted Use
-  Limited Restrictions
-  Exempt from Conservation Compliance Provisions

 Common Land Units

 Non Cropland

Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.

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2012 Ortho-Photography - Not to Scale

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APR 28 2014

WATER RIGHTS PROGRAM

PULLMAN DRILLING, INC. - DRILLER'S LOG

(605) 883-4532
1-800-451-4884

JOB NAME	LOCATION	DATE	RIG NO	FOREMAN
Liverside Colony Beadle Co.	T-112-NR-61-W Sec. 17 Iowa T.S.	4-24-2014	11	Paul Hofer

**WATER RIGHTS
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Jr No	DEPTH	TIME	REMARKS
1	20		0-20 Yellow Clay
2	40		20-35 Yellow clay 35-39 Yellow sand 39-40 Yellow clay
3	60		40-50 Yellow clay 50-55 Blue clay 55-60 Blue clay w/ S/S
4	80		60-80 Gravel w/ Blue clay break at 75'
5	100		80-100 Coarse sand w/ gravel
6	104		100-102 Coarse sand & gravel 102-104 Shale
7			Lots of Water loss Had to mix up Revert
8			
9			3" Well
10			→ T.D. 104'
11			20' .057 3" SCH 80 PVC
12			84' 3" SCH 40 PVC Blank
13			P.W.A. 75 G.P.M.
14			W.H. 24'
15			0-104' 5" Hole
16			0-80' 2 bags Vol clay
17			80'-104' Pearock
18			1/3 cu yd blinding granular
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Wants 16" Well IN The FALL
102'

#1800 ft.

Riverside Colony
Bennet Waldner
1605-350-5768
Harlow, S.D. 57350

Paul
Kyle
Dennis

> 104' 3" Well

Riverside Industries
40361 200th St.
Huron S.D. 57350

REMARKS:

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JAN 22 2015

**WATER RIGHTS
PROGRAM**

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 1/22, 20 15

RECEIVED OF Riverside Hutterian Brethren 40361 200th St Huron SD 57350

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>2078A-3</u> to Appropriate Water, to construct and to put water to beneficial use	100	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>2078A-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	300 00

No. 07180

By Jane Hodman
Chief Engineer

Application No. 2078A-3

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 2078A-3, Riverside Colony

ADDRESS: COUNTY: Beadle County

DATE: January 22, 2015 TELEPHONE: 605 350-5768

RE: discussion with Bennett Waldner when filing Application No. 2078A-3

Mr. Waldner came to the Water Rights Program on January 22, 2015 to file an application to transfer a portion of acres and diversion rate authority under Water Right No. 2078-3. He also filed new applications as part of implementation of last year's House Bill 1015. This file documentation deals with our discussion regarding the application to transfer a portion of the acreage under Water Right No. 2078-3.

The application proposes to transfer 132 acres located in the NW ¼ Section 27, T112N, R61W to the SW ¼ Section 17, T112N, R61W and add a well. Water Right No. 2078-3 currently authorizes 8.69 cubic feet of water per second (3,900 gpm) from five wells to irrigate 924 acres. I stated that to add a sixth well, DENR would need documentation that the total diversion rate will not exceed the 3,900 gpm. That would in essence mean each well would need to be limited to 650 gpm to supply a center pivot. Mr. Waldner indicated that Riverside intends to re-nozzle their center pivots to limit the application rate to 650 gpm. I told DENR will want evidence to prove that the systems are limited in a manner that the 3,900 gpm diversion rate is not exceeded. Mr. Waldner stated he could submit the nozzling chart for each pivot to document that each pivot operates at 650 gpm and that Riverside will comply with diversion rate authorize by their water right.

It was not specifically discussed when he would provide this information as the pivots had not been reconfigured with new low pressure drop nozzles.

Mr. Waldner and I also had a discussion about the unauthorized sixth well located in the NE ¼ NE ¼ Section 28, T112N, R61W. This well had been in use without authorization for many years to irrigate land authorized by Water Right No. 2078-3. The use of this well and its associated diversion rate came to the forefront when Riverside filed Application No. 8013-3. Application No. 8013-3 was denied by the Water Management Board. Mr. Waldner stated this well has been taken out of service and that Riverside will have the well plugged.

NAME: Eve Hurlburt



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

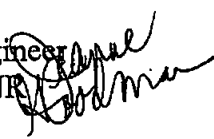
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

February 4, 2015

NOTICE OF ORDER

TO: Bennett Waldner
Riverside Hutterian Brethren
40361 200th Street
Huron SD 57350

FROM: Jeanne Goodman, Chief Engineer
Water Rights Program, DENR 

SUBJECT: Order of Chief Engineer to Comply with Water Right No. 2078-3 and Refund for
Denied Water Permit Application No. 8013-3

According to SDCL 46-2-17, the chief engineer has authority to investigate the use of the waters of the state and compliance with the provisions of a water license. Also, the chief engineer may issue an order to a person to discontinue the use of water to which the user has no legal right pursuant to SDCL 46-2-18.

Riverside Hutterian Brethren is hereby ordered to limit withdrawal of water to a maximum of 8.69 cfs from five wells to irrigate 924 acres as allowed by Water License No. 2078-3. The unauthorized sixth well located in the NE ¼ NE ¼ of Section 28, T112N, R61W, must be plugged and abandoned according to the Well Construction Standards ARSD 74:02:04 by June 1, 2015. Riverside Hutterian Brethren must notify the chief engineer when the well is plugged to allow an inspector access to verify the plugging is complete.

Failure to comply with this order will result in forwarding this matter to the South Dakota Attorney General's office for further enforcement actions. Pursuant to SDCL 46-1-11, violations of water use law is a Class 2 misdemeanor and subject to a civil fine of five hundred dollars per day for each day of noncompliance. In addition, pursuant to SDCL 46-1-12, a water license may be suspended or cancelled by order of the Water Management Board if the Board finds that any term of the license has been violated.

The Water Management Board's denial of Water Permit Application No. 8013-3 results in 75% of the application filing fee (\$375.00) and the entire license fee (\$200) being refunded. You will receive the refund check soon.

If you have questions regarding this order or the refund, please contact Eric Gronlund at (605) 773-3352 or eric.gronlund@state.sd.us.

c: Gregg Magera, Siegel, Barnett & Schutz
Ann Mines-Bailey, Assistant Attorney General



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2078A-3, Riverside Hutterian Brethren**

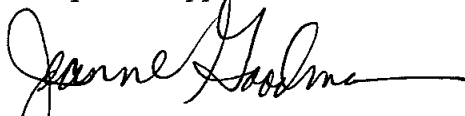
Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 2078A-3, Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th Street, Huron SD 57350.

The Chief Engineer is recommending APPROVAL of Application No. 2078A-3 because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) it is in the public interest with the following qualifications:

1. The wells approved under Water Right No. 2078-3 and Water Permit No. 2078A-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 2078A-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. A water meter with a readily accessible read out must be installed at the six well sites authorized under Water Right No. 2078-3 and Water Permit No. 2078A-3. Records must be kept for the meters and reported on the annual irrigation questionnaire.
4. Riverside Hutterian Brethren shall submit a plan with documentation to DENR for review and approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cubic feet of water per second (3,900 gpm). DENR shall review the plan and approve the plan with or without modifications. If the plan or documentation is unacceptable, DENR will return to the permit holder with an explanation of insufficiencies. The well in the SW ¼ Section 17, T112N, R61W and the irrigation system in this quarter section shall not be constructed until DENR approval of the plan is granted.

5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
6. Permit No. 2078A-3 is subject to compliance with the Notice of Order to comply with Water Rights No. 2078-3 issued to Riverside Hutterian Brethren on February 4, 2015.

See report on application for additional information.

A handwritten signature in black ink, appearing to read "Jeanne Goodman", with a long horizontal flourish extending to the right.

Jeanne Goodman, Chief Engineer
February 25, 2015

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 2078A-3
RIVERSIDE HUTTERIAN BRETHREN
FEBRUARY 2, 2015

Water Permit Application No. 2078A-3 proposes to amend Water Right No. 2078-3 by transferring the authority to irrigate 132 acres located in the NW¼ Sec. 27, T112N-R61W to acreage located in the SW¼ Sec. 17, T112N-R61W. This application also proposes to authorize the use of an additional well, located in the approximate center of the SW¼ Sec. 17, T112N-R61W. The well is expected to be 102 feet deep and will be completed into the Tulare: Western Spink/Hitchcock aquifer. This application does not propose an increase of the diversion rate or total number of acres irrigated authorized.

AQUIFER: TULARE: WESTERN SPINK/HITCHCOCK (T: WSH)

SOUTH DAKOTA CODIFIED LAW (SDCL) 46-5-34

SDCL 46-5-34 provides:

“...if for any reason it should become impracticable to use all or any part of the water beneficially or economically for irrigation of any land to which the right of its use is appurtenant, all or any part of the right may be severed from the land and simultaneously transferred and become appurtenant to other land without losing priority of right previously established, subject to existing rights, upon approval of an application for an amended permit.”

The application does not address why it has become impracticable to beneficially or economically irrigate the acreage in the NW¼ Sec. 27, T112N-R61W using groundwater. The applicant does however indicate that “The NW ¼ of Section 27 is now authorized for irrigation from the James River”.

DISCUSSION:

Based on an inspection of works that was conducted pursuant to SDCL 46-5-30, the Chief Engineer issued Water License No. 2078-3 on August 2, 1979. The license granted Riverside Colony a water right to divert 8.69 cfs, from five wells, to irrigate 924 acres. The Report of Examination of Works and/or Application of Water to Beneficial Use indicated the project consisted of five center pivot systems to irrigate the seven quarter sections authorized for irrigation. Presumably, two of the center pivot systems were moved between four quarters and the seven quarters could not be irrigated simultaneously. The well information and acreage authorized by the water right are shown in Table 1 and Table 2 respectively (Buhler, 2014).

Table 1. Well locations and capacities authorized by Water Right No. 2078-3(Buhler, 2014)

Well No.	Location	Capacity
2	1320'S & 1300' E of NW corner Sec. 28, T112N-R61W	750 gpm
3	1305'N & 1320'E of SW corner Sec. 28, T112N-R61W	900 gpm
4	1305'N & 1320'W of SE corner Sec. 28, T112N-R61W	800 gpm
5	1320'S & 1545'W of NE corner Sec. 28, T112N-R61W	650 gpm
6	2640'S & 550'E of NW corner Sec. 21, T112N-R61W	800 gpm
<i>Total = 3900 gpm (8.69 cfs)</i>		

Table 2. Acreage authorized for irrigation by Water Right No. 2078-3(Buhler, 2014).

Section	Quarter	Acres
Sec. 21, T112N-R61W	NW¼	132
Sec. 28, T112N-R61W	NE¼	132
	SE¼	132
	NW¼	132
	SW¼	132
Sec. 27, T112N-R61W	SW¼	132
	NW¼	132
<i>Total= 924 acres</i>		

On April 25, 2014, Riverside Hutterian Brethren submitted Water Permit Application No. 8013-3 proposing to sever the authority to irrigate 132 acres located in NW¼ Sec. 27, T112N-R61W, which was appropriated by Water Right No. 2078-3, and transfer that authority to acreage located in the SW¼ Sec. 17, T112N-R61W. The application also proposed adding an additional well without transferring any diversion rate authority. The Water Management Board denied Water Permit No. 8013-3, essentially because the permit would potentially result in additional withdrawals from the Tulare: Western Spink/Hitchcock aquifer. Earlier, the Board found the Tulare: Western Spink/Hitchcock aquifer is fully appropriated [In the matter of Water Permit Application No. s. 7725-3, et al., Findings of Fact, Conclusions of law and Final Decision issued December 5, 2013]. The Board's decision was affirmed by the Sixth Judicial Court on August 21, 2014.

In the process of filing Water Permit Application No. 8013-3, the representative for Riverside Hutterian Brethren conveyed to DENR-Water Rights staff that a sixth well had been constructed and was used to irrigate the acreage authorized by Water Right No. 2078-3. Review of the data provided through the annual irrigation questionnaires filed by the applicant confirms that the applicant has developed and operated with a diversion capacity in excess of the rate authorized by Water Right No. 2078-3 (Buhler, 2014). The Riverside Hutterian Brethren's unauthorized increase of the diversion rate capacity in excess of 8.69 cfs likely resulted in a larger average annual withdrawal from the Tulare: Western Spink/Hitchcock aquifer than was appropriated by Water Right No. 2078-3.

Water Permit Application No. 2078A-3 differs from Application No. 8013-3. In addition to transferring the authority to irrigate 132 acres appropriated by Water Right No. 2078-3 to

different acreage, Application No. 2078A-3 also proposes to sever and transfer a portion of the diversion rate authority to a new well location.

At this time, the applicant's diversion rate capacity and ability to apply water to beneficial use appear to exceed the amounts authorized. The application indicates that "the nozzles on the center pivots will be reconfigured to 650 gpm each so that the 8.69 cfs (3900 gpm) diversion rate authorized by Water Right No. 2078-3 is not exceeded." The applicant has verbally committed to Water Rights Staff that the unauthorized well will be plugged (Gronlund, 2015).

EXISTING RIGHTS:

SDCL 46-5-34 requires that an amendment to transfer a water right/permit is subject to existing rights. Existing water rights/permits filed for diversion points in the vicinity of the well site proposed by Water Permit Application No. 2078A-3 are shown in Table 3 and Figure 1.

Table 3. Water permit applications with status in the vicinity of the well site proposed by Water Permit Application No. 2078A-3, (see Figure 1. for approximate locations)

PERMIT NO	NAME	APPLICATION DATE	STATUS	CFS	ACRES
149-3	LEROY SLEPIKAS	03/07/1956	LC	4	320
1523-3	RIVERSIDE HTRN BRTH	02/20/1968	LC	1.71	131
2078-3	RIVERSIDE HTRN BRTH	02/13/1961	LC	8.69	924
2471-3	BUELL/CRAIG SLEPIKAS	12/08/1975	IL	1.33	202
2471A-3	BUELL/CRAIG SLEPIKAS	12/08/1975	IL	0	0
2471B-3	BUELL/CRAIG SLEPIKAS	07/23/1992	LC	2.88	202
4146-3	ADELE M WALTERS	09/09/1977	CA	1.85	130
4147-3	ADELE M WALTERS	09/09/1977	CA	1.85	130
416-3	NOAH MCGAUGHEY	02/20/1957	CA	2.25	158
4217-3	DECKER FARMS	12/29/1977	CA	1.85	130
4273-3	VICTOR/PEGGY	03/27/1978	CA	6.14	430
4482-3	DENIS SLEPIKAS	03/06/1980	LC	1.78	132
4546-3	ADELE M WALTERS	09/11/1980	CA	2.22	227
4550-3	RAYMOND OIL COMPANY	08/14/1980	LC	3.77	264
4622-3	RIVERSIDE HTRN BRTH	03/01/1977	CA	1.22	101
4622A-3	RIVERSIDE HTRN BRTH	03/01/1977	PE	1.71	130
498-3	C H/J R ERLING	09/04/1957	LC	4.55	320
563-3	BUELL/CRAIG SLEPIKAS	01/10/1959	LC	4	296
6594-3	RIVERSIDE COLONY	02/14/2005	DN	3.56	264
7198-3	RIVERSIDE HTRN BRTH	04/27/2010	DN	1.89	132
7378-3	RIVERSIDE HTRN BRTH	06/29/2012	WI	3.86	270
7379-3	RIVERSIDE HTRN BRTH	06/29/2012	WI	1.93	135
7716-3	DENIS & CRAIG SLEPIKAS	02/08/2013	PE	2.28	160
7731-3	RIVERSIDE COLONY	06/13/2013	WI	3.86	270

LC= Water Right, IL= Incorporated, CA= Cancelled, PE= Water Permit, DN= Denied, WI= Withdrawn

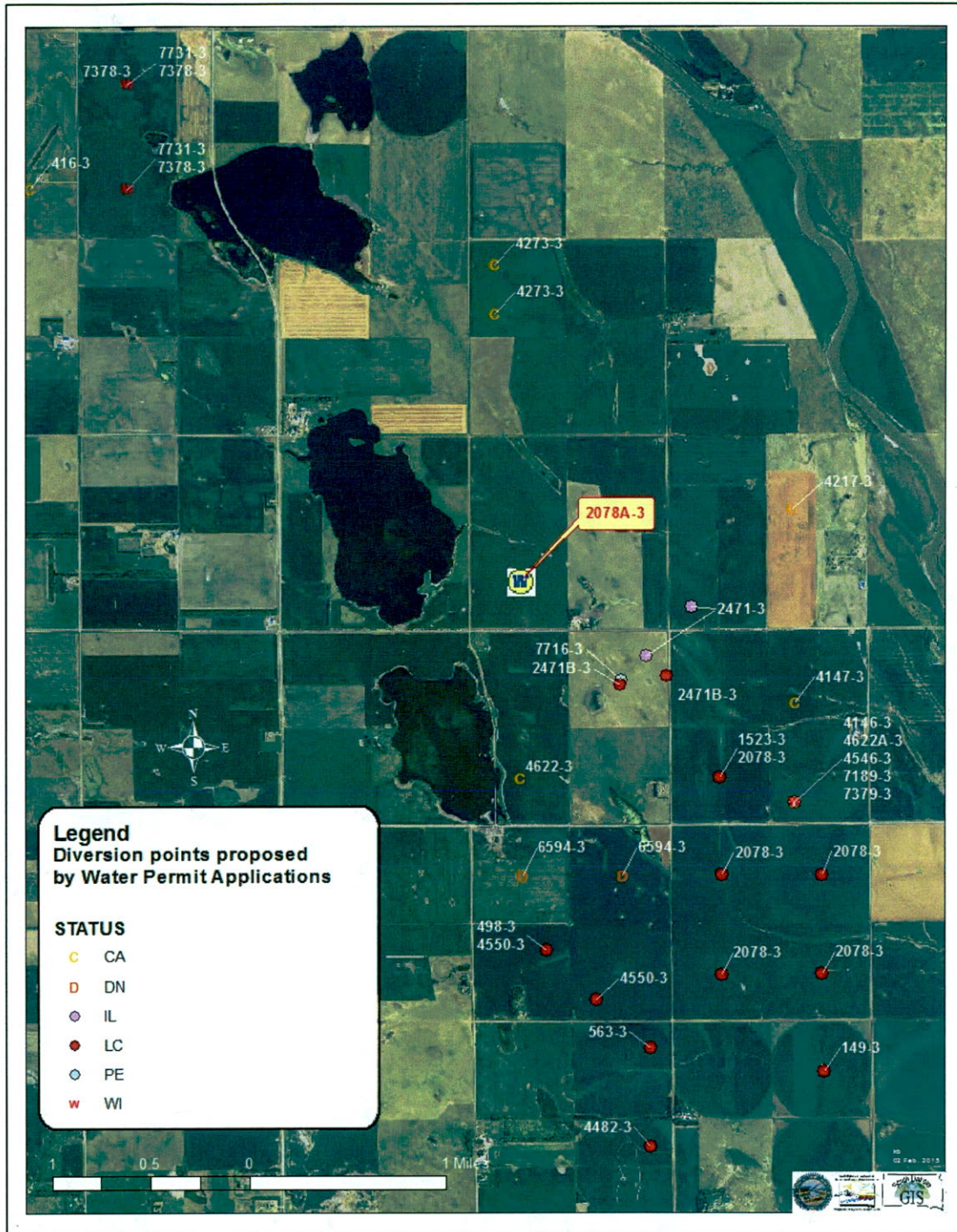


Figure 1. Location of the well site proposed by Application No. 2078A-3 and diversion points proposed by other water permit applications in the vicinity.

Historically, well interference has not been an issue in the Tulare: Western Spink Hitchcock aquifer. The DENR-Water Rights Program monitors two observation wells within approximately two and one-half miles of the well site proposed by this application. Observation well BD-66A is located within approximately one mile of four high capacity irrigation wells. Observation well BD-80D is located at least 1.75 miles from the nearest high capacity well.

Hydrographs for these two observation wells, shown in Figures 2 and 3, document that drawdown from nearby irrigation wells is not significant relative to climatic effects on the water levels.

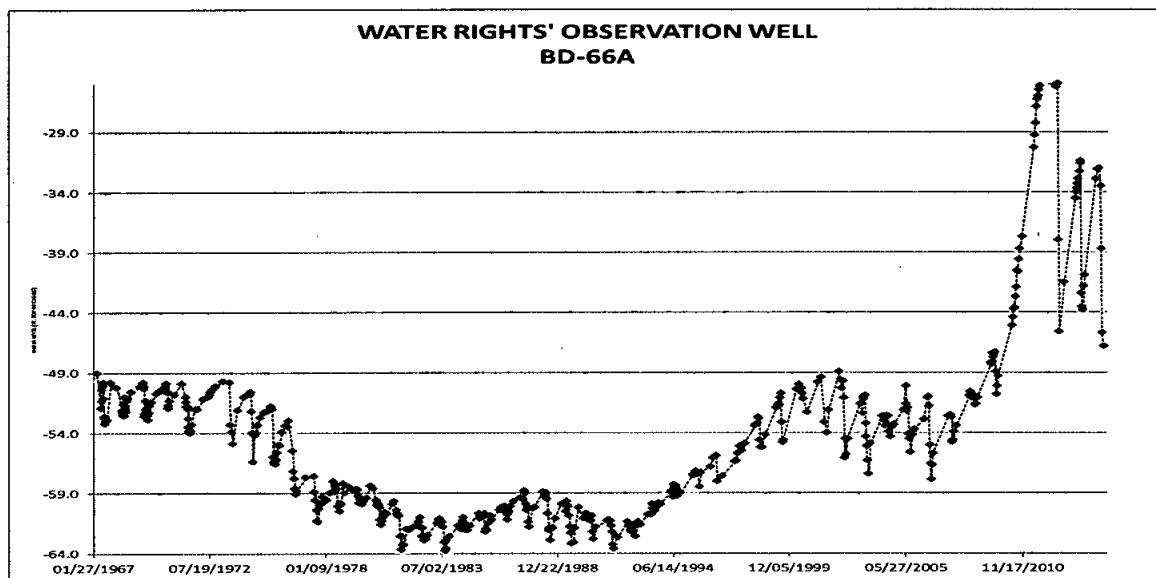


Figure 2. Hydrograph of an observation well completed into the T:WS/H aquifer near several high capacity wells (Water Rights, 2015a).

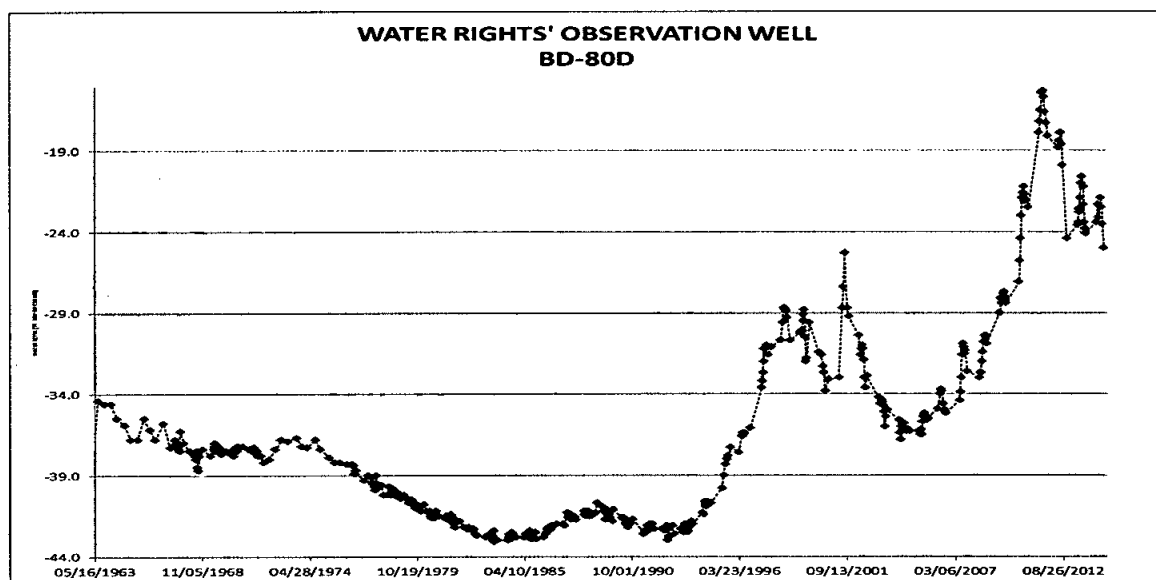
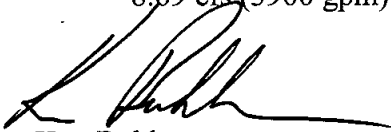


Figure 3. Hydrograph of an observation well completed into the T:WS/H aquifer located over 1.75 miles from the nearest high capacity well (Water Rights, 2015a).

If the water levels in the Tulare: Western Spink/Hitchcock aquifer were to decline, owners of existing wells bear the responsibility of lowering the pump inlet in the well to below the top of the aquifer, if necessary. Increased lift would decrease the pump discharge, or require a larger pump or a different type of a pump to maintain the same output.

CONCLUSIONS:

1. SDCL 46-5-34 provides authority to sever an irrigation right from one parcel of land and simultaneously transfer it to another parcel if for any reason it should become impracticable to use all or any part of the water beneficially or economically for irrigation.
2. The applicant intends to use James River as a water source to irrigate the acreage that had been authorized for irrigation using ground water. The acreage is located in the NW¼ Sec. 27, T112N-R61.
3. This application proposes to complete a new well into the Tulare: Western Spink/Hitchcock aquifer and transfer diversion authority to that well from Water Right No. 2078-3
4. The Tulare: Western Spink Hitchcock aquifer was determined to be fully appropriated from 2008 to 2012 and from 2013 to present.
5. The availability of unappropriated water is not a consideration required by SDCL 46-5-34.
6. Diversions from the well site proposed by this application are not expected to adversely impact existing water rights.
7. This application proposes to limit the rate that water can be placed to beneficial use to 8.69 cfs (3900 gpm).



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

Buhler, K.A., 2013, Report to the Chief Engineer on Water Permit Application No. 7373-3, Terry Wieting, Water Permit Application No. 7551-3, Wayne Binger, and Water Permit Application Nos. 7570-3, 7571-3, 7572-3, 7573-3, 7574-3, 7575-3, 7637-3, 7638-3, 7639-3 & 7640-3, Gary Marshall- Marshall Bros., Water Permit Application No. 7620-3, Oscar Inc.; January 30, 2013: SD DENR-Water Rights Program

Buhler, K.A., 2014, Report to the Chief Engineer on Water Permit No. 8013-3, Riverside Hutterian Brethren: SD DENR-Water Rights Program.

Gronlund, E.S., 2015, Water Rights Program-DENR Conversation File Documentation, January 22, 2015: SD DENR-Water Rights Program Application No. 2078A-3 File

RECEIVED

PRINTER'S AFFIDAVIT **MAR 18 2015**

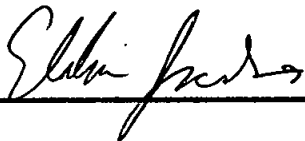
**WATER RIGHTS
PROGRAM**

STATE OF SOUTH DAKOTA,
COUNTY OF BEADLE: ss

I, ELDON JACOBS, being duly sworn on oath say that the PLAINSMAN is a daily paper published at Huron, Beadle County, South Dakota, and that said newspaper has a bona fide circulation of at least 250 copies daily; that said newspaper has been published within said county for fifty-two consecutive weeks immediately prior to this date, that said newspaper is printed in whole or in part, in an office maintained at said place of publication; that I am Legal Advertising Coordinator of said newspaper and know the facts herein state. The annexed notice headed:

**SD DEPT OF ENVIROMENTAL - WATER
RIGHTS - RIVESIDE COLONY**

was published for one day, in said newspaper, and not in any supplement of the said newspaper, the publication was of the 5TH day **MAR 2015**. That the full amount of the fee charged for publishing is: **NINTY-TWO & 61/00** dollars insures to the benefit of the publisher of said newspaper; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whom so ever.



Subscribed and sworn to me before this 5TH Day of **MAR 2015**.


Notary Public, South Dakota

My term expires 10/25/2017
Legal #1677

F. P. 03-05-15
**NOTICE OF HEARING
on Application No.
2078A-3 to
Appropriate Water**

Notice is given that Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th St., Huron SD 57350 has filed Application No. 2078A-3 which requests to amend Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Water Right No. 2078-3 appropriates 8.69 cubic feet of water per second (cfs) from five wells to irrigate 924 acres located in the NW 1/4 Section 21, Section 28, W 1/2 Section 27; all in T112N-R61W. This application proposes to transfer the irrigation of 132 acres located in the NW 1/4 Section 27 two miles northwest to irrigate 132 acres located in the SW 1/4 Section 17-T112N-R61W. The applicant is proposing an additional well to be completed into the Tulare:Western Spink Hitchcock Aquifer (102 feet deep) located in the approximate center of the SW 1/4 Section 17-T112N-R61W. No increase in the diversion rate or number of acres is authorized by this application.

State Law (SDCL 46-5-34) allows an irrigation water right to be severed from one parcel of land and simultaneously transferred to another parcel if it becomes impracticable to use all or any part of the water beneficially or economically for irrigation of any land to which the right is appurtenant. Mr. Waldner indicates justification for this change is that Water Permit No. 8006-3 now authorizes irrigation of the NW 1/4 Section 27-T112N-R61W from the James River.

SDCL 46-2A-4(10) provides that "if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer's recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board." In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2078A-3 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest.

The Water Management Board will consider this application at 9:30 a.m. on May 6, 2015 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave. Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The

Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any interested person who intends to participate in the hearing shall file a petition to oppose or support the application and the petition shall be filed with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 27, 2015. The petition may be informal, but shall be in writing and shall include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The May 6, 2015 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose or support the application. The request for an automatic delay must be filed by April 27, 2015. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to all petitioners regarding the time, date and location.

Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund by April 27, 2015 at the above Chief Engineer's address to request copies of the staff report, recommendation, application or other information. Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Environment and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

Under SDCL 1-26-17(7) notices must state that "if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing

Examiners by giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17." This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is March 16, 2015. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provides the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-9, 46-1-13 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-17; 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23; 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-30.4, 46-5-31, 46-5-32 thru 46-5-34.1, 46-5-38 thru 46-5-39, 46-5-46, 46-5-47, 46-5-49; 46-6-1 thru 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-21, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:25.02; 74:02:01:35.01.

Steven M. Pimer,
Secretary, Department
of Environment and
Natural Resources.
No. 1677 (adv.)

Published one time at
the total approximate
cost of \$92.61.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

February 26, 2015

Plainsman
PO Box 1278
Huron SD 57350

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 2078A-3 to Appropriate Water. Please publish the notice once on March 5, 2015. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th St, Huron SD 57350 (Ph # 605-352-7462).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, February 26, 2015 9:36 AM
To: Ruby Crandall (rnewman.plainsman@midconetwork.com)
Subject: 2078A-3, Riverside Httm Brethren
Attachments: 2078A-3public.wmb.docx

Ruby,

Attached is a Notice of Hearing to be published on March 5, 2015. Riverside Httm Brethren, c/o Bennett Waldner, 40361 200th St, Huron SD 57350 (phone 605 350-5768) has been notified to contact you to authorize publication and arrange for payment.

Please send us the affidavit ASAP. Thanks.

Karen Schlaak
Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.**

February 26, 2015

Riverside Hutterian Brethren
Bennett Waldner
40361 200th St
Huron SD 57350

Dear Mr. Waldner:

Water Permit Application No. 2078A-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Plainsman printed at Huron SD (Ph # 605-353-7401). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352
enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper – Publish the Notice on March 5, 2015. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF HEARING on Application No. 2078A-3 to Appropriate Water

Notice is given that Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th St, Huron SD 57350 has filed Application No. 2078A-3 which requests to amend Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Water Right No. 2078-3 appropriates 8.69 cubic feet of water per second (cfs) from five wells to irrigate 924 acres located in the NW 1/4 Section 21, Section 28, W 1/2 Section 27; all in T112N-R61W. This application proposes to transfer the irrigation of 132 acres located in the NW 1/4 Section 27 two miles northwest to irrigate 132 acres located in the SW 1/4 Section 17-T112N-R61W. The applicant is proposing an additional well to be completed into the Tulare:Western Spink Hitchcock Aquifer (102 feet deep) located in the approximate center of the SW 1/4 Section 17-T112N-R61W. No increase in the diversion rate or number of acres is authorized by this application.

State Law (SDCL 46-5-34) allows an irrigation water right to be severed from one parcel of land and simultaneously transferred to another parcel if it becomes impracticable to use all or any part of the water beneficially or economically for irrigation of any land to which the right is appurtenant. Mr. Waldner indicates justification for this change is that Water Permit No. 8006-3 now authorizes irrigation of the NW 1/4 Section 27-T112N-R61W from the James River.

SDCL 46-2A-4(10) provides that "if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer's recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board." In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2078A-3 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest.

The Water Management Board will consider this application at 9:30 a.m. on May 6, 2015 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave. Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any interested person who intends to participate in the hearing shall file a petition to oppose or support the application and the petition shall be filed with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 27, 2015. The petition may be informal, but shall be in writing and shall include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The May 6, 2015 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose or support the application. The request for an automatic delay must be filed by April 27, 2015. If an automatic delay is requested, the

hearing will be rescheduled for a future Board meeting and personal notice will be provided to all petitioners regarding the time, date and location.

Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund by April 27, 2015 at the above Chief Engineer's address to request copies of the staff report, recommendation, application or other information. Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Environment and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

Under SDCL 1-26-17(7) notices must state that "if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing Examiners by giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17." This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is March 16, 2015. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provides the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-9, 46-1-13 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-17; 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23; 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-30.4, 46-5-31, 46-5-32 thru 46-5-34.1, 46-5-38 thru 46-5-39, 46-5-46, 46-5-47, 46-5-49; 46-6-1 thru 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-21, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:25.02; 74:02:01:35.01.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at an approximate cost of _____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

April 24, 2015

NOTICE

TO: Bennett Waldner
Riverside Hutterian Brethren
40361 200th Street
Huron SD 57350

FROM: Jeanne Goodman, Chief Engineer
Water Rights Program

SUBJECT: Change of Hearing Date on Water Permit Application No. 2078A-3

Riverside Hutterian Brethren's Water Permit Application No. 2078A-3 requests to amend Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Water Right No. 2078-3 appropriates 8.69 cubic feet of water per second (cfs) from five wells to irrigate 924 acres located in the NW 1/4 Section 21, Section 28, W 1/2 Section 27; all in T112N-R61W. This application proposes to transfer the irrigation of 132 acres located in the NW 1/4 Section 27 two miles northwest to irrigate 132 acres located in the SW 1/4 Section 17-T112N-R61W. Riverside is proposing an additional well to be completed into the Tulare:Western Spink Hitchcock Aquifer (102 feet deep) located in the approximate center of the SW 1/4 Section 17-T112N-R61W. No increase in the diversion rate or number of acres is authorized by this application.

The public notice scheduled the hearing before the Water Management Board at 9:30 AM on Wednesday, May 6, 2015. Due to an unforeseen circumstance the date has been changed to Thursday, May 7, 2015.

The Water Management Board will now conduct the hearing on Application No. 2078A-3 at 9:30 AM (Central Time) on Thursday, May 7, 2015, at the Floyd Matthew Training Center, Joe Foss Building, 523 E. Capitol Avenue, Pierre SD. The agenda time is an estimate. If a petition is received in response to the public notice, the petitioner will be notified of the change.

Applicable provision of the notice of hearing published March 5, 2015, in the Plainsman will still apply.

Please contact Eric Gronlund at (605) 773-3352 if you have questions regarding the hearing.

c: Ann Mines-Bailey, Assistant Attorney General

CERTIFICATION

I hereby certify that on April 24, 2015, I have personally deposited with the United States mail at Pierre, South Dakota, first class postage, prepaid envelopes containing a Notice dated April 24, 2015, regarding change of hearing date on Water Permit Application No. 2078A-3as set forth below:

Bennett Waldner
Riverside Hutterian Brethren
40361 200th Street
Huron SD 57350

Sent Notice Inter-Office mail to:

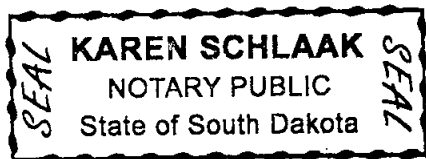
Ann Mines-Bailey, Assistant Attorney General, 1302 E. Hwy 14, Suite 1, Pierre SD 57501-8501


Gail Jacobson
Water Rights Program, DENR

[illegible]

Sworn to, before me, this 24th day of April, 2015

Karen Schlaak
Karen Schlaak
Notary Public
My Commission expires April 1, 2019



Gronlund, Eric

From: Gronlund, Eric
Sent: Monday, June 01, 2015 8:35 AM
To: Goodman, Jeanne; Buhler, Ken
Subject: Riverside Colony - Permit No. 2078A-3

Permit No. 2078A-3 was issued with Condition No. 7 that the unauthorized well located in the NE ¼ NE ¼ Section 28, T112N, R61W be plugged in accordance to the well construction standards by June1, 2015. Bennett Waldner called this morning to inform DENR that the well has been plugged and a staff person can come out to verify the plugging is complete.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

JUN 11 2015

Riverside Hutterian Brethren
c/o Bennett Waldner
40361 200th St
Huron SD 57350

Dear Mr. Waldner:

Enclosed is Water Permit No. 2078A-3 transferring a portion of the irrigated acreage and adding an additional well without an increase in the diversion rate or number of acres irrigated.

As stated in your phone conversation with Eric Gronlund on June 1st, the unauthorized well located in the NE 1/4 NE 1/4 Section 28-T112N-R61W has been plugged. A staff member will be in contact with you to verify the completion of the well plugging.

Please note the condition on No. 2078A-3 requiring water meters on the wells. Also, Riverside needs to submit documentation to DENR for review and approval regarding the diversion rate capacity and ability to place water to beneficial use being limited to 8.69 cubic feet of water per second prior to construction of the system and drilling the well.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

September 24, 2015

Bennett Waldner
Riverside Hutterian Brethren
40361 200th Street
Huron SD 57350

Dear Mr. Waldner:

The Department of Environment and Natural Resources (DENR) received Riverside Hutterian Brethren's submittal on September 17, 2015, regarding compliance with qualifications to Water Permit No. 2078A-3.

Water Permit No. 2078A-3 was issued June 11, 2015, amending Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. The permit is attached. Conditions on the permit required: 1) water meters to be installed at the six wells, 2) plugging of the unauthorized well located in the NE ¼ NE ¼ Section 28, T112N, R61W, and 3) Riverside to submit a plan with documentation to DENR for approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cubic feet of water per second (3,900 gpm).

Riverside submitted an invoice for a water meter that will meet the requirement if installed at each of the six wells. Also, a well plugging report was submitted documenting that the unauthorized well has been plugged. Finally, six invoices from Kevin's Pivot Service were submitted regarding the purchase of various numbers of Nelson R3000 rotators, regulators, poly drops and gooseneck fittings with a statement "650 gpm". This does not meet the necessary documentation that each of the pivots is limited to 650 gpm. As per qualification No. 4 on the permit this letter is intended to provide an explanation of the insufficiencies.

An invoice and a statement of "650 gpm" simply does not document that the capacity is limited to 650 gpm per pivot. DENR contacted an individual in the irrigation business to seek guidance regarding proper documentation that a pivot's water use is limited to a certain flow. We were informed a pivot's water use can be limited by the sprinkler package where the type of pivot, desired machine flow and pressure is used to configure the drop nozzles by size, distance between sprinklers and the end gun to a desired machine flow. A chart can then be generated providing the distance between sprinklers, the nozzle size and the end gun capacity. The individual DENR spoke to provided a test chart. In part, the chart provided a table with the following headings:

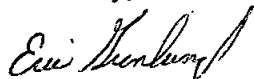
Sprinkler No.	Distance From pivot	Nozzle Size	Color	Line Pressure	Sprinkler Pressure	Gallons Per Minute
---------------	---------------------	-------------	-------	---------------	--------------------	--------------------

When totaling up all the sprinklers and the gallons per minute associated with each sprinkler and then adding the endgun capacity, the chart provides the anticipated machine flow. It appears that nozzle size determines the flow out of each sprinkler. The invoice in Riversides' submittal does not provide any detail on the various nozzle sizes or nozzle capacities but instead just provides a total number of sprinklers. In the test sprinkler chart we were provided the various nozzles are color coded that would make field verification possible of the sprinkler configuration.

DENR suggests that Riverside consult with their irrigation supply company to provide the sprinkler package installed on the pivots with a chart documenting the system's configuration. (nozzle size, distance between sprinklers, capacity of each nozzle and end gun capacity).

DENR hopes this provides direction on the type of documentation that is necessary in order for our review and approval that each pivot system is properly configured to 650 gpm.

Sincerely,



Eric Gronlund

Water Rights Program, DENR

605 773-3352

Eric.gronlund@state.sd.us

enclosure

SOUTH DAKOTA
WATER PERMIT NO. 2078A-3 FOR IRRIGATION

Date of first receipt of application January 22, 2015.

The Water Management Board approved Water Permit No. 2078A-3 on May 7, 2015 for Riverside Hutterian Brethren, c/o Bennett Waldner, 40361 200th St, Huron SD 57350 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2078A-3 amends Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Water Right No. 2078-3 appropriates 8.69 cubic feet of water per second (cfs) from five wells to irrigate 924 acres located in the NW 1/4 Section 21, Section 28, W 1/2 Section 27; all in T112N-R61W. This permit authorizes the transfer of the irrigation of 132 acres located in the NW 1/4 Section 27 two miles northwest to irrigate 132 acres located in the SW 1/4 Section 17-T112N-R61W. The additional well will be completed into the Tulare:Western Spink Hitchcock Aquifer (102 feet deep) located in the approximate center of the SW 1/4 Section 17-T112N-R61W. No increase in the diversion rate or number of acres is authorized by this permit.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is April 3, 1974.
4. One-fifth of the construction is to be completed on or before November 7, 2017.
5. All construction is to be completed on or before May 7, 2020.
6. Water is to be put to beneficial use on or before May 7, 2024.
7. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The wells approved under Water Right No. 2078-3 and Water Permit No. 2078A-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 2078A-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. A water meter with a readily accessible read out must be installed at the six well sites authorized under Water Right No. 2078-3 and Water Permit No. 2078A-3. Records must be kept for the meters and reported on the annual irrigation questionnaire.

(continued)

4. Riverside Hutterian Brethren shall submit a plan with documentation to DENR for review and approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cubic feet of water per second (3,900 gpm). DENR shall review the plan and approve the plan with or without modifications. If the plan or documentation is unacceptable, DENR will return to the permit holder with an explanation of insufficiencies. The well in the SW $\frac{1}{4}$ Section 17, T112N, R61W and the irrigation system in this quarter section shall not be constructed until DENR approval of the plan is granted.
5. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
6. Permit No. 2078A-3 is subject to compliance with the Notice of Order to comply with Water Rights No. 2078-3 issued to Riverside Hutterian Brethren on February 4, 2015.
7. The unauthorized well located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 28, T112N, R61W must be plugged in accordance to the Well Construction Standards ARSD 74:02:04 by June 1, 2015. Riverside Hutterian Brethren must notify the Chief Engineer when the well is plugged to allow an inspector access to verify the plugging is complete.

WATER MANAGEMENT BOARD

By: _____

Jeanne Goodman

Jeanne Goodman, Chief Engineer
Water Rights Program

Department of Environment and Natural Resources

JUN 11 2015

date



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WATER RIGHTS
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Dear Eric

Enclosed you will find the well plugging report and the invoice's for the sprinkler package for 6 irrigation System's. 3 are already installed. 3 we will install after harvest.

You will see the invoice for the water meter.

We bought one to make sure it is what we want, before we buy all 6, one for each well.

We would like to drill the new well this fall, if possible.

Thank You

Bennett



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

JUN 11 2015

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SEP 17 2015

WATER RIGHTS
PROGRAM

Riverside Hutterian Brethren
c/o Bennett Waldner
40361 200th St
Huron SD 57350

Dear Mr. Waldner:

Enclosed is Water Permit No. 2078A-3 transferring a portion of the irrigated acreage and adding an additional well without an increase in the diversion rate or number of acres irrigated.

As stated in your phone conversation with Eric Gronlund on June 1st, the unauthorized well located in the NE 1/4 NE 1/4 Section 28-T112N-R61W has been plugged. A staff member will be in contact with you to verify the completion of the well plugging.

Please note the condition on No. 2078A-3 requiring water meters on the wells. Also, Riverside needs to submit documentation to DENR for review and approval regarding the diversion rate capacity and ability to place water to beneficial use being limited to 8.69 cubic feet of water per second prior to construction of the system and drilling the well.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures



3255 West Stetson Avenue • Hemet, CA 92545-7763 USA
Tel: 951 652-6811 • Fax: 951 652-3078 • payments@mccrometer.com

Page Number- 1
Date - 09/15/15
Customer - 37153
Brn/Plt - MC1000
Related Ord- 601090
Order Nbr - 267491 SO
Invoice - 465012 RI

SALES INVOICE

Sold To: RIVERSIDE INDUSTRY
40361 200TH STREET
HURON SD 57350

Ship To: RIVERSIDE INDUSTRY
40361 200TH STREET
HURON SD 57350

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WATER RIGHTS
PROGRAM

Tax ID:
Tax Cert:

001 / 044 / 049

REP:
RSM:

Request Date
09/18/15

Customer P.O.
VERBAL-BENNETT WALDNER

EXW Seller's Premises

Ship : UPS GND/PPC
Inst : 09/14/15

Ln/Rq Dt	Description	Item Number	UM	Ship/Back/Cance	Price	Extended Price	Tax
	DJ/MARIAV						
1.000	McMag3000 8" Batt. 8" U-Straps G308-4-00-D Data Logger AG15-0948				2.074.0000		
		Customer Discount			414.8000-		
		Net Price	EA S	1	1.659.2000	1.659.20	Y
					Per EA		
	OD:8.000 ID:7.820 GAL/100 X GPM/1500 MAX FLOW						
2.000	McMag 3000 Data logger communication package	G3COM01		EA S	250.0000	250.00	Y
					Per EA		
3.000	Shipping & Handling/NonTaxable 1Z9200310348201290			EA	53.7800	53.78	N
	*						

Sales Tax Total Order

Terms Net 30 Days from Invoice Net Due Date 10/15/15

Tax Rt

1.962.98

MCCROMETER'S TERMS AND CONDITIONS APPLY UNLESS OTHERWISE STATED IN WRITING BETWEEN THE PARTIES; MCCROMETER'S
TERMS AND CONDITIONS CAN BE VIEWED AT THE FOLLOWING URL: WWW.MCCROMETER.COM/TERMS_AND_CONDITIONS.PDF
REMIT TO: McCrometer, Inc. • 96894 Collections Center Drive • Chicago, IL 60693-0329 USA
INTERNATIONAL WIRE TRANSFERS: Bank of America • 231 South LaSalle Street • Chicago, IL 60697 USA
A.B.A. No. 026009593 Swift: BOFAUS3N Acct# 87655-61569

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2014

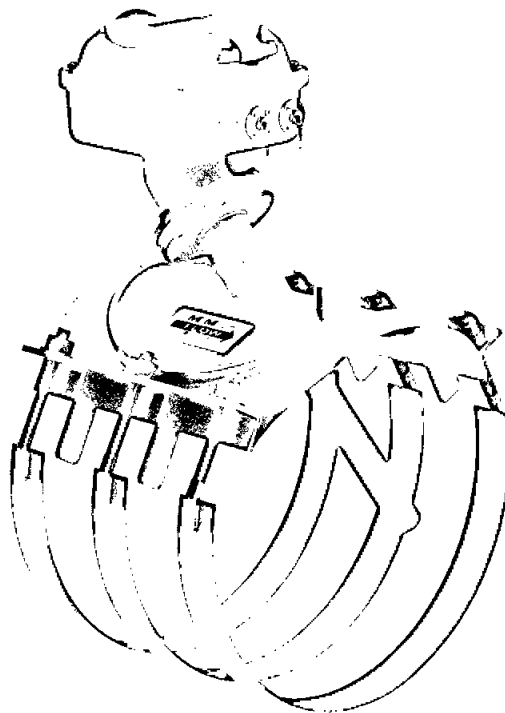
PRICE LIST

PRICING EFFECTIVE APRIL 1, 2014

30121-63 Rev. 1.1/04-14

Subject to change **without notice.**

Prices F.C.A. Factory Warehouse



 **McCROMETER**

3255 WEST STETSON AVENUE
HEMET, CALIFORNIA 92545 U.S.A.

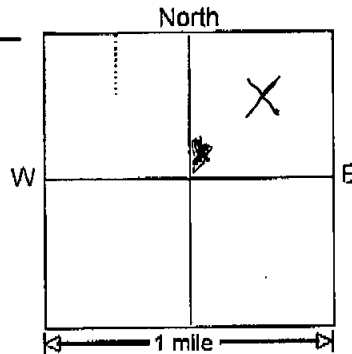
PHONE: 951-652-6811

FAX: 951-652-3078

WEBSITE: www.mccrometer.com

SD EForm - 1622LD V1

SOUTH DAKOTA WELL AND TEST HOLE PLUGGING REPORT 11-02

Location N $\frac{1}{4}$ E $\frac{1}{4}$ Sec 28 Twp 113 Rg 61County BeadyPlease mark well
location with an "X"Plugging Completion Date 5-29-15

Well Owner:

Name:

Address:

City, State, Zip:

Comments:

CHECK APPROPRIATE BOX

EXISTING WELL ☒TEST HOLE ☐

Well depth

Casing material

Casing size(s)

Casing condition

Hole depth

Hole size

Describe plugging procedure:

Traverse pipe to bottom, pumped in 75 bags on top of
30 bags PSE plug

Describe grout or plugging material:

30 bags Hole Plug in bottom
75 bags - (7500 lbs) Cement mixed 5.7 qals pr-100 lbs.

Type of non-slip plug:

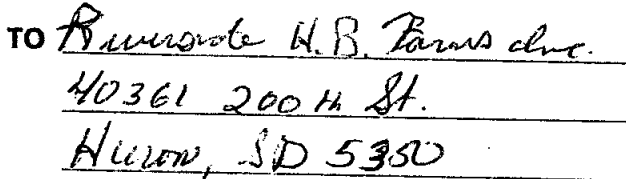
This well or test hole was plugged under license # 440 and this report is true and accurate.

Drilling firm:

Signature of Licensed Representative:

Signature of Well Owner:

Date:



Beadle County

98739 • Creative Printing • Huron, SD

Phone: (605) 350-3864

TO Riverside HB Farms Inc.
40361 200th St
Huron, SD 57350

INVOICE

2062

DATE 9-1-2015

CUSTOMER ORDER NO.

SALESPERSON *KB*

VIA
NW 1/4 28 T-162 N R-61-W
Beadle County

[illegible]

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Right No. 2078-3, Riverside Hutterian Brethren

ADDRESS: COUNTY: Beadle County

DATE: October 8, 2015 TELEPHONE: Bennett Waldner – 350-5768

RE:

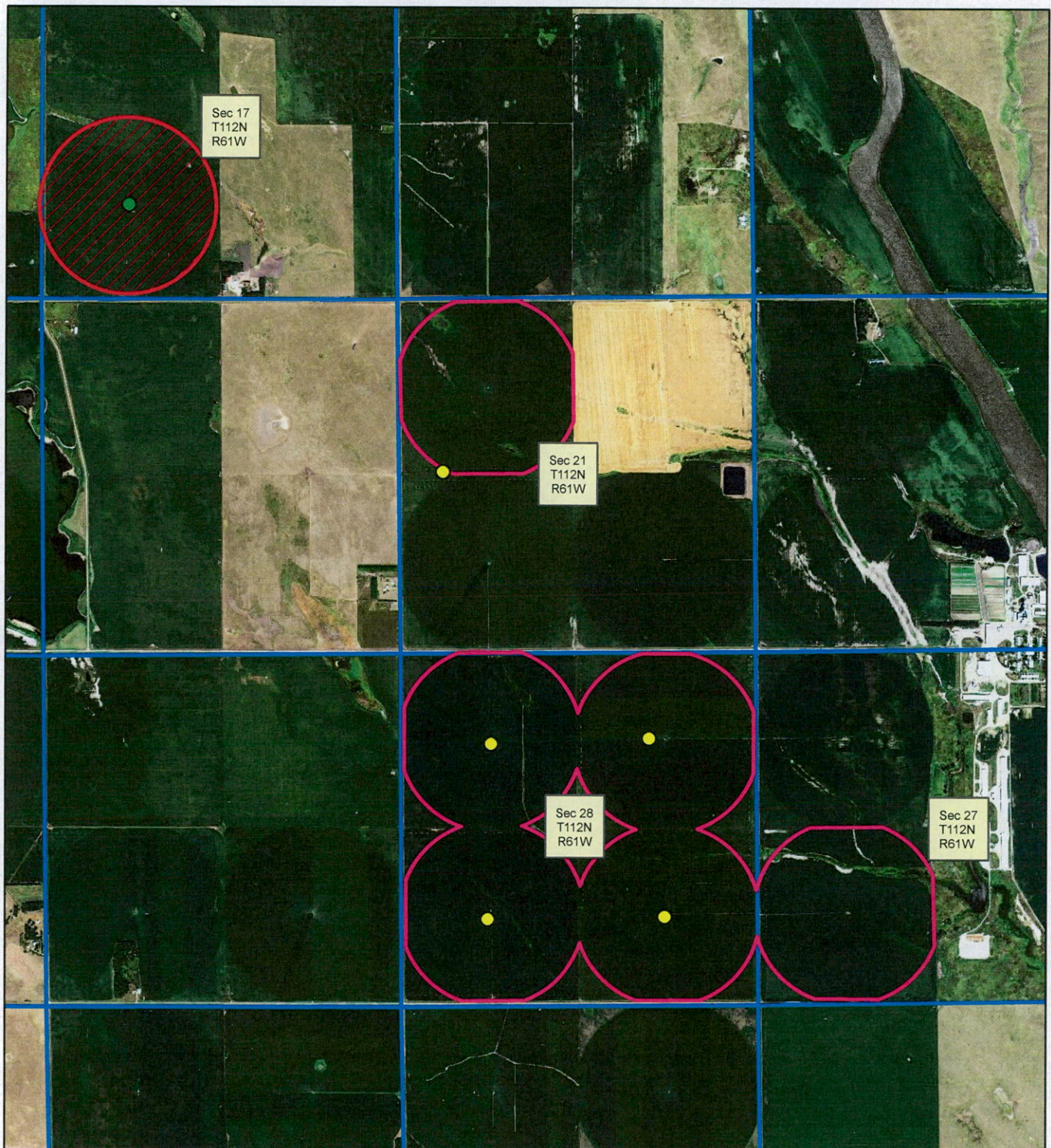
I contacted Mr. Waldner regarding the pivot coverage of existing pivots authorized by Water Right No. 2078-3. Mr. Waldner indicated that all end gun stops operated in a manner that water from the endgun does not spray on to roadways.

I stated that based on the length of the pivots and endgun radius in the chart provided by Ken's Pivot Service the area of coverage would be greater than the authorized 924 acres. The reason for my call was to inquiry about the operation of the endgun stops. Mr. Waldner assured me that between overlap of pivots and operation of endgun stops each pivot only covers 132 acres in order to maintain the authorized number of irrigated acres under Nos. 2078-3 and 2078A-3 at 924 acres.

Using ArcMap, I configured the pivots using the pivot length and endgun radius provided in the chart by Ken's Pivot Service and then limited the area if endgun stops are properly engaged to prohibit direct spray on to roadways. For the 6 pivots in the NW ¼ Section 21, Section 28 and SW ¼ Section 27 the total is at 792 acres. This allows for the new pivot to be set up in Section 17 to irrigate a total of 132 acres and maintain the total authorized amount of 924 acres. See attached map.

NAME: Eric Hummel

Riverside Hutterian Brethren's Water Right No. 2078-3 and Permit No. 2078A-3



0 850 1,700 3,400 5,100 6,800 Feet



Land authorized by Right No. 2078-3. Number of acres is 792 when accounting for overlapped acres and where end gun stops prohibit watering of roads or acres not authorized.



Transfer of 132 acres authorized by No. 2078A-3 from NW1/4 Section 27 to SW 1/4 Section 17

TOTAL - 924 acres

Eric Gronlund

Eric Gronlund
Water Rights Program, DENR

Riverside Colony – Water Right No 2078-3 and Permit No. 2078A-3, combined, authorize 8.69 cfs (3900 gpm) to irrigate 924 acres.

Pivot capacity based on sprinkler charts from Kevin's Pivot Service. Compiled by Eric Gronlund, Water Rights Program.

	Pivot	Pivot
Legal Description	GPM	Acres
NW 1/4 Section 28	645.6	135.8
SW 1/4 Section 28	641.4	138.5
NW 1/4 Section 21	632.8	137.6
NE 1/4 Section 28	650.6	134.7
SW 1/4 Section 27	652.1	139.5
SE 1/4 Section 28	638.6	133.6

The pivot acres is based on the pivot length and endgun radius. It does not account for overlap between pivots or locations near roadways where endgun stops are operation to limit spray on to roadways. Using ArcMap a acreage determination was made that if endgun stops are functional there would be 792 acres irrigated by these two pivot.

This does not account for the 132 acres of irrigation in the SW ¼ Section 17 transferred by No. 2078A-3.

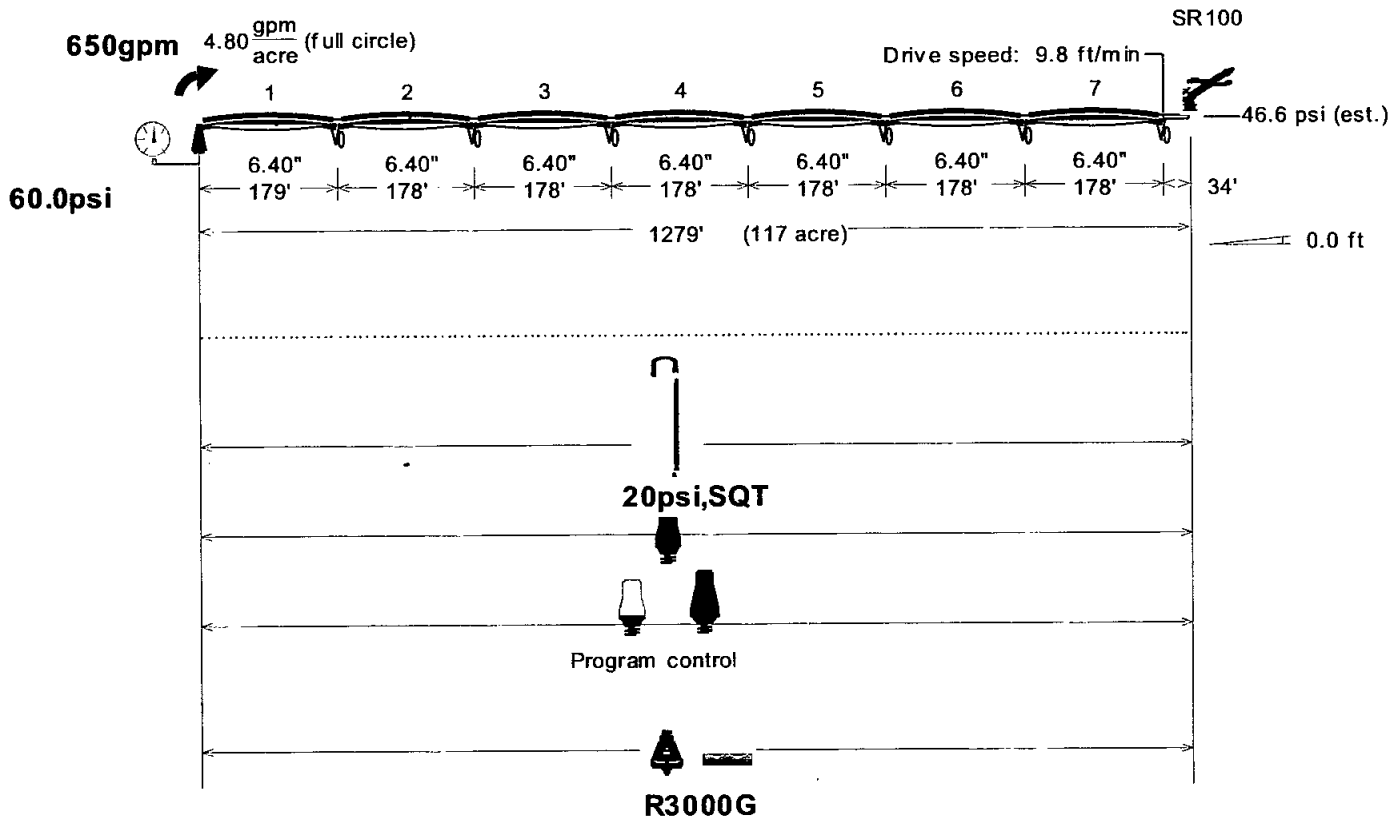
Combining the 792 acres and the 132 acres total the 924 acres authorized by the water rights.

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WATER RIGHTS
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Kevin's Pivot Service

AX636
03 Sep 2015Kevin's Pivot Service
Cavour, SDRiverside Colony
NW28

===== NOZZLE SELECTION VERIFICATION =====								
SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.3	6.9	11.4	16.0	20.5	25.1	29.6	23.4
GPM REQ.	12.4	33.5	55.2	76.2	95.8	119.4	140.7	112.6
GPM DEL.	15.3	32.9	55.1	76.3	95.7	119.4	140.1	115.0
% DEV.	24%	-2%	-0%	0%	-0%	-0%	-0%	2%
A high deviation in span 1 is unavoidable due to nozzle size limitations.								

===== DATA FILE IDENTIFICATION =====								
File	Sprinkler	Plate	SprNo	ID	Regulator	Flow PSI	In x Out	ID
R3000G	Rotator	Green	1- 94	AD26	LB20	LO 20	F x ST	7628

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX636
DATE: 03 Sep 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NW28

NUMBER OF TOWERS:	7	NOZZLE FILES: R3000G	
PIVOT PRESSURE:	53.9 psi	FRICTION C-FACTOR:	135
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE:	4.8
TOTAL PIPE LENGTH:	1279.1 FT	COVERAGE WITHOUT GUN:	1282.0 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS:	90.3 ft

SYSTEM MANUFACTURER: LINDSAY

			FT	PIPE ID
1	307-4	SPAN	1,	179.2, 6.40 in
6	307-4	SPANS	2- 7,	177.7, 6.40 in
1	33-OH-90	OVERHANG,	33.9,	5.37 in

The manufacturer cannot be responsible for the performance of the system and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE and does hereby disclaim any liability for damages due to failure of the system.

LMCchart 2.40

---OUTLET---	---REG---	PSI	---GPM---	---SPRINKLER---	---NOZZLE---
No	Loc	Sep	Model	RegIn	Req Del Model Plate SpNo.
-x-					PLUG 3
4	33.8	33.8*	LB20	55.6	0.6 1.6 R3000 Green 1 #14 Lime
5	42.7				PLUG
6	51.6	17.8*	LB20	55.4	0.9 1.6 R3000 Green 2 #14 Lime
7	60.2				PLUG
8	68.8				1.1 1.6 R3000 Green 3 #14 Lime
9	77.3	15.6			PLUG
10	85.1				1.2 1.6 R3000 Green 4 #14 Lime
11	94.1				PLUG
12	103.				1.4 1.6 R3000 Green 5 #14 Lime
13	111.				PLUG
14	120.				1.5 1.6 R3000 Green 6 #14 Lime
15	129.				PLUG
16	138.0	17.8			1.6 1.6 R3000 Green 7 #14 Lime
17	146.9				PLUG
18	155.8	17.8	LB20	54.4	2.0 2.1 R3000 Green 8 #16 Lavender
19	164.7				PLUG
20	173.6	17.8	LB20	54.2	2.2 2.3 R3000 Green 9 #17 Lvndr w/gra
	179.2	TOWER NO. 1			INLINE PRESSURE: 52.3 psi
21	184.7				PLUG
22	193.6	20.0	LB20	54.0	2.4 2.3 R3000 Green 10 #17 Lvndr w/gra
23	202.5				PLUG
24	211.4	17.8	LB20	53.8	2.7 2.6 R3000 Green 11 #18 Gray
25	220.4				PLUG
26	229.3	17.8	LB20	53.6	2.8 2.9 R3000 Green 12 #19 Gray w/trqu
27	237.9				PLUG
28	246.4	17.2	LB20	53.5	2.9 2.9 R3000 Green 13 #19 Gray w/trqu
29	255.0				PLUG
30	263.6	17.2	LB20	53.3	3.1 3.2 R3000 Green 14 #20 Turquoise
	32.9			53.1	3.3 3.2 R3000 Green 15 #20 Turquoise
				53.0	3.6 3.4 R3000 Green 16 #21 Trqu w/yllw
				52.8	3.9 3.8 R3000 Green 17 #22 Yellow
		0		52.6	4.2 4.1 R3000 Green 18 #23 Yllw w/red
40	351.5			52.4	4.7 4.5 R3000 Green 19 #24 Red
	356.8	TOWER NO. 2			INLINE PRESSURE: 50.6 psi
41	362.4				PLUG
42	371.3	19.9	LB20	52.2	4.9 4.9 R3000 Green 20 #25 Red w/white
43	380.2				PLUG
44	389.1	17.8	LB20	52.0	4.8 4.9 R3000 Green 21 #25 Red w/white
45	398.0				PLUG
46	407.0	17.8	LB20	51.9	4.8 4.9 R3000 Green 22 #25 Red w/white
47	415.5				PLUG
48	424.1	17.2	LB20	51.7	4.9 4.9 R3000 Green 23 #25 Red w/white
49	432.7				PLUG
50	441.3	17.2	LB20	51.5	5.3 5.3 R3000 Green 24 #26 White
51	450.1				PLUG

----OUTLET----	-REG-	PSI	---GPM---	----SPRINKLER-----	---NOZZLE---
No Loc			eq Del	Model Plate SpNo.	
52 458.6	55.3		.4 5.3	R3000 Green 25	#26 White
53 467.2				PLUG	
54 475.8			.8 5.7	R3000 Green 26	#27 White w/blu
55 484.4				PLUG	
56 493.3			.1 6.2	R3000 Green 27	#28 Blue
57 502.2				PLUG	
58 511.1			.2 6.2	R3000 Green 28	#28 Blue
59 520.1				PLUG	
60 529.0	17.8 LB20	50.6	6.9 7.0	R3000 Green 29	#30 Drk Brown
534.5	TOWER NO. 3		INLINE PRESSURE: 49.2 psi		
61 540.0				PLUG	
62 548.9	20.0 LB20	50.5	7.0 7.0	R3000 Green 30	#30 Drk Brown
63 557.9				PLUG	
64 566.8	17.8 LB20	50.3	6.9 7.0	R3000 Green 31	#30 Drk Brown
65 575.7				PLUG	
66 584.6	17.8 LB20	50.2	6.9 7.0	R3000 Green 32	#30 Drk Brown
67 593.2				PLUG	
68 601.8	17.2 LB20	50.1	7.0 7.0	R3000 Green 33	#30 Drk Brown
69 610.4				PLUG	
70 618.9	17.2 LB20	49.9	7.3 7.4	R3000 Green 34	#31 Brwn w/orng
71 627.7				PLUG	
7		49.8	7.5 7.4	R3000 Green 35	#31 Brwn w/orng
7				PLUG	
7 76.3		49.6	7.8 8.0	R3000 Green 36	#32 Orange
				PLUG	
		49.5	8.0 8.0	R3000 Green 37	#32 Orange
				PLUG	
		49.3	8.5 8.5	R3000 Green 38	#33 Ornge w/grn
				PLUG	
		49.1	9.2 9.0	R3000 Green 39	#34 Drk Green
712.2	TOWER NO. 4		INLINE PRESSURE: 48.1 psi		
81 717.7				PLUG	
82 726.6	20.0 LB20	48.9	9.6 9.5	R3000 Green 40	#35 Green w/prp
83 735.5				PLUG	
84 744.5	17.8 LB20	48.8	9.3 9.5	R3000 Green 41	#35 Green w/prp
85 753.4				PLUG	
8		48.8	8.9 9.0	R3000 Green 42	#34 Drk Green
8				PLUG	
8		48.7	9.1 9.0	R3000 Green 43	#34 Drk Green
8				PLUG	
9 95.8		48.5	9.6 9.5	R3000 Green 44	#35 Green w/prp
9				PLUG	
9		48.4	9.8 9.9	R3000 Green 45	#36 Purple
9				PLUG	
9		48.3	9.7 9.9	R3000 Green 46	#36 Purple
9				PLUG	
95 839.1				R3000 Green 47	#36 Purple
96 848.7	17.5 LB20	48.2	10.1 9.9	R3000 Green 48	#37 Prpl w/blk
97 857.6				PLUG	
98 866.5	17.8 LB20	48.0	10.8 10.6	R3000 Green 49	#34 Drk Green
99 875.4				PLUG	
100 884.3	17.8 LB20	48.3	8.9 9.0	R3000 Green	

-----OUTLET----- -REG- PSI ---GPM--- ----SPRINKLER----- ---NOZZLE---
 No Loc Sep Model RegIn Req Del Model Plate SpNo.

889.8 TOWER NO. 5 INLINE PRESSURE: 47.3 psi

101	895.4	11.0	LB20	48.8	6.1	6.2	R3000	Green	50	#28 Blue
102	904.3	8.9	LB20	48.8	5.4	5.3	R3000	Green	51	#26 White
103	913.2	8.9	LB20	48.8	5.7	5.7	R3000	Green	52	#27 White w/blu
104	922.1	8.9	LB20	48.7	5.7	5.7	R3000	Green	53	#27 White w/blu
10			LB20	48.7	5.8	5.7	R3000	Green	54	#27 White w/blu
10				48.7	5.7	5.7	R3000	Green	55	#27 White w/blu
10				48.7	5.7	5.7	R3000	Green	56	#27 White w/blu
10	117.4			48.6	5.6	5.7	R3000	Green	57	#27 White w/blu
10				48.6	5.6	5.7	R3000	Green	58	#27 White w/blu
10				48.6	5.8	5.7	R3000	Green	59	#27 White w/blu
1				48.5	6.0	6.2	R3000	Green	60	#28 Blue
1				48.5	5.7	5.7	R3000	Green	61	#27 White w/blu
1				48.5	5.9	5.7	R3000	Green	62	#27 White w/blu
114				48.4	6.1	6.2	R3000	Green	63	#28 Blue
115	1017.4	8.6	LB20	48.4	6.1	6.2	R3000	Green	64	#28 Blue
116	1026.3	8.9	LB20	48.4	6.2	6.2	R3000	Green	65	#28 Blue
117	1035.2	8.9	LB20	48.3	6.4	6.6	R3000	Green	66	#29 Blue w/brn
118	1044.2	8.9	LB20	48.4	6.2	6.2	R3000	Green	67	#28 Blue
119	1053.1	8.9	LB20	48.3	6.5	6.6	R3000	Green	68	#29 Blue w/brn
120	1062.0	8.9	LB20	48.1	7.2	7.4	R3000	Green	69	#31 Brwn w/orng

1067.5 TOWER NO. 6 INLINE PRESSURE: 46.8 psi

121	1073.0	11.0	LB20	48.2	7.2	7.0	R3000	Green	70	#30 Drk Brown
122	1081.9	8.9	LB20	48.2	6.8	6.6	R3000	Green	71	#29 Blue w/brn
123	1090.9	8.9	LB20	48.1	6.9	7.0	R3000	Green	72	#30 Drk Brown
124	1099.8	8.9	LB20	48.2	6.6	6.6	R3000	Green	73	#29 Blue w/brn
125	1108.7	8.9	LB20	48.1	6.8	7.0	R3000	Green	74	#30 Drk Brown
126	1117.6	8.9	LB20	48.2	6.5	6.6	R3000	Green	75	#29 Blue w/brn
127	1126.2	8.6	LB20	48.2	6.6	6.6	R3000	Green	76	#29 Blue w/brn
128	1134.8	8.6	LB20	48.2	6.7	6.6	R3000	Green	77	#29 Blue w/brn
1				48.1	6.9	7.0	R3000	Green	78	#30 Drk Brown
1				48.1	6.7	6.6	R3000	Green	79	#29 Blue w/brn
1				48.0	7.1	7.0	R3000	Green	80	#30 Drk Brown
1	132			48.0	7.0	7.0	R3000	Green	81	#30 Drk Brown
1				48.0	6.9	7.0	R3000	Green	82	#30 Drk Brown
1	140.2			48.0	6.9	7.0	R3000	Green	83	#30 Drk Brown
1				48.0	7.0	7.0	R3000	Green	84	#30 Drk Brown
1				48.0	7.4	7.4	R3000	Green	85	#31 Brwn w/orng
1				47.9	7.4	7.4	R3000	Green	86	#31 Brwn w/orng
1				47.9	7.5	7.4	R3000	Green	87	#31 Brwn w/orng
139	1230.8	8.9	LB20	47.9	7.6	7.4	R3000	Green	88	#31 Brwn w/orng
140	1239.7	8.9	LB20	47.8	8.2	8.0	R3000	Green	89	#32 Orange

1245.2 TOWER NO. 7 INLINE PRESSURE: 46.7 psi

1				47.8	7.7	7.9	R3000	Green	90	#32 Orange
1				48.1	6.2	6.2	R3000	Green	91	#28 Blue
1				48.1	6.0	6.2	R3000	Green	92	#28 Blue
1	32.6			48.3	5.0	4.9	R3000	Green	93	#25 Red w/white
1				47.9	7.6	7.4	R3000	Green	94	#31 Brwn w/orng

---OUTLET---			-REG- PSI		---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
1279.1 44.8 80.3 82.5 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphram) PRESSURE LOSS: 1.7 psi

SYSTEM INLINE END PRESSURE: 46.6 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.0

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
-x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

94 MOUNTING ASSEMBLIES:	First outlet=	4,	Last outlet=	145
MEMORY DROP, MxM			Poly02	(Length= 54.00 in)
GOOSENECK, SCH.40, MXFEMALE		1191880		
DROP, POLY PRO, MXM	<Vari>	1349310		(Length= 54.00 in)
COUPLER, PVC, 3/4", NPT *		1173186		
Standard Tee		1000-001		(as needed)
Standard Regulator		1000-002		(as needed)

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.3	6.9	11.4	16.0	20.5	25.1	29.6	23.4
GPM REQ.	12.4	33.5	55.2	76.2	95.8	119.4	140.7	112.6
GPM DEL.	15.3	32.9	55.1	76.3	95.7	119.4	140.1	115.0
% DEV.	24%	-2%	-0%	0%	-0%	-0%	-0%	2%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In	x	Out	ID
R3000G	Rotator	Green	1- 94	AD26	LB20	LO	20	F	x	ST	7628

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service CUSTOMER: Riverside Colony
 Cavour, SD NW28

SYSTEM MANUFACTURER: LINDSAY END GUN RADIUS: 90.3 ft
 TOTAL PIPE LENGTH: 1279.1 FT IRRIGATED AREA: 135.2 acre
 TOTAL SYSTEM FLOW: 650.0 gpm

Motor Speed: 1740 RPM Center Drive Speed: 43 RPM
 Center Gear Ratio: 40:1 Wheel Gear Ratio: 50:1
 Nominal Tire Size: 11 x 24.5 Loaded Tire Radius: 21.5 in

Last Tower Ground Speed at 100% Timer Setting: 9.8 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.14	100.0	9.79	13.31
0.16	90.0	8.81	14.79
0.18	80.0	7.84	16.64
0.20	70.0	6.86	19.02
0.22	65.0	6.37	20.48
0.24	60.0	5.88	22.19
0.26	55.0	5.39	24.21
0.28	50.0	4.90	26.63
0.31	45.0	4.41	29.59
0.35	40.0	3.92	33.28
0.40	35.0	3.43	38.04
0.47	30.0	2.94	44.38
0.57	25.0	2.45	53.26
0.71	20.0	1.96	66.57
0.94	15.0	1.47	88.76
1.18	12.0	1.18	110.95
1.57	9.0	0.88	147.93
2.36	6.0	0.59	221.90
4.71	3.0	0.29	443.80

The above data are intended only as a guide and should be

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
0606384	38	38	NIPPLE, PIPE, 3/4"XCLOSE, GALV.
11-2858-6	7	7	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2860-2	1	1	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	1	1	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	2	2	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2864-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #20, TRQUOISE
11-2865-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #21, TRQ/YEL
11-2866-9	1	1	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	1	1	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	1	1	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	5	5	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	3	3	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	11	11	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	10	10	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	8	8	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2874-3	14	14	NOZZLE, NEL, PLASTIC, 3TN, #30, DK BROWN
11-2875-0	8	8	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	4	4	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-2877-6	1	1	NOZZLE, NEL, PLASTIC, 3TN, #33, ORN/DGR
11-2878-4	4	4	NOZZLE, NEL, PLASTIC, 3TN, #34, DK GREEN
11-2879-2	3	3	NOZZLE, NEL, PLASTIC, 3TN, #35, DGR/PUR
11-2880-0	3	3	NOZZLE, NEL, PLASTIC, 3TN, #36, PURPLE
11-2881-8	1	1	NOZZLE, NEL, PLASTIC, 3TN, #37, PRPL/BLK
11-3020-2	94	94	REGULATOR, NEL, BT-LF-ST, 20 PSI
1603601	94	94	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	0	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NW28

PIVOT PRESSURE: 53.9 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1279.1 FT

Notes

Drop lengths are nominal - Variation in manufacturing and installation may occur.
Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance 92 in; Height to pipe at tower 146 in
Data source file LINDSAY; selection 'Solid Drops at Truss'

Length Summary

Length: Quantity

48: 5
54: 26
60: 9
66: 9
72: 45
Total Length = 502 ft

MOUNTING ASSEMBLIES:

Model Sprinkler Plate

a= MEMORY DROP, MxM
GOOSENECK, SCH.40, MXFEMALE
DROP, POLY PRO, MXM Vari Len
COUPLER, PVC, 3/4", NPT *
Standard Tee
Standard Regulator

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

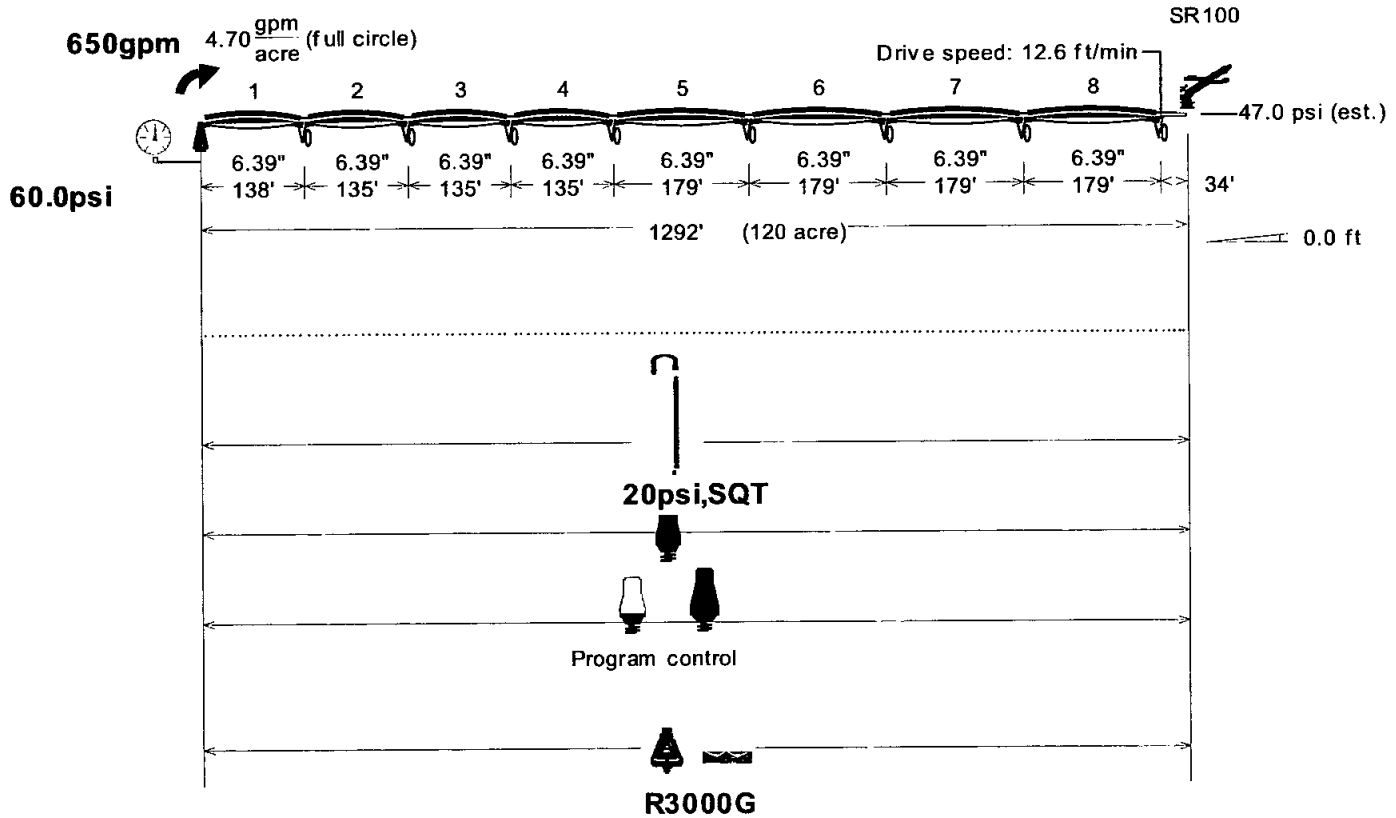
Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg
TOWER NO. 0, ID= 6.40				TOWER NO. 2, ID= 6.40				TOWER NO. 4, ID= 6.40				TOWER NO. 6, ID= 6.40			
1				1				1				1	54	70 #30	
2				2	54	20 #25		2	54	40 #35		2	54	71 #29	
3				3				3				3	54	72 #30	
4	60a	1A #14	LB20	4	60	21 #25		4	60	41 #35		4	60	73 #29	
5				5				5				5	66	74 #30	
6	72	2 #14		6	72	22 #25		6	72	42 #34		6	72	75 #29	
7				7				7				7	72	76 #29	
8	72	3 #14		8	72	23 #25		8	72	43 #34		8	72	77 #29	
9				9				9				9	72	78 #30	
10	72	4 #14		10	72	24 #26		10	72	44 #35		10	72	79 #29	
11				11				11				11	72	80 #30	
12	72	5 #14		12	72	25 #26		12	72	45 #36		12	72	81 #30	
13				13				13				13	72	82 #30	
14	72	6 #14		14	72	26 #27		14	72	46 #36		14	72	83 #30	
15				15				15				15	72	84 #30	
16	66	7 #14		16	66	27 #28		16	66	47 #36		16	66	85 #31	
17				17				17				17	60	86 #31	
18	54	8 #16		18	54	28 #28		18	54	48 #37		18	54	87 #31	
19				19				19				19	54	88 #31	
20	54	9 #17		20	54	29 #30		20	54	49 #34		20	54	89 #32	
TOWER NO. 1, ID= 6.40				TOWER NO. 3, ID= 6.40				TOWER NO. 5, ID= 6.40				TOWER NO. 7, ID= 5.37 OVERHANG			
1				1				1	54	50 #28		1	48	90 #32	
2	54	10 #17		2	54	30 #30		2	54	51 #26		2	48	91 #28	
3				3				3	54	52 #27		3	48	92 #28	
4	60	11 #18		4	60	31 #30		4	60	53 #27		4	48	93 #25	
5				5				5	66	54 #27		5	48	94 #31	
6	72	12 #19		6	72	32 #30		6	72	55 #27		END GUN TYPE:SR100 .65"			
7				7				7	72	56 #27					
8	72	13 #19		8	72	33 #30		8	72	57 #27					
9				9				9	72	58 #27					
10	72	14 #20		10	72	34 #31		10	72	59 #27					
11				11				11	72	60 #28					
12	72	15 #20		12	72	35 #31		12	72	61 #27					
13				13				13	72	62 #27					
14	72	16 #21		14	72	36 #32		14	72	63 #28					
15				15				15	72	64 #28					
16	66	17 #22		16	66	37 #32		16	66	65 #28					
17				17				17	60	66 #29					
18	54	18 #23		18	54	38 #33		18	54	67 #28					
19				19				19	54	68 #29					

Kevin's Pivot Service

AX638
03 Sep 2015

Kevin's Pivot Service
Cavour, SD

Riverside Colony
SW 28



NOZZLE SELECTION VERIFICATION									
SPAN #	1	2	3	4	5	6	7	8	OH+EG
ACRE	1.4	4.0	6.6	9.3	16.3	20.9	25.6	30.2	23.7
GPM REQ.	6.9	20.0	29.0	44.8	72.0	97.4	122.3	140.8	111.3
GPM DEL.	9.4	19.8	29.1	45.2	72.9	96.7	121.9	140.7	114.4
% DEV.	37%	-1%	0%	1%	1%	-1%	-0%	-0%	3%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX638
DATE: 03 Sep 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SW 28

NUMBER OF TOWERS:	8	NOZZLE FILES:	R3000G
PIVOT PRESSURE:	53.9 psi	FRICTION C-FACTOR:	140
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE:	4.7
TOTAL PIPE LENGTH:	1292.5 FT	COVERAGE WITHOUT GUN:	1295.5 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS:	90.5 ft

SYSTEM MANUFACTURER: LINDSAY

			FT	PIPE ID
1	135G2-65 SPAN	1,	137.7,	6.39 in
3	135G2-65 SPANS	2- 4,	135.0,	6.39 in
4	179G2-65 SPANS	5- 8,	179.0,	6.39 in
1	33-OH-90 OVERHANG,		33.9,	5.37 in

The manufacturer cannot be responsible for the performance of the system and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE and does hereby disclaim any liability for damages due to failure of the system.

LMCchart 2.40

-----OUTLET-----	-REG-	PSI	--- <th>---SPRINKLER---</th> <th>--- </th>	---SPRINKLER---	---
No Loc Sep Model RegIn Req Del Model Plate SpNo.					
-x-				PLUG 3	
4 35.2	35.2*	LB20	55.6	0.7 1.6 R3000 Green	1 #14 Lime
5 43.5				PLUG	
6 53.2	18.0*	LB20	55.4	0.9 1.6 R3000 Green	2 #14 Lime
7 61.5				PLUG	
8 70.3	17.2*	LB20	55.3	1.1 1.6 R3000 Green	3 #14 Lime
9 79.2				PLUG	
10 87.5	17.2*	LB20	55.1	1.3 1.6 R3000 Green	4 #14 Lime
11 97.2				PLUG	
12 105.4	17.9*	LB20	55.0	1.4 1.6 R3000 Green	5 #14 Lime
13 114.3				PLUG	
14 123.2	17.8*	LB20	54.8	1.6 1.6 R3000 Green	6 #14 Lime
15 131.5				PLUG	
137.7	TOWER NO. 1			INLINE PRESSURE: 52.7 psi	
16 144.2	21.0*	LB20	54.6	1.9 1.8 R3000 Green	7 #15 Lime w/lav
17 152.4				PLUG	
18 161.3	17.2*	LB20	54.4	1.9 1.8 R3000 Green	8 #15 Lime w/lav
19 170.2				PLUG	
20 178.5	17.2	LB20	54.3	2.2 2.1 R3000 Green	9 #16 Lavender
21 188.2				PLUG	
22 196.4	17.9	LB20	54.1	2.4 2.3 R3000 Green	10 #17 Lvndr w/gra
23 205.3				PLUG	
24 214.2	17.8	LB20	53.9	2.6 2.6 R3000 Green	11 #18 Gray
25 222.5				PLUG	
26 232.2	17.9	LB20	53.8	2.8 2.9 R3000 Green	12 #19 Gray w/trqu
27 240.4				PLUG	
28 249.3	17.2	LB20	53.6	2.8 2.9 R3000 Green	13 #19 Gray w/trqu
29 258.2				PLUG	
30 266.5	17.2	LB20	53.4	3.4 3.4 R3000 Green	14 #21 Trqu w/yllw
272.7	TOWER NO. 2			INLINE PRESSURE: 51.6 psi	
31 279.2				PLUG	
32 287.5	21.0	LB20	53.2	3.7 3.8 R3000 Green	15 #22 Yellow
33 296.3				PLUG	
34 305.2	17.8	LB20	53.1	3.5 3.4 R3000 Green	16 #21 Trqu w/yllw
35 313.5				PLUG	
36 323.2	18.0	LB20	52.9	3.9 3.8 R3000 Green	17 #22 Yellow
37 331.5				PLUG	
38 340.3	17.2	LB20	52.7	4.0 4.1 R3000 Green	18 #23 Yllw w/red
39 349.2				PLUG	
40 357.5	17.2	LB20	52.6	4.2 4.1 R3000 Green	19 #23 Yllw w/red
41 367.2				PLUG	
42 375.5	18.0	LB20	52.4	4.5 4.5 R3000 Green	20 #24 Red
43 384.3				PLUG	
44 393.2	17.8	LB20	52.2	5.1 5.3 R3000 Green	21 #26 White
45 401.5				PLUG	
407.7	TOWER NO. 3			INLINE PRESSURE: 50.5 psi	
46 414.2	21.0	LB20	52.0	5.1 5.3 R3000 Green	22 #26 White
47 422.5				PLUG	
48 431.3	17.2	LB20	51.9	4.8 4.9 R3000 Green	23 #25 Red w/white

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER----		---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.	
49	440.2						PLUG			
50	448.5	17.2	LB20	51.7	5.2	5.3	R3000	Green	24	#26 White
51	458.2						PLUG			
52	466.5	18.0	LB20	51.6	5.5	5.7	R3000	Green	25	#27 White w/blu
53	475.3						PLUG			
54	484.2	17.8	LB20	51.4	5.7	5.7	R3000	Green	26	#27 White w/blu
55	492.5						PLUG			
56	502.2	18.0	LB20	51.2	5.9	6.2	R3000	Green	27	#28 Blue
57	510.5						PLUG			
58	519.3	17.2	LB20	51.2	5.8	5.7	R3000	Green	28	#27 White w/blu
59	528.2						PLUG			
60	536.5	17.2	LB20	50.9	6.7	6.6	R3000	Green	29	#29 Blue w/brn

542.7 TOWER NO. 4 INLINE PRESSURE: 49.5 psi

61	546.9						PLUG			
62	555.5	19.0	LB20	50.7	6.8	7.0	R3000	Green	30	#30 Drk Brown
63	564.0						PLUG			
64	572.5	17.0	LB20	50.8	6.3	6.2	R3000	Green	31	#28 Blue
65	581.0						PLUG			
66	589.5	17.0	LB20	50.5	6.9	7.0	R3000	Green	32	#30 Drk Brown
67	598.0						PLUG			
68	606.6	17.0	LB20	50.4	6.9	7.0	R3000	Green	33	#30 Drk Brown
69	615.1						PLUG			
70	623.6	17.0	LB20	50.3	7.0	7.0	R3000	Green	34	#30 Drk Brown
71	632.1						PLUG			
72	640.7	17.0	LB20	50.1	7.3	7.4	R3000	Green	35	#31 Brwn w/orng
73	649.2						PLUG			
74	657.7	17.0	LB20	50.0	7.4	7.4	R3000	Green	36	#31 Brwn w/orng
75	666.2						PLUG			
76	674.7	17.0	LB20	49.8	7.7	8.0	R3000	Green	37	#32 Orange
77	683.3						PLUG			
78	691.8	17.0	LB20	49.7	7.7	8.0	R3000	Green	38	#32 Orange
79	700.3						PLUG			
80	708.8	17.0	LB20	49.7	7.9	8.0	R3000	Green	39	#32 Orange
81	717.3						PLUG			

721.7 TOWER NO. 5 INLINE PRESSURE: 48.4 psi

82	725.9	17.1	LB20	49.9	6.2	6.2	R3000	Green	40	#28 Blue
83	734.5	8.5	LB20	50.1	4.2	4.1	R3000	Green	41	#23 Yllw w/red
84	743.0	8.5	LB20	50.0	4.4	4.5	R3000	Green	42	#24 Red
85	751.5	8.5	LB20	50.0	4.2	4.1	R3000	Green	43	#23 Yllw w/red
86	760.0	8.5	LB20	49.9	4.4	4.5	R3000	Green	44	#24 Red
87	768.5	8.5	LB20	49.9	4.3	4.1	R3000	Green	45	#23 Yllw w/red
88	777.0	8.5	LB20	49.8	4.6	4.5	R3000	Green	46	#24 Red
89	785.6	8.5	LB20	49.8	4.5	4.5	R3000	Green	47	#24 Red
90	794.1	8.5	LB20	49.8	4.6	4.5	R3000	Green	48	#24 Red
91	802.6	8.5	LB20	49.7	4.6	4.5	R3000	Green	49	#24 Red
92	811.1	8.5	LB20	49.6	4.7	4.9	R3000	Green	50	#25 Red w/white
93	819.7	8.5	LB20	49.6	4.6	4.5	R3000	Green	51	#24 Red
94	828.2	8.5	LB20	49.6	4.8	4.9	R3000	Green	52	#25 Red w/white
95	836.7	8.5	LB20	49.6	4.7	4.5	R3000	Green	53	#24 Red
96	845.2	8.5	LB20	49.5	5.0	4.9	R3000	Green	54	#25 Red w/white
97	853.7	8.5	LB20	49.5	5.0	4.9	R3000	Green	55	#25 Red w/white

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
98	862.3	8.5	LB20	49.4	5.0	4.9	R3000	Green	56	#25	Red w/white
99	870.8	8.5	LB20	49.3	5.1	5.3	R3000	Green	57	#26	White
100	879.3	8.5	LB20	49.4	4.9	4.9	R3000	Green	58	#25	Red w/white
101	887.8	8.5	LB20	49.0	7.7	7.4	R3000	Green	59	#31	Brwn w/orng
102	896.3						PLUG				

900.7 TOWER NO. 6

INLINE PRESSURE: 47.7 psi

103	904.9	17.1	LB20	48.8	8.0	8.0	R3000	Green	60	#32	Orange
104	913.5	8.5	LB20	49.2	5.3	5.3	R3000	Green	61	#26	White
105	922.0	8.5	LB20	49.2	5.3	5.3	R3000	Green	62	#26	White
106	930.5	8.5	LB20	49.2	5.3	5.3	R3000	Green	63	#26	White
107	939.0	8.5	LB20	49.1	5.4	5.3	R3000	Green	64	#26	White
108	947.5	8.5	LB20	49.0	5.5	5.7	R3000	Green	65	#27	White w/blu
109	956.0	8.5	LB20	49.1	5.3	5.3	R3000	Green	66	#26	White
110	964.6	8.5	LB20	49.0	5.6	5.7	R3000	Green	67	#27	White w/blu
111	973.1	8.5	LB20	49.0	5.5	5.3	R3000	Green	68	#26	White
112	981.6	8.5	LB20	49.0	5.8	5.7	R3000	Green	69	#27	White w/blu
113	990.1	8.5	LB20	48.9	5.8	5.7	R3000	Green	70	#27	White w/blu
114	998.7	8.5	LB20	48.9	5.8	5.7	R3000	Green	71	#27	White w/blu
115	1007.2	8.5	LB20	48.8	5.9	6.2	R3000	Green	72	#28	Blue
116	1015.7	8.5	LB20	48.9	5.6	5.7	R3000	Green	73	#27	White w/blu
117	1024.2	8.5	LB20	48.9	5.8	5.7	R3000	Green	74	#27	White w/blu
118	1032.7	8.5	LB20	48.8	6.1	6.2	R3000	Green	75	#28	Blue
119	1041.3	8.5	LB20	48.8	5.9	5.7	R3000	Green	76	#27	White w/blu
120	1049.8	8.5	LB20	48.7	6.2	6.2	R3000	Green	77	#28	Blue
121	1058.3	8.5	LB20	48.7	6.1	6.2	R3000	Green	78	#28	Blue
122	1066.8	8.5	LB20	48.7	6.1	6.2	R3000	Green	79	#28	Blue
123	1075.3	8.5	LB20	48.7	6.1	6.2	R3000	Green	80	#28	Blue

1079.7 TOWER NO. 7

INLINE PRESSURE: 47.2 psi

124	1083.9	8.6	LB20	48.7	6.2	6.2	R3000	Green	81	#28	Blue
125	1092.4	8.5	LB20	48.7	6.3	6.2	R3000	Green	82	#28	Blue
126	1101.0	8.5	LB20	48.6	6.4	6.6	R3000	Green	83	#29	Blue w/brn
127	1109.5	8.5	LB20	48.6	6.2	6.2	R3000	Green	84	#28	Blue
128	1118.0	8.5	LB20	48.6	6.4	6.6	R3000	Green	85	#29	Blue w/brn
129	1126.5	8.5	LB20	48.6	6.3	6.2	R3000	Green	86	#28	Blue
130	1135.1	8.5	LB20	48.5	6.7	6.6	R3000	Green	87	#29	Blue w/brn
131	1143.6	8.5	LB20	48.5	6.7	6.6	R3000	Green	88	#29	Blue w/brn
132	1152.1	8.5	LB20	48.5	6.7	6.6	R3000	Green	89	#29	Blue w/brn
133	1160.6	8.5	LB20	48.5	6.8	6.6	R3000	Green	90	#29	Blue w/brn
134	1169.1	8.5	LB20	48.4	6.9	7.0	R3000	Green	91	#30	Drk Brown
135	1177.7	8.5	LB20	48.5	6.6	6.6	R3000	Green	92	#29	Blue w/brn
136	1186.2	8.5	LB20	48.4	6.8	7.0	R3000	Green	93	#30	Drk Brown
137	1194.7	8.5	LB20	48.5	6.7	6.6	R3000	Green	94	#29	Blue w/brn
138	1203.2	8.5	LB20	48.4	7.0	7.0	R3000	Green	95	#30	Drk Brown
139	1211.7	8.5	LB20	48.4	6.9	7.0	R3000	Green	96	#30	Drk Brown
140	1220.3	8.5	LB20	48.4	6.9	7.0	R3000	Green	97	#30	Drk Brown
141	1228.8	8.5	LB20	48.4	6.9	7.0	R3000	Green	98	#30	Drk Brown
142	1237.3	8.5	LB20	48.4	7.0	7.0	R3000	Green	99	#30	Drk Brown
143	1245.8	8.5	LB20	48.4	7.1	7.0	R3000	Green	100	#30	Drk Brown
144	1254.3	8.5	LB20	48.3	7.3	7.4	R3000	Green	101	#31	Brwn w/orng

----OUTLET---- -REG- PSI ---GPM--- ----SPRINKLER----- ---NOZZLE---
 No Loc Sep Model RegIn Req Del Model Plate SpNo.

1258.7 TOWER NO. 8 INLINE PRESSURE: 47.0 psi

145	1263.0	8.7	LB20	48.4	6.8	7.0	R3000	Green	102	#30 Drk Brown
146	1270.5	7.5	LB20	48.5	6.1	6.2	R3000	Green	103	#28 Blue
147	1277.9	7.3	LB20	48.6	5.9	5.7	R3000	Green	104	#27 White w/blu
148	1284.3	6.4	LB20	48.6	5.3	5.3	R3000	Green	105	#26 White
149	1289.8	5.5	LB20	48.3	7.4	7.4	R3000	Green	106	#31 Brwn w/orng

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
 1292.5 45.2 79.7 82.8 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphragm) PRESSURE LOSS: 1.7 psi

SYSTEM INLINE END PRESSURE: 47.0 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.1

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
 -x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

106 MOUNTING ASSEMBLIES: First outlet= 4, Last outlet= 149
 MEMORY DROP, MxM Poly02 (Length= 54.00 in)
 GOOSENECK, SCH.40, MXFEMALE 1191880
 DROP, POLY PRO, MXM <Vari> 1349310 (Length= 54.00 in)
 COUPLER, PVC, 3/4", NPT * 1173186
 Standard Tee 1000-001 (as needed)
 Standard Regulator 1000-002 (as needed)

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	8	OH+EG
ACRE	1.4	4.0	6.6	9.3	16.3	20.9	25.6	30.2	23.7
GPM REQ.	6.9	20.0	29.0	44.8	72.0	97.4	122.3	140.8	111.3
GPM DEL.	9.4	19.8	29.1	45.2	72.9	96.7	121.9	140.7	114.4
% DEV.	37%	-1%	0%	1%	1%	-1%	-0%	-0%	3%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

=====

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out	ID
R3000G	Rotator	Green	1-106	AD26	LB20	LO	20	F x ST	7628

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SW 28

SYSTEM MANUFACTURER:	LINDSAY	END GUN RADIUS:	90.5 ft
TOTAL PIPE LENGTH:	1292.5 FT	IRRIGATED AREA:	138.0 acre
TOTAL SYSTEM FLOW:	650.1 gpm		
Motor Speed:	1740 RPM	Center Drive Speed:	43 RPM
Center Gear Ratio:	40:1	Wheel Gear Ratio:	50:1
Nominal Tire Size:	11.2 x 38	Loaded Tire Radius:	27.7 in

Last Tower Ground Speed at 100% Timer Setting: 12.6 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.11	100.0	12.62	10.44
0.12	90.0	11.36	11.60
0.14	80.0	10.10	13.06
0.16	70.0	8.83	14.92
0.17	65.0	8.20	16.07
0.18	60.0	7.57	17.41
0.20	55.0	6.94	18.99
0.22	50.0	6.31	20.89
0.24	45.0	5.68	23.21
0.27	40.0	5.05	26.11
0.31	35.0	4.42	29.84
0.36	30.0	3.79	34.81
0.44	25.0	3.15	41.78
0.54	20.0	2.52	52.22
0.73	15.0	1.89	69.63
0.91	12.0	1.51	87.04
1.21	9.0	1.14	116.05
1.81	6.0	0.76	174.07
3.63	3.0	0.38	348.14

The above data are intended only as a guide and should be

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
0606384	84	84	NIPPLE, PIPE, 3/4"XCLOSE, GALV.
11-2858-6	6	6	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2859-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #15, LIM/LAV
11-2860-2	1	1	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	1	1	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	1	1	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	2	2	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2865-1	2	2	NOZZLE, NEL, PLASTIC, 3TN, #21, TRQ/YEL
11-2866-9	2	2	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	5	5	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	9	9	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	7	7	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	11	11	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	12	12	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	14	14	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	9	9	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2874-3	13	13	NOZZLE, NEL, PLASTIC, 3TN, #30, DK BROWN
11-2875-0	5	5	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	4	4	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-3020-2	106	106	REGULATOR, NEL, BT-LF-ST, 20 PSI
1603601	106	106	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	0	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SW 28

PIVOT PRESSURE: 53.9 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1292.5 FT

Notes

Drop lengths are nominal - Variation in manufacturing and installation may occur.
Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance 92 in; Height to pipe at tower 146 in
Data source file LINDSAY; selection 'Solid Drops at Truss'

Length Summary

Length: Quantity

48: 5
54: 32
60: 11
66: 11
72: 45
Total Length = 550 ft

MOUNTING ASSEMBLIES:

a= MEMORY DROP, MxM
GOOSENECK, SCH.40, MXFEMALE
DROP, POLY PRO, MXM Vari Len
COUPLER, PVC, 3/4", NPT *
Standard Tee
Standard Regulator

Model Sprinkler Plate

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg
					9					19					17	60		76	#27
TOWER NO. 0, ID= 6.39					10	72		19	#23	20	54		39	#32	18	54		77	#28
1					11					21					19	54		78	#28
2					12	60		20	#24						20	54		79	#28
3					13					TOWER NO. 5, ID= 6.39					21			80	#28
4	60a	1A	#14	LB20	14	54		21	#26	1	54		40	#28					
5					15					2	54		41	#23	TOWER NO. 7, ID= 6.39				
6	72	2	#14							3	54		42	#24	1	54		81	#28
7					TOWER NO. 3, ID= 6.39					4	60		43	#23	2	54		82	#28
8	72	3	#14		1	54		22	#26	5	66		44	#24	3	54		83	#29
9					2					6	72		45	#23	4	60		84	#28
10	72	4	#14		3	54		23	#25	7	72		46	#24	5	66		85	#29
11					4					8	72		47	#24	6	72		86	#28
12	60	5	#14		5	66		24	#26	9	72		48	#24	7	72		87	#29
13					6					10	72		49	#24	8	72		88	#29
14	54	6	#14		7	72		25	#27	11	72		50	#25	9	72		89	#29
15					8					12	72		51	#24	10	72		90	#29
TOWER NO. 1, ID= 6.39					9	72		26	#27	13	72		52	#25	11	72		91	#30
1	54	7	#15		10					14	72		53	#24	12	72		92	#29
2					11	66		27	#28	15	72		54	#25	13	72		93	#30
3	54	8	#15		12					16	66		55	#25	14	72		94	#29
4					13	54		28	#27	17	60		56	#25	15	72		95	#30
5	66	9	#16		14					18	54		57	#26	16	66		96	#30
6					15	54		29	#29	19	54		58	#25	17	60		97	#30
7	72	10	#17		TOWER NO. 4, ID= 6.39					20	54		59	#31	18	54		98	#30
8					1					21					19	54		99	#30
9	72	11	#18		2	54		30	#30	TOWER NO. 6, ID= 6.39					20	54		100	#30
10					3					1	54		60	#32	21			101	#31
11	66	12	#19		4	60		31	#28	2	54		61	#26	TOWER NO. 8, ID= 5.37 OVERHANG				
12					5					3	54		62	#26	1	48		102	#30
13	54	13	#19		6	72		32	#30	4	60		63	#26	2	48		103	#28
14					7					5	66		64	#26	3	48		104	#27
15	54	14	#21		8	72		33	#30	6	72		65	#27	4	48		105	#26
TOWER NO. 2, ID= 6.39					9					7	72		66	#26	5	48		106	#31
1					10	72		34	#30	8	72		67	#27					
2	54	15	#22		11					9	72		68	#26					
3					12	72		35	#31	10	72		69	#27					
4	60	16	#21		13					11	72		70	#27					
5					14	72		36	#31	12	72		71	#27					
6	72	17	#22		15					13	72		72	#28					
7					16	66		37	#32	14	72		73	#27					
8	72	18	#23		17					15	72		74	#27					
					18	54		38	#32	16	66		75	#28					

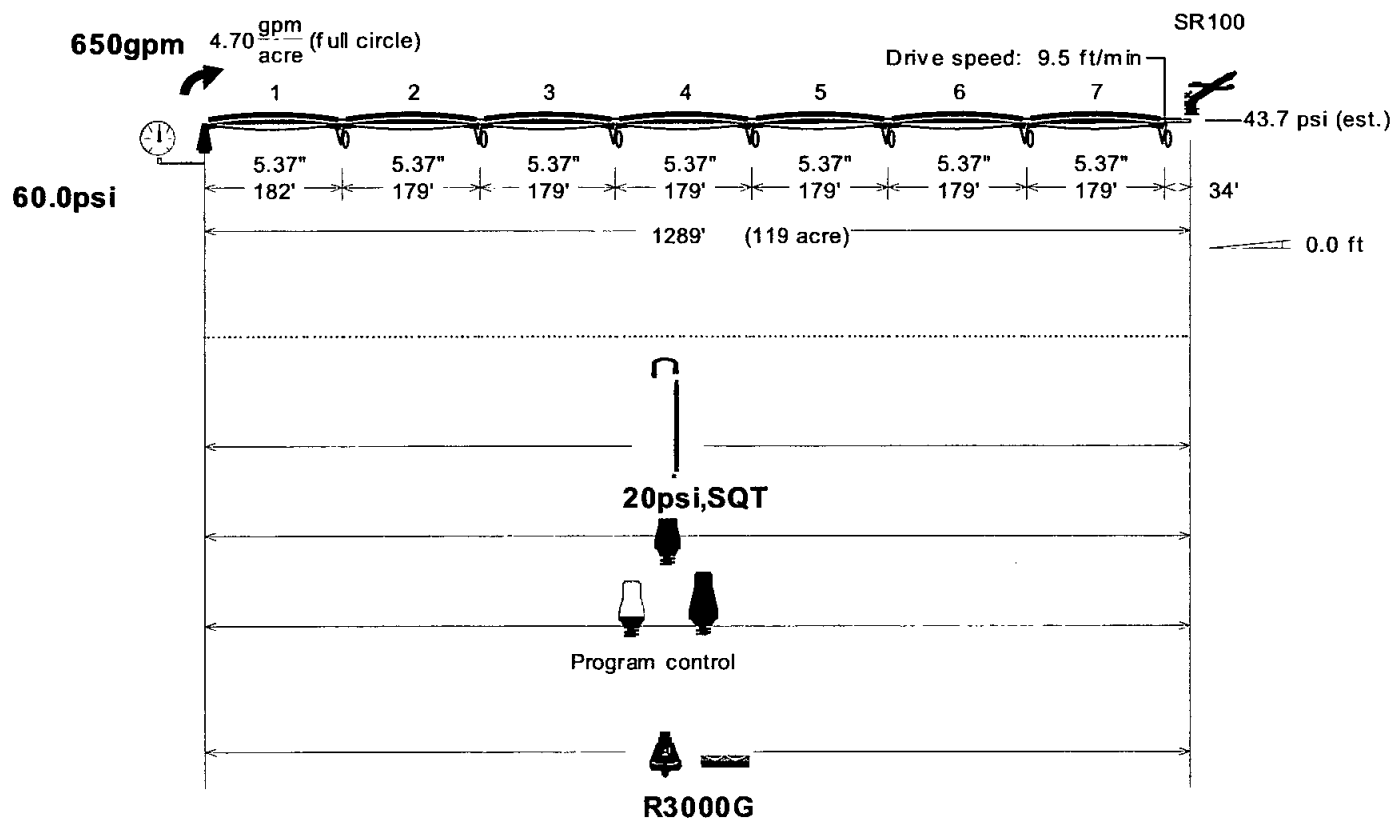
END GUN TYPE:SR100 .65"

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PROGRAM

Kevin's Pivot Service

AX637
03 Sep 2015Kevin's Pivot Service
Cavour, SDRiverside Colony
NW 21

NOZZLE SELECTION VERIFICATION								
SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.4	7.0	11.6	16.2	20.9	25.5	30.1	23.3
GPM REQ.	12.5	32.7	54.1	76.2	98.2	120.6	138.6	110.3
GPM DEL.	17.7	33.3	54.9	76.7	97.9	120.0	137.9	111.5
% DEV.	42%	2%	2%	1%	-0%	-1%	-0%	1%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

DATA FILE IDENTIFICATION									
File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out	ID
R3000G	Rotator	Green	1- 89	AD26	LB20	LO	20	F x ST	7628
PC-R3000	PartCirc	PC	** **	6D59	HB20	HI	20	F x ST	748B

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX637
DATE: 03 Sep 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NW 21

NUMBER OF TOWERS:	7	NOZZLE FILES: R3000G, PC-R3000
PIVOT PRESSURE:	59.8 psi	FRICTION C-FACTOR: 140
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE: 4.7
TOTAL PIPE LENGTH:	1289.5 FT	COVERAGE WITHOUT GUN: 1292.5 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS: 88.6 ft

SYSTEM MANUFACTURER: LMCSIXOL

			FT	PIPE ID
1	1796G259	SPAN 1,	181.7,	5.37 in
6	1796G259	SPANS 2- 7,	179.0,	5.37 in
1	OH-33-59	OVERHANG,	33.9,	5.37 in

The manufacturer cannot be responsible for the performance of the system and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE and does hereby disclaim any liability for damages due to failure of the system.

LMCchart 2.40

----OUTLET----			REG-	PSI	---GPM---		----SPRINKLER----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		

-x-							PLUG 4				
5	30.0	30.0*	LB20	61.1	0.5	1.6	R3000	Green	1	#14	Lime
6	37.3						PLUG				
7	44.8	14.8*	LB20	60.8	0.6	1.6	R3000	Green	2	#14	Lime
8	51.8						PLUG				
9	59.3	14.5*	LB20	60.5	0.8	1.6	R3000	Green	3	#14	Lime
10	66.7						PLUG				
11	74.0	14.7*	LB20	60.1	0.9	1.6	R3000	Green	4	#14	Lime
12	81.3						PLUG				
13	88.8	14.8*	LB20	59.8	1.0	1.6	R3000	Green	5	#14	Lime
14	95.8						PLUG				
15	103.3	14.5*	LB20	59.5	1.1	1.6	R3000	Green	6	#14	Lime
16	110.7						PLUG				
17	118.0	14.7*	LB20	59.2	1.2	1.6	R3000	Green	7	#14	Lime
18	125.3						PLUG				
19	132.8	14.8*	LB20	58.9	1.3	1.6	R3000	Green	8	#14	Lime
20	139.8						PLUG				
21	147.3	14.5*	LB20	58.6	1.4	1.6	R3000	Green	9	#14	Lime
22	154.6						PLUG				
23	162.0	14.7*	LB20	58.3	1.6	1.6	R3000	Green	10	#14	Lime
24	169.3						PLUG				
25	176.8	14.8	LB20	58.0	1.9	2.1	R3000	Green	11	#16	Lavender

181.7 TOWER NO. 1 INLINE PRESSURE: 56.0 psi

-x-							PLUG 2				
28	194.3	17.5	LB20	57.6	2.0	2.1	R3000	Green	12	#16	Lavender
29	201.6						PLUG				
30	209.0	14.7	LB20	57.3	2.1	2.1	R3000	Green	13	#16	Lavender
31	216.3						PLUG				
32	223.8	14.8	LB20	57.0	2.2	2.3	R3000	Green	14	#17	Lvndr w/gra
33	230.8						PLUG				
34	238.3	14.5	LB20	56.7	2.3	2.3	R3000	Green	15	#17	Lvndr w/gra
35	245.6						PLUG				
36	253.0	14.7	LB20	56.4	2.5	2.6	R3000	Green	16	#18	Gray
37	260.3						PLUG				
38	267.8	14.8	LB20	56.1	2.6	2.6	R3000	Green	17	#18	Gray
39	274.8						PLUG				
40	282.3	14.5	LB20	55.8	2.8	2.9	R3000	Green	18	#19	Gray w/trqu
41	289.6						PLUG				
42	297.0	14.7	LB20	55.5	2.9	2.9	R3000	Green	19	#19	Gray w/trqu
43	304.3						PLUG				
44	311.8	14.8	LB20	55.2	3.1	3.2	R3000	Green	20	#20	Turquoise
45	318.8						PLUG				
46	326.3	14.5	LB20	54.9	3.1	3.2	R3000	Green	21	#20	Turquoise
47	333.6						PLUG				
48	341.0	14.7	LB20	54.6	3.3	3.4	R3000	Green	22	#21	Trqu w/yllw
49	348.3						PLUG				
50	355.8	14.8	LB20	54.3	3.8	3.8	R3000	Green	23	#22	Yellow

360.7 TOWER NO. 2 INLINE PRESSURE: 52.4 psi

-x-							PLUG 2				
53	373.3	17.5	LB20	53.9	4.0	4.1	R3000	Green	24	#23	Yllw w/red
54	380.6						PLUG				

---OUTLET---			---REG---	PSI	---GPM---		---SPRINKLER---			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
55	388.0	14.7	LB20	53.7	3.8	3.8	R3000	Green	25	#22	Yellow
56	395.3						PLUG				
57	402.8	14.8	LB20	53.4	4.0	4.1	R3000	Green	26	#23	Yllw w/red
58	409.8						PLUG				
59	417.3	14.5	LB20	53.1	4.0	4.1	R3000	Green	27	#23	Yllw w/red
60	424.6						PLUG				
61	432.0	14.7	LB20	52.9	4.2	4.1	R3000	Green	28	#23	Yllw w/red
62	439.3						PLUG				
63	446.8	14.8	LB20	52.5	4.5	4.5	R3000	Green	29	#24	Red
64	453.8						PLUG				
65	461.3	14.5	LB20	52.3	4.5	4.5	R3000	Green	30	#24	Red
66	468.6						PLUG				
67	476.0	14.7	LB20	52.0	4.7	4.9	R3000	Green	31	#25	Red w/white
68	483.3						PLUG				
69	490.8	14.8	LB20	51.8	4.7	4.9	R3000	Green	32	#25	Red w/white
70	497.8						PLUG				
71	505.3	14.5	LB20	51.5	4.8	4.9	R3000	Green	33	#25	Red w/white
72	512.7						PLUG				
73	520.0	14.7	LB20	51.2	5.1	5.3	R3000	Green	34	#26	White
74	527.3						PLUG				
75	534.8	14.8	LB20	51.0	5.7	5.7	R3000	Green	35	#27	White w/blu

539.7 TOWER NO. 3 INLINE PRESSURE: 49.3 psi

-x-	552.3	17.5	LB20	50.6	6.0	6.2	PLUG 2					
78	552.3	17.5	LB20	50.6	6.0	6.2	R3000	Green	36	#28	Blue	
79	559.7						PLUG					
80	567.0	14.7	LB20	50.5	5.5	5.7	R3000	Green	37	#27	White w/blu	
81	574.3						PLUG					
82	581.8	14.8	LB20	50.2	5.6	5.7	R3000	Green	38	#27	White w/blu	
83	588.8						PLUG					
84	596.3	14.5	LB20	50.0	5.8	5.7	R3000	Green	39	#27	White w/blu	
85	603.7						PLUG					
86	611.0	14.7	LB20	49.7	6.2	6.2	R3000	Green	40	#28	Blue	
87	618.3						PLUG					
88	625.8	14.8	LB20	49.5	6.3	6.2	R3000	Green	41	#28	Blue	
89	632.8						PLUG					
90	640.3	14.5	LB20	49.3	6.4	6.6	R3000	Green	42	#29	Blue w/brn	
91	647.7						PLUG					
92	655.0	14.7	LB20	49.1	6.4	6.6	R3000	Green	43	#29	Blue w/brn	
93	662.3						PLUG					
94	669.8	14.8	LB20	48.9	6.5	6.6	R3000	Green	44	#29	Blue w/brn	
95	676.8						PLUG					
96	684.3	14.5	LB20	48.7	6.6	6.6	R3000	Green	45	#29	Blue w/brn	
97	691.7						PLUG					
98	699.0	14.7	LB20	48.4	7.0	7.0	R3000	Green	46	#30	Drk Brown	
99	706.3						PLUG					
100	713.8	14.8	LB20	48.1	7.8	8.0	R3000	Green	47	#32	Orange	

718.7 TOWER NO. 4 INLINE PRESSURE: 46.8 psi

-x-							PLUG 2					
103	731.3	17.5	LB20	47.9	7.8	7.9	R3000	Green	48	#32	Orange	
104	738.7						PLUG					
105	746.0	14.7	LB20	47.8	7.3	7.4	R3000	Green	49	#31	Brwn w/orng	

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
106	753.3						PLUG				
107	760.8	14.8	LB20	47.6	7.4	7.4	R3000	Green	50	#31	Brwn w/orng
108	767.8						PLUG				
109	775.3	14.5	LB20	47.5	7.6	7.4	R3000	Green	51	#31	Brwn w/orng
110	782.7						PLUG				
111	790.0	14.7	LB20	47.2	8.1	7.9	R3000	Green	52	#32	Orange
112	797.3						PLUG				
113	804.8	14.8	LB20	47.1	8.1	7.9	R3000	Green	53	#32	Orange
114	811.8						PLUG				
115	819.3	14.5	LB20	46.8	8.2	8.5	R3000	Green	54	#33	Ornge w/grn
116	826.7						PLUG				
117	834.0	14.7	LB20	46.8	8.1	7.9	R3000	Green	55	#32	Orange
118	841.3						PLUG				
119	848.8	14.8	LB20	46.6	8.5	8.5	R3000	Green	56	#33	Ornge w/grn
120	855.8						PLUG				
121	863.3	14.5	LB20	46.4	8.6	8.5	R3000	Green	57	#33	Ornge w/grn
122	870.7						PLUG				
123	878.0	14.7	LB20	46.2	8.9	9.0	R3000	Green	58	#34	Drk Green
124	885.3						PLUG				
125	892.8	14.8	LB20	46.0	9.6	9.5	R3000	Green	59	#35	Green w/prp

897.7 TOWER NO. 5 INLINE PRESSURE: 45.1 psi

-x-							PLUG 2				
128	910.3	17.5	LB20	45.8	10.1	9.9	R3000	Green	60	#36	Purple
129	917.7						PLUG				
130	925.0	14.7	LB20	45.8	9.3	9.5	R3000	Green	61	#35	Green w/prp
131	932.3						PLUG				
132	939.8	14.8	LB20	45.8	9.2	9.0	R3000	Green	62	#34	Drk Green
133	946.8						PLUG				
134	954.3	14.5	LB20	45.5	9.6	9.5	R3000	Green	63	#35	Green w/prp
135	961.7						PLUG				
136	969.0	14.7	LB20	45.3	9.8	9.9	R3000	Green	64	#36	Purple
137	976.3						PLUG				
138	983.8	14.8	LB20	45.4	9.6	9.5	R3000	Green	65	#35	Green w/prp
139	990.8						PLUG				
140	998.3	14.5	LB20	45.2	10.0	9.9	R3000	Green	66	#36	Purple
141	1005.7						PLUG				
142	1013.0	14.7	LB20	45.1	10.1	9.9	R3000	Green	67	#36	Purple
143	1020.3						PLUG				
144	1027.8	14.8	LB20	44.9	10.4	10.6	R3000	Green	68	#37	Prpl w/blk
145	1034.8						PLUG				
146	1042.3	14.5	LB20	45.0	10.1	9.9	R3000	Green	69	#36	Purple
147	1049.7						PLUG				
148	1057.0	14.7	LB20	44.7	10.7	10.6	R3000	Green	70	#37	Prpl w/blk
149	1064.3						PLUG				
150	1071.8	14.8	LB20	44.4	11.8	11.8	R3000	Green	71	#39	Black w/trq

1076.7 TOWER NO. 6 INLINE PRESSURE: 44.1 psi

-x-							PLUG 2				
153	1089.3	17.5	LB20	44.3	11.8	11.8	R3000	Green	72	#39	Black w/trq
154	1096.7						PLUG				
155	1104.0	14.7	LB20	44.4	11.0	11.2	R3000	Green	73	#38	Black
156	1111.3						PLUG				

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
157	1118.8	14.8	LB20	44.5	10.9	10.6	R3000	Green	74	#37	Prpl w/blck
158	1125.8						PLUG				
159	1133.3	14.5	LB20	44.3	11.4	11.2	R3000	Green	75	#38	Black
160	1140.7						PLUG				
161	1148.0	14.7	LB20	44.1	11.7	11.8	R3000	Green	76	#39	Black w/trq
162	1155.3						PLUG				
163	1162.8	14.8	LB20	44.3	11.4	11.2	R3000	Green	77	#38	Black
164	1169.8						PLUG				
165	1177.3	14.5	LB20	44.1	11.8	11.8	R3000	Green	78	#39	Black w/trq
166	1184.7						PLUG				
167	1192.0	14.7	LB20	44.0	11.9	11.8	R3000	Green	79	#39	Black w/trq
168	1199.3						PLUG				
169	1206.8	14.8	LB20	44.0	12.0	11.8	R3000	Green	80	#39	Black w/trq
170	1213.8						PLUG				
171	1221.3	14.5	HB20	43.8	12.3	12.4	R3000	Green	81	#40	DrkTurquese
172	1228.7						PLUG				
173	1236.0	14.7	HB20	44.7	9.0	9.0	R3000	Green	82	#34	Drk Green
174	1243.3	7.3	HB20	45.2	6.2	6.2	R3000	Green	83	#28	Blue
175	1250.8	7.5	HB20	45.0	7.1	7.1	R3000	Green	84	#30	Drk Brown

1255.7 TOWER NO. 7 INLINE PRESSURE: 43.7 psi

176	1260.0	9.2	HB20	45.0	7.1	7.1	R3000	Green	85	#30	Drk Brown
177	1267.5	7.5	HB20	45.1	6.3	6.2	R3000	Green	86	#28	Blue
178	1274.9	7.3	LB20	45.2	6.0	6.1	R3000	Green	87	#28	Blue
179	1281.3	6.4	LB20	45.3	5.0	4.9	R3000	Green	88	#25	Red w/white
180	1286.8	5.5	LB20	44.9	7.5	7.4	R3000	Green	89	#31	Brwn w/orng

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
 1289.5 41.8 78.2 79.8 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphragm) PRESSURE LOSS: 1.6 psi

SYSTEM INLINE END PRESSURE: 43.7 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.1

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
 -x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

89 MOUNTING ASSEMBLIES:	First outlet=	5,	Last outlet=	180
MEMORY DROP, MxM		Poly02	(Length=	54.00 in)
GOOSENECK, SCH.40, MXFEMALE		1191880		
DROP, POLY PRO, MXM	<Vari>	1349310	(Length=	54.00 in)
COUPLER, PVC, 3/4", NPT *		1173186		
Standard Tee		1000-001	(as needed)	
Standard Regulator		1000-002	(as needed)	

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.4	7.0	11.6	16.2	20.9	25.5	30.1	23.3
GPM REQ.	12.5	32.7	54.1	76.2	98.2	120.6	138.6	110.3
GPM DEL.	17.7	33.3	54.9	76.7	97.9	120.0	137.9	111.5
% DEV.	42%	2%	2%	1%	-0%	-1%	-0%	1%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out	ID
R3000G	Rotator	Green	1- 89	AD26	LB20	LO	20	F x ST	7628
PC-R3000	PartCirc	PC	** **	6D59	HB20	HI	20	F x ST	748B

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NW 21

SYSTEM MANUFACTURER: LMCSIXOL END GUN RADIUS: 88.6 ft
TOTAL PIPE LENGTH: 1289.5 FT IRRIGATED AREA: 137.0 acre
TOTAL SYSTEM FLOW: 650.1 gpm

Motor Speed: 1740 RPM Center Drive Speed: 43 RPM
Center Gear Ratio: 40:1 Wheel Gear Ratio: 50:1
Nominal Tire Size: 11 x 24.5 Loaded Tire Radius: 20.8 in

Last Tower Ground Speed at 100% Timer Setting: 9.5 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.15	100.0	9.48	13.87
0.16	90.0	8.53	15.41
0.18	80.0	7.58	17.34
0.21	70.0	6.64	19.82
0.22	65.0	6.16	21.34
0.24	60.0	5.69	23.12
0.26	55.0	5.21	25.22
0.29	50.0	4.74	27.74
0.32	45.0	4.27	30.82
0.36	40.0	3.79	34.68
0.42	35.0	3.32	39.63
0.48	30.0	2.84	46.24
0.58	25.0	2.37	55.48
0.73	20.0	1.90	69.35
0.97	15.0	1.42	92.47
1.21	12.0	1.14	115.59
1.62	9.0	0.85	154.12
2.42	6.0	0.57	231.18
4.85	3.0	0.28	462.35

The above data are intended only as a guide and should be

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
11-2858-6	10	10	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2860-2	3	3	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	2	2	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	2	2	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2864-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #20, TRQUOISE
11-2865-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #21, TRQ/YEL
11-2866-9	2	2	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	4	4	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	2	2	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	4	4	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	4	4	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	6	6	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	4	4	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2874-3	3	3	NOZZLE, NEL, PLASTIC, 3TN, #30, DK BROWN
11-2875-0	4	4	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	5	5	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-2877-6	3	3	NOZZLE, NEL, PLASTIC, 3TN, #33, ORN/DGR
11-2878-4	3	3	NOZZLE, NEL, PLASTIC, 3TN, #34, DK GREEN
11-2879-2	4	4	NOZZLE, NEL, PLASTIC, 3TN, #35, DGR/PUR
11-2880-0	5	5	NOZZLE, NEL, PLASTIC, 3TN, #36, PURPLE
11-2881-8	3	3	NOZZLE, NEL, PLASTIC, 3TN, #37, PRPL/BLK
11-2882-6	3	3	NOZZLE, NEL, PLASTIC, 3TN, #38, BLACK
11-2883-4	1	1	NOZZLE, NEL, PLASTIC, 3TN, #40, DK TRQU
11-3020-2	83	83	REGULATOR, NEL, BT-LF-ST, 20 PSI
11-3470-9	6	6	REGULATOR, NEL, BT-HF-ST, 20 PSI
11-9173-0	6	6	NOZZLE, NEL, PLASTIC, 3TN, #39, BLK/TRQ
1191880	3	3	GOOSENECK, SCH.40, MXFEMALE
1603601	89	89	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	1	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NW 21

PIVOT PRESSURE: 59.8 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1289.5 FT

Notes

Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance: 92 in; Height to pipe at towers: 146 in
Based on arch of representative spans

Length Summary

Total Length = 498 ft

MOUNTING ASSEMBLIES:

a= MEMORY DROP, MxM
GOOSENECK, SCH.40, MXFEMALE
DROP, POLY PRO, MXM Vari Len
COUPLER, PVC, 3/4", NPT *
Standard Tee
Standard Regulator

Model Sprinkler Plate

A= R3000G Rotator Green
B= PC-R3000 PartCirc PC

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST
HB20 HI 20 F x ST

Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg
TOWER NO. 0, ID= 5.37				15	78	18 #19		5	63	37 #27		21	66	57 #33	
1				16				6				22			
2				17	76	19 #19		7	69	38 #27		23	59	58 #34	
3				18				8				24			
4				19	72	20 #20		9	74	39 #27		25	50	59 #35	
5	64a	1A #14	LB20	20				10				TOWER NO. 5, ID= 5.37			
6				21	66	21 #20		11	77	40 #28		1			
7	71	2 #14		22				12				2			
8				23	59	22 #21		13	78	41 #28		3	55	60 #36	
9	75	3 #14		24				14				4			
10				25	50	23 #22		15	78	42 #29		5	63	61 #35	
11	78	4 #14		TOWER NO. 2, ID= 5.37				16				6			
12				1				17	76	43 #29		7	69	62 #34	
13	79	5 #14		2				18				8			
14				3	55	24 #23		19	72	44 #29		9	74	63 #35	
15	78	6 #14		4				20				10			
16				5	63	25 #22		21	66	45 #29		11	77	64 #36	
17	76	7 #14		6				22				12			
18				7	69	26 #23		23	59	46 #30		13	78	65 #35	
19	72	8 #14		8				24				14			
20				9	74	27 #23		25	50	47 #32		15	78	66 #36	
21	66	9 #14		10				TOWER NO. 4, ID= 5.37				16			
22				11	77	28 #23		1				17	76	67 #36	
23	59	10 #14		12				2				18			
24				13	78	29 #24		3	55	48 #32		19	72	68 #37	
25	50	11 #16		14				4				20			
TOWER NO. 1, ID= 5.37				15	78	30 #24		5	63	49 #31		21	66	69 #36	
1				16				6				22			
2				17	76	31 #25		7	69	50 #31		23	59	70 #37	
3	55	12 #16		18				8				24			
4				19	72	32 #25		9	74	51 #31		25	50	71 #39	
5	63	13 #16		20				10				TOWER NO. 6, ID= 5.37			
6				21	66	33 #25		11	77	52 #32		1			
7	69	14 #17		22				12				2			
8				23	59	34 #26		13	78	53 #32		3	55	72 #39	
9	74	15 #17		24				14				4			
10				25	50	35 #27		15	78	54 #33		5	63	73 #38	
11	77	16 #18		TOWER NO. 3, ID= 5.37				16				6			
12				1				17	76	55 #32		7	69	74 #37	
13	78	17 #18		2				18				8			
14				3	55	36 #28		19	72	56 #33		9	74	75 #38	
				4				20				10			

MOUNTING ASSEMBLIES:

a= MEMORY DROP, MxM

Model Sprinkler Plate

A= R3000G Rotator Green
B= PC-R3000 PartCirc PC

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST
HB20 HI 20 F x ST

Out No.	Var-Len	Spr Noz No. Size	Reg
11	77a	76 #39	LB20
12			
13	78	77 #38	
14			
15	78	78 #39	
16			
17	76	79 #39	
18			
19	72	80 #39	
20			
21	66	81 #40	HB20
22			
23	59	82 #34	
24	55	83 #28	
25	50	84 #30	
TOWER NO. 7, ID= 5.37 OVERHANG			
1	48	85 #30	
2	48	86 #28	
3	48	87 #28	LB20
4	48	88 #25	
5	48	89 #31	
END GUN TYPE:SR100 .65"			

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SEP 29 2015

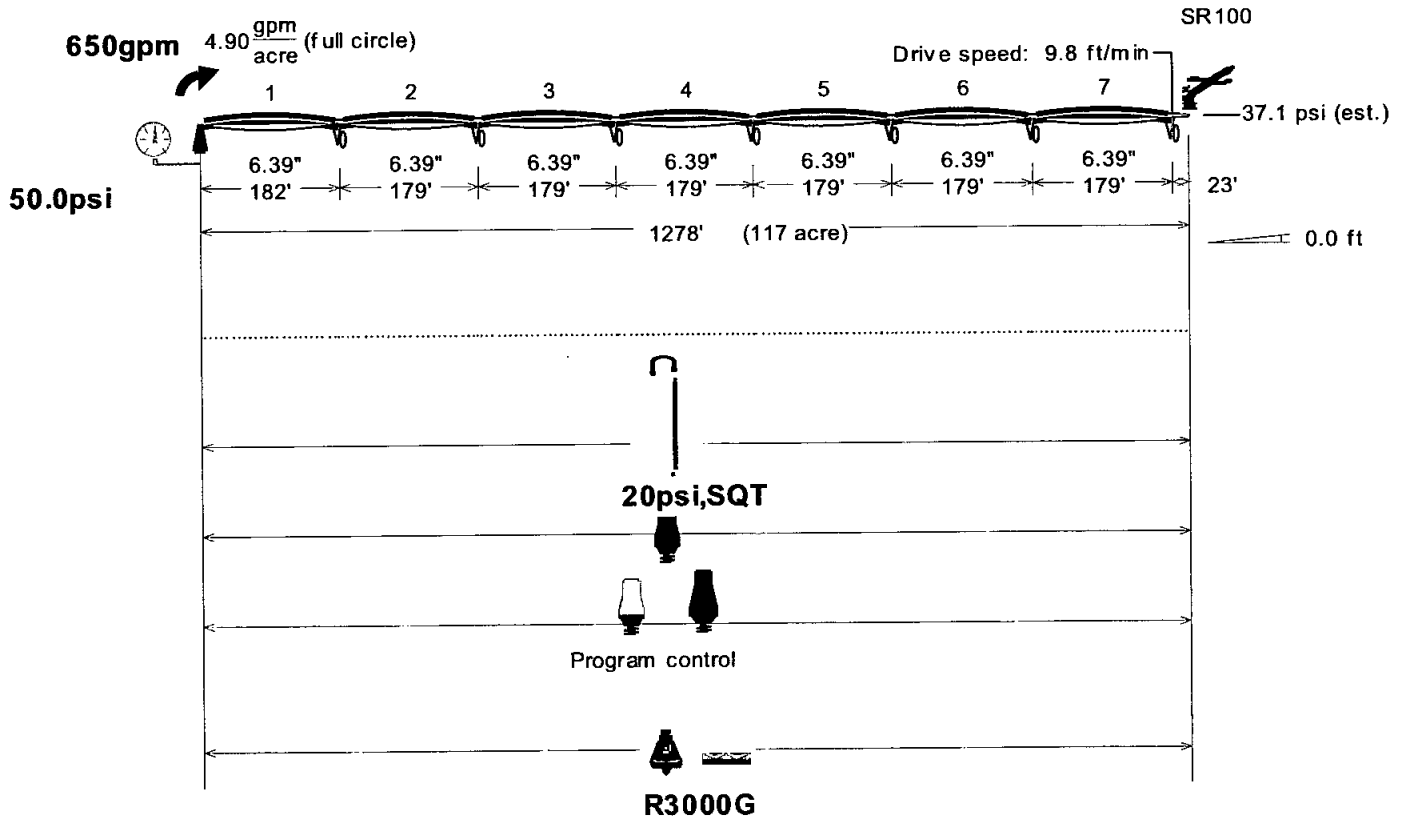
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PROGRAM

Kevin's Pivot Service

AX439
23 May 2015

Kevin's Pivot Service
Cavour, SD

Riverside Colony
NE28



===== NOZZLE SELECTION VERIFICATION =====								
SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.4	7.0	11.6	16.2	20.9	25.5	30.1	20.4
GPM REQ.	12.0	33.0	55.3	77.0	99.8	121.7	146.0	98.9
GPM DEL.	17.4	33.2	55.7	77.5	99.7	122.1	147.4	97.1
% DEV.	45%	1%	1%	1%	-0%	0%	1%	-2%
A high deviation in span 1 is unavoidable due to nozzle size limitations.								

===== DATA FILE IDENTIFICATION =====								
File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out ID
R3000G	Rotator	Green	1- 98	AD26	LB20	LO	20	F x ST 7628

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX439
DATE: 23 May 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NE28

NUMBER OF TOWERS:	7	NOZZLE FILES:	R3000G
PIVOT PRESSURE:	43.9 psi	FRICTION C-FACTOR:	140
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE:	4.9
TOTAL PIPE LENGTH:	1278.5 FT	COVERAGE WITHOUT GUN:	1281.5 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS:	85.0 ft

SYSTEM MANUFACTURER: LINDSAY

		FT	PIPE ID
1	1799G265 SPAN 1,	181.6,	6.39 in
6	1799G265 SPANS 2- 7,	179.0,	6.39 in
1	22-OH-90 OVERHANG,	22.9,	5.37 in

The manufacturer cannot be responsible for the performance of the system and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE and does hereby disclaim any liability for damages due to failure of the system.

LMCchart 2.40

-----OUTLET-----			-REG-	PSI	---GPM---		----SPRINKLER----		---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.	
-x-							PLUG 3			
4	22.6	22.6*	LB20	45.7	0.4	1.6	R3000	Green	1	#14 Lime
5	29.9						PLUG			
6	37.3	14.7*	LB20	45.5	0.6	1.6	R3000	Green	2	#14 Lime
7	44.8						PLUG			
8	51.8	14.5*	LB20	45.4	0.7	1.6	R3000	Green	3	#14 Lime
9	59.3						PLUG			
10	66.6	14.8*	LB20	45.2	0.9	1.6	R3000	Green	4	#14 Lime
11	73.9						PLUG			
12	81.3	14.7*	LB20	45.1	1.0	1.6	R3000	Green	5	#14 Lime
13	88.8						PLUG			
14	95.8	14.5*	LB20	45.0	1.1	1.6	R3000	Green	6	#14 Lime
15	103.3						PLUG			
16	110.6	14.8*	LB20	44.8	1.2	1.6	R3000	Green	7	#14 Lime
17	117.9						PLUG			
18	125.3	14.7*	LB20	44.7	1.3	1.6	R3000	Green	8	#14 Lime
19	132.8						PLUG			
20	139.8	14.5*	LB20	44.6	1.4	1.6	R3000	Green	9	#14 Lime
21	147.3						PLUG			
22	154.6	14.8*	LB20	44.5	1.5	1.6	R3000	Green	10	#14 Lime
23	161.9						PLUG			
24	169.3	14.7*	LB20	44.3	1.9	1.8	R3000	Green	11	#15 Lime w/lav
25	176.8						PLUG			
	181.6	TOWER NO. 1					INLINE PRESSURE:	42.3 psi		
26	182.6						PLUG			
27	186.8	17.5	LB20	44.1	2.1	2.1	R3000	Green	12	#16 Lavender
28	194.3						PLUG			
29	201.6	14.8	LB20	44.0	2.1	2.1	R3000	Green	13	#16 Lavender
30	208.9						PLUG			
31	216.3	14.7	LB20	43.9	2.3	2.3	R3000	Green	14	#17 Lvndr w/gra
32	223.8						PLUG			
33	230.8	14.5	LB20	43.8	2.3	2.3	R3000	Green	15	#17 Lvndr w/gra
34	238.3						PLUG			
35	245.6	14.8	LB20	43.6	2.5	2.6	R3000	Green	16	#18 Gray
36	252.9						PLUG			
37	260.3	14.7	LB20	43.5	2.6	2.6	R3000	Green	17	#18 Gray
38	267.8						PLUG			
39	274.8	14.5	LB20	43.3	2.8	2.9	R3000	Green	18	#19 Gray w/trqu
40	282.3						PLUG			
41	289.6	14.8	LB20	43.2	2.9	2.9	R3000	Green	19	#19 Gray w/trqu
42	296.9						PLUG			
43	304.3	14.7	LB20	43.1	3.1	3.2	R3000	Green	20	#20 Turquoise
44	311.8						PLUG			
45	318.8	14.5	LB20	42.9	3.2	3.2	R3000	Green	21	#20 Turquoise
46	326.3						PLUG			
47	333.6	14.8	LB20	42.8	3.4	3.4	R3000	Green	22	#21 Trqu w/yllw
48	340.9						PLUG			
49	348.3	14.7	LB20	42.7	3.8	3.8	R3000	Green	23	#22 Yellow
50	355.8						PLUG			
	360.6	TOWER NO. 2					INLINE PRESSURE:	40.8 psi		
51	361.6						PLUG			

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
52	365.8	17.5	LB20	42.5	4.1	4.1	R3000	Green	24	#23	Yllw w/red
53	373.3						PLUG				
54	380.6	14.8	LB20	42.4	3.9	3.8	R3000	Green	25	#22	Yellow
55	387.9						PLUG				
56	395.3	14.7	LB20	42.3	4.1	4.1	R3000	Green	26	#23	Yllw w/red
57	402.8						PLUG				
58	409.8	14.5	LB20	42.1	4.2	4.1	R3000	Green	27	#23	Yllw w/red
59	417.3						PLUG				
60	424.6	14.8	LB20	42.0	4.4	4.5	R3000	Green	28	#24	Red
61	431.9						PLUG				
62	439.3	14.7	LB20	41.9	4.3	4.5	R3000	Green	29	#24	Red
63	446.8						PLUG				
64	453.8	14.5	LB20	41.8	4.5	4.5	R3000	Green	30	#24	Red
65	461.3						PLUG				
66	468.6	14.8	LB20	41.6	4.8	4.9	R3000	Green	31	#25	Red w/white
67	475.9						PLUG				
68	483.3	14.7	LB20	41.5	4.8	4.9	R3000	Green	32	#25	Red w/white
69	490.8						PLUG				
70	497.8	14.5	LB20	41.4	5.0	4.9	R3000	Green	33	#25	Red w/white
71	505.3						PLUG				
72	512.6	14.8	LB20	41.3	5.3	5.3	R3000	Green	34	#26	White
73	519.9						PLUG				
74	527.3	14.7	LB20	41.0	5.9	6.1	R3000	Green	35	#28	Blue
75	534.8						PLUG				

539.6 TOWER NO. 3 INLINE PRESSURE: 39.5 psi

76	540.6						PLUG				
77	544.8	17.5	LB20	40.9	5.9	6.1	R3000	Green	36	#28	Blue
78	552.3						PLUG				
79	559.6	14.8	LB20	40.9	5.5	5.7	R3000	Green	37	#27	White w/blu
80	566.9						PLUG				
81	574.3	14.7	LB20	40.8	5.7	5.7	R3000	Green	38	#27	White w/blu
82	581.8						PLUG				
83	588.8	14.5	LB20	40.6	6.0	6.1	R3000	Green	39	#28	Blue
84	596.3						PLUG				
85	603.6	14.8	LB20	40.5	6.1	6.1	R3000	Green	40	#28	Blue
86	610.9						PLUG				
87	618.3	14.7	LB20	40.5	6.2	6.1	R3000	Green	41	#28	Blue
88	625.8						PLUG				
89	632.8	14.5	LB20	40.3	6.4	6.6	R3000	Green	42	#29	Blue w/brn
90	640.3						PLUG				
91	647.6	14.8	LB20	40.2	6.5	6.6	R3000	Green	43	#29	Blue w/brn
92	654.9						PLUG				
93	662.3	14.7	LB20	40.2	6.7	6.6	R3000	Green	44	#29	Blue w/brn
94	669.8						PLUG				
95	676.8	14.5	LB20	40.0	7.0	7.0	R3000	Green	45	#30	Drk Brown
96	684.3						PLUG				
97	691.6	14.8	LB20	39.9	7.1	7.0	R3000	Green	46	#30	Drk Brown
98	698.9						PLUG				
99	706.3	14.7	LB20	39.7	7.9	7.9	R3000	Green	47	#32	Orange
100	713.8						PLUG				

718.6 TOWER NO. 4 INLINE PRESSURE: 38.4 psi

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
101	719.6						PLUG				
102	723.8	17.5	LB20	39.6	8.1	7.9	R3000	Green	48	#32	Orange
103	731.3						PLUG				
104	738.6	14.8	LB20	39.5	7.7	7.9	R3000	Green	49	#32	Orange
105	745.9						PLUG				
106	753.3	14.7	LB20	39.5	7.4	7.4	R3000	Green	50	#31	Brwn w/orng
107	760.8						PLUG				
108	767.8	14.5	LB20	39.4	7.8	7.9	R3000	Green	51	#32	Orange
109	775.3						PLUG				
110	782.6	14.8	LB20	39.3	7.9	7.9	R3000	Green	52	#32	Orange
111	789.9						PLUG				
112	797.3	14.7	LB20	39.3	8.0	7.9	R3000	Green	53	#32	Orange
113	804.8						PLUG				
114	811.8	14.5	LB20	39.1	8.3	8.4	R3000	Green	54	#33	Ornge w/grn
115	819.3						PLUG				
116	826.6	14.8	LB20	39.0	8.3	8.4	R3000	Green	55	#33	Ornge w/grn
117	833.9						PLUG				
118	841.3	14.7	LB20	39.0	8.4	8.4	R3000	Green	56	#33	Ornge w/grn
119	848.8						PLUG				
120	855.8	14.5	LB20	38.9	8.7	8.4	R3000	Green	57	#33	Ornge w/grn
121	863.3						PLUG				
122	870.6	14.8	LB20	38.8	9.1	9.0	R3000	Green	58	#34	Drk Green
123	877.9						PLUG				
124	885.3	14.7	LB20	38.5	10.0	9.9	R3000	Green	59	#36	Purple
125	892.8						PLUG				

897.6 TOWER NO. 5 INLINE PRESSURE: 37.7 psi

126	898.6						PLUG				
127	902.8	17.5	LB20	38.3	10.2	10.6	R3000	Green	60	#37	Prpl w/blk
128	910.3						PLUG				
129	917.6	14.8	LB20	38.6	9.1	9.0	R3000	Green	61	#34	Drk Green
130	924.9						PLUG				
131	932.3	14.7	LB20	38.5	9.5	9.4	R3000	Green	62	#35	Green w/prp
132	939.8						PLUG				
133	946.8	14.5	LB20	38.3	9.7	9.9	R3000	Green	63	#36	Purple
134	954.3						PLUG				
135	961.6	14.8	LB20	38.4	9.7	9.4	R3000	Green	64	#35	Green w/prp
136	968.9						PLUG				
137	976.3	14.7	LB20	38.3	10.1	9.9	R3000	Green	65	#36	Purple
138	983.8						PLUG				
139	990.8	14.5	LB20	38.1	10.3	10.6	R3000	Green	66	#37	Prpl w/blk
140	998.3						PLUG				
141	1005.6	14.8	LB20	38.2	10.0	9.9	R3000	Green	67	#36	Purple
142	1012.9						PLUG				
143	1020.3	14.7	LB20	38.0	10.4	10.6	R3000	Green	68	#37	Prpl w/blk
144	1027.8						PLUG				
145	1034.8	14.5	LB20	38.0	10.4	10.6	R3000	Green	69	#37	Prpl w/blk
146	1042.3						PLUG				
147	1049.6	14.8	LB20	37.9	10.5	10.6	R3000	Green	70	#37	Prpl w/blk
148	1056.9						PLUG				
149	1064.3	14.7	LB20	37.6	11.8	11.8	R3000	Green	71	#39	Black w/trq
150	1071.8						PLUG				

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----		---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.	

1076.6 TOWER NO. 6 INLINE PRESSURE: 37.3 psi

151	1077.6						PLUG			
152	1081.8	17.5	LB20	38.2	9.4	9.4	R3000	Green	72	#35 Green w/prp
153	1089.3	7.5	LB20	38.8	5.6	5.7	R3000	Green	73	#27 White w/blu
154	1096.6	7.3	LB20	38.8	5.5	5.7	R3000	Green	74	#27 White w/blu
155	1103.9	7.3	LB20	38.8	5.5	5.7	R3000	Green	75	#27 White w/blu
156	1111.3	7.3	LB20	38.8	5.6	5.7	R3000	Green	76	#27 White w/blu
157	1118.8	7.5	LB20	38.8	5.5	5.7	R3000	Green	77	#27 White w/blu
158	1125.8	7.0	LB20	38.8	5.5	5.7	R3000	Green	78	#27 White w/blu
159	1133.3	7.5	LB20	38.8	5.7	5.7	R3000	Green	79	#27 White w/blu
160	1140.6	7.3	LB20	38.8	5.8	5.7	R3000	Green	80	#27 White w/blu
161	1147.9	7.3	LB20	38.7	6.0	6.1	R3000	Green	81	#28 Blue
162	1155.3	7.3	LB20	38.8	5.8	5.7	R3000	Green	82	#27 White w/blu
163	1162.8	7.5	LB20	38.7	6.0	6.1	R3000	Green	83	#28 Blue
164	1169.8	7.0	LB20	38.7	5.7	5.7	R3000	Green	84	#27 White w/blu
165	1177.3	7.5	LB20	38.7	6.1	6.1	R3000	Green	85	#28 Blue
166	1184.6	7.3	LB20	38.7	6.0	6.1	R3000	Green	86	#28 Blue
167	1191.9	7.3	LB20	38.7	5.9	6.1	R3000	Green	87	#28 Blue
168	1199.3	7.3	LB20	38.7	6.0	6.1	R3000	Green	88	#28 Blue
169	1206.8	7.5	LB20	38.7	5.9	6.1	R3000	Green	89	#28 Blue
170	1213.8	7.0	LB20	38.7	5.9	6.1	R3000	Green	90	#28 Blue
171	1221.3	7.5	LB20	38.6	6.1	6.1	R3000	Green	91	#28 Blue
172	1228.6	7.3	LB20	38.6	6.2	6.1	R3000	Green	92	#28 Blue
173	1235.9	7.3	LB20	38.6	6.3	6.1	R3000	Green	93	#28 Blue
174	1243.3	7.3	LB20	38.6	6.6	6.5	R3000	Green	94	#29 Blue w/brn
175	1250.8	7.5	LB20	38.4	7.3	7.4	R3000	Green	95	#31 Brwn w/orng

1255.6 TOWER NO. 7 INLINE PRESSURE: 37.1 psi

176	1260.0	9.2	LB20	38.5	7.1	7.0	R3000	Green	96	#30 Drk Brown
177	1267.5	7.5	LB20	38.6	6.7	6.5	R3000	Green	97	#29 Blue w/brn
178	1274.8	7.3	LB20	38.0	9.2	9.4	R3000	Green	98	#35 Green w/prp

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
 1278.5 35.6 75.9 74.2 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphragm) PRESSURE LOSS: 1.4 psi

SYSTEM INLINE END PRESSURE: 37.1 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.3

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
 -x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

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98 MOUNTING ASSEMBLIES:      First outlet=      4,  Last outlet= 178
MEMORY DROP, MxM              Poly02              (Length=  54.00 in)
GOOSENECK, SCH.40, MXFEMALE    1191880
DROP, POLY PRO, MXM            <Vari> 1349310      (Length=  54.00 in)
COUPLER, PVC, 3/4", NPT *      1173186
Standard Tee                   1000-001          (as needed)
Standard Regulator             1000-002          (as needed)

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	ACRE	2.4	7.0	11.6	16.2	20.9	25.5	30.1	20.4
GPM REQ.		12.0	33.0	55.3	77.0	99.8	121.7	146.0	98.9
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% DEV.		45%	1%	1%	1%	-0%	0%	1%	-2%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In	x	Out	ID
R3000G	Rotator	Green	1- 98	AD26	LB20	LO	20	F	x	ST	7628

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NE28

SYSTEM MANUFACTURER: LINDSAY END GUN RADIUS: 85.0 ft
TOTAL PIPE LENGTH: 1278.5 FT IRRIGATED AREA: 134.1 acre
TOTAL SYSTEM FLOW: 650.3 gpm

Motor Speed: 1740 RPM Center Drive Speed: 43 RPM
Center Gear Ratio: 40:1 Wheel Gear Ratio: 50:1
Nominal Tire Size: 11 x 24.5 Loaded Tire Radius: 21.5 in

Last Tower Ground Speed at 100% Timer Setting: 9.8 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.14	100.0	9.79	13.43
0.16	90.0	8.81	14.92
0.18	80.0	7.84	16.78
0.21	70.0	6.86	19.18
0.22	65.0	6.37	20.65
0.24	60.0	5.88	22.38
0.26	55.0	5.39	24.41
0.29	50.0	4.90	26.85
0.32	45.0	4.41	29.83
0.36	40.0	3.92	33.56
0.41	35.0	3.43	38.36
0.48	30.0	2.94	44.75
0.58	25.0	2.45	53.70
0.72	20.0	1.96	67.13
0.96	15.0	1.47	89.50
1.20	12.0	1.18	111.88
1.60	9.0	0.88	149.17
2.40	6.0	0.59	223.75
4.80	3.0	0.29	447.51

The above data are intended only as a guide and should be

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
0606384	24	24	NIPPLE, PIPE, 3/4"XCLOSE, GALV.
11-2858-6	10	10	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2859-4	1	1	NOZZLE, NEL, PLASTIC, 3TN, #15, LIM/LAV
11-2860-2	2	2	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	2	2	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	2	2	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2864-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #20, TRQUOISE
11-2865-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #21, TRQ/YEL
11-2866-9	2	2	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	3	3	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	3	3	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	3	3	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	12	12	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	16	16	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	5	5	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2874-3	3	3	NOZZLE, NEL, PLASTIC, 3TN, #30, DK BROWN
11-2875-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	6	6	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-2877-6	4	4	NOZZLE, NEL, PLASTIC, 3TN, #33, ORN/DGR
11-2878-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #34, DK GREEN
11-2879-2	4	4	NOZZLE, NEL, PLASTIC, 3TN, #35, DGR/PUR
11-2880-0	4	4	NOZZLE, NEL, PLASTIC, 3TN, #36, PURPLE
11-2881-8	5	5	NOZZLE, NEL, PLASTIC, 3TN, #37, PRPL/BLK
11-3020-2	98	98	REGULATOR, NEL, BT-LF-ST, 20 PSI
11-9173-0	1	1	NOZZLE, NEL, PLASTIC, 3TN, #39, BLK/TRQ
1603601	98	98	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	0	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
NE28

PIVOT PRESSURE: 43.9 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1278.5 FT

Notes

Drop lengths are nominal - Variation in manufacturing and installation may occur.
Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance 92 in; Height to pipe at tower 146 in
Data source file LINDSAY; selection'Solid Drops at Truss'

Length Summary

Length: Quantity

48: 3
54: 23
60: 16
66: 8
72: 48
Total Length = 528 ft

MOUNTING ASSEMBLIES:

Model Sprinkler Plate

a= MEMORY DROP, MxM
GOOSENECK,SCH.40,MXFEMALE
DROP, POLY PRO, MXM
COUPLER,PVC,3/4",NPT *
Standard Tee
Standard Regulator

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg
TOWER NO. 0, ID= 6.39				15				5				21			
1				16	72	19 #19		6	60	38 #27		22	60	58 #34	
2				17				7				23			
3				18	72	20 #20		8	72	39 #28		24	54	59 #36	
4	54a	1A #14	LB20	19				9				25			
5				20	66	21 #20		10	72	40 #28		TOWER NO. 5, ID= 6.39			
6	60	2 #14		21				11				1			
7				22	60	22 #21		12	72	41 #28		2	54	60 #37	
8	72	3 #14		23				13				3			
9				24	54	23 #22		14	72	42 #29		4	54	61 #34	
10	72	4 #14		25				15				5			
11				TOWER NO. 2, ID= 6.39				16	72	43 #29		6	60	62 #35	
12	72	5 #14		1				17				7			
13				2	54	24 #23		18	72	44 #29		8	72	63 #36	
14	72	6 #14		3				19				9			
15				4	54	25 #22		20	66	45 #30		10	72	64 #35	
16	72	7 #14		5				21				11			
17				6	60	26 #23		22	60	46 #30		12	72	65 #36	
18	72	8 #14		7				23				13			
19				8	72	27 #23		24	54	47 #32		14	72	66 #37	
20	66	9 #14		9				25				15			
21				10	72	28 #24		TOWER NO. 4, ID= 6.39				16	72	67 #36	
22	60	10 #14		11				1				17			
23				12	72	29 #24		2	54	48 #32		18	72	68 #37	
24	54	11 #15		13				3				19			
25				14	72	30 #24		4	54	49 #32		20	66	69 #37	
TOWER NO. 1, ID= 6.39				15				5				21			
1				16	72	31 #25		6	60	50 #31		22	60	70 #37	
2	54	12 #16		17				7				23			
3				18	72	32 #25		8	72	51 #32		24	54	71 #39	
4	54	13 #16		19				9				25			
5				20	66	33 #25		10	72	52 #32		TOWER NO. 6, ID= 6.39			
6	60	14 #17		21				11				1			
7				22	60	34 #26		12	72	53 #32		2	54	72 #35	
8	72	15 #17		23				13				3	54	73 #27	
9				24	54	35 #28		14	72	54 #33		4	54	74 #27	
10	72	16 #18		25				15				5	60	75 #27	
11				TOWER NO. 3, ID= 6.39				16	72	55 #33		6	60	76 #27	
12	72	17 #18		1				17				7	66	77 #27	
13				2	54	36 #28		18	72	56 #33		8	72	78 #27	
14	72	18 #19		3				19				9	72	79 #27	
				4	54	37 #27		20	66	57 #33		10	72	80 #27	

MOUNTING ASSEMBLIES:

a= MEMORY DROP, MxM

Model Sprinkler Plate

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

Out No.	Var-Len	Spr No.	Noz Size	Reg
---------	---------	---------	----------	-----

11	72a	81	#28	LB20
12	72	82	#27	
13	72	83	#28	
14	72	84	#27	
15	72	85	#28	
16	72	86	#28	
17	72	87	#28	
18	72	88	#28	
19	72	89	#28	
20	66	90	#28	
21	60	91	#28	
22	60	92	#28	
23	54	93	#28	
24	54	94	#29	
25	54	95	#31	

TOWER NO. 7, ID= 5.37 OVERHANG

1	48	96	#30
2	48	97	#29
3	48	98	#35

END GUN TYPE:SR100 .65"

RECEIVED

SEP 29 2015

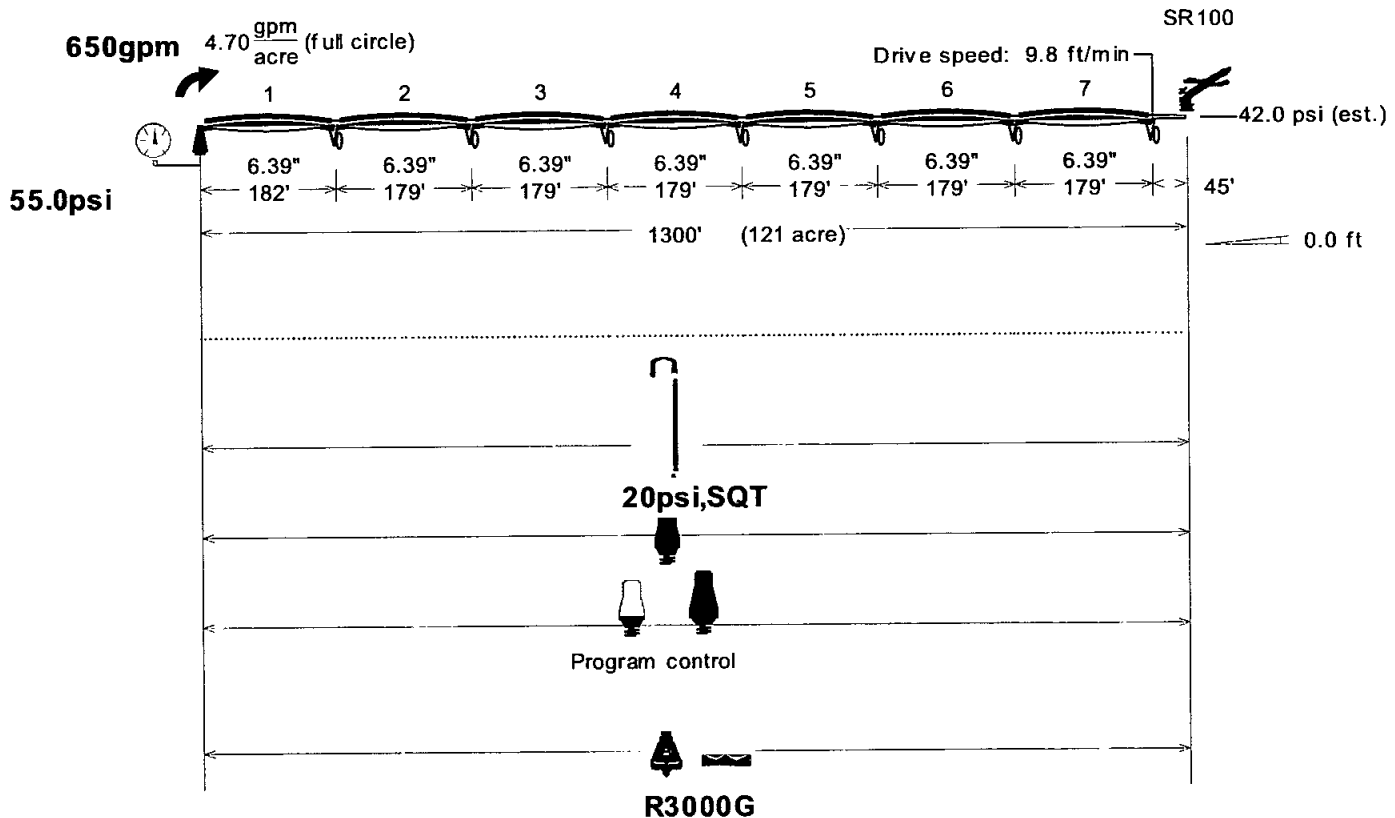
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PROGRAM

Kevin's Pivot Service

AX437A
23 May 2015

Kevin's Pivot Service
Cavour, SD

Riverside Colony
SW27



DISCLAIMER

The products manufactured by Nelson Irrigation Corporation which are specified as a part of this system design are covered by the manufacturer's printed "Warranty and Disclaimer", which applies to the individual components of its own manufacture. The manufacturer cannot be responsible for the performance of the system and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE and does hereby disclaim any liability for damages due to failure of the system to perform as anticipated.

LMCchart 2.40

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX437A
DATE: 23 May 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SW27

NUMBER OF TOWERS:	7	NOZZLE FILES:	R3000G
PIVOT PRESSURE:	48.9 psi	FRICTION C-FACTOR:	140
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE:	4.7
TOTAL PIPE LENGTH:	1300.5 FT	COVERAGE WITHOUT GUN:	1302.8 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS:	87.8 ft

SYSTEM MANUFACTURER: LINDSAY

		FT	PIPE ID
1	1799G265 SPAN 1,	181.6,	6.39 in
6	1799G265 SPANS 2- 7,	179.0,	6.39 in
1	44G2-59 OVERHANG,	44.9,	5.37 in

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LMCchart 2.40

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----		---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.	
-x-							PLUG 3			
4	22.6	22.6*	LB20	50.7	0.4	1.6	R3000	Green	1	#14 Lime
5	29.9						PLUG			
6	37.3	14.7*	LB20	50.5	0.5	1.6	R3000	Green	2	#14 Lime
7	44.8						PLUG			
8	51.8	14.5*	LB20	50.4	0.7	1.6	R3000	Green	3	#14 Lime
9	59.3						PLUG			
10	66.6	14.8*	LB20	50.2	0.9	1.6	R3000	Green	4	#14 Lime
11	73.9						PLUG			
12	81.3	14.7*	LB20	50.1	1.0	1.6	R3000	Green	5	#14 Lime
13	88.8						PLUG			
14	95.8	14.5*	LB20	50.0	1.1	1.6	R3000	Green	6	#14 Lime
15	103.3						PLUG			
16	110.6	14.8*	LB20	49.8	1.2	1.6	R3000	Green	7	#14 Lime
17	117.9						PLUG			
18	125.3	14.7*	LB20	49.7	1.2	1.6	R3000	Green	8	#14 Lime
19	132.8						PLUG			
20	139.8	14.5*	LB20	49.6	1.3	1.6	R3000	Green	9	#14 Lime
21	147.3						PLUG			
22	154.6	14.8*	LB20	49.5	1.5	1.6	R3000	Green	10	#14 Lime
23	161.9						PLUG			
24	169.3	14.7*	LB20	49.3	1.8	1.8	R3000	Green	11	#15 Lime w/lav
25	176.8						PLUG			
	181.6	TOWER NO. 1					INLINE PRESSURE:	47.3 psi		
26	182.6						PLUG			
27	186.8	17.5	LB20	49.1	2.0	2.1	R3000	Green	12	#16 Lavender
28	194.3						PLUG			
29	201.6	14.8*	LB20	49.0	1.9	1.8	R3000	Green	13	#15 Lime w/lav
30	208.9						PLUG			
31	216.3	14.7	LB20	48.9	2.2	2.1	R3000	Green	14	#16 Lavender
32	223.8						PLUG			
33	230.8	14.5	LB20	48.7	2.3	2.3	R3000	Green	15	#17 Lvndr w/gra
34	238.3						PLUG			
35	245.6	14.8	LB20	48.6	2.4	2.3	R3000	Green	16	#17 Lvndr w/gra
36	252.9						PLUG			
37	260.3	14.7	LB20	48.5	2.6	2.6	R3000	Green	17	#18 Gray
38	267.8						PLUG			
39	274.8	14.5	LB20	48.3	2.7	2.9	R3000	Green	18	#19 Gray w/trqu
40	282.3						PLUG			
41	289.6	14.8	LB20	48.2	2.8	2.9	R3000	Green	19	#19 Gray w/trqu
42	296.9						PLUG			
43	304.3	14.7	LB20	48.1	2.9	2.9	R3000	Green	20	#19 Gray w/trqu
44	311.8						PLUG			
45	318.8	14.5	LB20	47.9	3.1	3.2	R3000	Green	21	#20 Turquoise
46	326.3						PLUG			
47	333.6	14.8	LB20	47.8	3.2	3.2	R3000	Green	22	#20 Turquoise
48	340.9						PLUG			
49	348.3	14.7	LB20	47.7	3.8	3.8	R3000	Green	23	#22 Yellow
50	355.8						PLUG			
	360.6	TOWER NO. 2					INLINE PRESSURE:	45.8 psi		
51	361.6						PLUG			

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
52	365.8	17.5	LB20	47.5	3.9	3.8	R3000	Green	24	#22	Yellow
53	373.3						PLUG				
54	380.6	14.8	LB20	47.4	3.8	3.8	R3000	Green	25	#22	Yellow
55	387.9						PLUG				
56	395.3	14.7	LB20	47.3	3.9	3.8	R3000	Green	26	#22	Yellow
57	402.8						PLUG				
58	409.8	14.5	LB20	47.1	4.1	4.1	R3000	Green	27	#23	Yllw w/red
59	417.3						PLUG				
60	424.6	14.8	LB20	47.0	4.1	4.1	R3000	Green	28	#23	Yllw w/red
61	431.9						PLUG				
62	439.3	14.7	LB20	46.9	4.3	4.1	R3000	Green	29	#23	Yllw w/red
63	446.8						PLUG				
64	453.8	14.5	LB20	46.8	4.6	4.5	R3000	Green	30	#24	Red
65	461.3						PLUG				
66	468.6	14.8	LB20	46.7	4.6	4.5	R3000	Green	31	#24	Red
67	475.9						PLUG				
68	483.3	14.7	LB20	46.5	4.8	4.9	R3000	Green	32	#25	Red w/white
69	490.8						PLUG				
70	497.8	14.5	LB20	46.4	4.8	4.9	R3000	Green	33	#25	Red w/white
71	505.3						PLUG				
72	512.6	14.8	LB20	46.3	4.9	4.9	R3000	Green	34	#25	Red w/white
73	519.9						PLUG				
74	527.3	14.7	LB20	46.1	5.7	5.7	R3000	Green	35	#27	White w/blu
75	534.8						PLUG				

539.6 TOWER NO. 3 INLINE PRESSURE: 44.5 psi

76	540.6						PLUG				
77	544.8	17.5	LB20	46.0	5.9	5.7	R3000	Green	36	#27	White w/blu
78	552.3						PLUG				
79	559.6	14.8	LB20	45.9	5.7	5.7	R3000	Green	37	#27	White w/blu
80	566.9						PLUG				
81	574.3	14.7	LB20	45.8	5.6	5.7	R3000	Green	38	#27	White w/blu
82	581.8						PLUG				
83	588.8	14.5	LB20	45.7	5.7	5.7	R3000	Green	39	#27	White w/blu
84	596.3						PLUG				
85	603.6	14.8	LB20	45.5	5.9	6.1	R3000	Green	40	#28	Blue
86	610.9						PLUG				
87	618.3	14.7	LB20	45.5	5.8	5.7	R3000	Green	41	#27	White w/blu
88	625.8						PLUG				
89	632.8	14.5	LB20	45.4	6.3	6.1	R3000	Green	42	#28	Blue
90	640.3						PLUG				
91	647.6	14.8	LB20	45.2	6.5	6.6	R3000	Green	43	#29	Blue w/brn
92	654.9						PLUG				
93	662.3	14.7	LB20	45.1	6.4	6.6	R3000	Green	44	#29	Blue w/brn
94	669.8						PLUG				
95	676.8	14.5	LB20	45.0	6.4	6.6	R3000	Green	45	#29	Blue w/brn
96	684.3						PLUG				
97	691.6	14.8	LB20	45.0	6.7	6.6	R3000	Green	46	#29	Blue w/brn
98	698.9						PLUG				
99	706.3	14.7	LB20	44.6	7.7	7.9	R3000	Green	47	#32	Orange
100	713.8						PLUG				

718.6 TOWER NO. 4 INLINE PRESSURE: 43.4 psi

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
101	719.6						PLUG				
102	723.8	17.5	LB20	44.7	7.6	7.4	R3000	Green	48	#31	Brwn w/orng
103	731.3						PLUG				
104	738.6	14.8	LB20	44.6	7.4	7.4	R3000	Green	49	#31	Brwn w/orng
105	745.9						PLUG				
106	753.3	14.7	LB20	44.5	7.3	7.4	R3000	Green	50	#31	Brwn w/orng
107	760.8						PLUG				
108	767.8	14.5	LB20	44.4	7.4	7.4	R3000	Green	51	#31	Brwn w/orng
109	775.3						PLUG				
110	782.6	14.8	LB20	44.4	7.7	7.4	R3000	Green	52	#31	Brwn w/orng
111	789.9						PLUG				
112	797.3	14.7	LB20	44.2	8.0	7.9	R3000	Green	53	#32	Orange
113	804.8						PLUG				
114	811.8	14.5	LB20	44.2	7.9	7.9	R3000	Green	54	#32	Orange
115	819.3						PLUG				
116	826.6	14.8	LB20	44.1	8.1	7.9	R3000	Green	55	#32	Orange
117	833.9						PLUG				
118	841.3	14.7	LB20	43.9	8.3	8.5	R3000	Green	56	#33	Ornge w/grn
119	848.8						PLUG				
120	855.8	14.5	LB20	43.9	8.2	8.5	R3000	Green	57	#33	Ornge w/grn
121	863.3						PLUG				
122	870.6	14.8	LB20	43.8	8.3	8.5	R3000	Green	58	#33	Ornge w/grn
123	877.9						PLUG				
124	885.3	14.7	LB20	43.5	9.3	9.5	R3000	Green	59	#35	Green w/prp
125	892.8						PLUG				

897.6 TOWER NO. 5 INLINE PRESSURE: 42.6 psi

126	898.6						PLUG				
127	902.8	17.5	LB20	43.5	9.6	9.5	R3000	Green	60	#35	Green w/prp
128	910.3						PLUG				
129	917.6	14.8	LB20	43.5	9.1	9.0	R3000	Green	61	#34	Drk Green
130	924.9						PLUG				
131	932.3	14.7	LB20	43.5	9.2	9.0	R3000	Green	62	#34	Drk Green
132	939.8						PLUG				
133	946.8	14.5	LB20	43.4	9.5	9.5	R3000	Green	63	#35	Green w/prp
134	954.3						PLUG				
135	961.6	14.8	LB20	43.3	9.5	9.5	R3000	Green	64	#35	Green w/prp
136	968.9						PLUG				
137	976.3	14.7	LB20	43.3	9.5	9.5	R3000	Green	65	#35	Green w/prp
138	983.8						PLUG				
139	990.8	14.5	LB20	43.1	9.7	9.9	R3000	Green	66	#36	Purple
140	998.3						PLUG				
141	1005.6	14.8	LB20	43.2	9.6	9.5	R3000	Green	67	#35	Green w/prp
142	1012.9						PLUG				
143	1020.3	14.7	LB20	43.1	10.1	9.9	R3000	Green	68	#36	Purple
144	1027.8						PLUG				
145	1034.8	14.5	LB20	42.9	10.3	10.6	R3000	Green	69	#37	Prpl w/blk
146	1042.3						PLUG				
147	1049.6	14.8	LB20	43.0	10.0	9.9	R3000	Green	70	#36	Purple
148	1056.9						PLUG				
149	1064.3	14.7	LB20	42.7	11.5	11.2	R3000	Green	71	#38	Black
150	1071.8						PLUG				

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER----			---NOZZLE---
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.	

1076.6 TOWER NO. 6 INLINE PRESSURE: 42.2 psi

151	1077.6						PLUG			
152	1081.8	17.5	LB20	43.1	9.3	9.5	R3000	Green	72	#35 Green w/prp
153	1089.3	7.5	LB20	43.8	5.2	5.3	R3000	Green	73	#26 White
154	1096.6	7.3	LB20	43.8	5.2	5.3	R3000	Green	74	#26 White
155	1103.9	7.3	LB20	43.8	5.3	5.3	R3000	Green	75	#26 White
156	1111.3	7.3	LB20	43.7	5.5	5.7	R3000	Green	76	#27 White w/blu
157	1118.8	7.5	LB20	43.7	5.3	5.3	R3000	Green	77	#26 White
158	1125.8	7.0	LB20	43.7	5.4	5.3	R3000	Green	78	#26 White
159	1133.3	7.5	LB20	43.7	5.7	5.7	R3000	Green	79	#27 White w/blu
160	1140.6	7.3	LB20	43.7	5.6	5.7	R3000	Green	80	#27 White w/blu
161	1147.9	7.3	LB20	43.7	5.6	5.7	R3000	Green	81	#27 White w/blu
162	1155.3	7.3	LB20	43.6	5.6	5.7	R3000	Green	82	#27 White w/blu
163	1162.8	7.5	LB20	43.6	5.6	5.7	R3000	Green	83	#27 White w/blu
164	1169.8	7.0	LB20	43.6	5.5	5.7	R3000	Green	84	#27 White w/blu
165	1177.3	7.5	LB20	43.6	5.7	5.7	R3000	Green	85	#27 White w/blu
166	1184.6	7.3	LB20	43.6	5.8	5.7	R3000	Green	86	#27 White w/blu
167	1191.9	7.3	LB20	43.5	6.0	6.1	R3000	Green	87	#28 Blue
168	1199.3	7.3	LB20	43.6	5.7	5.7	R3000	Green	88	#27 White w/blu
169	1206.8	7.5	LB20	43.6	5.9	5.7	R3000	Green	89	#27 White w/blu
170	1213.8	7.0	LB20	43.5	6.0	6.1	R3000	Green	90	#28 Blue
171	1221.3	7.5	LB20	43.5	5.9	6.1	R3000	Green	91	#28 Blue
172	1228.6	7.3	LB20	43.6	5.8	5.7	R3000	Green	92	#27 White w/blu
173	1235.9	7.3	LB20	43.5	6.2	6.1	R3000	Green	93	#28 Blue
174	1243.3	7.3	LB20	43.5	6.2	6.1	R3000	Green	94	#28 Blue
175	1250.8	7.5	LB20	43.3	7.5	7.4	R3000	Green	95	#31 Brwn w/orng

1255.6 TOWER NO. 7 INLINE PRESSURE: 42.0 psi

176	1261.3	10.5	LB20	43.2	8.0	7.9	R3000	Green	96	#32 Orange
177	1269.6	8.3	LB20	43.3	7.3	7.4	R3000	Green	97	#31 Brwn w/orng
178	1278.5	8.9	LB20	43.3	7.5	7.4	R3000	Green	98	#31 Brwn w/orng
179	1287.3	8.9	LB20	43.3	7.4	7.4	R3000	Green	99	#31 Brwn w/orng
180	1295.6	8.3	LB20	42.8	9.8	9.9	R3000	Green	100	#36 Purple

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
 1300.5 40.3 77.5 78.5 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphragm) PRESSURE LOSS: 1.6 psi

SYSTEM INLINE END PRESSURE: 42.0 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.3

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
 -x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

100 MOUNTING ASSEMBLIES: First outlet= 4, Last outlet= 180
 MEMORY DROP, MxM Poly02 (Length= 54.00 in)
 GOOSENECK, SCH.40, MXFEMALE 1191880
 DROP, POLY PRO, MXM <Vari> 1349310 (Length= 54.00 in)
 COUPLER, PVC, 3/4", NPT * 1173186
 Standard Tee 1000-001 (as needed)
 Standard Regulator 1000-002 (as needed)

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.4	7.0	11.6	16.2	20.9	25.5	30.1	25.3
GPM REQ.	11.5	31.8	53.4	74.7	95.5	117.5	141.5	117.6
GPM DEL.	17.5	31.9	53.1	74.8	95.7	116.8	141.9	118.6
% DEV.	51%	0%	-1%	0%	0%	-1%	0%	1%

A high deviation in span 1 is unavoidable due to nozzle size limitations.
 =====

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out	ID
R3000G	Rotator	Green	1-100	AD26	LB20	LO	20	F x ST	7628

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service
Cavour, SDCUSTOMER: Riverside Colony
SW27

SYSTEM MANUFACTURER:	LINDSAY	END GUN RADIUS:	87.8 ft
TOTAL PIPE LENGTH:	1300.5 FT	IRRIGATED AREA:	139.0 acre
TOTAL SYSTEM FLOW:	650.3 gpm		

Motor Speed:	1740 RPM	Center Drive Speed:	43 RPM
Center Gear Ratio:	40:1	Wheel Gear Ratio:	50:1
Nominal Tire Size:	11 x 24.5	Loaded Tire Radius:	21.5 in

Last Tower Ground Speed at 100% Timer Setting: 9.8 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.14	100.0	9.79	13.43
0.15	90.0	8.81	14.92
0.17	80.0	7.83	16.79
0.20	70.0	6.85	19.19
0.21	65.0	6.36	20.66
0.23	60.0	5.87	22.38
0.25	55.0	5.38	24.42
0.28	50.0	4.89	26.86
0.31	45.0	4.41	29.85
0.35	40.0	3.92	33.58
0.40	35.0	3.43	38.37
0.46	30.0	2.94	44.77
0.56	25.0	2.45	53.72
0.69	20.0	1.96	67.15
0.93	15.0	1.47	89.54
1.16	12.0	1.17	111.92
1.54	9.0	0.88	149.23
2.31	6.0	0.59	223.84
4.63	3.0	0.29	447.69

The relationships between water application, timer setting and pivot speed provided above are theoretical. Actual application rates will vary due to the following: tire slippage, tire inflation and tread wear; variations in terrain and soils; wind drift; evaporation; and drive train efficiency. For this reason the above data are intended only as a guide and should be used with due caution.

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
0606384	103	103	NIPPLE, PIPE, 3/4"XCLOSE, GALV.
11-2858-6	10	10	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2859-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #15, LIM/LAV
11-2860-2	2	2	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	1	1	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	3	3	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2864-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #20, TRQUOISE
11-2866-9	4	4	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	3	3	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	2	2	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	3	3	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	5	5	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	18	18	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	7	7	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	4	4	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2875-0	9	9	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	5	5	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-2877-6	3	3	NOZZLE, NEL, PLASTIC, 3TN, #33, ORN/DGR
11-2878-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #34, DK GREEN
11-2879-2	7	7	NOZZLE, NEL, PLASTIC, 3TN, #35, DGR/PUR
11-2880-0	4	4	NOZZLE, NEL, PLASTIC, 3TN, #36, PURPLE
11-2881-8	1	1	NOZZLE, NEL, PLASTIC, 3TN, #37, PRPL/BLK
11-2882-6	1	1	NOZZLE, NEL, PLASTIC, 3TN, #38, BLACK
11-3020-2	100	100	REGULATOR, NEL, BT-LF-ST, 20 PSI
1603601	100	100	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	0	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SW27

PIVOT PRESSURE: 48.9 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1300.5 FT

Notes

Drop lengths are nominal - Variation in manufacturing and installation may occur.
Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance 92 in; Height to pipe at tower 146 in
Data source file LINDSAY; selection 'Solid Drops at Truss'

Length Summary

Length: Quantity

48: 5
54: 23
60: 16
66: 8
72: 48

Total Length = 536 ft

MOUNTING ASSEMBLIES:

Model Sprinkler Plate

a= MEMORY DROP, MxM
GOOSENECK, SCH.40, MXFEMALE
DROP, POLY PRO, MXM Vari Len
COUPLER, PVC, 3/4", NPT *
Standard Tee
Standard Regulator

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg	Out No.	Var-Len	Spr Noz No. Size	Reg
TOWER NO. 0, ID= 6.39				15				5				21			
1				16	72	19 #19		6	60	38 #27		22	60	58 #33	
2				17				7				23			
3				18	72	20 #19		8	72	39 #27		24	54	59 #35	
4	54a	1A #14	LB20	19				9				25			
5				20	66	21 #20		10	72	40 #28		TOWER NO. 5, ID= 6.39			
6	60	2 #14		21				11				1			
7				22	60	22 #20		12	72	41 #27		2	54	60 #35	
8	72	3 #14		23				13				3			
9				24	54	23 #22		14	72	42 #28		4	54	61 #34	
10	72	4 #14		25				15				5			
11				TOWER NO. 2, ID= 6.39				16	72	43 #29		6	60	62 #34	
12	72	5 #14		1				17				7			
13				2	54	24 #22		18	72	44 #29		8	72	63 #35	
14	72	6 #14		3				19				9			
15				4	54	25 #22		20	66	45 #29		10	72	64 #35	
16	72	7 #14		5				21				11			
17				6	60	26 #22		22	60	46 #29		12	72	65 #35	
18	72	8 #14		7				23				13			
19				8	72	27 #23		24	54	47 #32		14	72	66 #36	
20	66	9 #14		9				25				15			
21				10	72	28 #23		TOWER NO. 4, ID= 6.39				16	72	67 #35	
22	60	10 #14		11				1				17			
23				12	72	29 #23		2	54	48 #31		18	72	68 #36	
24	54	11 #15		13				3				19			
25				14	72	30 #24		4	54	49 #31		20	66	69 #37	
TOWER NO. 1, ID= 6.39				15				5				21			
1				16	72	31 #24		6	60	50 #31		22	60	70 #36	
2	54	12 #16		17				7				23			
3				18	72	32 #25		8	72	51 #31		24	54	71 #38	
4	54	13 #15		19				9				25			
5				20	66	33 #25		10	72	52 #31		TOWER NO. 6, ID= 6.39			
6	60	14 #16		21				11				1			
7				22	60	34 #25		12	72	53 #32		2	54	72 #35	
8	72	15 #17		23				13				3	54	73 #26	
9				24	54	35 #27		14	72	54 #32		4	54	74 #26	
10	72	16 #17		25				15				5	60	75 #26	
11				TOWER NO. 3, ID= 6.39				16	72	55 #32		6	60	76 #27	
12	72	17 #18		1				17				7	66	77 #26	
13				2	54	36 #27		18	72	56 #33		8	72	78 #26	
14	72	18 #19		3				19				9	72	79 #27	
				4	54	37 #27		20	66	57 #33		10	72	80 #27	

MOUNTING ASSEMBLIES:

a= MEMORY DROP, MxM

Model Sprinkler Plate

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

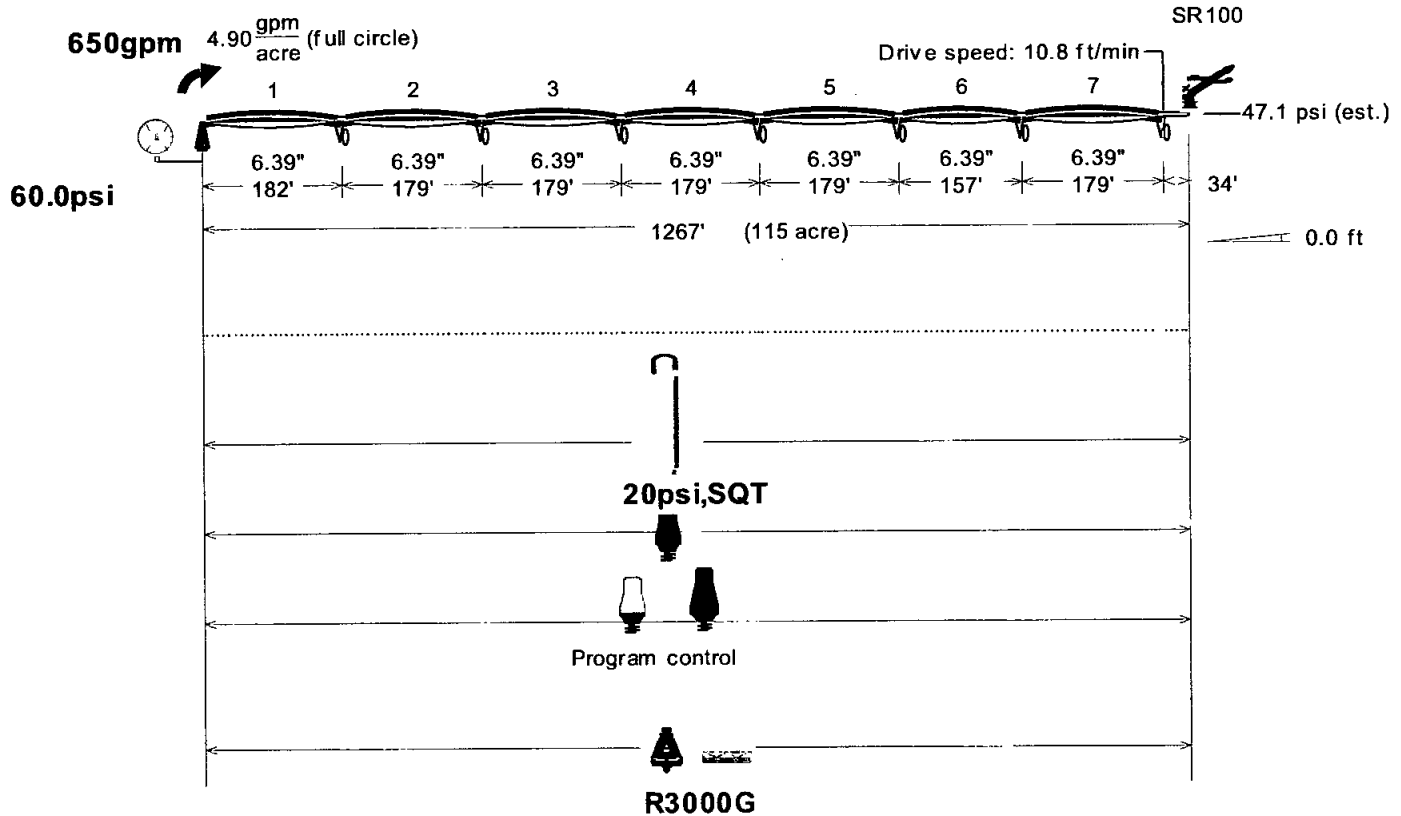
Out No.	Var- Len	Spr Noz No. Size	Reg
11	72a	81 #27	LB20
12	72	82 #27	
13	72	83 #27	
14	72	84 #27	
15	72	85 #27	
16	72	86 #27	
17	72	87 #28	
18	72	88 #27	
19	72	89 #27	
20	66	90 #28	
21	60	91 #28	
22	60	92 #27	
23	54	93 #28	
24	54	94 #28	
25	54	95 #31	

TOWER NO. 7, ID= 5.37 OVERHANG

1	48	96 #32
2	48	97 #31
3	48	98 #31
4	48	99 #31
5	48	100 #36

END GUN TYPE:SR100 .65"

Kevin's Pivot Service

AX438
23 MAY 2015Kevin's Pivot Service
Cavour, SDRiverside Colony
SE28

DISCLAIMER

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LMCchart 2.40

Kevin's Pivot Service
CENTER PIVOT SPRINKLER CHART
LOG NUMBER: AX438
DATE: 23 MAY 2015

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SE28

NUMBER OF TOWERS:	7	NOZZLE FILES: R3000G	
PIVOT PRESSURE:	53.9 psi	FRICTION C-FACTOR:	140
TOTAL SYSTEM FLOW:	650.0 gpm	FULL CIRCLE GPM / ACRE:	4.9
TOTAL PIPE LENGTH:	1267.5 FT	COVERAGE WITHOUT GUN:	1270.4 FT
END GUN TYPE:	SR100	ADJ. END GUN RADIUS:	90.6 ft

SYSTEM MANUFACTURER: LINDSAY

			FT	PIPE ID
1	1799G265	SPAN 1,	181.6,	6.39 in
4	1799G265	SPANS 2- 5,	179.0,	6.39 in
1	1579G265	SPAN 6,	157.0,	6.39 in
1	179G2-65	SPAN 7,	179.0,	6.39 in
1	33-OH-90	OVERHANG,	33.9,	5.37 in

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LMCchart 2.40

-----OUTLET-----	-REG-	PSI	--- <th>-----SPRINKLER-----</th> <th>---NOZZLE---</th>	-----SPRINKLER-----	---NOZZLE---
No Loc Sep Model RegIn Req Del Model Plate SpNo.					
-x-				PLUG 3	
4	22.6	22.6*	LB20	55.7	0.4 1.6 R3000 Green 1 #14 Lime
5	29.9				PLUG
6	37.3	14.7*	LB20	55.5	0.6 1.6 R3000 Green 2 #14 Lime
7	44.8				PLUG
8	51.8	14.5*	LB20	55.4	0.7 1.6 R3000 Green 3 #14 Lime
9	59.3				PLUG
10	66.6	14.8*	LB20	55.2	0.9 1.6 R3000 Green 4 #14 Lime
11	73.9				PLUG
12	81.3	14.7*	LB20	55.1	1.0 1.6 R3000 Green 5 #14 Lime
13	88.8				PLUG
14	95.8	14.5*	LB20	55.0	1.1 1.6 R3000 Green 6 #14 Lime
15	103.3				PLUG
16	110.6	14.8*	LB20	54.8	1.2 1.6 R3000 Green 7 #14 Lime
17	117.9				PLUG
18	125.3	14.7*	LB20	54.7	1.2 1.6 R3000 Green 8 #14 Lime
19	132.8				PLUG
20	139.8	14.5*	LB20	54.6	1.4 1.6 R3000 Green 9 #14 Lime
21	147.3				PLUG
22	154.6	14.8*	LB20	54.5	1.5 1.6 R3000 Green 10 #14 Lime
23	161.9				PLUG
24	169.3	14.7*	LB20	54.3	1.9 1.8 R3000 Green 11 #15 Lime w/lav
25	176.8				PLUG
	181.6	TOWER NO. 1			INLINE PRESSURE: 52.3 psi
26	182.6				PLUG
27	186.8	17.5	LB20	54.1	2.1 2.1 R3000 Green 12 #16 Lavender
28	194.3				PLUG
29	201.6	14.8	LB20	54.0	2.1 2.1 R3000 Green 13 #16 Lavender
30	208.9				PLUG
31	216.3	14.7	LB20	53.9	2.3 2.3 R3000 Green 14 #17 Lvndr w/gra
32	223.8				PLUG
33	230.8	14.5	LB20	53.8	2.3 2.3 R3000 Green 15 #17 Lvndr w/gra
34	238.3				PLUG
35	245.6	14.8	LB20	53.6	2.5 2.6 R3000 Green 16 #18 Gray
36	252.9				PLUG
37	260.3	14.7	LB20	53.5	2.6 2.6 R3000 Green 17 #18 Gray
38	267.8				PLUG
39	274.8	14.5	LB20	53.3	2.8 2.9 R3000 Green 18 #19 Gray w/trqu
40	282.3				PLUG
41	289.6	14.8	LB20	53.2	2.9 2.9 R3000 Green 19 #19 Gray w/trqu
42	296.9				PLUG
43	304.3	14.7	LB20	53.1	3.1 3.2 R3000 Green 20 #20 Turquoise
44	311.8				PLUG
45	318.8	14.5	LB20	52.9	3.2 3.2 R3000 Green 21 #20 Turquoise
46	326.3				PLUG
47	333.6	14.8	LB20	52.8	3.4 3.4 R3000 Green 22 #21 Trqu w/yllw
48	340.9				PLUG
49	348.3	14.7	LB20	52.7	3.8 3.8 R3000 Green 23 #22 Yellow
50	355.8				PLUG
	360.6	TOWER NO. 2			INLINE PRESSURE: 50.8 psi
51	361.6				PLUG

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
52	365.8	17.5	LB20	52.5	4.2	4.1	R3000	Green	24	#23	Yllw w/red
53	373.3						PLUG				
54	380.6	14.8	LB20	52.4	3.9	3.8	R3000	Green	25	#22	Yellow
55	387.9						PLUG				
56	395.3	14.7	LB20	52.3	4.1	4.1	R3000	Green	26	#23	Yllw w/red
57	402.8						PLUG				
58	409.8	14.5	LB20	52.1	4.2	4.1	R3000	Green	27	#23	Yllw w/red
59	417.3						PLUG				
60	424.6	14.8	LB20	52.0	4.4	4.5	R3000	Green	28	#24	Red
61	431.9						PLUG				
62	439.3	14.7	LB20	51.9	4.3	4.5	R3000	Green	29	#24	Red
63	446.8						PLUG				
64	453.8	14.5	LB20	51.8	4.5	4.5	R3000	Green	30	#24	Red
65	461.3						PLUG				
66	468.6	14.8	LB20	51.6	4.8	4.9	R3000	Green	31	#25	Red w/white
67	475.9						PLUG				
68	483.3	14.7	LB20	51.5	4.8	4.9	R3000	Green	32	#25	Red w/white
69	490.8						PLUG				
70	497.8	14.5	LB20	51.4	5.0	4.9	R3000	Green	33	#25	Red w/white
71	505.3						PLUG				
72	512.6	14.8	LB20	51.3	5.3	5.3	R3000	Green	34	#26	White
73	519.9						PLUG				
74	527.3	14.7	LB20	51.0	5.9	6.2	R3000	Green	35	#28	Blue
75	534.8						PLUG				

539.6 TOWER NO. 3

INLINE PRESSURE: 49.5 psi

76	540.6						PLUG				
77	544.8	17.5	LB20	50.9	5.9	6.2	R3000	Green	36	#28	Blue
78	552.3						PLUG				
79	559.6	14.8	LB20	50.9	5.6	5.7	R3000	Green	37	#27	White w/blu
80	566.9						PLUG				
81	574.3	14.7	LB20	50.8	5.7	5.7	R3000	Green	38	#27	White w/blu
82	581.8						PLUG				
83	588.8	14.5	LB20	50.6	6.0	6.2	R3000	Green	39	#28	Blue
84	596.3						PLUG				
85	603.6	14.8	LB20	50.5	6.1	6.2	R3000	Green	40	#28	Blue
86	610.9						PLUG				
87	618.3	14.7	LB20	50.5	6.2	6.2	R3000	Green	41	#28	Blue
88	625.8						PLUG				
89	632.8	14.5	LB20	50.3	6.5	6.6	R3000	Green	42	#29	Blue w/brn
90	640.3						PLUG				
91	647.6	14.8	LB20	50.2	6.5	6.6	R3000	Green	43	#29	Blue w/brn
92	654.9						PLUG				
93	662.3	14.7	LB20	50.2	6.7	6.6	R3000	Green	44	#29	Blue w/brn
94	669.8						PLUG				
95	676.8	14.5	LB20	50.0	7.0	7.0	R3000	Green	45	#30	Drk Brown
96	684.3						PLUG				
97	691.6	14.8	LB20	49.9	7.1	7.0	R3000	Green	46	#30	Drk Brown
98	698.9						PLUG				
99	706.3	14.7	LB20	49.7	7.9	8.0	R3000	Green	47	#32	Orange
100	713.8						PLUG				

718.6 TOWER NO. 4

INLINE PRESSURE: 48.4 psi

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER-----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
101	719.6						PLUG				
102	723.8	17.5	LB20	49.6	8.1	8.0	R3000	Green	48	#32	Orange
103	731.3						PLUG				
104	738.6	14.8	LB20	49.5	7.7	8.0	R3000	Green	49	#32	Orange
105	745.9						PLUG				
106	753.3	14.7	LB20	49.5	7.4	7.4	R3000	Green	50	#31	Brwn w/orng
107	760.8						PLUG				
108	767.8	14.5	LB20	49.4	7.8	8.0	R3000	Green	51	#32	Orange
109	775.3						PLUG				
110	782.6	14.8	LB20	49.3	7.9	8.0	R3000	Green	52	#32	Orange
111	789.9						PLUG				
112	797.3	14.7	LB20	49.3	8.0	8.0	R3000	Green	53	#32	Orange
113	804.8						PLUG				
114	811.8	14.5	LB20	49.1	8.3	8.5	R3000	Green	54	#33	Ornge w/grn
115	819.3						PLUG				
116	826.6	14.8	LB20	49.0	8.3	8.5	R3000	Green	55	#33	Ornge w/grn
117	833.9						PLUG				
118	841.3	14.7	LB20	49.0	8.4	8.5	R3000	Green	56	#33	Ornge w/grn
119	848.8						PLUG				
120	855.8	14.5	LB20	48.9	8.6	8.5	R3000	Green	57	#33	Ornge w/grn
121	863.3						PLUG				
122	870.6	14.8	LB20	48.8	9.1	9.0	R3000	Green	58	#34	Drk Green
123	877.9						PLUG				
124	885.3	14.7	LB20	48.5	10.0	9.9	R3000	Green	59	#36	Purple
125	892.8						PLUG				

897.6 TOWER NO. 5 INLINE PRESSURE: 47.7 psi

126	898.6						PLUG				
127	902.8	17.5	LB20	48.5	10.1	9.9	R3000	Green	60	#36	Purple
128	910.3						PLUG				
129	917.6	14.8	LB20	48.5	9.6	9.5	R3000	Green	61	#35	Green w/prp
130	924.9						PLUG				
131	932.3	14.7	LB20	48.5	9.6	9.5	R3000	Green	62	#35	Green w/prp
132	939.8						PLUG				
133	946.8	14.5	LB20	48.3	9.8	9.9	R3000	Green	63	#36	Purple
134	954.3						PLUG				
135	961.6	14.8	LB20	48.4	9.7	9.5	R3000	Green	64	#35	Green w/prp
136	968.8						PLUG				
137	976.3	14.7	LB20	48.3	10.2	9.9	R3000	Green	65	#36	Purple
138	983.6						PLUG				
139	990.9	14.7	LB20	48.0	10.4	10.6	R3000	Green	66	#37	Prpl w/blck
140	998.3						PLUG				
141	1005.8	14.8	LB20	48.2	10.0	9.9	R3000	Green	67	#36	Purple
142	1012.8						PLUG				
143	1020.3	14.5	LB20	48.0	10.4	10.6	R3000	Green	68	#37	Prpl w/blck
144	1027.6						PLUG				
145	1034.9	14.7	LB20	48.0	10.4	10.6	R3000	Green	69	#37	Prpl w/blck
146	1042.3						PLUG				
147	1049.8	14.8	LB20	48.4	8.6	8.5	R3000	Green	70	#33	Ornge w/grn

1054.6 TOWER NO. 6 INLINE PRESSURE: 47.3 psi

148	1058.9	9.1	LB20	48.7	6.5	6.6	R3000	Green	71	#29	Blue w/brn
149	1067.2	8.3	LB20	48.8	6.3	6.2	R3000	Green	72	#28	Blue

----OUTLET----			-REG-	PSI	---GPM---		----SPRINKLER----			---NOZZLE---	
No	Loc	Sep	Model	RegIn	Req	Del	Model	Plate	SpNo.		
150	1076.1	8.9	LB20	48.7	6.8	6.6	R3000	Green	73	#29	Blue w/brn
151	1085.0	8.9	LB20	48.7	6.8	6.6	R3000	Green	74	#29	Blue w/brn
152	1093.5	8.5	LB20	48.7	6.7	6.6	R3000	Green	75	#29	Blue w/brn
153	1102.0	8.5	LB20	48.7	6.6	6.6	R3000	Green	76	#29	Blue w/brn
154	1110.5	8.5	LB20	48.7	6.6	6.6	R3000	Green	77	#29	Blue w/brn
155	1119.0	8.5	LB20	48.7	6.7	6.6	R3000	Green	78	#29	Blue w/brn
156	1127.6	8.5	LB20	48.6	6.8	7.0	R3000	Green	79	#30	Drk Brown
157	1136.1	8.5	LB20	48.6	6.5	6.6	R3000	Green	80	#29	Blue w/brn
158	1144.6	8.5	LB20	48.6	6.7	6.6	R3000	Green	81	#29	Blue w/brn
159	1153.1	8.5	LB20	48.5	7.0	7.0	R3000	Green	82	#30	Drk Brown
160	1161.6	8.5	LB20	48.5	6.8	7.0	R3000	Green	83	#30	Drk Brown
161	1170.2	8.5	LB20	48.6	6.8	6.6	R3000	Green	84	#29	Blue w/brn
162	1178.7	8.5	LB20	48.5	7.2	7.0	R3000	Green	85	#30	Drk Brown
163	1187.2	8.5	LB20	48.5	7.2	7.0	R3000	Green	86	#30	Drk Brown
164	1195.7	8.5	LB20	48.5	7.2	7.4	R3000	Green	87	#31	Brwn w/orng
165	1204.2	8.5	LB20	48.5	6.9	7.0	R3000	Green	88	#30	Drk Brown
166	1212.8	8.5	LB20	48.5	7.1	7.0	R3000	Green	89	#30	Drk Brown
167	1221.3	8.5	LB20	47.8	10.8	10.6	R3000	Green	90	#37	Prpl w/blk

1233.6 TOWER NO. 7 INLINE PRESSURE: 47.2 psi

168	1238.0	16.7	LB20	47.8	10.6	10.6	R3000	Green	91	#37	Prpl w/blk
169	1245.5	7.5	LB20	48.6	6.4	6.6	R3000	Green	92	#29	Blue w/brn
170	1252.8	7.3	LB20	48.7	5.8	5.7	R3000	Green	93	#27	White w/blu
171	1259.2	6.4	LB20	48.7	5.3	5.3	R3000	Green	94	#26	White
172	1264.7	5.5	LB20	48.4	7.5	7.4	R3000	Green	95	#31	Brwn w/orng

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED ARC: 170°)
 1267.5 45.3 81.2 82.9 SR100 .65"

END GUN VALVE (TYPE: 2 inch Diaphragm) PRESSURE LOSS: 1.7 psi

SYSTEM INLINE END PRESSURE: 47.1 psi, INCLUDING 0 ft INCREASE IN ELEVATION

TOTAL gpm DELIVERED: 650.0

* INDICATES SPRINKLERS OPERATING BELOW RECOMMENDED PRESSURE LIMITS.
 -x-INDICATES 2 OR MORE SUCCESSIVE OUTLETS SHOULD BE PLUGGED.

95 MOUNTING ASSEMBLIES: First outlet= 4, Last outlet= 172
 MEMORY DROP, MxM Poly02 (Length= 54.00 in)
 GOOSENECK, SCH.40,MXFEMALE 1191880
 DROP, POLY PRO, MXM <Vari> 1349310 (Length= 54.00 in)
 COUPLER,PVC,3/4",NPT * 1173186
 Standard Tee 1000-001 (as needed)
 Standard Regulator 1000-002 (as needed)

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	OH+EG
ACRE	2.4	7.0	11.6	16.2	20.9	22.1	29.5	23.3
GPM REQ.	12.0	33.1	55.5	77.1	99.4	108.9	139.9	116.7
GPM DEL.	17.5	33.2	55.8	77.6	100.0	108.4	138.9	118.5
	-----	-----	-----	-----	-----	-----	-----	-----
% DEV.	46%	1%	1%	1%	1%	-0%	-1%	1%

A high deviation in span 1 is unavoidable due to nozzle size limitations.

=====

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	PSI	In x Out	ID
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
R3000G	Rotator	Green	1- 95	AD26	LB20	LO	20	F x ST	7628

PERCENTAGE TIMER REPORT

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SE28

SYSTEM MANUFACTURER: LINDSAY END GUN RADIUS: 90.6 ft
TOTAL PIPE LENGTH: 1267.5 FT IRRIGATED AREA: 133.0 acre
TOTAL SYSTEM FLOW: 650.0 gpm

Motor Speed: 1725 RPM Center Drive Speed: 43 RPM
Center Gear Ratio: 40:1 Wheel Gear Ratio: 50:1
Nominal Tire Size: 16.9 x 24 Loaded Tire Radius: 23.9 in

Last Tower Ground Speed at 100% Timer Setting: 10.8 ft/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (in)	Timer Setting (%)	Last Tower Ground Speed (ft/min)	Time Per Revolution (hrs)
0.13	100.0	10.79	11.97
0.14	90.0	9.71	13.30
0.16	80.0	8.63	14.97
0.18	70.0	7.55	17.10
0.20	65.0	7.01	18.42
0.22	60.0	6.47	19.95
0.24	55.0	5.93	21.77
0.26	50.0	5.39	23.94
0.29	45.0	4.86	26.61
0.32	40.0	4.32	29.93
0.37	35.0	3.78	34.21
0.43	30.0	3.24	39.91
0.52	25.0	2.70	47.89
0.65	20.0	2.16	59.86
0.86	15.0	1.62	79.82
1.08	12.0	1.29	99.77
1.44	9.0	0.97	133.03
2.15	6.0	0.65	199.54
4.31	3.0	0.32	399.08

The relationships between water application, timer setting and pivot speed provided above are theoretical. Actual application rates will vary due to the following: tire slippage, tire inflation and tread wear; variations in terrain and soils; wind drift; evaporation; and drive train efficiency. For this reason the above data are intended only as a guide and should be used with due caution.

-PART NUMBER AND SHIPPING SUMMARY-

PART NO.	SHIP QTY	SYSTEM QTY	DESCRIPTION
0606384	95	95	NIPPLE, PIPE, 3/4"XCLOSE, GALV.
11-2858-6	10	10	NOZZLE, NEL, PLASTIC, 3TN, #14, LIME
11-2859-4	1	1	NOZZLE, NEL, PLASTIC, 3TN, #15, LIM/LAV
11-2860-2	2	2	NOZZLE, NEL, PLASTIC, 3TN, #16, LAVENDER
11-2861-0	2	2	NOZZLE, NEL, PLASTIC, 3TN, #17, LAV/GRY
11-2862-8	2	2	NOZZLE, NEL, PLASTIC, 3TN, #18, GRAY
11-2863-6	2	2	NOZZLE, NEL, PLASTIC, 3TN, #19, GRY/TRQ
11-2864-4	2	2	NOZZLE, NEL, PLASTIC, 3TN, #20, TRQUOISE
11-2865-1	1	1	NOZZLE, NEL, PLASTIC, 3TN, #21, TRQ/YEL
11-2866-9	2	2	NOZZLE, NEL, PLASTIC, 3TN, #22, YELLOW
11-2867-7	3	3	NOZZLE, NEL, PLASTIC, 3TN, #23, YEL/RED
11-2868-5	3	3	NOZZLE, NEL, PLASTIC, 3TN, #24, RED
11-2869-3	3	3	NOZZLE, NEL, PLASTIC, 3TN, #25, RED/WHT
11-2870-1	2	2	NOZZLE, NEL, PLASTIC, 3TN, #26, WHITE
11-2871-9	3	3	NOZZLE, NEL, PLASTIC, 3TN, #27, WHT/BLU
11-2872-7	6	6	NOZZLE, NEL, PLASTIC, 3TN, #28, BLUE
11-2873-5	14	14	NOZZLE, NEL, PLASTIC, 3TN, #29, BLU/DBR
11-2874-3	9	9	NOZZLE, NEL, PLASTIC, 3TN, #30, DK BROWN
11-2875-0	3	3	NOZZLE, NEL, PLASTIC, 3TN, #31, DBR/ORN
11-2876-8	6	6	NOZZLE, NEL, PLASTIC, 3TN, #32, ORANGE
11-2877-6	5	5	NOZZLE, NEL, PLASTIC, 3TN, #33, ORN/DGR
11-2878-4	1	1	NOZZLE, NEL, PLASTIC, 3TN, #34, DK GREEN
11-2879-2	3	3	NOZZLE, NEL, PLASTIC, 3TN, #35, DGR/PUR
11-2880-0	5	5	NOZZLE, NEL, PLASTIC, 3TN, #36, PURPLE
11-2881-8	5	5	NOZZLE, NEL, PLASTIC, 3TN, #37, PRPL/BLK
11-3020-2	95	95	REGULATOR, NEL, BT-LF-ST, 20 PSI
1603601	95	95	R3000 ROTATOR ASSY, GREEN PLATE
88-4983-8	1	1	END GUN NOZ, NELSON 100T, 0.65"
88-5265-9	0	1	SR100 END GUN

DEALER: Kevin's Pivot Service
Cavour, SD

CUSTOMER: Riverside Colony
SE28

PIVOT PRESSURE: 53.9 psi
TOTAL SYSTEM FLOW: 650.0 gpm
TOTAL PIPE LENGTH: 1267.5 FT

Notes

Drop lengths are nominal - Variation in manufacturing and installation may occur.
Nozzle size calculations are based on no arch and constant drop lengths.
Length of drop component indicated by '(Vari Len.)' are in 'in'
Sprinkler ground clearance 92 in; Height to pipe at tower 146 in
Data source file LINDSAY; selection'Solid Drops at Truss'

Length Summary

Length: Quantity

48: 5
54: 24
60: 14
66: 7
72: 45

Total Length = 507 ft

MOUNTING ASSEMBLIES:

Model Sprinkler Plate

a= MEMORY DROP, MxM
GOOSENECK, SCH.40, MXFEMALE
DROP, POLY PRO, MXM Vari Len
COUPLER, PVC, 3/4", NPT *
Standard Tee
Standard Regulator

A= R3000G Rotator Green

Regulator Flow Duty PSI Outlet

LB20 LO 20 F x ST

Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg	Out No.	Var-Len	Spr No.	Noz Size	Reg
TOWER NO. 0, ID= 6.39					15					5					21				
1					16	72	19	#19		6	60	38	#27		22	60	58	#34	
2					17					7					23				
3					18	72	20	#20		8	72	39	#28		24	54	59	#36	
4	54a	1A	#14	LB20	19					9					25				
5					20	66	21	#20		10	72	40	#28		TOWER NO. 5, ID= 6.39				
6	60	2	#14		21					11					1				
7					22	60	22	#21		12	72	41	#28		2	54	60	#36	
8	72	3	#14		23					13					3				
9					24	54	23	#22		14	72	42	#29		4	54	61	#35	
10	72	4	#14		25					15					5				
11					TOWER NO. 2, ID= 6.39					16	72	43	#29		6	60	62	#35	
12	72	5	#14		1					17					7				
13					2	54	24	#23		18	72	44	#29		8	72	63	#36	
14	72	6	#14		3					19					9				
15					4	54	25	#22		20	66	45	#30		10	72	64	#35	
16	72	7	#14		5					21					11				
17					6	60	26	#23		22	60	46	#30		12	72	65	#36	
18	72	8	#14		7					23					13				
19					8	72	27	#23		24	54	47	#32		14	72	66	#37	
20	66	9	#14		9					25					15				
21					10	72	28	#24		TOWER NO. 4, ID= 6.39					16	72	67	#36	
22	60	10	#14		11					1					17				
23					12	72	29	#24		2	54	48	#32		18	60	68	#37	
24	54	11	#15		13					3					19				
25					14	72	30	#24		4	54	49	#32		20	54	69	#37	
TOWER NO. 1, ID= 6.39					15					5					21				
1					16	72	31	#25		6	60	50	#31		22	54	70	#33	
2	54	12	#16		17					7					TOWER NO. 6, ID= 6.39				
3					18	72	32	#25		8	72	51	#32		1	54	71	#29	
4	54	13	#16		19					9					2	54	72	#28	
5					20	66	33	#25		10	72	52	#32		3	54	73	#29	
6	60	14	#17		21					11					4	60	74	#29	
7					22	60	34	#26		12	72	53	#32		5	66	75	#29	
8	72	15	#17		23					13					6	72	76	#29	
9					24	54	35	#28		14	72	54	#33		7	72	77	#29	
10	72	16	#18		25					15					8	72	78	#29	
11					TOWER NO. 3, ID= 6.39					16	72	55	#33		9	72	79	#30	
12	72	17	#18		1					17					10	72	80	#29	
13					2	54	36	#28		18	72	56	#33		11	72	81	#29	
14	72	18	#19		3					19					12	72	82	#30	
					4	54	37	#27		20	66	57	#33		13	72	83	#30	

MOUNTING ASSEMBLIES:		Model	Sprinkler Plate	Regulator Flow Duty PSI Outlet
a= MEMORY DROP, MxM		A=	R3000G Rotator Green	LB20 LO 20 F x ST

Out No.	Var-Len	Spr No.	Noz Size	Reg
14	72a	84	#29	LB20
15	72	85	#30	
16	66	86	#30	
17	60	87	#31	
18	54	88	#30	
19	54	89	#30	
20	54	90	#37	

TOWER NO. 7, ID= 5.37 OVERHANG

1	48	91	#37
2	48	92	#29
3	48	93	#27
4	48	94	#26
5	48	95	#31

END GUN TYPE:SR100 .65"



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

October 9, 2015

Bennett Waldner
Riverside Hutterian Brethren
40361 200th Street
Huron SD 57350

Dear Mr. Waldner:

The Department of Environment and Natural Resources (DENR) received Riverside Hutterian Brethren's supplemental submittal regarding reconfiguring center pivots authorized by Water Right No. 2078-3. DENR approves Riverside's plans to limit the ability to apply water to beneficial use to the 8.69 cubic feet of water per second (cfs) as authorized by Water Right No. 2078-3. Riverside is allowed to undertake construction of the irrigation system in the SW $\frac{1}{4}$ Section 17, T112N, R61W as set forth in Water Permit No. 2078A-3.

Water Permit No. 2078A-3 was issued June 11, 2015, amending Water Right No. 2078-3 by transferring a portion of the irrigated acreage and adding an additional well. Conditions on the permit required: 1) water meters to be installed at the six wells, 2) plugging of the unauthorized well located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 28, T112N, R61W, and 3) submittal of a plan with documentation to DENR for approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cfs (3,900 gpm).

On September 24th, DENR sent a letter to Riverside stating the water meter information provided will meet the requirement on the permit if installed at each of the six wells. The letter also acknowledged that the unauthorized well has been plugged. However, the submitted invoices for the drop nozzles were not sufficient to document that the center pivots will be limited to a capacity of 650 gpm.

Riverside submitted sprinkler charts from Kevin's Pivot Service on September 29th for each of the six existing pivots. These charts indicate that if the nozzles and endguns are installed as described the six pivots will not exceed on average a capacity of 650 gpm. The submittal did not include a chart for the new pivot to be set up in the SW $\frac{1}{4}$ Section 17, T112N, R61W. DENR assumes this pivot will be set with nozzles capable of no more than 650 gpm and irrigate of no more than 132 acres.

DENR approves the documentation from Kevin's Pivot Service as the plan to limit the ability to apply water to beneficial use to 8.69 cfs (3,900 gpm). The plan does not specifically state how the diversion rate capacity from the six wells will be limited. However, DENR is satisfied that the new nozzle configuration on the pivots is a limiting factor on the water applied to beneficial use. Water meters installed on each well and required reporting will provide for ongoing monitoring of compliance.

DENR reserves the right to conduct an on-site inspection to verify that the drop nozzles have been installed as set forth in the chart from Kevin's Pivot Service. An exceedance of the authorized diversion rate or acres authorized by Water Right No. 2078-3 and Water Permit No. 2078A-3 will be brought before the Water Management Board.

If you have any questions, please contact Eric Gronlund at 605 773-3352 or email at eric.gronlund@state.sd.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeanne Goodman". The signature is fluid and cursive, with a large initial "J" and "G".

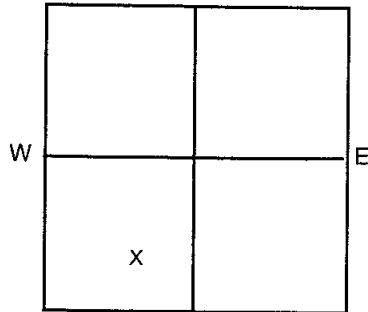
Jeanne Goodman, Chief Engineer
Water Rights Program, DENR

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 SW 1/4 Sec 17 Twp 112 Rg 61County Beadle

North

Please mark well
location with an "X"

Well Completion Date

4/20/16

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
ft. from _____ (identify source) _____

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test holes
☒ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Reverse

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	16 IN	0 FT	101 FT	25 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
DF Grout	51	Lb/gal	0 Ft	77 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure _____

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 16 Inches Length 20 FeetMaterial SDR 26Slot Size 0.057 Set From 81 Feet to 101 Feet

Other information _____

WAS A PACKER OR SEAL USED?

☒ Yes ☐ NoIf so, what material? PeaRock

Describe packer(s) and location

77-101'

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? Granulated Chlorine
☐ No, Why Not? _____
 Lab to which water
 quality sample sent for analysis
Well Owner: Riverside Colony

Business Name: _____

Address: 40361 200th StCity, State, Zip: Huron ☒ SD ☒ 57350

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Yellow Clay w/ S/S & Rocks	0	43
Blue Clay w/ Rocks	43	51
Coarse Sand & Gravel	51	73
Coarse Sand/Gravel w/ Rocks & Coal	73	93
Coarse Sand & Gravel	93	101

STATIC WATER LEVEL 37 WR FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe: _____
☐ Bailed
☐ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

RECEIVED

Per Pullman: Goulds 40hp
 Set up for 650 gpm @
 180 ft of head
 Tulare: Western Spink Hitch COB

JAN 18 2017

WATER RIGHTS
PROGRAMThis well was drilled under license # 440 and this report is true and accurate.Drilling firm: Pullman Well Drilling Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: _____

Permit No. 2078A-3

Report of Examination of Works

On, July 26, 2018, I made a thorough examination of the water use system constructed by Riverside Hutterian Brethren, 40361 200th Street, Huron SD 57350 holder of Permit No. 2078A-3, bearing the priority of April 3, 1974 authorizing the diversion of 1.44 cu. ft. per second of the waters of ground water (Tulare; Western Spink Hitchcock Aquifer) for irrigation purposes, in Beadle County.

Contact Person: Samuel Waldner

The system is in the following condition good. The point of diversion is located from the SW corner of Section 17, T112N, R61W 1,515 feet North and 1,350 feet East with latitude of 44.50501 and a longitude of -98.18917 as determined using GPS. The works are capable of diverting and conveying to the place of use 1.44 cu. ft. per second of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

All land is located in Sec 17/ T112N, R61W

NW ¼ SW ¼ - 33 ac NE ¼ SW ¼ - 33 ac SE ¼ SW ¼ - 33 ac SW ¼ SW ¼ - 33 ac

comprising a total of 132 acres of land and the license should be issued for 1.44 cfs.

Review of Permit Qualifications and Regulations:

- 1) Special qualifications to permit being abided by yes
- 2) All structures, wells and lands on map yes
- 3) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period yes.
- 4) Exceptions to compliance are: none

Report On the Specifics of the System

Diversion Point Information:

Well Information:

- 1) Well Drilling Firm: Pullman Drilling, Inc.
- 2) No. of Wells 1
- 3) Depth(s) 101 feet
- 4) Well log is available yes

Casing:

- 1) Diameter 16 inches
- 2) Length 81 feet
- 3) Type PVC

Screen:

- 1) Type PVC
- 2) Length 20 feet
- 3) Static water level 37 feet

Pump:

- 1) Make Goulds
- 2) Model submersible
- 3) Size NA
- 4) Capacity 650 GPM

Motor:

- 1) Make NA
- 2) Model No. NA
- 3) Horsepower rating NA

DISTRIBUTION LINES OR CANALS:

- 1) Type PVC 2) Size 8 inches 3) Length 12 feet

SYSTEM TYPE:

Center pivot:

- 1) Make Zimmatic 2) Overall length 1,200 feet
3) Number of towers 7 4) End gun yes
5) High or low pressure low 6) Capacity 650 GPM

CHEMIGATION EQUIPMENT:

- 1) Does chemigate yes 2) Main line check valve yes
3) Inspection port/air relief yes 4) Low pressure drain yes
5) Discharge is 20' from source yes 6) Interlock type yes
7) Injection pump type electric 8) Injection check valve yes
9) Injection line check valve or positive displacement pump yes
10) All chemigation equipment appears to be installed in the proper position and complies with chemigation laws and rules yes

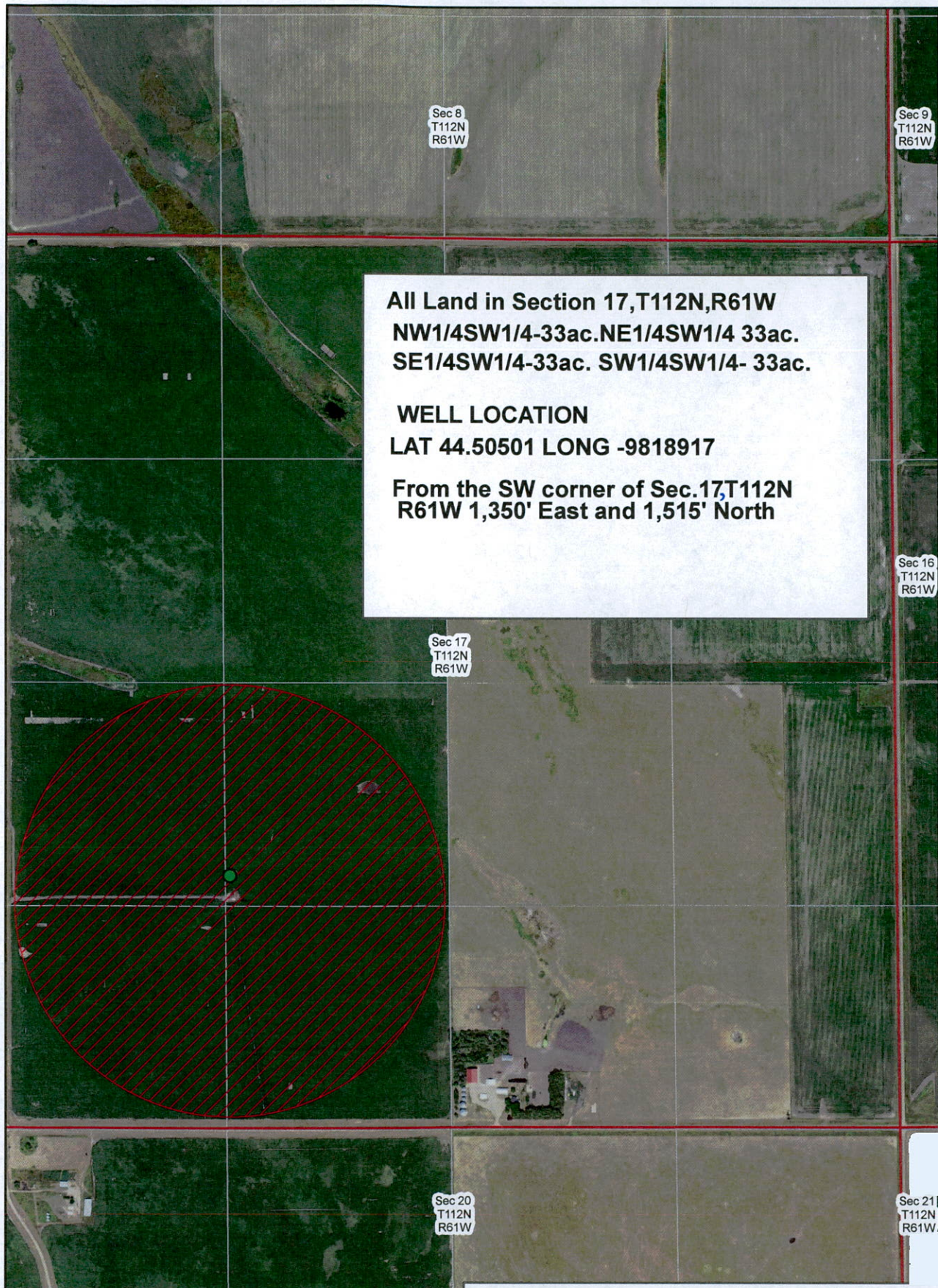
Comments: none

 Date: September 13, 2018

Terry D. Helms

Water Rights Inspector

2078A-3



0 0.05 0.1 0.2 0.3 0.4 Miles



D. Orle

Water Rights Inspector Dated: 9-13-2018

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCESJOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

JUN 27 2019

2078-3
2078A-3Samuel Waldner
Riverside Hutterian Brethren
40361 200th St
Huron SD 57350

Dear Mr. Waldner:

Enclosed is Water License No. 2078A-3 and Reissued Water License No. 2078-3. They are the final water right documents completing your process of obtaining Water Rights. Maps of the area covered under both water rights are also enclosed.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2078A-3

(1) Riverside Hutterian Brethren, 40361 200th St., Huron SD 57350 made Application No. 2078A-3, January 22, 2015 for a water permit to amend Water Right No. 2078-3 by transferring a portion of the irrigated acreage two miles northwest of the current location and adding an additional well. Water Permit No. 2078A-3 did not allow for an increase in the diversion rate from the new well (Tulare Western Spink Hitchcock Aquifer). The well and the acreage to be irrigated are located in the SW $\frac{1}{4}$ Section 17, T112N, R61W, Beadle County, South Dakota. Permit No. 2078A-3, with a priority date of April 3, 1974 was approved May 7, 2015 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 7, 2020 and for the application to beneficial use of said water on or before May 7, 2024.

Water Permit No. 2078A-3 was given a priority date of April 3, 1974 established under Water Right No. 2078-3. The permit listed an acre-foot limitation of 2 acre feet per acre annually. Permits with priority dates prior to July, 1978 were allowed up to 3 acre feet per acre annually. With regard to the April 3, 1974 priority date, this Water License No. 2078A-3 corrects the error and allows up to 3 acre feet per acre annually.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.44 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,515'N and 1,350'E of the SW corner of Section 17, T112N, R61W (NE $\frac{1}{4}$ SW $\frac{1}{4}$)
Latitude 44.50501; Longitude -98.18917

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate the following land:

T112N, R61W Section 17	NW $\frac{1}{4}$ SW $\frac{1}{4}$	33 acres
	NE $\frac{1}{4}$ SW $\frac{1}{4}$	33 acres
	SE $\frac{1}{4}$ SW $\frac{1}{4}$	33 acres
	SW $\frac{1}{4}$ SW $\frac{1}{4}$	33 acres
Total		132 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Riverside Hutterian Brethren, 40361 200th St., Huron SD 57350 the holder and/or owner of Water Right No. 2078A-3 is issued a license to appropriate water, the right to use 1.44 cubic feet of water per second from ground water (one well, Tulare Western Spink Hitchcock Aquifer) with a priority date of April 3, 1974 from the location specified in (2) of this license for irrigation purposes.

continued

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 2078A-3 and subject to the following qualifications:

- The wells approved under Nos. 2078-3 and 2078A-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The new well authorized by Permit No. 2078A-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The well was drilled in April, 2016 by Pullman Well Drilling Inc. A copy of the well completion report is on file with the Water Rights Program.*
- A water meter with a readily accessible read out must be installed at the six well sites authorized under Water Right No. 2078-3 and Water Right No. 2078A-3. Records must be kept for the meters and reported on the annual irrigation questionnaire.
- Riverside Hutterian Brethren shall submit a plan with documentation to DENR for review and approval regarding how the diversion rate capacity from the six wells and ability to apply water to beneficial use is limited to 8.69 cubic feet of water per second (3,900 gpm). DENR shall review the plan and approve the plan with or without modifications. If the plan or documentation is unacceptable, DENR will return to the permit holder with an explanation of insufficiencies. The well in the SW ¼ Section 17, T112N, R61W and the irrigation system in this quarter section shall not be constructed until DENR approval of the plan is granted. *Documentation was submitted and approved by DENR (see October 9, 2015 letter)*
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
- Permit No. 2078A-3 is subject to compliance with the Notice of Order to comply with Water Rights No. 2078-3 issued to Riverside Hutterian Brethren on February 4, 2015. *The "Notice of Order" was complied with.*
- The unauthorized well located in the NE ¼ NE ¼ Section 28, T112N, R61W must be plugged in accordance to the Well Construction Standards ARSD 74:02:04 by June 1, 2015. Riverside Hutterian Brethren must notify the Chief Engineer when the well is plugged to allow an inspector access to verify the plugging is complete. *(The well was plugged May 29, 2015 by Pullman Well Drilling Inc. A copy of the well plugging report is on file with the Water Rights Program).*



Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUN 27 2019

date

