

WATER PERMIT NO. 1746A-2

Phone: 393-1018

Name of Applicant: Jean J Lyman

Post Office Address: PO Box 63, Caputa SD 57725

Amount of Water Claimed: no add'l (2.46) Total Acres: no add'l (172)

Source of Water Supply: Rapid Creek

Water to be used for: irrigation County: Pennington

About 1/2 mile south of Caputa

PRIORITY Date Received: 2-3-93 Fee: \$50 Remarks: Additional

diversion point and change acreage on Water Right No. 1746-2

Corrected Application Received: _____ Period of Annual Use: April 1 - Sept 30

WATER QUALITY APPROVAL RECEIVED: 2-17-93 APPROVED/CONDITIONAL (Circle one)

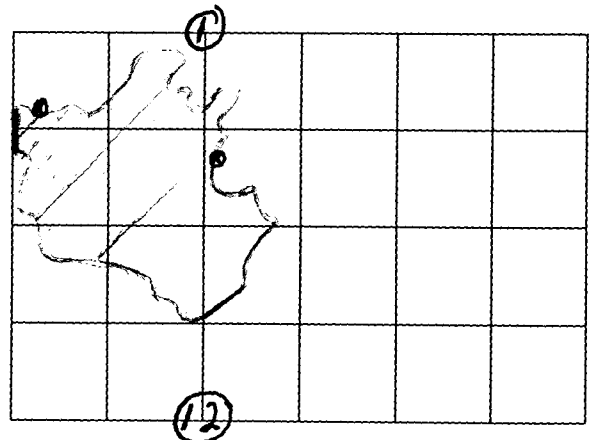
WI-1 Description same as Application YES X NO _____ REMARKS: _____

Diversion Point: SW 1/4 SE 1/4 and NW 1/4 SW 1/4

Sec 1-T1S-R9E

Land to be Irrigated: SW 1/4, W 1/2 SE 1/4 Sec 1,

N 1/2 NW 1/4, NW 1/4 NE 1/4 Sec 12; all in T1S-
R9E



Well Log: Driller: _____ Licensed YES _____ NO _____

Depth of Well: _____ REMARKS: _____

Type of Map: topo PREPARED BY: Mark Rath Reviewed and the Number

Assigned on: 2-18-93 By: Karen Schlaak

FORM 2: Application for irrigation in South Dakota

(type or print)



Mail to:
Water Rights Division
Joe Foss Building
523 E Capitol
Pierre SD 57501-3181
605 773-3352

No. 1746A-2 Hydrologic Unit 10120110
Basin Upper Cheyenne
Newspaper Rapid City Journal, P.O. Box 450, RC
(office use only)

Application For Soil/Water Compatibility Permit And Permit To Appropriate Water

Type of Application: New Vested Right X Amendment/Correction to Permit No. 1746-2
(check one) (Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. acreage change, change diversion point(s), add diversion point(s), etc.) ADD DIVERSION POINT AND CHANGE ACRES

- Name of Applicant JEAN J LYMAN Phone 605-393-1018
Mailing Address PO Box 63 CAPOTA, SD State SD 57725
(Street, RR, or Box) (City) (Zip Code)
- Amount of water claimed NO ADD *CFS or **GPM ***AF Total Acreage 172
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout if applicable)
- Source of water supply RAPID CREEK
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) FROM SW CORNER OF SECTION 1 T1S-R9E POINT #1 2750' EAST, 850' NORTH (SW1/4 SE1/4) POINT #2 1500' NORTH, 750' EAST (NW1/4 SW1/4) County PENNINGTON
- County or counties where water will be used PENNINGTON
- Annual period during which water is to be used APRIL 1 - SEPT 30
- List below each forty acre subdivision, 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
S1 T1S-R9E NW SW	4
" NE SW	26
" NW SE	4
" SW SW	36

Land Description	Acres
S1 T1S-R9E SE SW	40
" SW SE	11
S12 T1S R9E NW NW	6
" NE NW	27
" NW NE	18

- Type of Irrigation: Gravity: X Towline: Center Pivot: Gun: Other (Specify): SPRINKLER
- Crops to be irrigated: ALFALFA, GRASS, TREES
- Give a description of the project. (Attach sheet if more space is needed)
ADD DIVERSION POINT FROM RAPID CREEK AND CHANGE ACRES FOR IRRIGATION AUTHORIZED BY 1746-2

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach maps, soils information and any other technical information. (see instructions)

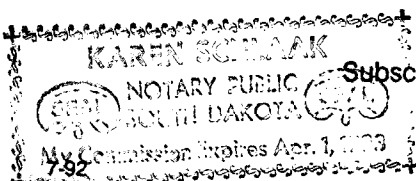
STATE OF SOUTH DAKOTA)

County of Hughes)^{SS}

I, Jean J Lyman, the applicant, certify that I have read this application and examined the attached maps, that the water sample, if needed, has been taken by the required procedures and has not been adulterated or tampered with and is representative of the water to be used, and that the matters stated in this application are true and correct.

Signed Jean J Lyman
Subscribed and sworn to before me this 3rd day of February 19 93

Karen Schlaak
Notary Public



SOUTH DAKOTA WATER PERMIT NO. 1746A-2 FOR IRRIGATION

Date of first receipt of application February 3, 1993.

Date Soil/Water Compatibility Permit received February 17, 1993.

The Water Management Board approved Water Permit Application No. 1746A-2 on May 5, 1993 for Jean J. Lyman, PO Box 63, Caputa SD 57725 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. 1746A-2 authorizes an additional point of diversion and changes the location of the acres authorized by Water Right No. 1746-2. Water Right No. 1746-2 appropriates 2.46 cubic feet of water per second from Rapid Creek from a diversion point located in the SW 1/4 SE 1/4 Section 1 to irrigate 172 acres located in the S 1/2 SW 1/4, SW 1/4 SE 1/4 Section 1 and the NW 1/4, NW 1/4 NE 1/4 Section 12; all in T1S-R9E. The additional point of diversion from Rapid Creek is located in the NW 1/4 SW 1/4 Section 1 and the change in location of the 60 acres of irrigation in the NW 1/4 Section 12 to include the SW 1/4, W 1/2 SE 1/4 Section 1 and the NW 1/4 NE 1/4 Section 12; all in T1S-R9E. No increase in the diversion rate or the 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 - September 30.
3. The date from which applicant may claim right is February 3, 1993.
4. One-fifth of the construction is to be completed on or before November 5, 1995.
5. All construction is to be completed on or before May 5, 1998.
6. Water is to be put to beneficial use on or before May 5, 2002.
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. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.
2. Water is available from Rapid Creek to reasonably satisfy this application only through contract between the Rapid Valley Water Conservancy District and Bureau of Reclamation for releases from Deerfield and Pactola Reservoirs.
3. This permit is approved subject to the irrigation water use questionnaire being submitted each year.

(continued)

4. Approval of Permit No. 1746A-2 deletes 30 acres in the NW 1/4 NW 1/4, 13 acres in the NE 1/4 NW 1/4, 11 acres in the SE 1/4 NW 1/4 and 6 acres in the SW 1/4 NW 1/4 of Section 12, T1S-R9E from irrigation. The 172 acres authorized for irrigation include: 4 acres in the NW 1/4 SW 1/4, 26 acres in the NE 1/4 SW 1/4, 4 acres in the NW 1/4 SE 1/4, 36 acres in the SW 1/4 SW 1/4, 40 acres in the SE 1/4 SW 1/4 and 11 acres in the SW 1/4 SE 1/4 of Section 1 and 6 acres in the NW 1/4 NW 1/4, 27 acres in the NE 1/4 NW 1/4 and 18 acres in the NW 1/4 NE 1/4 of Section 12, all in T1S-R9E.

WATER MANAGEMENT BOARD

By: _____

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources

JUL 6 1993

date

RECEIPT

413616

Division of Water Rights

South Dakota Department of Environment and Natural Resources

Pierre, _____ February 3 _____, 19 93

RECEIVED OF Jean J Lyman, PO Box 63, Caputa SD 57725

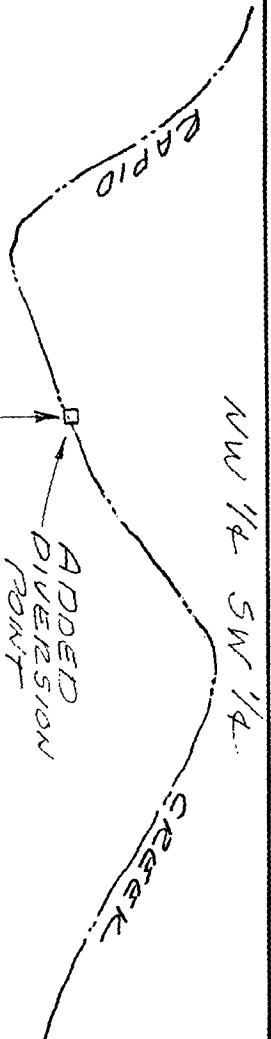
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use _____	50 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. _____	
Fee for Filing Transfer Form _____	
Fee for Filing Extension Request _____	
Fee for _____	

(Any Other Work Provided by Law)	
Total	50 00

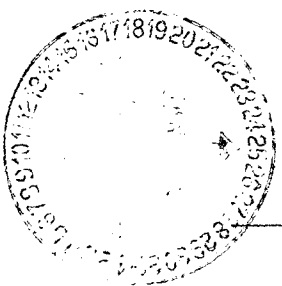
By *John M. Hatten*
Chief Engineer

(115)



1/16 LINE

1/16 LINE



SECTION LINE
COUNTY ROAD

2

11

12

476'

1436'

SW 1/4

SW 1/4

NOTE: Added diversion point is located 476 feet East and 1436 feet North of the Southwest corner of Section 1 as described.

NW 1/4 SW 1/4 Section 1, Township 1 South, Range 9 East, Black Hills Meridian, Pennington County, South Dakota.

LEGAL DESCRIPTION

SURVEYORS STATEMENT

I, Duane C. Scott, Registered Land Surveyor, do hereby state that the above shown location of the added diversion point for Permit No. 1746-2 was made by me on January 21, 1993 and that the same is correctly shown to the best of my knowledge, information and belief.
WITNESS my hand and official seal this Twenty-first day of January, 1993.

CLIENT

Jean J. Lyman

P.O. Box 63

Caputa, SD 57725

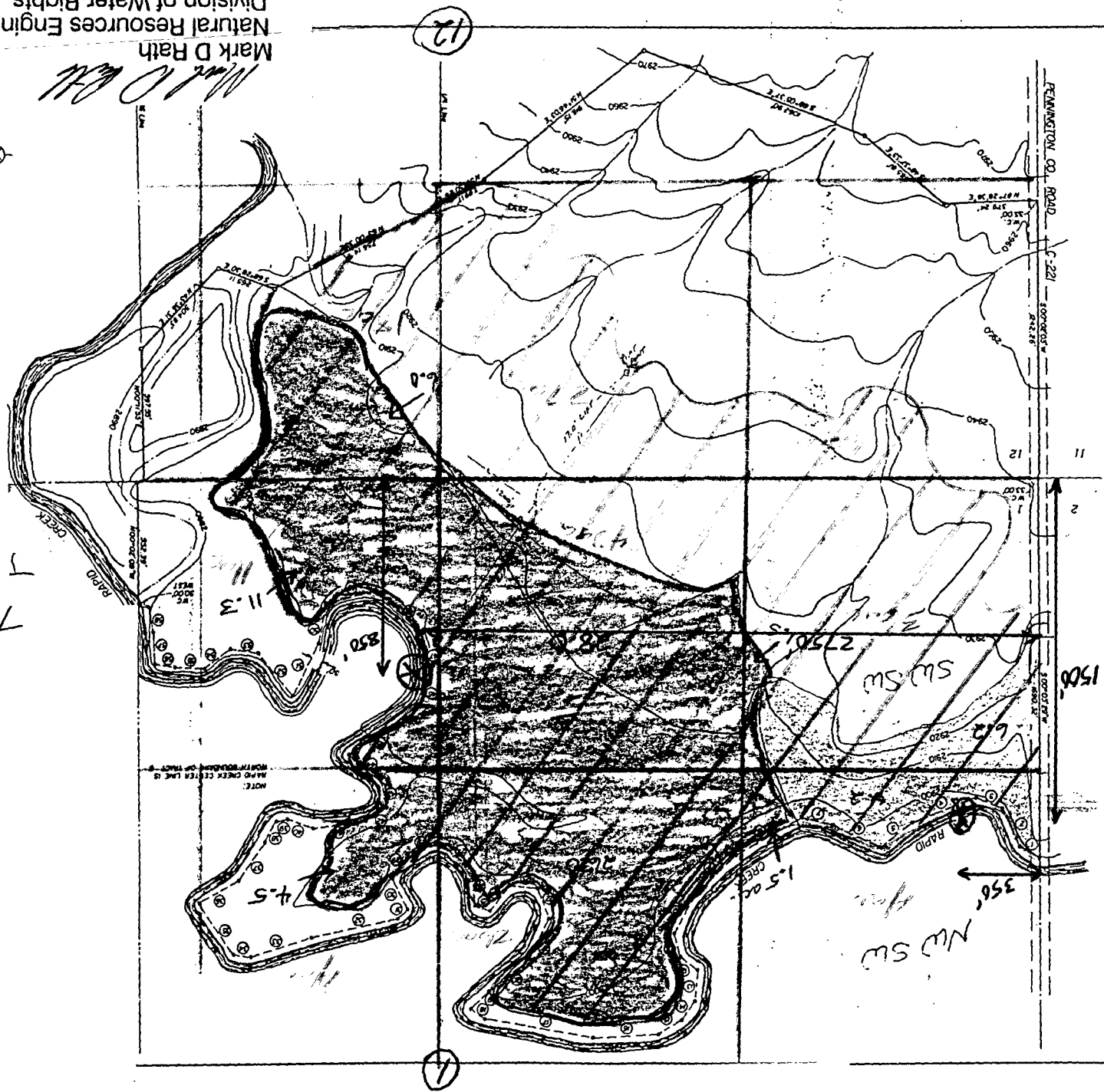
REGISTERED LAND SURVEYOR NO. 2540

SCALE	DATE DRAWN	DRAWN BY	CHECKED BY	REVISED	FILE NUMBER
1"=200'	Jan 21 1993	[Signature]	[Signature]		93-A



Mark D Rath
 Natural Resources Engineer
 Division of Water Rights
 Date 2/8/93

TOPOGRAPHY MAP
 of
 TRACT 8 of HOOK J SUBDIVISION
 Located in the
 NW 1/4 NE 1/4 and the NW 1/4 of Section 12
 Township 1 South, Range 9 East
 Rock Hills Meridian
 REMINGTON COUNTY, SOUTH DAKOTA



No. 1746A-2
 App1

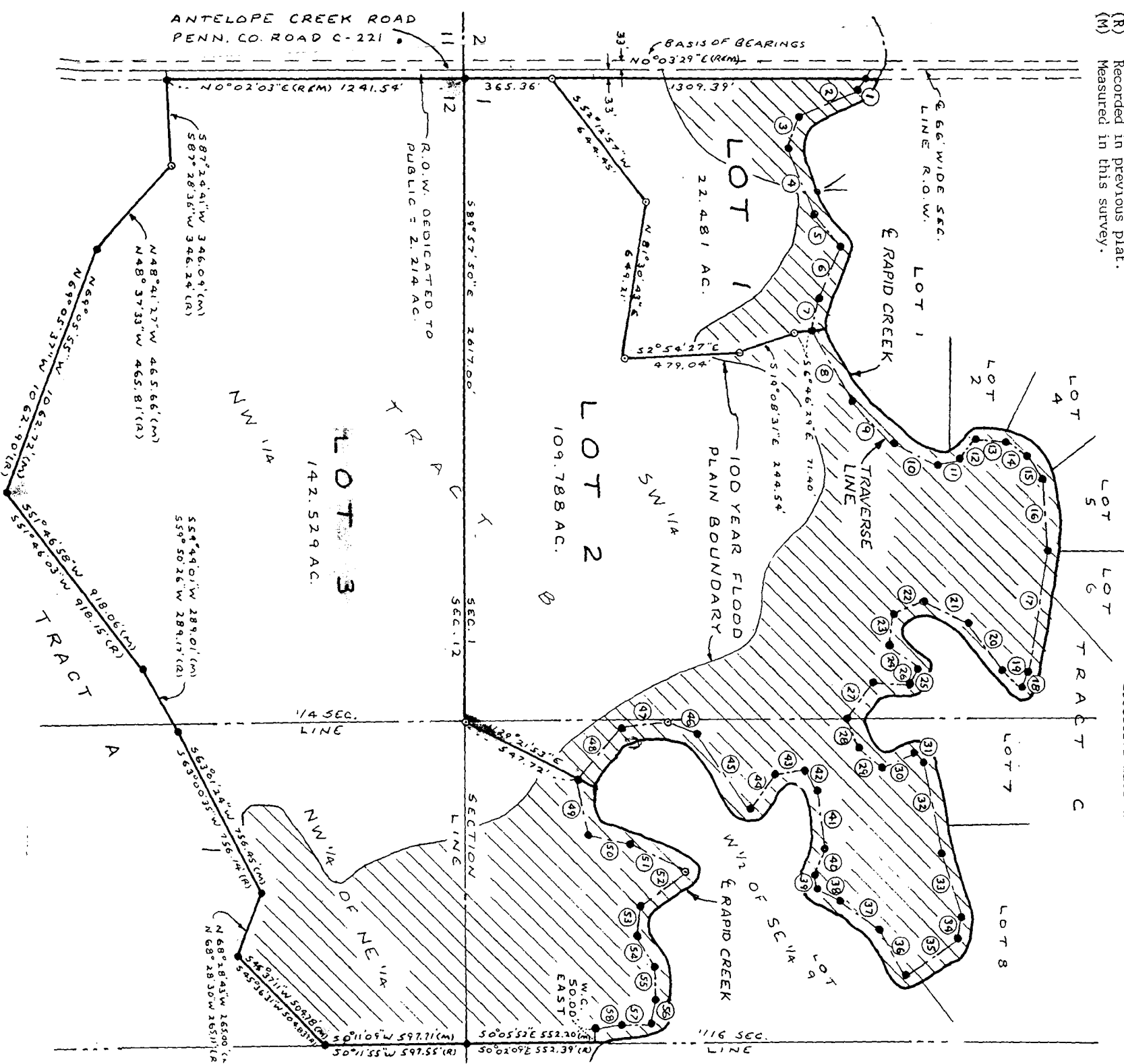
LOTS 1, 2 AND 3 OF TRACT B OF HOOK J SUBDIVISION

located in $\frac{1}{2}$ of SE $\frac{1}{4}$ and in SW $\frac{1}{4}$ of Section 1 and in $\frac{1}{2}$ of NE $\frac{1}{4}$ and in NW $\frac{1}{4}$ of Section 12, T1S, R9E, R1M, Sannington County, South Dakota.

LEGEND:

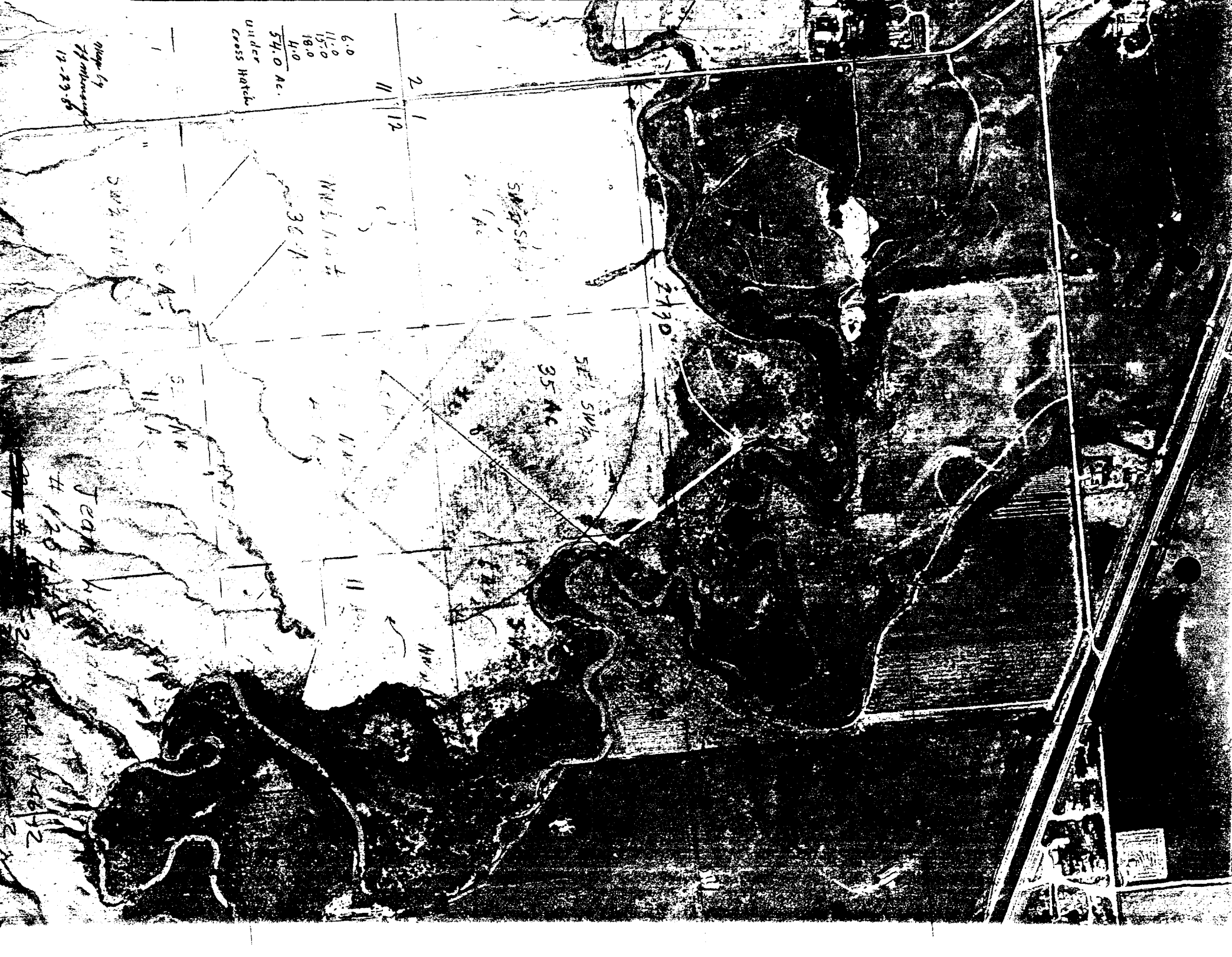
- Set 5/8" rebar with survey cap marked "HEAD SD 2199 WY 5148".
- Found survey monument (iron pipe)
- (W.C.) Witness Corner
- (R) Recorded in previous plat.
- (M) Measured in this survey.

- NOTES:
- 1) Utility Easements: 8' on the interior sides all side and rear-lot lines.
 - 2) Rapid Creek centerline is the North boundary Lots 1, 2 & 3 of Tract B. The traverse line is setback 50' ± from the centerline of the creek. Areas in the creek are based on the length of traverse line.
 - 3) The 100 year Flood Plain boundary as shown hereon was drawn from FIRN Panel # 460064-125, effective date 12-1-81.

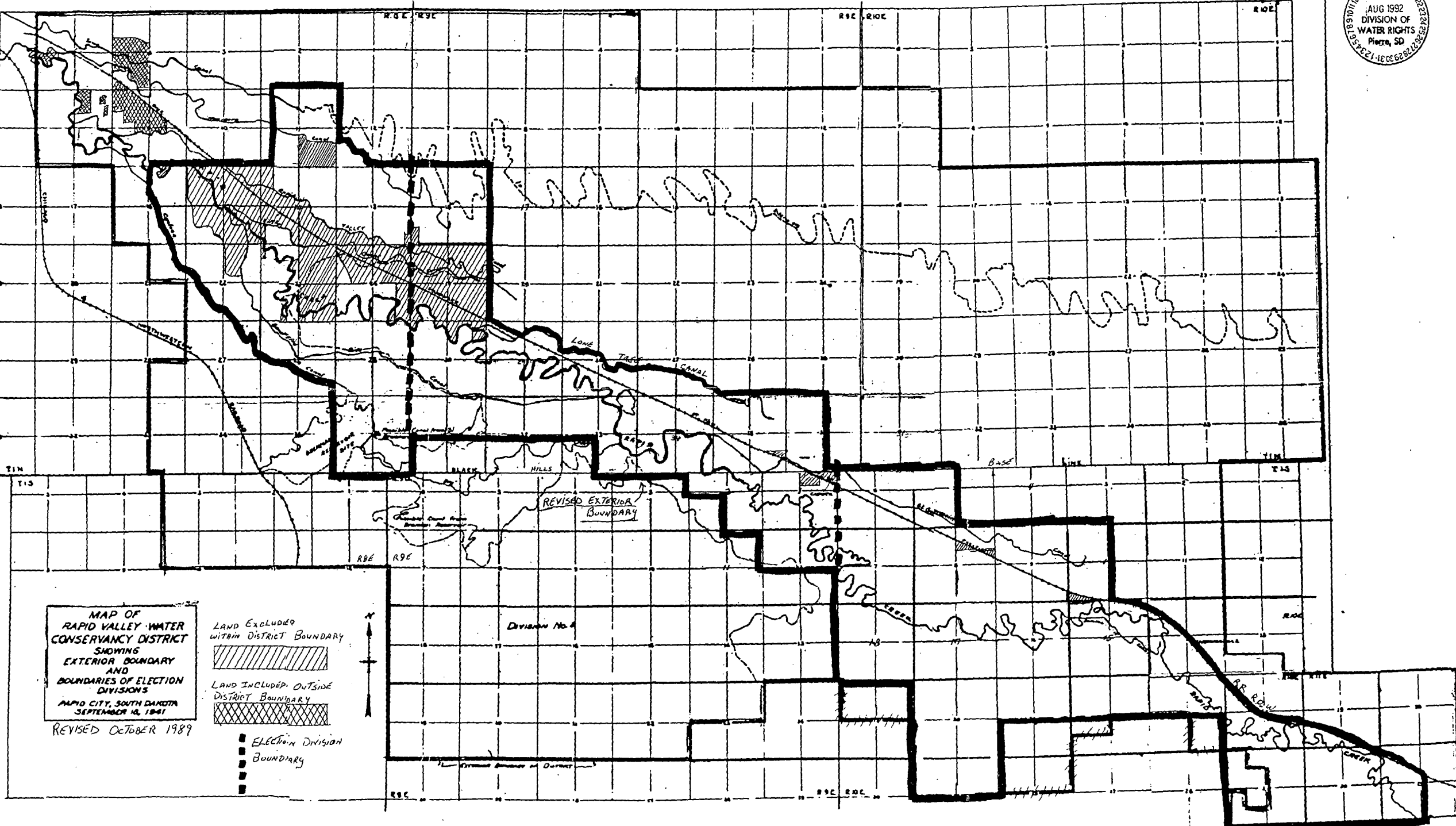


6.0
11.0
15.0
18.0
4.0
54.0 Ac.
under
cross Hatch

Map by
H. M. M. M.
12-23-88



AUG 1992
 DIVISION OF
 WATER RIGHTS
 Pierre, SD
 123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100



Department of Agriculture
WI#1
5/87

SOIL/WATER COMPATIBILITY PERMIT
Division of Conservation

Office Use Only

4750

WR#

OWNERS NAME: LYMAN, JEAN J. OWNERS ADDRESS: PO BOX 60
CAPOTA SD 57725

COUNTY LAND LOCATED IN: PENNINGTON PHONE: 323-1613

LEGAL DESCRIPTION:

☐ Well

☒ Surface

1. LOCATION From SW Corner of 1-T1S-R9E POINT #1 2750' East, 650' North
Depth POINT #2 1500' North, 350' East

Legal Description	Acres	Legal Description	Acres
<u>NW 1/4 SW 1/4 1-T1S-R9E</u>	<u>4</u>	<u>SE 1/4 SW 1/4 1-T1S-R9E</u>	<u>4</u>
<u>NW 1/4 SW 1/4 1-T1S-R9E</u>	<u>26</u>	<u>SW 1/4 SE 1/4 1-T1S-R9E</u>	<u>11</u>
<u>NW 1/4 SE 1/4 1-T1S-R9E</u>	<u>4</u>	<u>NW 1/4 NW 1/4 12-T1S-R9E</u>	<u>6</u>
<u>SW 1/4 SW 1/4 1-T1S-R9E</u>	<u>36</u>	<u>NW 1/4 NW 1/4 12-T1S-R9E</u>	<u>27</u>
<u>NW 1/4 NW 1/4 12-T1S-R9E</u>	<u>13</u>		

2. TYPE OF IRRIGATION: GRAVITY: _____ TOWLINE: _____ CENTER PIVOT: _____ GUN: _____ OTHER: (Specify) SPINNIER

3. CROPS TO BE IRRIGATED: ALFALFA, GRASS, TREES

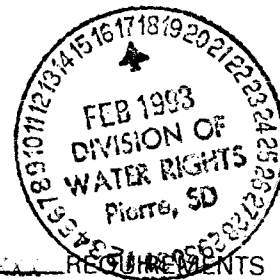
WATER QUALITY:

4. WATER SAMPLE NUMBER: RAPID CREEK 7. ADJUSTED (SAR): _____
5. SALINITY (EC X 10⁶): _____ 8. PERCENT SODIUM: _____
6. SODIUM (SAR): _____

Requirements:

A buffer strip along Rapid Creek be maintained in permanent vegetation and not be irrigated to address potential stream bank erosion.

The draw found in the NW corner of the project not be irrigated to reduce the potential of erosion.



Russell J. Stone

Director, Division of Conservation

☒ APPROVED
☐ DISAPPROVED
☐ WAIVER

☒ REQUIREMENTS

Soil/water permits will be recorded by the Department of Agriculture, with the County Register of Deeds.

PENNINGTON Co., S.D.
Date



TABLE 1 - SOIL INTERPRETIVE GROUPS

Map Symbol	Mapping Unit Name	SIR Number	Slope %	Capability Unit		Range Site	Pasture Group	Windbk. Suit. Group	Wind Erod. Group (I)	Soil Loss Values		Hydro Group
				Dryland	Irrigation					K	Tons	
AaA	Altvan loam	NE0097	0-2	IVs1		Sl	D1	6G	5(56)	.28	4	B
AaB	Altvan loam	NE0097	2-6	IVe2		Sl	D1	6G	5(56)	.28	4	B
AaC	Altvan loam	NE0097	6-9	VIe2		Sl	D1	6G	5(56)	.28	4	B
ArA	Arvada loam	WY0088	0-4	Vis3		TCp	NS	10	5(56)	.32	3	D
BaA	Baca silt loam	CO0004	0-4	IIIf1		Sl	F	3	5(56)	.24	5	B
Bb	Badland			VIIIf1		-	-	-	-	-	-	-
BcB	Bankard loamy fine sand	CO0729	0-4	IVe6		Sa	H	1	2(134)	.17	5	A
BfA	Beckton silt loam	SD0403	0-4	IVs2		Cp	C	9	6(48)	.32	3	D
BhA	Beckton-Arvada complex		0-4									
	Beckton part	SD0403		IVs2		Cp	C	9	6(48)	.32	3	D
	Arvada part	WY0088		Vis3		TCp	NS	10	5(56)	.32	3	D
BkA	Blackpipe silty clay loam	SD0085	0-2	IIIf1		Sl	F	6R	7(38)	.32	4	C
BkB	Blackpipe silty clay loam	SD0085	2-6	IIIf1		Sl	F	6R	7(38)	.32	4	B
B1A	Blackpipe clay loam	SD0085	0-2	IIIf1		Sl	F	6R	6(48)	.32	4	C
B1B	Blackpipe clay loam	SD0085	2-6	IIIf1		Sl	F	6R	6(46)	.32	4	C
BnC	Blackpipe-Norrest complex		6-12									
	Blackpipe part	SD0085		IVe1		Sl	F	6R	6(48)	.28	4	C
	Norrest part	SD0203		Vis3		Cy	F	6R	4L(86)	.37	4	C
BoA	Blackpipe-Wortman complex		0-3									
	Blackpipe part	SD0085		IIIf1		Sl	F	6R	7(38)	.32	4	C
	Wortman part	SD0132		IVs2		Cp	C	9	6(48)	.32	3	D
BoB	Blackpipe-Wortman complex		1-6									
	Blackpipe part	SD0085		IIIf1		Sl	F	6R	6(48)	.28	4	C
	Wortman part	SD0132		IVs2		Cp	C	9	6(48)	.32	3	D
Bp	Bridgeport silt loam	KS0127	0-2	IIIf1		LT	K	1	6(48)	.32	5	B
Ca	Cactusflat silty clay	SD0362	0-3	IIIf1		Cy	I	4C	4(86)	.32	5	C
Cb	Cactusflat-Weta complex		0-2									
	Cactusflat part	SD0362		IIIf1		Cy	I	4C	4(86)	.32	5	C
	Weta part	SD0363		Vis3		TCp	C	10	6(48)	.32	3	D
CeA	Cedarpass silty clay loam	SD0365	0-3	IVe10		Sl	F	8	4L(86)	.32	5	B
CfA	Cedarpass-Denby complex		0-3									
	Cedarpass part	SD0365		IVe10		Sl	F	8	4L(86)	.32	5	B
	Denby part	SD0421		IVs6		Cy	I	4C	4(86)	.37	5	C
Ch	Cedarpass-Interior-Badlands complex		0-45									
	Cedarpass part	SD0365		VIIIs6		Sl	NS	8	4L(86)	.32	5	B
	Interior part	SD0364				BOv	NS	10	4L(86)	.32	5	B
	Badland part			VIIIf1		-	-	-	-	-	-	-
C1F	Colby silt loam	KS0024	9-40	VIIf1		TU	NS	10	4L(86)	.43	5	B

TABLE 1 - SOIL INTERPRETIVE GROUPS

Map Symbol	Mapping Unit Name	SIR Number	Slope %	Capability Unit		Range Site	Pasture Group	Windbk. Suit. Group	Wind Erod. Group (I)	Soil Loss Values		Hydro Group
				Dryland	Irrigation					K	Tons	
HrC	Hisle-Rock outcrop complex Hisle part Rock outcrop part	SD0117	2-9	VIa3 VIIIs1		TCp	NS	10	6(48)	.37	3	D
HsB	Hisle-Slickspots complex Hisle part Slickspots part	SD0017	0-6	VIa3 VIIIs3		TCp	NS	10	6(48)	.37	3	D
Hv	Hoven silt loam	SD0056	0-1	VIa3		CD	B2	10	6(48)	.37	3	D
Hx	Hoven Variant silty clay, ponded	SD0376	0-1	VIIIw1						.37	3	D
Ia	Interior loam	SD0380	0-2	VIa7		TU	NS	10	4L(86)	.32	5	B
Io	Interior loam, channeled	SD0364	0-3	VIw1		BOv	NS	10	4L(86)	.32	5	B
IrB	Interior-Cedarpass-Denby complex Interior part Cedarpass part Denby part	SD0364 SD0365 SD0421	0-6	VIa7		BOv S1 Cy	NS F I	10 8 4C	4L(86) 4L(86) 4(86)	.32 .32 .37	5 5 5	B B C
JaA	Jayem fine sandy loam	WY0044	0-3	IIIe4		Sy	H	5	3(86)	.28	5	B
JaC	Jayem fine sandy loam	WY0044	3-9	IVe6		Sy	H	5	3(86)	.28	5	B
KtA	Kyle clay	SD0078	0-1	IVa3		Cy	I	4C	4(86)	.37	5	D
KyA	Kyle clay	SD0078	0-3	IVa3		Cy	I	4C	4(86)	.37	5	D
KyB	Kyle clay	SD0078	3-6	IVe3		Cy	I	4C	4(86)	.37	5	D
KyC	Kyle clay	SD0078	6-9	IVe14		Cy	I	4C	4(86)	.37	5	D
LaB	Larvie clay	SD0223	0-4	IVa3		Cy	I	4C	4(86)	.37	4	D
LaD	Larvie clay	SD0223	6-15	VIe4		Cy	I	4C	4(86)	.37	4	D
LhC	Larvie-Hisle complex Larvie part Hisle part	SD0223 SD0117	0-9	IVe14 VIa3		Cy TCp	I NS	4C 10	4(86) 6(48)	.37 .37	4 3	D D
Lo	Lohmiller silty clay	SD0326	0-2	IIIs1		COv	F	4C	4(86)	.32	5	C
Lp	Lohmiller silty clay, channeled	SD0351	0-4	VIw1		COv	F	4C	4(86)	.32	5	C
MaB	Manvel silt loam	CO0179	0-6	IVe10		TU	G	8	4L(86)	.37	5	B
MeC	Manvel-Minnequa silt loams Manvel part Minnequa part	CO0179 CO0034	2-9	IVe10 VIe3		TU TU	G G	8 8	4L(86) 4L(86)	.37 .32	5 4	B C
MgC	Manvel soil-Urban land complex		6-15	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
MoE	Midway silty clay loam	CO0612	15-40	VIIe5		SwC	NS	10	4L(86)	.43	2	D
MoeP	Midway clay loam, stony	CO0643	15-40	VIIIs6		SwC	NS	10	8(-)	.24	2	D
MpD	Midway-Urban land complex	CO0612	9-30	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
MrC	Minnequa-Penrose complex Minnequa part Penrose part	CO0034 CO0041	6-9	VIe3 Vis1		TU SW	G NS	8 10	4L(86) 4L(86)	.32 .32	4 2	C D

TABLE 1 - SOIL INTERPRETIVE GROUPS

Map Symbol	Mapping Unit Name	SIR Number	Slope %	Capability Unit		Range Site	Pasture Group	Windbk. Suit. Group	Wind Erod. Group (I)	Soil Loss Values		Hydro Group
				Dryland	Irrigation					K	Tons	
NdE	Nihill gravelly loam	WY0431	9-40	VIe3		TU	NS	10	5(56)	.10	5	B
NeD	Nihill very gravelly loam	WY0431	0-25	VIIIs6		VSw	NS	10	8(-)	.05	5	A
NgA	Norka silt loam	CO0613	0-2	IIIC1		Sl	F	3	5(56)	.32	5	B
NgB	Norka silt loam	CO0613	2-6	IIIE1		Sl	F	3	5(56)	.32	5	B
NhA	Norka-Weta silt loams		0-3									
	Norka part	CO0613		IIIC1		Sl	F	3	5(56)	.32	5	B
	Weta part	SD0363		VIIs3		TCp	C	10	6(48)	.32	3	D
NkD	Norrest silty clay loam	SD0203	6-15	VIe3		Cy	F	6R	4L(86)	.37	4	C
NuA	Nunn loam	CO1078	0-2	IIIC1		Sl	F	3	6(48)	.24	5	C
NuB	Nunn loam	CO1078	2-6	IIIE1		Sl	F	3	6(48)	.24	5	C
NuC	Nunn loam	CO1078	6-12	IVe1		Sl	F	3	6(48)	.24	5	C
NvA	Nunn-Beckton complex		0-3									
	Nunn part	CO1078		IIIC1		Sl	F	3	6(48)	.24	5	C
	Beckton part	CO0879		IVs2		Cp	C	9	6(48)	.32	3	D
NvC	Nunn-Beckton complex		3-9									
	Nunn part	CO1078		IVe1		Sl	F	3	6(48)	.24	5	C
	Beckton part	CO0879		IVs2		Cp	C	9	6(48)	.32	3	D
NwA	Nunn-Urban land complex	CO1078	0-3	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
ObE	Orella-Badland complex		9-45									
	Orella part	NE0071		VIIIs5		SwC	NS	10	4L(86)	.32	2	D
	Badland part			VIIIs1		-	-	-	-	-	-	-
OeE	Orella-Interior-Badlands complex		0-25	VIIIs5								
	Orella part	NE0071				SwC	NS	10	4L(86)	.32	2	D
	Interior part	SD0364				BoV	NS	10	4L(86)	.32	5	B
	Badlands part			VIIIs1		-	-	-	-	-	-	-
OtA	Ottumwa clay	SD0248	0-2	IIIs1		Cy	I	4C	4(86)	.37	5	D
OtB	Ottumwa clay	SD0248	2-6	IIIE3		Cy	I	4C	4(86)	.37	5	D
OvC	Ottumwa-Razor complex		6-9	IVe14								
	Ottumwa part	SD0248				Cy	I	4C	4(86)	.37	5	D
	Razor part	CO0981				Cy	I	4C	4L(86)	.28	4	C
Ov	Owanka clay loam	SD0240	0-3	IIIC2		LT	F	3	4(86)	.28	5	C
Ox	Owanka-Beckton complex		0-2									
	Owanka part	SD0240		IIIC2		LT	F	3	4(86)	.28	5	C
	Beckton part	CO0879		IVs2		Cp	C	9	6(48)	.32	3	D
PdF	Penrose-Rock outcrop complex		9-60									
	Penrose part	CO0041		VIIIs1		Sw	NS	10	4L(86)	.32	2	D
	Rock outcrop part			VIIIs1		-	-	-	-	-	-	-
PeB	Pierre clay	SD0077	2-6	IVe3		Cy	I	4C	4(86)	.37	4	D
PeC	Pierre clay	SD0077	6-9	IVe14		Cy	I	4C	4(86)	.37	4	D

Sec. II-A

TABLE 1 - SOIL INTERPRETIVE GROUPS

Map Symbol	Mapping Unit Name	SIR Number	Slope %	Capability Unit		Range Site	Pasture Group	Windbk. Suit. Group	Wind Erod. Group(I)	Soil Loss Values		Hydro Group
				Dryland	Irrigation					K	Tons	
PeD	Pierre clay	SD0077	6-15	Vie4		Cy	I	4C	4(86)	.37	4	D
PgD	Pierre-Grummit clays		6-15									
	Pierre part	SD0077		Vie4		Cy	I	4C	4(86)	.37	4	D
	Grummit part	SD0082		Vie12		SwC	NS	10	4(86)	.28	2	D
PhB	Pierre-Hisle complex		0-9									
	Pierre part	SD0077		Ive3		Cy	I	4C	4(86)	.37	4	D
	Hisle part	SD0117		Vis3		TCp	NS	10	6(48)	.37	3	D
PkC	Pierre-Urban land complex	SD0077	6-15	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
Ps	Pits, gravel		-	VIIIIs2		-	-	-	-	-	-	A
RaB	Razor silty clay	CO0581	2-6	Ive3		Cy	I	4C	4L(86)	.28	4	C
RaC	Razor silty clay	CO0981	6-9	Ive14		Cy	I	4C	4L(86)	.28	4	C
RbD	Razor-Midway complex		6-15									
	Razor part	CO0981		Vie4		Cy	I	4C	4L(86)	.28	4	C
	Midway part	CO0612		Vie12		SwC	NS	10	4L(86)	.43	2	D
Rv	Riverwash		0-1	VIIIe1					1(250)		-	-
SbF	Samsil clay	SD0109	15-40	VIIe5		SwC	NS	10	4(86)	.37	2	D
ScE	Samsil-Pierre clays		15-25									
	Samsil part	SD0109		Vie12		SwC	NS	10	4(86)	.37	2	D
	Pierre part	SD0077		Vie4		Cy	NS	10	4(86)	.37	4	D
SdF	Samsil-Rock outcrop complex		25-75									
	Samsil part	SD0109		VIIe5		SwC	NS	10	4(86)	.37	2	D
	Rock outcrop part			VIIIIs2		-	-	-	-	-	-	-
SeA	Satanta loam	KS0102	0-2	IIIc1		S1	F	3	6(48)	.28	5	B
SeB	Satanta loam	KS0102	2-6	IIIe1		S1	F	3	6(48)	.28	5	B
SeC	Satanta loam	KS0102	6-9	Ive1		S1	F	3	6(48)	.28	5	B
SgA	Satanta-Beckton complex		0-3									
	Satanta part	KS0102		IIIc1		S1	F	3	6(48)	.28	5	B
	Beckton part	CO0879		IVs2		Cp	C	9	6(48)	.32	3	D
SkA	Satanta-Urban land complex	KS0102	0-2	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
SkB	Satanta-Urban land complex	KS0102	2-6	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
SmA	Savo silt loam	SD0084	0-2	IIIc1		S1	F	3	6(48)	.32	5	C
SmB	Savo silt loam	SD0084	2-6	IIIe1		S1	F	3	6(48)	.32	5	C
SmC	Savo silt loam	SD0084	6-9	Ive1		S1	F	3	6(48)	.32	5	C
SoB	Savo-Urban land complex	SD0084	0-9	NO AGRICULTURAL INTERPRETATION MADE FOR URBAN LAND COMPLEXES								
StE	Schamber-Samsil complex		15-40									
	Schamber part	SD0075		VIIIs7		VSw	NS	10	6(48)	.17	2	A
	Samsil part	SD0109		VIIe5		SwC	NS	10	4(86)	.37	2	D
SuE	Shingle loam	WY0090	15-25	VIIe4		Sw	NS	10	5(56)	.32	2	D

Sec. II-A

TABLE 1 - SOIL INTERPRETIVE GROUPS

Map Symbol	Mapping Unit Name	SIR Number	Slope %	Capability Unit		Range Site	Pasture Group	Windbk. Suit. Group	Wind Erod. Group(1)	Soil Loss Values		Hydro Group
				Dryland	Irrigation					K	Tons	
SvF	Shingle-Rock outcrop complex		25-60									
	Shingle part	WY0090		VIIe4		Sw	NS	10	5(56)	.32	2	D
	Rock outcrop part			VIIIIs2		-	-	-	-	-	-	-
SzB	Swanboy clay	SD0066	0-6	VIIs6		DC	NS	10	4(86)	.37	5	D
TfA	Tilford silt loam	SD0012	0-2	IIIfc1		Sl	F	3	6(48)	.32	5	B
VbD	Valent loamy fine sand	CO0050	6-25	VIe7		Sa	NS	10	2(134)	.10	5	A
VbwB	Valent-Wortman loamy fine sands		2-6									
	Valent part	CO0050		VIe7		Sa	NS	7	2(134)	.10	5	A
	Wortman part	SD0402		IVs2		Cp	C	9	2(134)	.17	3	A
WaA	Wanblee silt loam	SD0112	0-4	VIIs3		TCp	NS	10	6(48)	.32	3	D
WbB	Wanblee-Wortman silt loams		0-4									
	Wanblee part	SD0112		VIIs3		TCp	NS	10	6(48)	.32	3	D
	Wortman part	SD0132		IVs5		Cp	C	9	6(48)	.32	3	D
WeA	Weta silt loam	SD0363	0-3	VIIs3		TCp	NS	10	6(48)	.32	3	D
Wh	Whitelake fine sandy loam	SD0120	0-2	IVs2		Sy	H	5	3(86)	.24	3	B
WxA	Whitewater clay	SD0383	0-3	VIIs6		DC	NS	10	4(86)	.37	4	D
WbB	Whitewater-Orella clays		3-9									
	Whitewater part	SD0383		VIIs6		DC	NS	10	4(86)	.37	4	D
	Orella part	NE0071		VIe12		SwC	NS	10	4(86)	.32	2	D
WvB	Wortman silt loam	SD0132	0-6	IVs5		Cp	C	9	6(48)	.32	3	D
ZnD	Zigweid-Nihill complex		6-15									
	Zigweid part	WY0121		VIe1		Sl	NS	3	6(48)	.32	5	B
	Nihill part	WY0421		VIe3		TU	NS	10	5(56)	.10	5	B

SD0078

SOIL INTERPRETATIONS RECORD

HLRA(S): 63A, 60A, 58A

REV. LDZ, 11-85

KYLE SERIES

TYPIC TORRENTS, VERY-FINE, MONTMORILLONITIC, MESIC

THE KYLE SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN CLAY SEDIMENTS WEATHERED FROM CLAY SHALES ON UPLANDS. THE SURFACE LAYER IS GRAYISH BROWN CLAY 4 INCHES THICK. THE SUBSOIL IS GRAYISH BROWN AND LIGHT OLIVE GRAY CLAY 36 INCHES THICK. THE SUBSTRATUM IS LIGHT OLIVE GRAY AND PALE OLIVE CLAY. SLOPES RANGE FROM 0 TO 15 PERCENT. MOST AREAS ARE USED FOR RANGELAND.

ESTIMATED SOIL PROPERTIES (1)													
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				LIQUID LIMIT	PLAS- TICITY	INDEX			
				(PCT)	4	10	40	100					
0-4 IC, SIC	IC4, MH	IA-7		0	100	100	90-100	80-100	55-75	125-45			
4-24 IC	IC4, MH	IA-7		0	100	100	90-100	80-100	55-75	125-45			
24-60 IC	IC4, MH	IA-7		0	100	100	90-100	80-100	50-70	125-55			
DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (MMHOS/CM)	SALINITY (CMH)	SHRINK SWELL FACTOR	TEROSIDEWIND FACTOR	ORGANIC MATTER (PCT)	CORROSIVITY			
							POTENTIAL K _f T _f GROUP			STEEL	CONCRETE		
0-4	151-65	1.15-1.30	<0.05	0.08-0.12	16.6-7.8	C2	VERY HIGH	371	5	4	1-3	HIGH	MODERATE
4-24	160-65	1.15-1.30	<0.05	0.08-0.12	17.4-8.4	C4	VERY HIGH	371					
24-60	160-65	1.15-1.30	<0.05	0.08-0.12	17.4-8.4	2-8	VERY HIGH	371					
FLOODING													
HIGH WATER TABLE				CEMENTED PAN		BEDROCK		SUBSIDENCE		HYDROPTENTIAL			
FREQUENCY	DURATION	DEPTH (FT)	KIND	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL	TOTAL	GROUP	ACTION		
NONE		26.0									LOW		

SANITARY FACILITIES				CONSTRUCTION MATERIAL			
SEPTIC TANK	SEVERE-PERCS SLOWLY			ROADFILL	POOR-SHRINK-SWELL, LOW STRENGTH		
ABSORPTION FIELDS							
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE			SAND	IMPROBABLE-EXCESS FINES		
SANITARY LANDFILL (TRENCH)	SEVERE-TOO CLAYEY			GRAVEL	IMPROBABLE-EXCESS FINES		
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE			TOPSOIL	POOR-TOO CLAYEY		
DAILY COVER FOR LANDFILL	POOR-TOO CLAYEY, HARD TO PACK						
BUILDING SITE DEVELOPMENT				WATER MANAGEMENT			
SHALLOW EXCAVATIONS	SEVERE-CUTBANKS CAVE			POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE		
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL			EMBANKMENTS DIKS AND LEVEES	SEVERE-HARD TO PACK		
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL			EXCAVATED PONDS	SEVERE-NO WATER		
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL, SLOPE			IRRIGATION	0-3%: DROUGHTY, SLOW INTAKE 3+%: SLOPE, DROUGHTY, SLOW INTAKE		
LOCAL ROADS AND STREETS	SEVERE-SHRINK-SWELL, LOW STRENGTH			TERRACES AND DIVERSIONS	0-8%: ERODES EASILY, PERCS SLOWLY 8+%: SLOPE, ERODES EASILY, PERCS SLOWLY		
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	SEVERE-TOO CLAYEY			GRASSED WATERWAYS	0-8%: TOO ARID, ERODES EASILY 8+%: TOO ARID, SLOPE, ERODES EASILY		
REGIONAL INTERPRETATIONS							
PASTURE	GROUP I						

RECREATIONAL DEVELOPMENT			
CAMP AREAS	0-8X: MODERATE-PERCS SLOWLY, TOO CLAYEY	0-2X: MODERATE-TOO CLAYEY, PERCS SLOWLY	
	8-15X: MODERATE-SLOPE, PERCS SLOWLY, TOO CLAYEY	2-5X: MODERATE-SLOPE, TOO CLAYEY, PERCS SLOWLY	
		6+X: SEVERE-SLOPE	
PICNIC AREAS	0-8X: MODERATE-TOO CLAYEY, PERCS SLOWLY	SEVERE-FROGES EASILY	
	8-15X: MODERATE-SLOPE, TOO CLAYEY, PERCS SLOWLY	PATHS	
		AND	
		TRAILS	

[illegible]

WOODLAND SUITABILITY									
CLASS- DETERMINING PHASE	FORM	MANAGEMENT PROBLEMS			POTENTIAL PRODUCTIVITY				
	SYM	PROS	EQUIP	USEED	INVTHT	PLANT	COMMON TREES	ISITIPROD	TREES TO PLANT
		HAZARD	LIMIT	IMORTY	HAZARD	COMPET		INDVICLAS	
							NOVE		

PASTURE SUITABILITY						
GROUP	MLRA(S)	SPECIES	MLRA(S)	SPECIES	MLRA(S)	SPECIES
I	60A	ALFALFA CRESTED WHEATGRASS GREEN NEEDLEGRASS PUBESCENT WHEATGRASS WESTERN WHEATGRASS	63A	ALFALFA CRESTED WHEATGRASS GREEN NEEDLEGRASS INTERMEDIATE WHEATGRASS PUBESCENT WHEATGRASS SMOOTH BROMEGRASS WESTERN WHEATGRASS		

[illegible]

WILDLIFE HABITAT SUITABILITY														
CLASS- DETERMINING PHASE		POTENTIAL FOR HABITAT ELEMENTS					POTENTIAL AS HABITAT FOR:							
		GRAIN	GRASS	WILD HERB	HARD TREES	ICONIFEROUS PLANTS	SHRUBS	WETLAND	SHALLOW WATER	OPENLD	WOODLD	WETLAND	GRANGLD	
10-5% PES1-44	FAIR	FAIR	GOOD	IV.	POORIV.	POORIV.	POORIV.	POORIV.	POOR	FAIR	IV.	POORIV.	POOR	GOOD
6-9% PES1-44	POOR	FAIR	GOOD	IV.	POORIV.	POORIV.	POORIV.	POORIV.	POOR	POOR	IV.	POORIV.	POOR	GOOD
0-5% PES31	POOR	FAIR	GOOD	IV.	POORIV.	POORIV.	POORIV.	POORIV.	POOR	POOR	IV.	POORIV.	POOR	GOOD
7-15%	IV.	POOR	FAIR	GOOD	IV.	POORIV.	POORIV.	POORIV.	POOR	POOR	IV.	POORIV.	POOR	GOOD
10-15%	POOR	FAIR	GOOD	FAIR	IV.	POORIV.	POORIV.	POORIV.	POOR	POOR	IV.	POORIV.	POOR	GOOD

COMMON PLANT NAME		PERCENTAGE COMPOSITION		DISTRIBUTION BY CLASS DETERMINING PHASE	
SYMBOL		PE31-44	PE31	DRY, WARM	DRY, COOL
WESTERN WHEATGRASS	AGSM	35	50	40	30
GREEN NEEDLEGRASS	STV14	30	25	30	15
BLUE GRASS	ROGR2	10	15	-	-
BUFFALOGRASS	BUDA	-	5	-	-
OTHER PERENNIAL FORBS	PPFF	5	5	10	10
BLUEBUNCH WHEATGRASS	AGSP	-	-	10	15
PRAIRIE SANDREED	CALO	-	-	-	5
WINTERFAT	EULA5	-	-	5	5
SIS SAGEBRUSH	ARTR2	-	-	5	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT.):					
FAVORABLE YEARS		2500	2300	1200	1900
NORMAL YEARS		2100	1700	1000	1300
UNFAVORABLE YEARS		1500	1300	700	900

1 BASE ON "ENGINEERING TEST DATA...SOUTH DAKOTA", 1971. PROPERTIES FOR UWB(SHALE) FROM PULVERIZED SAMPLE.
 2 PREDICTED YIELDS FOR LRA 53: PE31-44 AND LRA 60A:PE31.
 3 WINDBREAK GROUP 4C
 4 PE31-44 AND PE31: CLAYEY RANGE SITE, SD; DRY: 4T-58A-X, IX-12-CY.

S 5 I L I N T E R P R E T A T I O N S R E C O R D

LOHMEYER SERIES
FLOODED.

USTIC TORRIFLUENTS, FINE, MONTMORILLONITIC (CALCAREOUS), MESIC

THE LOHMEYER SERIES, FLOODED, CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN ALLUVIUM ON BOTTOMLANDS. THE SURFACE LAYER IS LIGHT BROWNISH GRAY SILTY CLAY 5 INCHES THICK. THE SUBSTRATUM IS 31 INCHES OF LIGHT BROWNISH GRAY CLAY LOAM OVER STRATIFIED CLAY LOAM. SLOPES ARE 0 TO 3 PERCENT. AREAS ARE USED FOR HAYLAND AND RANGELAND.

ESTIMATED SOIL PROPERTIES													
DEPTH (FT.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	PERCENT OF MATERIAL LESS THAN 2.0 MM	LIQUID LIMIT	PLASTICITY INDEX	PERCENT ORGANIC MATTER	CORROSIVITY	STRENGTH	CONCRETE	ROD	WATER
0-5	CL	CL	A-6, A-7	0	100	95-100	90-100	75-85	35-50	115-25			
0-5	ISCL	CL	A-6, A-7	0	100	100	95-100	85-100	35-50	115-25			
0-5	ISIC	CL, CH	A-7	0	100	100	95-100	85-100	45-60	120-30			
5-41	ISCL, CL, SIC	CL, CH	A-7	0	100	95-100	90-100	70-100	40-60	115-30			
41-60	SR-FSL-C	CL, ML	A-4, A-6	0	100	95-100	90-100	55-75	30-40	115-15			
DEPTH (FT.)	MOISTURE (%)	BULK DENSITY (G/CM ³)	PERCENT AVAILABLE WATER	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SWELL POTENTIAL (%)	PERCENT ORGANIC MATTER	CORROSIVITY	STRENGTH	CONCRETE	ROD	WATER	
0-5	130-400	1.20-1.30	0.05-0.5	0.14-0.17	16.6-8.4	<4	MODERATE	1.32	5	4L	1-2		
0-5	130-400	1.15-1.25	0.05-0.5	0.14-0.17	16.6-8.4	<4	MODERATE	1.32	5	4L	1-2		
0-5	140-500	1.15-1.25	0.05-0.5	0.11-0.16	16.6-8.4	<4	HIGH	1.32	5	4L	1-2		
5-41	135-500	1.20-1.35	0.05-0.5	0.11-0.16	17.4-8.4	<4	HIGH	1.32					
41-60	125-350	1.30-1.45	0.05-0.5	0.14-0.16	17.4-8.4	<4	MODERATE	1.32					
FLOODING													
HIGH WATER TABLE													
DEPTH (FT.) KIND MONTHS DEPTH (FT.) HARDNESS DEPTH (FT.) HARDNESS INIT. TOTAL GRP. FROST													
COMMON BRIDGE 1441-SEPT 26.0													
ACTION													

SANITARY FACILITIES		CONSTRUCTION MATERIAL	
SEPTIC TANK ABSORPTION FIELDS	SEVERE-FLOODING, PERCS SLOWLY	ROADFILL	FAIR-SHRINK-SWELL, LOW STRENGTH
SEWAGE LAGOON AREAS	SEVERE-FLOODING	SAND	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (TRENCH)	SEVERE-FLOODING	GRAVEL	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (AREA)	SEVERE-FLOODING	TOPSOIL	POOR-TOO CLAYEY
DAILY COVER FOR LANDFILL	POOR-HARD TO PACK	WATER MANAGEMENT	
		POUND RESERVATION	SLIGHT

BUILDING SITE DEVELOPMENT		AREA	
SHALLOW EXCAVATIONS	MODERATE-TOO CLAYEY, FLOODING	EMBANKMENTS DIKES AND LEVEES	MODERATE-THIN LAYER, HARD TO PACK
DWELLINGS WITHOUT BASEMENTS	SEVERE-FLOODING, SHRINK-SWELL	EXCAVATED PODS AQUIFER FED	SEVERE-NO WATER
DWELLINGS WITH BASEMENTS	SEVERE-FLOODING, SHRINK-SWELL	DRAINAGE	DEEP TO WATER
SMALL COMMERCIAL BUILDINGS	SEVERE-FLOODING, SHRINK-SWELL	IRRIGATION	CL, SICL: PERCS SLOWLY, FLOODING SIC: SLOW INTAKE, PERCS SLOWLY, FLOODING
LOCAL ROADS AND STREETS	SEVERE-SHRINK-SWELL, LOW STRENGTH, FLOODING	TERRACES AND DIVERSIONS	PERCS SLOWLY
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	CL, SICL, OCCAS: MODERATE-FLOODING SIC, OCCAS: SEVERE-TOO CLAYEY CL, SICL, FREQ: SEVERE-FLOODING SIC, FREQ: SEVERE-FLOODING, TOO CLAYEY	GRASSED WATERWAYS	TOO ARID, PERCS SLOWLY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-FLOODING	0-2% OCCAS: MODERATE-FLOODING
	PLAYGROUNDS	2-3% OCCAS: MODERATE-SLOPE, FLOODING FREQ: SEVERE-FLOODING
PICNIC AREAS	CL, SICL, OCCAS: SLIGHT	CL, SICL, OCCAS: SLIGHT
	SIC, OCCAS: MODERATE-TOO CLAYEY	SIC, OCCAS: MODERATE-TOO CLAYEY
	CL, SICL, FREQ: MODERATE-FLOODING	CL, SICL, FREQ: MODERATE-FLOODING
	SIC, FREQ: MODERATE-FLOODING, TOO CLAYEY	SIC, FREQ: MODERATE-TOO CLAYEY, FLOODING

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE	CAPABILITY		OATS	WHEAT	ALFALFA	COOL SEASON	GRASS HAY
	(BU)	(T)	(BU)	(T)	(TONS)	(T)	(TONS)
MAP12-14	54	64	30	26	1.7	2.8	-
MAP14-16	54	64	-	-	2.0	3.3	-
CHANNELLED							

WOODLAND SUITABILITY

CLASS- DETERMINING PHASE	MANAGEMENT PROBLEMS		POTENTIAL PRODUCTIVITY	
	SYMPTOMS	HAZARD LIMIT	COMMON TREES	TREES TO PLANT
			INDEX	CLAS

PASTURE SUITABILITY

GROUP	MLRA(S)	SPECIES	MLRA(S)	SPECIES	MLRA(S)	SPECIES
A	63A	ALFALFA BIG BLUESTEM CREEPING FOXTAIL INDIANGRASS INTERMEDIATE WHEATGRASS REED CANARYGRASS SMOOTH BROMEGRASS SWITCHGRASS WESTERN WHEATGRASS				

WILDLIFE

CLASS-DETERMINING PHASE	SPECIES		SPECIES		SPECIES	
	1	2	3	4	5	6
ALL	EASTERN COTTONWOOD	BLUE SPRUCE	GREEN ASH	PONDEROSA PINE	EASTERN RED CEDAR	PEKING COTONEASTER
	SILVER WILLOW	SIBERIAN PEASHRUB	MANCHURIAN CRABAPPLE			
	COMMON CHOKECHERRY	SIBERIAN PEASHRUB	TATARIAN HONEYSUCKLE			

WILDLIFE HABITAT SUITABILITY (A)

CLASS- DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS		POTENTIAL AS HABITAT FOR	
	GRAIN & GRASS	WILD (HARDY) CONIFER & SHRUBS	WETLAND & SHALLOW OPEN	WOODLAND & WETLAND
MAP12-14	POOR	FAIR	POOR	POOR
MAP14-16	FAIR	GOOD	FAIR	FAIR
CHANNELLED	IV. POOR	GOOD	FAIR	IV. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)

COMMON PLANT NAME	SYMBOL	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE			
		MAP12-14	MAP14-16	CHANNELLED	PE25-31
WESTERN WHEATGRASS	AGSM	15	20	15	40
SWITCHGRASS	PAV12	20	15	15	15
BIG BLUESTEM	ANGE	10	30	35	10
BLUE GRAMA	BOGR2	15	5	5	5
INDIANGRASS	SDNU2	10	-	-	-
SLENDER WHEATGRASS	AGTR	5	5	5	-
SIDE OATS GRAMA	BOCU	5	5	5	-
FOURWING SALT-TUSH	ATCA2	5	-	-	-
WESTERN SNOWBERRY	SYOC	-	10	10	5
GREEN NEEDLEGRASS	STV14	-	10	10	20
POTENTIAL PRODUCTION (LBS./AC. DRY WT.):					
FAVORABLE YEARS		3500	3000	3000	2800
NORMAL YEARS		2500	2500	2500	2000
UNFAVORABLE YEARS		1000	1700	1700	1200

FOOTNOTES

A WINDBREAK GROUP 1

B LOAMY OVERFLOW RANGE SITE, MAP12-14: LRA 67, MAP14-16: LRA 60A; PE25-31: OVERFLOW RANGE SITE #36, 20.

00929

SOIL INTERPRETATIONS RECORD

COLOMBO SERIES
HIGH RAINFALL

MLRA(S): 60A, 61

RLS, SD, 7-85

TORRIFLUVENTIC HAPLUSTOLLS, FINE-LOAMY, MIXED, MESIC

THE COLOMBO SERIES CONSISTS OF DEEP, WELL-DRAINED SOILS FORMED IN CALCAREOUS LOAMY ALLUVIUM ON FLOODPLAINS AND TERRACES. TYPICALLY, THE SURFACE LAYER IS BROWN AND GRAYISH BROWN LOAM, 10 IN. THICK. IT OVERLIES STRATIFIED LOAM AND SANDY LOAM THAT EXTENDS TO 60 INCHES OR MORE. AVERAGE ANNUAL PRECIPITATION IS ABOUT 16 IN. SLOPES RANGE FROM 0 TO 6 PERCENT. MOST AREAS ARE USED FOR CROPLAND.

LANDSCAPE AND CLIMATE PROPERTIES					
ANNUAL AIR TEMPERATURE	FROST FREE DAYS	ANNUAL PRECIPITATION	ELEVATION (FT)	DRAINAGE CLASS	SLOPE (PCT)
		16		W	0-6

ESTIMATED SOIL PROPERTIES											
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT. >10 IN. (PCT)	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				CLAY (PCT)	
0-10						4	10	40	200		
10-60	SR-CL-S	ML	A-4	0	0	95-100	80-100	75-90	50-70	15-25	
		ML	A-4, A-6		0-5	90-100	75-100	70-90	50-60	18-35	

DEPTH (IN.)	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHQS/CM)	SAR	CEC (ME/100G)	CACO3 (PCT)	GYPSON (PCT)
0-10	25-35	10-15	1.35-1.45	0.6-2.0	0.14-0.18	7.4-8.4	<2				
10-60	30-40	5-15	1.35-1.45	0.6-2.0	0.14-0.16	7.4-9.0	<2				

DEPTH (IN.)	ORGANIC MATTER (PCT)	SHRINK-SWELL POTENTIAL	EROSION FACTORS	WIND EROD. GROUP	WIND EROD. INDEX	CORROSIVITY	
0-10	2-4	LOW	28	5	5	STEEL	CONCRETE
10-60		LOW	28			HIGH	LOW

FLOODING			HIGH WATER TABLE			CEMENTED FAN			BEDROCK			RESIDENCE TIME			FROST ACTION		
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INIT.	TOTAL	GRP	TR	POTENTIAL	FROST	ACTION	
RARE-OCCASIONAL	BRIEF	MAR-JUN	>6.0			-		>60		-	-	-	-	B	MODERATE		

SANITARY FACILITIES (A)		CONSTRUCTION MATERIAL	
SEPTIC TANK ABSORPTION FIELDS	RARE: MODERATE-FLOODING, PERCS SLOWLY OCCAS: SEVERE-FLOODING	ROADFILL	GOOD
SEWAGE LAGOON AREAS	0-2% RARE: MODERATE-SEEPAGE 2-6% RARE: MODERATE-SEEPAGE, SLOPE OCCAS: SEVERE-FLOODING	SAND	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (TRENCH)	RARE: SEVERE-TOO SANDY OCCAS: SEVERE-FLOODING, TOO SANDY	GRAVEL	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (AREA)	RARE: MODERATE-FLOODING OCCAS: SEVERE-FLOODING	TOPSOIL	POOR-TOO SANDY, SMALL STONES
DAILY COVER FOR LANDFILL	POOR-TOO SANDY	WATER MANAGEMENT	
BUILDING SITE DEVELOPMENT		POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-6%: MODERATE-SEEPAGE, SLOPE
SHALLOW EXCAVATIONS	SEVERE-CUTBANKS CAVE	EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
DWELLINGS WITHOUT BASEMENTS 1	SEVERE-FLOODING	EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DWELLINGS WITH BASEMENTS 1	SEVERE-FLOODING	DRAINAGE	DEEP TO WATER
SMALL COMMERCIAL BUILDINGS 1	SEVERE-FLOODING	IRRIGATION	0-3% RARE: FAVORABLE 3+% RARE: SLOPE 0-3% OCCAS: FLOODING 3+% OCCAS: SLOPE, FLOODING
LOCAL ROADS AND STREETS	RARE: MODERATE-FLOODING, FROST ACTION OCCAS: SEVERE-FLOODING	TERRACES AND DIVERSIONS	TOO SANDY
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	RARE: SLIGHT OCCAS: MODERATE-FLOODING	GRASSED WATERWAYS	TOO ARID

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-FLOODING	PLAYGROUNDS	0-2% RARE: MODERATE-SMALL STONES 2-6% RARE: MODERATE-SLOPE, SMALL STONES 0-2% OCCAS: MODERATE-SMALL STONES, FLOODING 2-6% OCCAS: MODERATE-SLOPE, SMALL STONES, FLOODING
PICNIC AREAS	MODERATE-DUSTY	PATHS AND TRAILS	MODERATE-DUSTY

REGIONAL INTERPRETATIONS

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE	CAPA- BILITY		CORN (BU)		CORN SILAGE (TONS)		ALFALFA HAY (TONS)		WHEAT (BU)		COOL SEASON GRASS (AUM)			
	NIRR	TIRR	NIRR	TIRR	NIRR	TIRR	NIRR	TIRR	NIRR	TIRR	NIRR	TIRR	NIRR	TIRR
0-3%	3C	1		120		32	2.2	4.5	40		3.7			
3-6%	3E	3E		90		25	2.0	3.5	36		3.3			
CHANNLED	6W			-		-	-	-	-		-			

WOODLAND SUITABILITY

CLASS- DETERMINING PHASE	TORD	MANAGEMENT PROBLEMS						POTENTIAL PRODUCTIVITY				TREES TO PLANT	
		SYM	EROS	NTE	DIP	ISEEDL	TAINDTH	PLANT	COMMON TREES	TSITE	PROD		INDX
									NONE				

CLASS-DETERMINING PHASE:		SPECIES		HT	SPECIES		HT	SPECIES		HT	SPECIES		HT
ALL	COTTONWOOD	38	SIBERIAN ELM	28	PONEYLOCUST	28	GREEN ASH	22					
	HACKBERRY	22	PONDEROSA PINE	20	BLUE SPRUCE	20	RUSSIAN OLIVE	18					
	EASTERN REDCEDAR	18	TATARIAN HONEYSUCKLE	8	LILAC	6	AMERICAN PLUM	7					

WILDLIFE HABITAT SUITABILITY		WILDLIFE HABITAT SUITABILITY		WILDLIFE HABITAT SUITABILITY		WILDLIFE HABITAT SUITABILITY	
CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS	POTENTIAL AS HABITAT FOR:		POTENTIAL AS HABITAT FOR:		POTENTIAL AS HABITAT FOR:	
	GRAIN & GRASS & WILD SEED LEGUME HERB. TREES PLANTS	WETLAND	SHALLOW OPENED WOODED	WETLAND	SHALLOW OPENED WOODED	WETLAND	SHALLOW OPENED WOODED
WRR	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR
IRR	GOOD	GOOD	FAIR	POOR	V. POOR	GOOD	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)		POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)		POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)	
COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	ALL	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE
BLUE GRASS	BGR2	5			
WHEATER GRASS	AGROP2	15			
NEEDLE GRASS	STIPA	10			
BIG BLUESTEM	ANGE	30			
LITTLE BLUESTEM	SCSC	10			
GOLDEN ROD	SOLID	5			
WESTERN YARROW	ACMIL*	5			
SNOWBERRY	SYMPH	5			
POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS		4300			
NORMAL YEARS		3600			
UNFAVORABLE YEARS		2500			

FOOTNOTES

- A THE RARE FLOODING MAY OCCUR AS FLASH FLOODS OF UNPREDICTABLE MAGNITUDE
 1 FROST NOT DEEP ENOUGH TO AFFECT FOOTINGS
 B SOUTH DAKOTA RANGE SITE: OVERFLOW

MLR(S): 60A, 63A

REV. LDZ, 2-87

USTIC TORRIORTHENTS, CLAYEY, MONTMORILLONITIC (CALCAREOUS), MESIC, SHALLOW

THE SANSIL SERIES CONSISTS OF SHALLOW, WELL DRAINED SOILS FORMED IN RESIDUUM WEATHERED FROM SHALE. THE SURFACE LAYER IS LIGHT BROWNISH GRAY CLAY 2 INCHES THICK. THE NEXT LAYER IS LIGHT BROWNISH GRAY CLAY 5 INCHES THICK. THE SUBSTRATUM IS 10 INCHES OF LIGHT BROWNISH GRAY AND LIGHT OLIVE GRAY CLAY OVER BEDDED SHALE. SLOPES RANGE FROM 1 TO 60 PERCENT. MOST AREAS ARE USED FOR RANGELAND.

LANDSCAPE AND CLIMATE PROPERTIES					
ANNUAL AIR TEMPERATURE	FROST FREE DAYS	ANNUAL PRECIPITATION	ELEVATION (FT)	DRAINAGE CLASS	SLOPE (PCT)
				V	1-60

ESTIMATED SOIL PROPERTIES (a)											
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRAC. >10 IN. (PCT)	FRAC. 3-10 IN. (PCT)	PERCENT OF MATERIAL LESS PASSING SIEVE NO.				CLAY	
0-2	CL, SIC	CH, MH	A-7	0	0	100	85-100	80-100	70-100	45-60	
0-2	CL	CL	A-6, A-7	0	0	100	95-100	80-95	70-90	35-40	
2-17	CL	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-65	
17-40	MH	CH, MH	A-7	0	0	100	95-100	90-100	85-100		

DEPTH (IN.)	LIQUID LIMIT	PLASTICITY INDEX	MOIST DENSITY (G/CM ³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SAR	CEC (ME/100G)	CAC03 (PCT)	GYPSUM (PCT)
0-2	50-85	20-50	1.15-1.30	0.06-0.2	0.08-0.12	7.4-8.4	<2				
0-2	30-45	10-20	1.15-1.30	0.2-0.6	0.17-0.20	7.4-8.4	<2				
2-17	50-80	18-55	1.15-1.30	0.06-0.2	0.08-0.12	7.4-8.4	<2				
17-40	50-80	20-55		0.01-0.2							

DEPTH (IN.)	ORGANIC MATTER (PCT)	SHRINK-SWELL POTENTIAL (PCT)	EROSION RESISTANCE (I)	WIND EROD. INDEX	WIND EROD. INDEX	CORROSIVITY
0-2	1-3	VERY HIGH	37	2	4	86
0-2	1-3	HIGH	37	2	4	86
2-17		VERY HIGH	37			
17-40						

FLOODING			HIGH WATER TABLE			CEMENTED PAV.		FEEDECK		SUBSIDENCE		HYDIPOTENTIAL	
FREQUENCY	DURATION	MONTHS	DEPTH (ET)	KIND	MONTHS	DEPTH (IN)	HARDNESS (IN)	DEPTH (IN)	HARDNESS (IN)	INIT. (IN)	TOTAL (IN)	CRP	FROST ACTION
None			6.0					4-20	SOET			1.0	LOW

SANITARY FACILITIES		CONSTRUCTION MATERIAL	
SEPTIC TANK ABSORPTION FIELDS	1-15Z: SEVERE-THIN LAYER, SEEPAGE 15+Z: SEVERE-THIN LAYER, SEEPAGE, SLOPE	ROADFILL	POOR-AREA RECLAIM, SHRINK-SWELL, LOW STRENGTH
SEWAGE LAGOON AREAS	1-7Z: SEVERE-SEEPAGE 7+Z: SEVERE-SEEPAGE, SLOPE	SAND	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (TRENCH)	1-15Z: SEVERE-SEEPAGE 15+Z: SEVERE-SEEPAGE, SLOPE	GRAVEL	IMPROBABLE-EXCESS FINES
SANITARY LANDFILL (AREA)	1-8Z: SLIGHT 8-15Z: MODERATE-SLOPE 15+Z: SEVERE-SLOPE	TOPSOIL	POOR-AREA RECLAIM, TOO CLAYEY, THIN LAYER
DAILY COVER FOR LANDFILL	1-15Z: POOR-AREA RECLAIM, HARD TO PACK 15+Z: POOR-AREA RECLAIM, HARD TO PACK, SLOPE	WATER MANAGEMENT	
BUILDING SITE DEVELOPMENT		POND RESERVOIR AREA	1-8Z: SEVERE-SEEPAGE 8+Z: SEVERE-SEEPAGE, SLOPE
SHALLOW EXCAVATIONS	1-8Z: SLIGHT 8-15Z: MODERATE-SLOPE 15+Z: SEVERE-SLOPE	EMBANKMENTS DIKES AND LEVEES	SEVERE-HARD TO PACK, THIN LAYER
DWELLINGS WITHOUT BASEMENTS	1-15Z: SEVERE-SHRINK-SWELL 15+Z: SEVERE-SLOPE, SHRINK-SWELL	EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DWELLINGS WITH BASEMENTS	1-15Z: SEVERE-SHRINK-SWELL 15+Z: SEVERE-SHRINK-SWELL, SLOPE	DRAINAGE	DEEP TO WATER
SMALL COMMERCIAL BUILDINGS	1-8Z: SEVERE-SHRINK-SWELL 8+Z: SEVERE-SLOPE, SHRINK-SWELL	IRRIGATION	1-3Z CL: DROUGHTY, PERCS SLOWLY 3+Z CL: SLOPE, DROUGHTY, PERCS SLOWLY 1-3Z C, SIC: DROUGHTY, SLOW INTAKE 3+Z C, SIC: SLOPE, DROUGHTY, SLOW INTAKE
LOCAL ROADS AND STREETS	1-15Z: SEVERE-LOW STRENGTH, SHRINK-SWELL 15+Z: SEVERE-LOW STRENGTH, SLOPE, SHRINK-SWELL	TERRACES AND DIVERSIONS	1-8Z: AREA RECLAIM, ERODES EASILY 8+Z: SLOPE, AREA RECLAIM, ERODES EASILY
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	1-15Z CL: SEVERE-THIN LAYER, AREA RECLAIM 15+ZCL: SEVERE-SLOPE, THIN LAYER, AREA RECLAIM 1-15Z C, SIC: SEVERE-THIN LAYER, TOO CLAYEY 15+ZC, SIC: SEVERE-SLOPE, THIN LAYER, TOO CLAYEY	GRASSED WATERWAYS	1-8Z: ERODES EASILY, DROUGHTY 8+Z: SLOPE, ERODES EASILY, DROUGHTY

RECREATION DEVELOPMENT	
CAMP AREAS	1-15%: SEVERE-THIN LAYER, AREA RECLAIM 15-2: SEVERE-SLOPE, THIN LAYER, AREA RECLAIM 1-6%: SEVERE-THIN LAYER, AREA RECLAIM 6-2: SEVERE-SLOPE, THIN LAYER, AREA RECLAIM
PICNIC AREAS	1-15%: SEVERE-THIN LAYER, AREA RECLAIM 15-2: SEVERE-SLOPE, THIN LAYER, AREA RECLAIM 1-8% CL: SLIGHT 1-8% C, SIC: MODERATE-TOO CLAYEY 8-25%: SEVERE-ERODES EASILY 25-2: SEVERE-SLOPE, ERODES EASILY

REGIONAL INTERPRETATIONS

PASTURE	GROUP NS (NOT SUITED), SOUTH DAKOTA
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CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE	CAPA- BILITY	FIELDS PER HOUR OF LOGS	HOUR POSTURE	(HIGH LEVEL MANAGEMENT)				
1-25Z	6E	NIER IIR	NIER IIR	NIER IIR	NIER IIR	NIER IIR	NIER IIR	NIER IIR
25-Z	7E							

WOODLAND SUITABILITY

[illegible]

WINDBREAKS. (B)

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS				POTENTIAL AS HABITAT FOR			
	GRAIN & GRASS & WILD SEED	LEGUME	WESS	IBEE3 PLANTS	WETLAND	SHALLOW	OPENLD	WOODLD
ALL	V. POOR	V. POOR	FAIR	POOR	V. POOR	V. POOR	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION). (C)

COMMON PLANT NAME	PLANT SYMBOL (WLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE	
		PE31-44	PEK31
LITTLE BLUESTEM	SCSC	25	25
WESTERN WHEATGRASS	AGSN	25	30
SIDEWATER GRAMA	BGCU	15	15
GREEN NEEDLEGRASS	STV14	15	10
BLUE GRAMA	BGGR2	10	10
SEDGE	CAREX	5	5
OTHER PERENNIAL FORBS	FFFF	5	10
POTENTIAL PRODUCTION (LBS./AC. DRY MT):			
FAVORABLE YEARS		1700	1400
NORMAL YEARS		1400	1200
UNFAVORABLE YEARS		1000	900

FOOTNOTES

- A BASED ON "ENGINEERING TEST DATA PROPOSED HIGHWAY ROUTES STATE OF SOUTH DAKOTA", 1971. DATA FOR PULVERIZED MATERIAL.
 B POSSIBLE SEEPAGE ALONG BEDDING PLANES OF SHALE.
 C WINDBREAK GROUP 10
 D SHALLOW CLAY RANGE SITE, PREDICTED YIELDS FOR LRA 63A: PE31-44, LRA 60A: PEK31.

RECREATIONAL DEVELOPMENT

0-4%: MODERATE-SLOPE, SLOWLY, TOO CLAYEY	11	0-4%: MODERATE-SLOPE, SLOWLY, TOO CLAYEY	11
5-15%: MODERATE-SLOPE, PERCS SLOWLY, TOO CLAYEY	11	15-25%: MODERATE-SLOPE, TOO CLAYEY, FIRM LAYER	11
15-25%: SEVERE-SLOPE	11	25-40%: SEVERE-SLOPE	11
3-4%: MODERATE-SLOPE, PERCS SLOWLY	11	0-4%: MODERATE-SLOPE, SLOWLY, TOO CLAYEY	11
5-15%: MODERATE-SLOPE, TOO CLAYEY, PERCS SLOWLY	11	5-15%: SEVERE-SLOPE, ERODES EASILY	11
15-25%: SEVERE-SLOPE	11	25-40%: SEVERE-SLOPE, ERODES EASILY	11

CLASS- DETERMINING PHASE	CAPABILITY	CORN	JOBS	WHEAT	WHEAT	GRAIN	ALFALFA	1200L SEASON
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
0-4% PE31-44	35	25	31	21	29	26	1.4	2.3
5-15% PE31-44	35	21	29	20	26	25	1.3	2.2
15-25% PE31-44	40	18	24	16	20	20	1.1	1.8
25-40% PE31-44	50	-	-	-	-	-	-	-
0-4% PE31	45	-	30	21	26	-	1.3	2.2
5-15% PE31	45	-	29	19	24	-	1.2	2.0
15-25% PE31	50	-	-	-	-	-	-	-

CLASS- DETERMINING PHASE	MANAGEMENT PROBLEMS	POTENTIAL PRODUCTIVITY	TREES TO PLANT
	(100)	(100)	(100)
0-4% PE31-44	SYNTHETIC	COMMON TREES	INDEX CLASS
5-15% PE31-44	SYNTHETIC	COMMON TREES	INDEX CLASS
15-25% PE31-44	SYNTHETIC	COMMON TREES	INDEX CLASS

GROUP	MLRA(S)	SPECIES	MLRA(S)	SPECIES	MLRA(S)	SPECIES
1	60A	ALFALFA CRESTED WHEATGRASS GREEN NEEDLEGRASS PUBESCENT WHEATGRASS WESTERN WHEATGRASS	63A	ALFALFA CRESTED WHEATGRASS GREEN NEEDLEGRASS INTERMEDIATE WHEATGRASS PUBESCENT WHEATGRASS SMOOTH BROMEGRASS WESTERN WHEATGRASS		

CLASS- DETERMINING PHASE	SPECIES	100L	SPECIES	100L	SPECIES	100L	SPECIES
0-4%	1121SIBERIAN ELM	1121PONDEROSA PINE	1121GREEN ASH	1121ROCKY MT. JUNIPER	1121		
5-15%	1121SIBERIAN OLIVE	1121COMMON CHOKCHERRY	1121EASTERN REDCEDAR	1121SIBERIAN PEASHRUB	1121		
15-25%	1121GOLDEN CURRANT	1121AMERICAN PLUM	1121ATAPIAN HONEYSUCKLE	1121LILAC	1121		

CLASS- DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS	POTENTIAL FOR HABITAT ELEMENTS	POTENTIAL FOR HABITAT ELEMENTS
0-4%	1121GRASS 41 WILD	1121GRASS 41 WILD	1121GRASS 41 WILD
5-15%	1121GRASS 41 WILD	1121GRASS 41 WILD	1121GRASS 41 WILD
15-25%	1121GRASS 41 WILD	1121GRASS 41 WILD	1121GRASS 41 WILD
25-40%	1121GRASS 41 WILD	1121GRASS 41 WILD	1121GRASS 41 WILD

COMMON PLANT NAME	PLANT SYMBOL	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE
WESTERN WHEATGRASS	ASSH	50	60
GREEN NEEDLEGRASS	SVIA	25	15
SIBERIAN GRAMA	POCU	5	-
BLUE GRAMA	POGR2	10	15
BUFFALOGRASS	PODA	5	5
OTHER PERENNIAL FORBS	POFF	5	5

POTENTIAL PRODUCTION (LBS./AC. DRY MAT.)	FAVORABLE YEARS	NORMAL YEARS	UNFAVORABLE YEARS
7	2400	2000	1800
	2400	2000	1800

NOTES
 A BASED ON "ENGINEERING TEST DATA...SOUTH DAKOTA", 1971. PROPERTIES FOR UMB(SHALE) FROM PULVERIZED SAMPLE.
 B PE31-44: LRA 63A; PE31: LRA 60A
 C 0-15%: WINDPRAK GROUP 30; 15-25%: WINDPRAK GROUP 10.
 D CLAYEY RANGE SIFT

SOIL INTERPRETATIONS RECORD

REV. JFY.FS. 5-84

USTOLLIC CAMBORTHIDS, FINE-LOAMY, MINED, MESSIC

ZIGWEID SERIFS

THE ZICJED SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND TERRACES. ELEVATION IS 3500 TO 6000 FEET. PFT IS ABOUT 14 INCHES, MAST IS ABOUT 50 P.F. AND THE PFS IS 100 TO 130 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH GRAY LOAM ABOUT 6 INCHES THICK. THE SUBSOIL IS LIGHT OLIVE BROWN TO LIGHT BROWNISH GRAY LOAM ABOUT 16 INCHES THICK. THE SUBSTRATUM IS LIGHT BROWNISH GRAY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES									
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.	ILLUINOIS PLAK- LIMIT	PLAK- INDEX	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.	ILLUINOIS PLAK- LIMIT	PLAK- INDEX
0-6 IN.		CL	A-4	75-100	75-100	75-85	60-70	25-35	110-120
6-12 IN.		CL	A-4	75-100	75-100	75-85	60-70	35-40	115-120
6-12 IN. CL		CL	A-4	75-100	75-100	75-85	60-70	25-40	110-120
DEPTH (IN.)	MOISTURE (%)	DENSITY (G/CM³)	WATER CAPACITY (%)	SOIL REACTION (PH)	SALINITY (MMH₂O/CM)	SHRINK-SWELL (%)	CROSSLINKING (%)	ORGANIC MATTER (%)	POROSITY (%)
0-6 IN.	15-20	1.25-1.40	0.16-0.21	7.4-8.4	<2	MODERATE	1.32	5	1-2
6-12 IN.	15-20	1.25-1.40	0.16-0.21	7.4-8.4	<2	MODERATE	1.32	5	1-2
6-12 IN. CL	15-20	1.25-1.40	0.16-0.21	7.4-8.4	<2	MODERATE	1.32	5	1-2
FLOODING									
FREQUENCY	DURATION	MONTHS	DEPTH (IN.)	KIND	MONTHS	DEPTH (IN.)	HARDNESS	DEPTH (IN.)	HARDNESS
NO. 2			2"				100	10"	100
SANITARY FACILITIES									
SEPTIC TANK ABSORPTION FIELD	0-4% MODERATE PERCS SLOWLY 4-15% MODERATE PERCS SLOWLY, SLOPE 15+% SEVERE SLOPE			PODFILL			0-15% FAIR-LOW STRENGTH, SHRINK-SWELL 15-25% FAIR-LOW STRENGTH, SLOPE, SHRINK-SWELL 25+% POOR SLOPE		
SLURRY LAGOON AREAS	0-4% MODERATE SEEPAGE 4-7% MODERATE SEEPAGE, SLOPE 7+% SEVERE SLOPE			SAND			IMPROBABLE EXCESS FINES		
GARITARY LANDFILL (TRENCH)	0-4% SLIGHT 4-15% MODERATE SLOPE 15+% SEVERE SLOPE			GRAVEL			IMPROBABLE EXCESS FINES		
SANITARY LANDFILL (AREA)	0-4% SLIGHT 4-15% MODERATE SLOPE 15+% SEVERE SLOPE			TOPSOIL			0-4% CL: FAIR-SMALL STONES 4-15% CL: FAIR-SMALL STONES, SLOPE 0-4% CL: FAIR-TOO CLAYEY, SMALL STONES 4-15% CL: FAIR-TOO CLAYEY, SMALL STONES, SLOPE 15+% POOR SLOPE		
DAILY COVER FOR LANDFILL	0-4% GOOD 4-15% FAIR SLOPE 15+% POOR SLOPE								
WATER MANAGEMENT									
				POND RESERVOIR AREA			0-4% MODERATE SEEPAGE 4-15% MODERATE SEEPAGE, SLOPE 15+% SEVERE SLOPE		
BUILDING SITE DEVELOPMENT									
SHALLOW EXCAVATIONS	0-4% SLIGHT 4-15% MODERATE SLOPE 15+% SEVERE SLOPE			EMBANKMENTS DIKS AND LEVES			MODERATE-FIPING		
DWELLINGS WITHOUT BASEMENTS	0-4% MODERATE SHRINK-SWELL 4-15% MODERATE SHRINK-SWELL, SLOPE 15+% SEVERE SLOPE			EXCAVATED FOUNDS QUIFIER FEQ			SEVERE-NO WATER		
DWELLINGS WITH BASEMENTS	0-4% MODERATE SHRINK-SWELL 4-15% MODERATE SLOPE, SHRINK-SWELL 15+% SEVERE SLOPE			DRAINAGE			DEEP TO WATER		
SMALL COMMERCIAL BUILDINGS	0-4% MODERATE SHRINK-SWELL 4-15% MODERATE SHRINK-SWELL, SLOPE 15+% SEVERE SLOPE			IRRIGATION			0-4% FAVORABLE 4-15% SLOPE		
LOCAL ROADS AND STREETS	0-4% MODERATE LOW STRENGTH, SHRINK-SWELL 4-15% MODERATE LOW STRENGTH, SLOPE, SHRINK-SWELL 15+% SEVERE SLOPE			TERRACES AND DIVERSIONS			0-4% ERODES EASILY 4-15% SLOPE, ERODES EASILY		
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-4% SLIGHT 4-15% MODERATE SLOPE 15+% SEVERE SLOPE			GRASSES WATERWAYS			0-4% ERODES EASILY 4-15% SLOPE, ERODES EASILY		
REGIONAL INTERPRETATIONS									
PASTURE	GROUP G - 1-6% slopes SOUTH DAKOTA GROUP NS - Not Suited 6+%								

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-5% CL: SLIGHT 6-15% CL: MODERATE-SLOPE 16-25% L: MODERATE-DUSTY 26-45% L: MODERATE-SLOPE, DUSTY 46-65% SEVEPE-SLOPE	PLAYGROUNDS	0-5% CL: MODERATE-SMALL STONES 6-15% CL: MODERATE-SLOPE, SMALL STONES 16-25% L: MODERATE-SMALL STONES, DUSTY 26-45% L: MODERATE-SLOPE, SMALL STONES, DUSTY 46-65% SEVEPE-SLOPE
PICNIC AREAS	0-5% CL: SLIGHT 6-15% CL: MODERATE-SLOPE 16-25% L: MODERATE-DUSTY 26-45% L: MODERATE-SLOPE, DUSTY 46-65% SEVEPE-SLOPE	PATHS AND TRAILS	0-15% CL: SLIGHT 16-25% CL: MODERATE-SLOPE 26-45% L: MODERATE-DUSTY 46-65% L: MODERATE-SLOPE, DUSTY 66-85% SEVEPE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE	CALF- BILITY	ALFALFA (TONS)	BARLEY (TUB)	OATS (TUB)	PASTURE (SUM)
0-5%	60	4.0	70	85	7
6-15%	40	3.0	65	80	6
16-25%	20	3.0	40	70	4
26-45%	10	2.0	20	30	2
46-65%	5	1.0	10	15	1

WOODLAND SUITABILITY

CLASS- DETERMINING PHASE	MANAGEMENT PROBLEMS	POTENTIAL PRODUCTIVITY
0-5%	SYNTHETIC FERTILIZER, PESTICIDES, INTRUSIVE PLANTS	COMMON TREES
6-15%	HAZARDOUS WILDFIRE, HAZARDOUS COMPETITION	HAZARDOUS WILDFIRE, HAZARDOUS COMPETITION
16-25%		NONE
26-45%		NONE
46-65%		NONE

PASTURE SUITABILITY

GROUP	MLRA(S)	SPECIES	MLRA(S)	SPECIES	MLRA(S)	SPECIES
G	60A	ALFALFA CRESTED WHEATGRASS INTERMEDIATE WHEATGRASS PUBESCENT WHEATGRASS				

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	INTL	SPECIES	INTL	SPECIES	INTL
IRR	101 SIBERIAN ELM	101 SIBERIAN ELM	101 SIBERIAN ELM	101 SIBERIAN ELM	101 SIBERIAN ELM	101 SIBERIAN ELM
	102 PUNDELOSA PINE	102 PUNDELOSA PINE	102 PUNDELOSA PINE	102 PUNDELOSA PINE	102 PUNDELOSA PINE	102 PUNDELOSA PINE
	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER
NIER	104 SIBERIAN ELM	104 SIBERIAN ELM	104 SIBERIAN ELM	104 SIBERIAN ELM	104 SIBERIAN ELM	104 SIBERIAN ELM

WILDLIFE HABITAT SUITABILITY

CLASS- DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENT	POTENTIAL AS HABITAT FOR
0-5% IRR	101 SIBERIAN ELM	101 SIBERIAN ELM
6-15% IRR	102 PUNDELOSA PINE	102 PUNDELOSA PINE
16-25% IRR	103 ROCKY MT. JUNIPER	103 ROCKY MT. JUNIPER
NIER	104 SIBERIAN ELM	104 SIBERIAN ELM

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (A)

COMMON PLANT NAME	PLANT SYMBOL	MAP 10-14	MAP 14-16
101 SIBERIAN ELM	101	10	10
102 PUNDELOSA PINE	102	10	10
103 ROCKY MT. JUNIPER	103	10	10
104 SIBERIAN ELM	104	10	10
105 PUNDELOSA PINE	105	10	10
106 ROCKY MT. JUNIPER	106	10	10
107 SIBERIAN ELM	107	10	10
108 PUNDELOSA PINE	108	10	10
109 ROCKY MT. JUNIPER	109	10	10
110 SIBERIAN ELM	110	10	10
111 PUNDELOSA PINE	111	10	10
112 ROCKY MT. JUNIPER	112	10	10
113 SIBERIAN ELM	113	10	10
114 PUNDELOSA PINE	114	10	10
115 ROCKY MT. JUNIPER	115	10	10
116 SIBERIAN ELM	116	10	10
117 PUNDELOSA PINE	117	10	10
118 ROCKY MT. JUNIPER	118	10	10
119 SIBERIAN ELM	119	10	10
120 PUNDELOSA PINE	120	10	10
121 ROCKY MT. JUNIPER	121	10	10
122 SIBERIAN ELM	122	10	10
123 PUNDELOSA PINE	123	10	10
124 ROCKY MT. JUNIPER	124	10	10
125 SIBERIAN ELM	125	10	10
126 PUNDELOSA PINE	126	10	10
127 ROCKY MT. JUNIPER	127	10	10
128 SIBERIAN ELM	128	10	10
129 PUNDELOSA PINE	129	10	10
130 ROCKY MT. JUNIPER	130	10	10
131 SIBERIAN ELM	131	10	10
132 PUNDELOSA PINE	132	10	10
133 ROCKY MT. JUNIPER	133	10	10
134 SIBERIAN ELM	134	10	10
135 PUNDELOSA PINE	135	10	10
136 ROCKY MT. JUNIPER	136	10	10
137 SIBERIAN ELM	137	10	10
138 PUNDELOSA PINE	138	10	10
139 ROCKY MT. JUNIPER	139	10	10
140 SIBERIAN ELM	140	10	10
141 PUNDELOSA PINE	141	10	10
142 ROCKY MT. JUNIPER	142	10	10
143 SIBERIAN ELM	143	10	10
144 PUNDELOSA PINE	144	10	10
145 ROCKY MT. JUNIPER	145	10	10
146 SIBERIAN ELM	146	10	10
147 PUNDELOSA PINE	147	10	10
148 ROCKY MT. JUNIPER	148	10	10
149 SIBERIAN ELM	149	10	10
150 PUNDELOSA PINE	150	10	10
151 ROCKY MT. JUNIPER	151	10	10
152 SIBERIAN ELM	152	10	10
153 PUNDELOSA PINE	153	10	10
154 ROCKY MT. JUNIPER	154	10	10
155 SIBERIAN ELM	155	10	10
156 PUNDELOSA PINE	156	10	10
157 ROCKY MT. JUNIPER	157	10	10
158 SIBERIAN ELM	158	10	10
159 PUNDELOSA PINE	159	10	10
160 ROCKY MT. JUNIPER	160	10	10
161 SIBERIAN ELM	161	10	10
162 PUNDELOSA PINE	162	10	10
163 ROCKY MT. JUNIPER	163	10	10
164 SIBERIAN ELM	164	10	10
165 PUNDELOSA PINE	165	10	10
166 ROCKY MT. JUNIPER	166	10	10
167 SIBERIAN ELM	167	10	10
168 PUNDELOSA PINE	168	10	10
169 ROCKY MT. JUNIPER	169	10	10
170 SIBERIAN ELM	170	10	10
171 PUNDELOSA PINE	171	10	10
172 ROCKY MT. JUNIPER	172	10	10
173 SIBERIAN ELM	173	10	10
174 PUNDELOSA PINE	174	10	10
175 ROCKY MT. JUNIPER	175	10	10
176 SIBERIAN ELM	176	10	10
177 PUNDELOSA PINE	177	10	10
178 ROCKY MT. JUNIPER	178	10	10
179 SIBERIAN ELM	179	10	10
180 PUNDELOSA PINE	180	10	10
181 ROCKY MT. JUNIPER	181	10	10
182 SIBERIAN ELM	182	10	10
183 PUNDELOSA PINE	183	10	10
184 ROCKY MT. JUNIPER	184	10	10
185 SIBERIAN ELM	185	10	10
186 PUNDELOSA PINE	186	10	10
187 ROCKY MT. JUNIPER	187	10	10
188 SIBERIAN ELM	188	10	10
189 PUNDELOSA PINE	189	10	10
190 ROCKY MT. JUNIPER	190	10	10
191 SIBERIAN ELM	191	10	10
192 PUNDELOSA PINE	192	10	10
193 ROCKY MT. JUNIPER	193	10	10
194 SIBERIAN ELM	194	10	10
195 PUNDELOSA PINE	195	10	10
196 ROCKY MT. JUNIPER	196	10	10
197 SIBERIAN ELM	197	10	10
198 PUNDELOSA PINE	198	10	10
199 ROCKY MT. JUNIPER	199	10	10
200 SIBERIAN ELM	200	10	10

FOOTNOTES

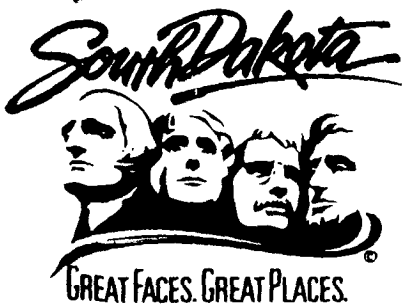
A YIELD FOR 14-16 MAP, SOUTH DAKOTA, THEN UPLANDS RANGE SITE: MAP 10-14-WYOMING RANGE SITE-LOAMY 10-14 NO. PLAINS.

OLANKA SERIES

THE OWANKA SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN CLAYEY SEDIMENTS ON TERRACES AND FAYS. THE SURFACE LAYER IS DARK GRAYISH BROWN SILTY CLAY 6 INCHES THICK. THE SUBSOIL IS 29 INCHES OF SILTY CLAY. THE UPPER 12 INCHES IS DARK GRAYISH BROWN AND THE LOWER 17 INCHES IS GRAYISH BROWN. THE UNDERLYING MATERIAL IS GRAYISH BROWN SILTY CLAY. SLOPES ARE 0 TO 3 PERCENT. MOST AREAS ARE USED FOR CROPLAND.

ESTIMATED SOIL PROPERTIES												
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				PLASTICITY LIMIT	PLASTICITY INDEX			
				10	20	40	60					
0-6	ISCL, CL	CL, MH, CH	A-7	0	15-100	90-100	90-100	95-95	40-55	115-30		
0-6	ISIC	MH, CH	A-7	0	15-100	90-100	90-100	90-95	50-60	120-30		
6-18	ISCL, SIC, CL	CL, MH, CH	A-7	0	15-100	90-100	90-100	95-95	40-60	115-35		
18-35	ISCL, SIC, CL	CL, MH, CH	A-7	0	15-100	90-100	90-100	95-95	40-60	115-35		
35-60	ISCL, SIC, CL	CL, MH, CH	A-7	0	15-100	90-100	90-100	95-95	40-60	115-35		
DEPTH (IN.)	CLAY (PCT)	MOIST DENSITY (G/CM ³)	BULK DENSITY (G/CM ³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINKAGE POTENTIAL (%)	EROSION FACTOR	WIND EROSION INDEX	ORGANIC MATTER (%)	CORROSIVITY
0-6	133-40	1.15-1.25	0.2-2.0	0.16-0.19	16.1-7.8	<2	HIGH	1.28	5	4	2-4	HIGH
0-6	140-50	1.15-1.30	0.2-0.6	0.13-0.18	16.1-7.8	<2	HIGH	1.28	5	4	2-4	HIGH
6-18	135-45	1.20-1.40	0.2-0.6	0.12-0.16	16.1-7.8	<2	HIGH	1.28	5	4	2-4	HIGH
18-35	135-45	1.20-1.40	0.2-0.6	0.12-0.16	17.4-8.4	<2	HIGH	1.37	5	4	2-4	HIGH
35-60	130-50	1.20-1.40	0.2-0.6	0.11-0.15	17.4-8.4	<2	HIGH	1.37	5	4	2-4	HIGH
FLOODING												
HIGH WATER TABLE												
FREQUENCY	DURATION	IN MONTHS	DEPTH (FT)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	DEPTH (IN)	ACTION
NONE			26.0					26.0				LOW
SANITARY FACILITIES												
SEVERE-PERCS SLOWLY												
CONSTRUCTION MATERIAL												
POOR-SHRINK-SWELL, LOW STRENGTH												
ROADFILL												
SAND												
GRAVEL												
TOPSOIL												
POOR-HARD TO PACK												
WATER MANAGEMENT												
SLIGHT												
POND RESERVOIR AREA												
SEVERE-HARD TO PACK												
EMBANKMENTS, DIKES AND LEVEES												
EXCAVATED PONDS, AQUIFER FED												
SEVERE-NO WATER												
DRAINAGE												
DEEP TO WATER												
SEVERE-SHRINK-SWELL												
IRRIGATION												
SICL, CL: FAVORABLE SIC: SLOW INTAKE												
SEVERE-SHRINK-SWELL, LOW STRENGTH												
TERRACES AND DIVERSIONS												
ERODES EASILY												
LAWNS, LANDSCAPING AND GOLF FAIRWAYS												
SICL, CL: SLIGHT SIC: SEVERE-TOO CLAYEY												
GRASSED WATERWAYS												
ERODES EASILY												
REGIONAL INTERPRETATIONS												
GROUP F, SOUTH DAKOTA												

A BASED ON "ENGINEERING TEST DATA...SOUTH DAKOTA", 1971. FOO
B WINDBREAK GROUP 3
C LOAMY TERRACE RANGE SITE



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

January 29, 1993

Jean J. Lyman
PO Box 63
Caputa, SD 57725

Dear Ms. Lyman:

This letter is in regard to our telephone conversation on January 27 concerning your water permit application to add a diversion point. As we discussed, the map that you submitted with your application indicates that the some of the land you will be irrigating is in a different location than the land that is authorized by Water Right No. 1746-2. Because of this there are some additional steps that need taken prior to submitting a completed application.

1. A signed map showing all the acres that are to be irrigated from both the existing diversion point and the proposed diversion point. Please indicate on this map the location of both diversion points from a section corner.
2. Because the irrigated acres are different than the authorized acres, a Soil/Water Compatibility Permit is also needed. I spoke with Jim Stukel, with the Division of Conservation, he said that you will **not** need to take a new water sample and have it tested. You will need to submit a soils map and soils information for the map, which can be obtained from the SCS, with the application outlining the acres to be irrigated. Upon receiving the application, we forward the soils map and other information to the Division of Conservation so they can begin processing the application for the Soil/Water Compatibility Permit.
3. If the total acres to be irrigated is less than or equal to the 172 acres currently authorized by Water Right No. 1746-2, the application will be for an additional diversion point and a transfer of irrigated acres from one location to another.

If your application is to increase the total number of

irrigated acres beyond the 172 authorized acres in addition to the extra diversion point, I would advise you that the Chief Engineer would probably recommend denial of the application for additional land to be irrigated from Rapid Creek. This does not restrict your right to apply for the additional acres, if you wish to do that.

4. You will need submit two copies of the completed and signed application form listing the location of both diversion points and all the land to be irrigated. Along with the application you will also have to submit the signed map indicating diversion points and acres, the soils map and the required fee to this office. If your application is only for adding a diversion point and changing the location of the acres to be irrigated, a \$50 fee is required. If you wish to apply for additional acres beyond the 172 acres authorized in addition to the change in diversion point, then the required fee for the first 60 additional acres is \$150. If you wish to add more than 60 acres then refer to number 6 on the enclosed instruction sheet for the required fee.

I am enclosing some blank application forms, instruction sheet and a copy of the map that was submitted with Water Right 1746-2 back in 1981 showing the original acres. I am also returning your \$50 check, you can resubmit the required fee with the new application.

If you have any questions, feel free to contact me.

Sincerely,



Mark D. Rath
Natural Resources Engineer
Division of Water Rights
(605) 773-3352

enclosure



January 26, 1993

Water Rights Division
523 E. Capitol
Pierre, S. D.
Mark Path
Dear Mr. Path,

Enclosed please find a personal check for ("50") fifty dollars and a map signed off by Jane Jensen at Rapid City ASC Office.

As you can see there are 4.2 acres in (NW SW Sec I, 1 south, 9 east) this 40 acres. And there are 6.2 acres in (SW SW Sec I, 1 south 9 east) the other 40 acres.

I do hope this will be sufficient to complete our task. Thank you.

Sincerely,
Jean J. Lyman
P.O. Box 63
Capota, S. Dak

605-393-1018

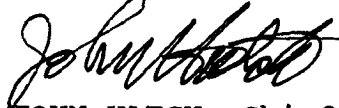
RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1746A-2, Jean J. Lyman

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Environment and Natural Resources concerning Water Permit Application No. 1746A-2, Jean J. Lyman, PO Box 63, Caputa, SD 57725.

The Chief Engineer is recommending APPROVAL of Application No. 1746A-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) in the public interest with the following qualifications:

1. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.
2. Water is available from Rapid Creek to reasonably satisfy this application only through contract between the Rapid Valley Water Conservancy District and Bureau of Reclamation for releases from Deerfield and Pactola Reservoirs.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
4. Approval of Permit No. 1746A-2 deletes 30 acres in the NW 1/4 NW 1/4, 13 acres in the NE 1/4 NW 1/4, 11 acres in the SE 1/4 NW 1/4 and 6 acres in the SW 1/4 NW 1/4 of Section 12, T1S-R9E from irrigation. The 172 acres authorized for irrigation include: 4 acres in the NW 1/4 SW 1/4, 26 acres in the NE 1/4 SW 1/4, 4 acres in the NW 1/4 SE 1/4, 36 acres in the SW 1/4 SW 1/4, 40 acres in the SE 1/4 SW 1/4 and 11 acres in the SW 1/4 SE 1/4 of Section 1 and 6 acres in the ~~SW 1/4~~ NW 1/4, 27 acres in the NE 1/4 NW 1/4 and 18 acres in the NW 1/4 NE 1/4 of Section 12, all in T1S-R9E.

See report on application for additional information.



JOHN HATCH, Chief Engineer
March 5, 1993

Report on Water Permit Application No. 1746A-2
Jean J. Lyman

Application No. 1746A-2, Jean J. Lyman, proposes to add an additional Rapid Creek diversion point and change acreage for irrigation authorized by Water Right No. 1746-2. There is no request for an increase in the diversion rate or in irrigated acres. Water Right No. 1746-2, priority date of April 1, 1975, authorizes the irrigation of 172 acres located in the S1/2 SW1/4 and SW1/4 SE1/4 in Section 1 and the NW1/4 and NW1/4 NE1/4 of Section 12 all in T1S-R9E. The existing Rapid Creek diversion point is located in SW1/4 SE1/4 of Section 1 T1S-R9E. The applicant proposes to add a diversion point to be located on Rapid Creek in the NW1/4 SW1/4 of Section 1, T1S-R9E. The applicant also proposes to irrigate 172 acres to be located in the SW1/4 and W1/2 SE1/4 of Section 1 and the N1/2 NW1/4 and NW1/4 NE1/4 of Section 12 all in T1S-R9E. The priority date of April 1, 1975 should be retained. The project is located approximately 1 mile southwest of Caputa, SD in Pennington county.

Review of the Water Source and Existing Water Rights

The source of water, for the proposed project changes, is from available natural flow in Rapid Creek and contracted stored water releases from Deerfield and Pactola reservoir. There is to be no change in the diversion rate from the 2.46 cfs authorized. The applicant, if using both diversion points simultaneously, should limit his diversions such that the combined diversion rate of 2.46 cfs is not exceeded. The annual volume of water authorized by Water Right No. 1746-2 is not to exceed 3 acre-foot per acre. This limitation should be retained by this application.

There are 72 existing water rights/permits appropriating 258.89 cfs located on Rapid Creek between Pactola Reservoir and the Cheyenne River. Below the diversion points for this project, there are 16 existing water rights/permits appropriating 28.89 cfs, of these, 3 water rights/permits appropriating 7.31 cfs have priority dates junior to April 1, 1975.

The following qualifications listed on Water Right No. 1746-2 should also be placed on this application.

Low flows as needed for downstream domestic use, including livestock watering, and prior water rights must be by-passed.

Unappropriated water is available from Rapid Creek to reasonably satisfy this application only through contract between the Rapid Valley Water Conservancy District and Bureau of Reclamation for releases from Deerfield and Pactola Reservoirs.

This Permit should be approved subject to the irrigation water use questionnaire being submitted each year.

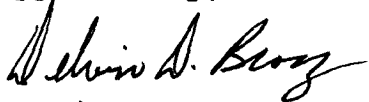
Conclusion

1. Application No. 1746A-2 proposes to add a diversion point and change acres for irrigation authorized by Water Right No. 1746-2. There is no request to increase the diversion rate or the irrigated acres.
2. The priority date of April 1, 1975 should be retained.
3. If approved, the simultaneous diversion rates for both diversion points, combined, should not exceed 2.46 cfs.
4. If approved, the 3 acre-foot per acre limitation should be retained.
5. If approved, 30 acres in NW1/4 NW1/4, 13 acres in NE1/4 NW1/4, 11 acres in SE1/4 NW1/4 and 6 acres in SW1/4 NW1/4, all in Section 12, T1S-R9E irrigated acres authorized by Water Right No. 1746-2 are no longer authorized for irrigation. The 172 acres that are authorized for irrigation include: 4 acres in the NW1/4 SW1/4, 26 acres in the NE1/4 SW1/4, 4 acres in the NW1/4 SE1/4, 36 acres in the SW1/4 SW1/4, 40 acres in the SE1/4 SW1/4 and 11 acres in the SW1/4 SE1/4 of Section 1 and 6 acres in the NW1/4 NW1/4, 27 acres in the NE1/4 NW1/4 and 18 acres in the NW1/4 NE1/4 of Section 12, all in T1S-R9E.
6. If approved, this application should be subject to the qualifications placed on Water Right No. 1746-2.



Mark D. Rath
Natural Resources Engineer II

Approved by,



Delvin D. Brosz, P.E.
Natural Resources Engineer IV



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

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

March 11, 1993

Jean L. Lyman
PO Box 63
Caputa, SD 57725

Dear Ms. Lyman:

Water Permit Application No. 1746A-2 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Rapid City Journal printed at Rapid City, SD (Ph # 394-8300). For your information, a copy of the notice, the recommendation of the Chief Engineer and a 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 to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has 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.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

March 11, 1993

Rapid City Journal
PO Box 450
Rapid City, SD 57709-0450

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 1746A-3 to be published twice. Please publish the first notice on March 19, 1993, with the second publication 7 days later.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you make the first publication. Please BILL the APPLICANT for the cost of publication. The APPLICANT is Jean J. Lyman, Po Box 63, Caputa, SD 57725 (Ph # 393-1018).

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. No action may be taken on the permit application until proof of publication has been received.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----
FIRST TRANSMITTAL NOTICE
No. _____ TO: Eric Gronlund
Water Rights Division
Joe Foss Building
Pierre SD 57501-3181
Date _____
We are in receipt of your letter of _____ enclosing Notice of
Hearing to Appropriate Water by Application No. _____ which was first
published in our issue of _____. ENCLOSED IS A COPY OF THIS
FIRST PUBLICATION.

Name _____

Newspaper _____

Instruction to Newspaper - Publish first Notice on March 19, 1993, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 1746A-2 to Appropriate Water
and Amend Water Right No. 1746-2

Notice is given that Jean J. Lyman, Po Box 63, Caputa, SD 57725 has filed an application for a water permit for an additional point of diversion and to change the location of the acres authorized by Water Right No. 1746-2. Water Right No. 1746-2 appropriates 2.46 cubic feet of water per second from Rapid Creek from a diversion point located in the SW 1/4 SE 1/4 Section 1 to irrigate 172 acres located in the S 1/2 SW 1/4, SW 1/4 SE 1/4 Section 1 and the NW 1/4, NW 1/4 NE 1/4 Section 12, all in T1S-R9E. This application is for an additional point of diversion from Rapid Creek located in the NW 1/4 SW 1/4 Section 1 and change the location of 60 acres irrigated in the NW 1/4 Section 12 to include the SW 1/4, W 1/2 SE 1/4 Section 1 and NW 1/4 NE 1/4 Section 12, all in T1S-R9E. No increase in the diversion rate or the number of acres being irrigated is authorized by this application.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1746A-2 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.

Any person interested in opposing or supporting this application must file a written petition 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 Division, 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 23, 1993. The petition may be informal, but must 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 Board will consider this application at 10:00 a.m., May 5, 1993, Floyd Matthew Training Center, Joe Foss Building, 523 East Capitol, 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. The May 5, 1993, hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the application. The request for an automatic delay must be filed by April 23, 1993.

Any hearing will be an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 1-26. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact Eric Gronlund by April 23, 1993, at the above Water Rights Division address to request copies of information pertaining to this application, to assure access to the hearing by the handicapped or to obtain an interpreter for the hearing impaired.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-5-33 thru 46-5-35; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15. Robert E. Roberts, Secretary, Department of Environment and Natural Resources.

**NOTICE OF HEARING
ON APPLICATION NO. 1746A-2
TO APPROPRIATE WATER AND
AMEND WATER RIGHT
NO. 1746-2**

Notice is given that Jean J. Lyman, P.O. Box 63, Capota, SD 57725 has filed an application for a water permit for an additional point of diversion and to change the location of the acres authorized by Water Right No. 1746-2. Water Right No. 1746-2 appropriates 2.46 cubic feet of water per second from Rapid Creek from a diversion point located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 1 to irrigate 172 acres located in the S $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 1 and the NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 12; all in T1S-R9E. This application is for an additional point of diversion from Rapid Creek located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$

Section 1 and change the location of 60 acres irrigated in the NW $\frac{1}{4}$ Section 12 to include the SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ Section 1 and NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 12, all in T1S-R9E. No increase in the diversion rate or the number of acres being irrigated is authorized by this application.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1746A-2 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.

Any person interested in opposing or supporting this application must file a written petition 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 Division, 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 23, 1993. The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reason 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 Board will consider this application at 10:00 a.m., May 5, 1993, Floyd Matthew Training Center, Joe Foss Building, 523 East Capitol, Pierre, S.D. 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. The May 5, 1993, hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the application. The request for an automatic delay must be filed by April 23, 1993.

Any hearing will be an adversary proceedings. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 1-26. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact Eric Gronlund by April 23, 1993, at the above Water Rights Division address to request copies of information pertaining to this application, to assure access to the hearing by the handicapped or to obtain an interpreter for the hearing impaired.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-5-33 thru 46-5-35; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

Robert E. Roberts
Secretary
Department of Environment
and Natural Resources

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County of Pennington) ss

I, Helena M. Bauer

certify that the attached printed Notice was

taken from the Rapid City Journal

printed and published in Rapid City

County of Pennington and State of

South Dakota. The notice was published in
the newspaper on the following two dates:

March 19, 1993

March 26, 1993

Cost of Printing: 10 6/16 inch adv run 2

times @ 5.10 per inch \$105.84

Helena M. Bauer
(Signature)

Bookkeeper

(Title)

March 26, 1993

(Date Signed)





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING

523 EAST CAPITOL

PIERRE SOUTH DAKOTA 57501-3181

JUL 6 1993

Jean J. Lyman
PO Box 63
Caputa, SD 57725

Dear Ms. Lyman:

Enclosed is Water Permit No. 1746A-2 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that the Water License may be issued, thus completing your acquisition of a Water Right.

Very truly yours

JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosures

PLEASE NOTE: Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period - i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period.



1746A-2

January 30, 1996

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

NOTICE

TO: JEAN J LYMAN, PO BOX 63, CAPUTA, SD 57725 0063

FROM: Ron Duvall, Natural Resources Engineer
for John Hatch, Chief Engineer
Water Rights Program

SUBJECT: Violation of Water Permit No(s) 1746-2, 1746A-2.

Our records indicate that the 1995 Irrigation Questionnaire has not been submitted for Permit No(s) 1746-2, 1746A-2. The request for the Questionnaire was dated October 20, 1995. The Water Management Board has directed that owners of water permits who have not submitted the 1995 Irrigation Questionnaire be given notice of permit violation and a hearing to be held by the Board. The hearing held by the Board will determine the action to be taken for violation of Water Permit No(s) 1746-2, 1746A-2 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 9:45 am, March 6, 1996 in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol, Pierre, SD, and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 1746-2, 1746A-2 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is(are) received in this office on/or before March 1, 1996, you will no longer be in violation of your permit and your name will be deleted from the Board agenda. If you have questions or need assistance in completion of the irrigation questionnaire(s), please contact Genny McMath at (605) 773-3352.

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.

1746 A-2



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

February 2, 1996

Jean J Lyman
PO Box 63
Caputa, SD 57725-0063

1746-2
1746A-2

Dear Mrs Lyman:

I reviewed our files again, after our telephone conversation, and found the 1995 irrigation questionnaire you submitted, dated November 9, 1995.

You have two irrigation permits (No. 1746-2 and No. 1746A-2). I think the problem occurred when I marked off No. 1746A-3 and did not catch the other number in order to mark it off too. I apologize for the error and will try not to let it happen again next year.

You may disregard the January 30, 1996, **Notice of Violation of Water Permit No. 1746-2 and No. 1746A-2.** Your name has been deleted from the agenda for the Water Management Board Meeting.

Thank you for calling and if you have any questions, please contact me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Division
(605) 773-3352



1746A-2

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

August 10, 2000

1746-2
1746A-2

Fred McFarland
McFarland Auctions, Inc
PO Box 2110
Rapid City, SD 57709

Dear Mr. McFarland:

Thank you for contacting us about Water Right No. 1746-2 and Water Permit No. 1746A-2. Both these are currently on file listed in the name of Jean J Lyman.

The following is a brief description of each one:

- Water Right No. 1746-2 authorizes diversion of 2.46 cubic feet of water per second from Rapid Creek to irrigate 172 acres in portions of the S $\frac{1}{2}$ Section 1 and the N $\frac{1}{2}$ Section 12, T1S, R9E. No. 1746-2 carries an April 1, 1975 priority date. Water Right No. 1746-2 was inspected for licensing purposes in 1980 and licensed to the extent of what was developed.
- Water Permit No. 1746A-2 amends the original to authorize an additional diversion point and changes the location of 60 acres authorized by Water Right No. 1746-2. The change in the location of the 60 acres in the NW $\frac{1}{4}$ Section 12 to include the SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ Section 1 and the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 12, all in T1S, R9E. The permit did not allow for an increase in the diversion rate or the number of acres irrigated. No. 1746A-2 carries a February 3, 1993 priority date.

Whether or not the water rights are subject to cancellation depends on the history of water use and is a question ultimately decided by the Water Management Board. Our staff does not make decisions on validity of water rights. I can, however, inform you of the water right laws and the Water Management Board Rules regarding the abandonment and/or forfeiture of water rights. Enclosed is a copy of excerpts from South Dakota Water Laws and Water Management Board rules which discusses abandonment and forfeiture, invalid water rights and legal excuse for not irrigating. Of special note is SDCL 46-5-37 which states water is to be used for the purpose it was appropriated at least once every three years.

I reviewed irrigation questionnaires from 1980 through 1999. The questionnaires indicate irrigation took place on a continuous basis with the exception of 1986, 1987 and 1998. The irrigator did not comment on why irrigation did not take place in 1986 and 1987. In 1998, they had enough natural moisture that irrigation was not needed.

Page 2

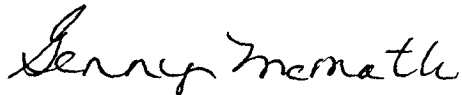
August 10, 2000

McFarland Auctions, Inc.

With the information found when reviewing past irrigation questionnaire records, it does not appear the water rights are subject to abandonment or forfeiture for nonuse. However, as stated previously, the Water Management Board is the only entity that can make a determination on whether or not a water right or permit is valid or if it has been lost due to abandonment and/or forfeiture.

If you have any questions after reviewing the enclosed excerpts and irrigation questionnaire information, or feel you would like the matter brought to the attention of the Board for review, please get in touch with me.

Sincerely,

A handwritten signature in cursive script that reads "Genny McMath".

Genny McMath

Environmental Scientist

Water Rights Program

(605) 773-3352

email: genny.mcmath@state.sd.us

enclosure

c: faxed to McFarland Auctions, Inc at (605) 348-2676

Statutes:

46-5-36. Abandonment of use of water appurtenant to land - Public water subject to general appropriation. If the owner of the land to which water has become appurtenant abandons the use of such water upon such land, such water shall become public water, subject to general appropriation.

46-5-37. Failure to use beneficially appropriated water - Forfeiture for nonuse - Reversion to public. When any person entitled to the use of appropriated water fails to use beneficially all or any part of such water for the purpose for which it was appropriated, for a period of three years, such unused water shall revert to the public and shall be regarded as unappropriated public water.

46-5-37.1. Abandonment or forfeiture of permits or rights - Recommendation of chief engineer for cancellation. Upon the initiative of the chief engineer or upon petition by any interested person and after reasonable notice to the holder of the right or permit, if he can be located, the chief engineer may investigate whether or not a water permit or right has been abandoned or forfeited. After the investigation, the chief engineer may recommend cancellation of the permit or right for reason of abandonment or forfeiture. The recommendation, notice and hearing shall be conducted pursuant to the procedure contained in chapter 46-2A.

46-5-37.2. Exceptions to forfeiture for nonuse. The provisions of ' 46-5-37 notwithstanding, no water right or permit may be forfeited for nonuse if land authorized for irrigation by a permit or right is placed under an acreage reserve or production quota program or otherwise withdrawn from use as required for participation in any federal program, if the water source is not fully appropriated, if the withdrawal from use does not prevent approval of new permits from the same source, and if the appropriated water has been applied to beneficial irrigation use prior to participation in a federal program.

Rules:

74:02:01:36. Board authorized to cancel invalid water permits, rights, or vested rights. The board may cancel a water permit, right, or vested right which has become invalid and file a record of the cancellation in the water permit, right, or vested right record.

74:02:01:37. Invalid water permit, right, or vested right defined. A water permit, right, or vested right is invalid if it meets one or more of the following conditions:

- (1) The necessary works were not constructed or the water put to beneficial use within the time limits as provided by statute;
- (2) Use of water has been abandoned as specified in SDCL 46-5-36;
- (3) Use of water has been forfeited for nonuse as specified in SDCL 46-5-37.

74:02:01:37.01. Legal excuse for nonuse of water. Legal excuse for nonuse of water suspends the period of nonuse specified in SDCL 46-5-37. Legal excuses for nonuse of water include but are not limited to the following:

- (1) Unavailability of water to satisfy a permit, right, or vested right;
- (2) Legal proceedings which prevent the use of water;
- (3) Water use under existing climatic conditions would result in a waste of water.

8/17/00
Jenny -



this is the map of the
place.

We offer the property
in the three Lots and
also as one complete unit.
Won't know until the auction
how it sells!

Hope you don't have
to go to too much trouble
to pro-rate the water.

Appreciate your cooperation
and help! Thank You
Ed McFarland



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

www.state.sd.us/denr

August 21, 2000

1746A-2
1746-2

Fred McFarland
McFarland Auction Service
PO Box 2110
Rapid City, SD 57709

Dear Mr. McFarland:

Thank you for the map showing the breakdown of the lots you are offering for sale on the Jean Lyman property.

Enclosed, as you requested, is a copy of the map we have in the file pertaining to the acreage irrigated. I made an attempt to highlight the acreage in yellow and outline the diversion points in red.

Depending on the outcome of the sale, it should not be a problem to divide the water permits up. I will wait to hear from you on whether the land was sold in three lots or as one unit. Once the land is sold, the new owner(s) will need to file a "Notice of Transfer of Ownership" form with our office. I can send the documents to you or you can have them contact me when they are ready to file the ownership changes.

If you have any questions, please give me a call.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

www.state.sd.us/denr

September 15, 2000

1746-2
1746A-2

Carol Bradeen
5995 E 53rd St
Rapid City, SD 57703

Dear Mr. Bradeen:

Thank you for contacting us about the ownership of Water Right No. 1746-2 and Water Permit No. 1746A-2.

Enclosed are partially completed "Notice of Transfer of Ownership" forms for use in filing the ownership changes. Please review the forms for accuracy and complete as needed. The forms will need to be signed in the presence of a notary public by the new owner(s). Upon completion, please return them to our office with a required filing fee of \$2.50 each (total of \$5.00). The check or money order for the fee can be made payable to the "Water Rights Program".

When we spoke, you expressed concern over whether or not the water rights were in good standing. I am enclosing a copy of the letter we recently wrote to McFarland Auctions, Inc., concerning this issue.

If you have any questions after reviewing the enclosed information, please get in touch with me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

www.state.sd.us/denr

September 27, 2000

1746-2
1746A-2

Don & Carol Bradeen
5995 E 53rd St
Rapid City, SD 57703

Dear Mr. & Mrs. Bradeen:

Thank you for following up on the transfer of ownership of Water Right No. 1746-2 and Water Permit No. 1746A-2.

The transfer forms have been received. Just a reminder, state statutes require us to assess a \$2.50 filing fee for each transfer submitted. My first letter to you may not have been clear with respect to the fees.

Please remit a total of \$5.00 as soon as possible. As soon as we receive the fee, Water Right No. 1746-2 and Water Permit No. 1746A-2 will be transferred to your names. The check or money order for the fee can be made payable to the "Water Rights Program".

Thank you in advance for your help. If you have any questions, please get in touch with me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

Sept. 29, 2000

Dear Gerry,

You made it clear in your first note that money was due for this transfer. I failed to send the check with the papers.

Thanks for the reminder.

Sorry for the delay.

Truly

Carol Braden

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N~~2~~ 416649

Pierre, October 2, 2000, _____

RECEIVED OF Donald or Carol Bradeen, 5995 E 53rd St, Rapid City, SD 57703
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

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. _____

Fee for Filing Transfer Form 1746A-2

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

2 50

2 50

By

Chief Engineer

Garland Erbele

Garland Erbele

NOTICE OF TRANSFER OF OWNERSHIP

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

No. 1746A-2



Date: 9-25-00

I/We request that Water Permit No. 1746A-2

formerly owned by: Jean J Lyman

be transferred to: (name & address) Don or Carol Bradeen
5995 E 53 Street
Rapid City, SD 57703 Telephone No. 605-393-2366

Title to the following described land(s)/property has been transferred as described above:

172 acres - S 1/2 SW 1/4, SW 1/4 SE 1/4 Section 1 and the NW 1/4, NW 1/4 NE 1/4 Section 12, all in T1S, R9E

I/We understand that the validity of Water Permit No. 1746A-2 has not been determined by this transfer action. If I/We have any questions on validity, I/We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is required to cover the filing fees as required under SDCL 46-2-13. This form must be signed by the new owner.

STATE OF SOUTH DAKOTA)

County of Pennington

I/We Don or Carol Bradeen being first duly sworn on my oath depose and say that my relation to the above described undertaking is that of Owner, that I have read the above foregoing statement, and that I know of my own personal knowledge that the information herein stated is true.

Ronald Bradeen

Carol J. Bradeen
(Signed)

Subscribed and sworn to before me this 25 day of September, 2000.

Susan E. Mudlin
(Notary Public)

Comm. Expires: 11-7-03

NOTE: Water permits may be cancelled for nonconstruction within the five year construction period. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181

www.state.sd.us/denr

October 2, 2000

1746-2
1746A-2

Don or Carol Bradeen
5995 E 53rd St
Rapid City, SD 57703

Dear Mr. & Mrs. Bradeen:

Thank you for completing the transfer of ownership for Water Right No. 1746-2 and Water Permit No. 1746A-2. The transfers have been completed and Nos. 1746-2 and 1746A-2 are now listed in your names.

Enclosed is your Receipt Nos. 416648 and 416649 in the amounts of \$2.50 each, which you paid for filing the transfers. You may keep these for your records.

If I can answer any questions for you, please get in touch with me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures

Department of Environmental and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181



Genny McMath,

Please find the two 2000 Irrigation Questionnaires that I just sent to you through e-mail.

If you do not receive these, please e-mail me at this address:

cdbrad@sd.value.net

Thank you for your assistance in getting our water rights transferred in such a timely fashion.

Carol Bradeen
5995 E 53 Street
Rapid City, SD 57703



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

January 18, 2008

NOTICE

TO: DON OR CAROL BRADEEN, 5995 RESERVOIR RD, RAPID CITY, SD 57703

FROM: Ron Duvall, Natural Resources Engineer
for Garland Erbele, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 2007 Irrigation Questionnaire(s)

Our records indicate that the 2007 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 1746-2 & 1746A-2. The request for the Questionnaire was dated October 19, 2007. The Water Management Board has directed that owners of water permits who have not submitted the 2007 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 1746-2 & 1746A-2 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at **10:00 am, March 11, 2008** in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Avenue, Pierre, SD and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 1746-2 & 1746A-2 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaire(s) is(are) received in this office on/or before **March 3, 2008**, you will no longer be in violation of your permit and your name will be deleted from the Board agenda. Enclosed are additional questionnaire(s) for your use. If you have questions or need assistance, please contact Genny McMath at (605) 773-3352. If you prefer, you can complete the questionnaire on-line at the following link:

<https://www.state.sd.us/eforms/secure/eforms/E0455V6-IQ.pdf>

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

February 1, 2008

1746-2
1746A-2

Don or Carol Bradeen
5995 Reservoir Rd
Rapid City SD 57703

Dear Mr. & Mrs. Bradeen:

I am writing to acknowledge receipt of your 2007 irrigation questionnaires. You may disregard the January 18, 2008, "Notice" concerning reporting requirements for Water Right No. 1746-2 and Water Permit No. 1746A-2.

The information was received in our office prior to the Water Management Board meeting and your names have been deleted from the agenda.

If you have any questions, please contact me.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 1746A-2

I have this day, April 6, 2016, made a thorough examination of the water use system constructed by Don Bradeen, 5995 E. 53rd St., Rapid City, SD 57703 of Permit No. 1746A-2, bearing the priority of 2/3/1993 authorizing the diversion of 2.46 cu. ft. per second of the waters of the Rapid Creek for irrigation purposes, in Pennington County.

Inspection contact & relationship to permit holder, if applicable: **Don Bradeen, owner**

A. Works used to divert the water:

Pump:

- 1) Make Berkeley
- 2) Model unknown (pump not onsite)
- 3) Size unknown
- 4) Capacity 1,000 GPM @ 15 PSI (see comments)

Power:

- 1) Source Propane (Chrysler engine)
- 2) Horsepower rating --- hp (horsepower varies depending on rpm)

Comments: The operator has not irrigated in recent years due to adequate moisture. The pump had been loaned out to another irrigator. The 1996 irrigation questionnaire showed the pump rate for flood irrigation at 1,000 gpm.

B. Works used to transport water to place of use:

- 1) Type PVC pipeline
- 2) Size 10 inches
- 3) Length 960 feet

Comments:

C. Works used to apply water to beneficial use:

Irrigation Ditch

Comments: An alfalfa valve is located in each graded irrigation ditch served by the pipeline. A tarp is used to check the water and allow the water to spill over the downstream bank.

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Yes

List any extended period of nonuse: **The irrigation questionnaire has been returned each year. The last year irrigation was reported was 1999.**

- 3) Exceptions to compliance are: none

E. Condition and Location:

1. The system is in good condition with the point of diversion located as follows:

SW ¼ SE ¼ S1 T1S R9E (963 ft. north and 2,582 ft. west of SE corner Section 1).

N 43.98701° W 102.98885°

2. The works are capable of diverting and conveying to the place of use 2.2 cu. ft. per second of water which is to be used for gravity irrigation. Water has been put to beneficial use to the maximum extent as follows:

legal description/acreage

NW ¼ SW ¼ S1 T1S R9E – 1.1 acres

NE ¼ SW ¼ S1 T1S R9E – 22.9 acres

SW ¼ SW ¼ S1 T1S R9E – 0.9 acres

SE ¼ SW ¼ S1 T1S R9E – 25.6 acres

NW ¼ SE ¼ S1 T1S R9E – 5.0 acres

SW ¼ SE ¼ S1 T1S R9E – 17.1 acres

legal description/acreage

NW ¼ NE ¼ S12 T1S R9E – 11.9 acres

NE ¼ NW ¼ S12 T1S R9E – 0.3 acres

comprising a total of 84.8 acres of land and the license should be issued for 2.2 cfs. ** 1.21 is statutory limit.*

3. All structures, wells and lands on map Yes

F. Comments or other permit(s) associated with the project:

Permit 1746A-2 authorized an additional point of diversion and changed the location of the acres authorized by 1746-2. The additional diversion point is no longer used (NW ¼ SW ¼ Section 1) and the center pivot which used the additional diversion point has been removed. The 84.8 acres listed above were included in the 1746A-2 permit. The operator accepts the permit being licensed for 84.8 acres. The current method of irrigation being used (graded ditches) requires the 2.2 cfs volume to distribute the water and get proper coverage. This volume is in excess of the 1 cfs per 70 acres but the operator requests the 2.2 cfs be licensed and I feel it is appropriate.

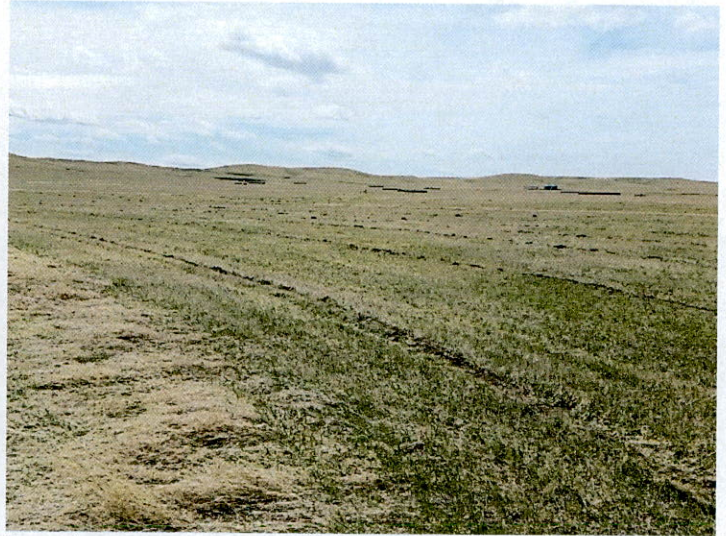


Steven Quissell
Water Rights Inspector
DENR, Water Rights Program

Date report completed: 4/12/2016

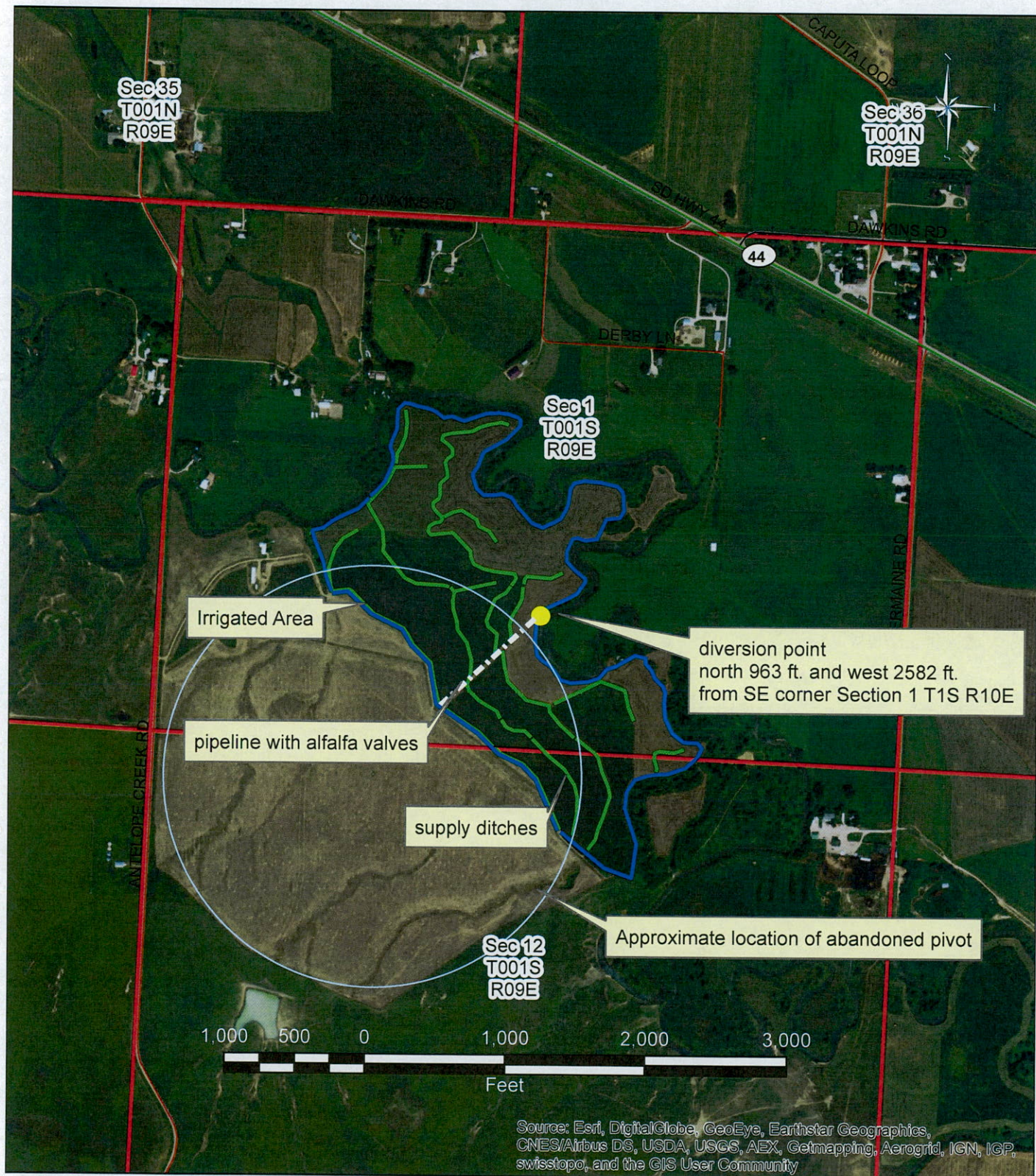


Bradeen diversion point



Irrigated acreage

Water Right #1746A-2
Don Bradeen
4/6/16

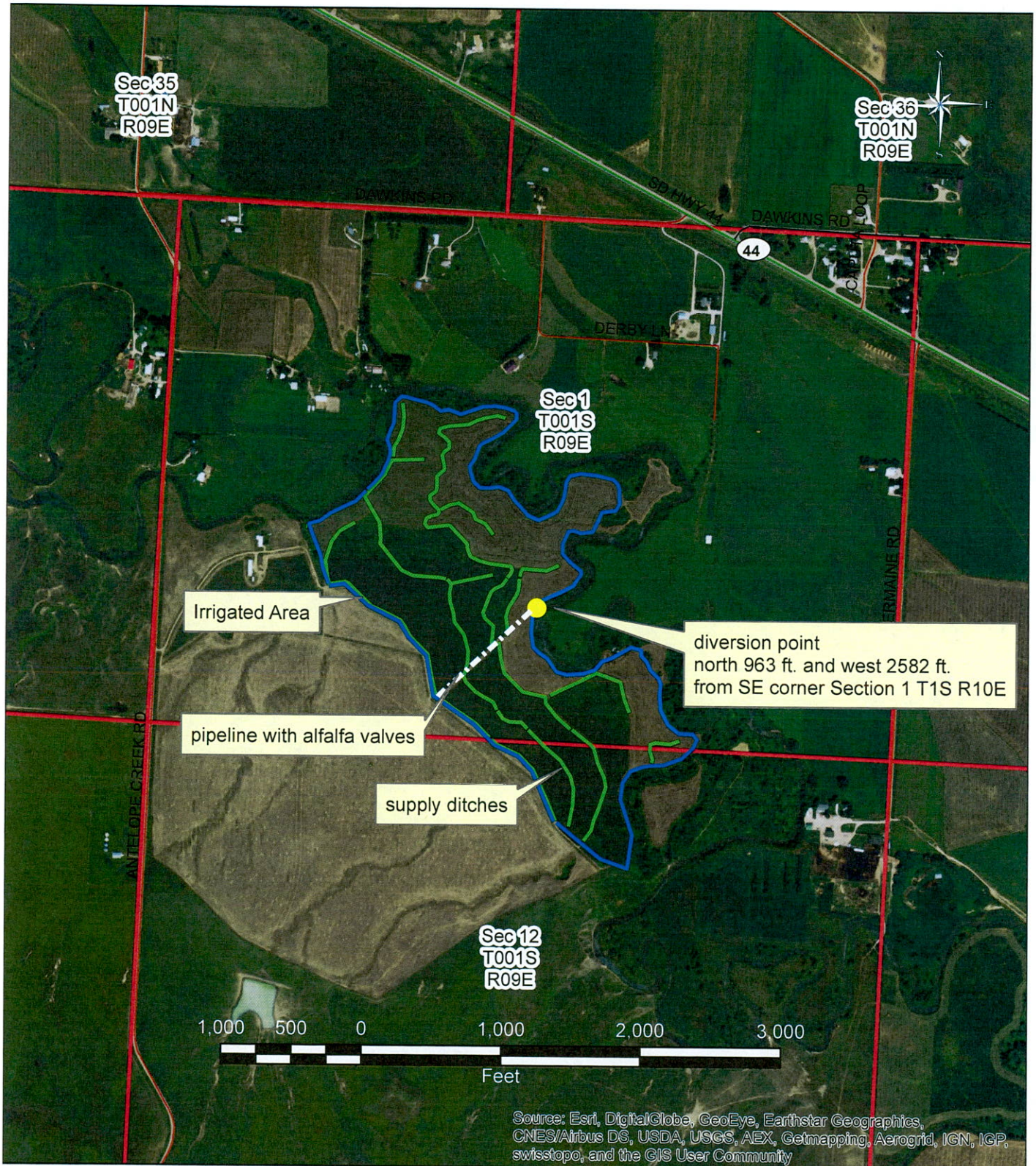


Steven Quissell

Steven Quissell
Water Rights Inspector
DNR Water Rights Program

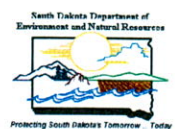


Water Right #1746A-2
Don Bradeen
4/6/16

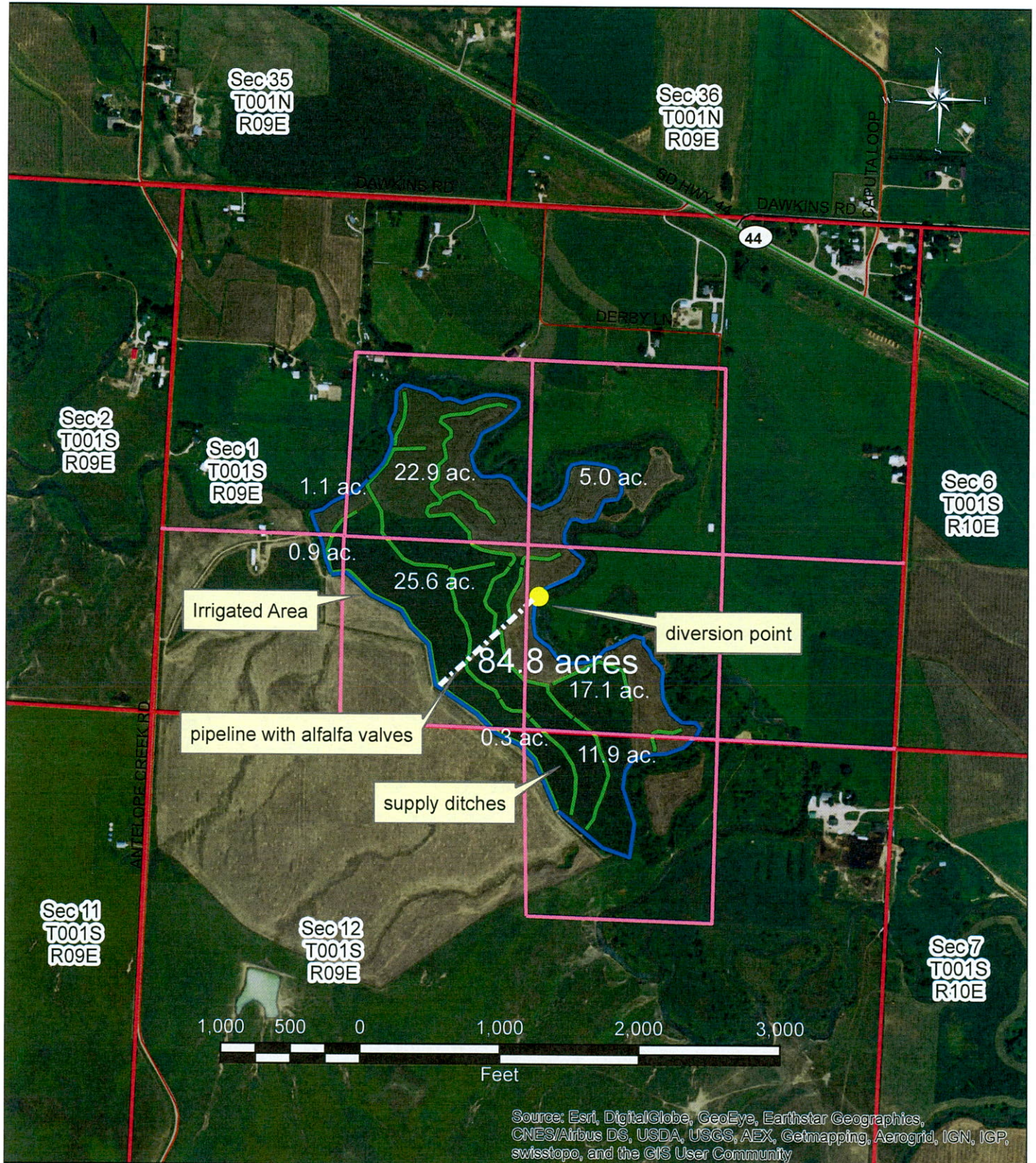


Steven Quissell

Steven Quissell
Water Rights Inspector
DENR Water Rights Program

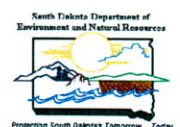


Water Right #1746A-2
Don Bradeen
4/6/16



Steven Quissell

Steven Quissell
Water Rights Inspector
DENR Water Rights Program





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

April 13, 2016

1746A-2

Don & Carol Bradeen
5995 E 53rd St
Rapid City SD 57703

Dear Mr. & Mrs. Bradeen:

On April 6, 2016 the investigation of your water use system, including the extent of application of water to beneficial use, as developed under Water Permit No. 1746A-2, was completed by Steve Quissell, a staff person with our program. Your final water right document, the water license, can now be issued.

State law requires that we charge a \$50.00 fee for the investigation and issuance of the water license. Upon receipt of the \$50.00 fee from you, we will complete processing your water license. The check or money order for the fee should be made payable to the "Water Rights Program".

Your licensed water right will be similar to a property right that cannot be lost as long as the water use continues and you abide by the permit requirements.

If you have any questions regarding the water permit, investigation of your water use system or payment of the fee, please contact me.

Sincerely,

A handwritten signature in cursive script that reads 'Genny McMath'.

Genny McMath
Water Rights Program
(605) 773-3352

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 4/20, 20 16

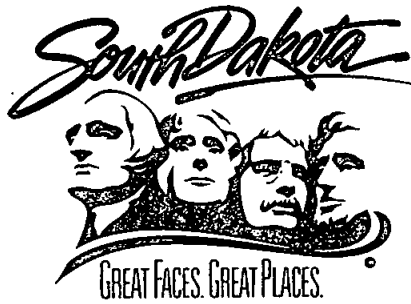
RECEIVED OF Donald Bradeen 5995 Reservoir Rd Rapid City SD 57703

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	50 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>1746A-3</u>		
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. _____	50 00	
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	50 00

No. **07828**

By J. Earle Goodman
Chief Engineer



1746A-2
DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

MAY 03 2016

1746-2
1746A-2

Don or Carol Bradeen
5995 Reservoir Rd
Rapid City SD 57703

Dear Mr. & Mrs. Bradeen:

Enclosed is Water License No. 1746A-2. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water.

Sincerely,

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

enclosures

Note: Upon licensing, the applicable portions of Water Right No. 1746-2 were incorporated into Water License No. 1746A-2.

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 1746A-2**

(1) Jean J Lyman made Application No. 1746A-2, February 3, 1993 for a water permit to add a diversion point on Rapid Creek and change the location of acreage authorized under Water Right No. 1746-2. No. 1746A-2 did not authorize an increase in the diversion rate or number of acres irrigated. The irrigation project is located in Pennington County, South Dakota. Permit No. 1746A-2 was approved May 5, 1993 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 5, 1998 and for the application to beneficial use of said water on or before May 5, 2002.

Water Right No. 1746-2, with a priority date of April 1, 1975 authorizes irrigation of 172 acres in portions of Section 1 and Section 12, T1S, R9E. No. 1746A-2 added a diversion point for irrigation of the acreage and changed the location of acreage. Permit No. 1746A-2 was issued with a new priority date. With no additional acreage or diversion authority, the permit should have retained the original priority date of April 1, 1975.

On September 27, 2000, both Nos. 1746-2 and 1746A-2 were transferred to Don or Carol Bradeen. The applicable portions of Water Right No. 1746-2 are incorporated into Water License No. 1746A-2.

(2) It is certified that the permit holders have complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and are entitled to divert 1.21 cubic feet of water per second for beneficial use. The location of the diversion point is 963 feet north and 2,582 feet west of the SE corner of Section 1, T1S, R9E (SW ¼ SE ¼). *The additional diversion point requested is no longer used. Only the above listed diversion point is used.*

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

Section 1, T1S, R9E				Section 12, T1S, R9E	
NW ¼ SW ¼	1.1 acres	NW ¼ SE ¼	5.0 acres	NW ¼ NE ¼	11.9 acres
NE ¼ SW ¼	22.9 acres	SW ¼ SE ¼	17.1 acres	NE ¼ NW ¼	0.3 acres
SW ¼ SW ¼	0.9 acres				
SE ¼ SW ¼	25.6 acres				
Total 84.8 acres irrigated					

(4) Pursuant to South Dakota Water Law 46-5-30.1 Don or Carol Bradeen, 5995 Reservoir Rd, Rapid City SD 57703 the holders and/or owners of Incorporated Water Right No. 1746A-2 are issued a license to appropriate water, the right to use 1.21 cubic feet of water per second from Rapid Creek with a priority date of April 1, 1975 from the location specified in (2) of this license for irrigation purposes.

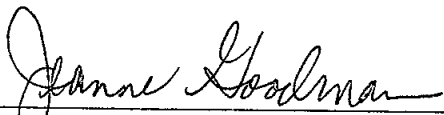
This license is subject to South Dakota Water Law, any limitations or conditions listed in Incorporated Water Right No. 1746A-2 and subject to the following qualifications:

- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be bypassed.

continued

Water License No. 1746A-2

- Water is available from Rapid Creek to reasonably satisfy this right only through contract between Rapid Valley Water Conservancy District and Bureau of Reclamation for releases from Deerfield and Pactola Reservoirs.
- This permit is approved subject to the irrigation water use questionnaire being submitted each year.
- Approval of Permit No. 1746A-2 deletes 30 acres in the NW $\frac{1}{4}$ NW $\frac{1}{4}$; 13 acres in the NE $\frac{1}{4}$ NW $\frac{1}{4}$; 11 acres in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ and 6 acres in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 12, T1S, R9E from irrigation. The 172 acres authorized for irrigation included: 4 acres in the NW $\frac{1}{4}$ SW $\frac{1}{4}$; 26 acres in the NE $\frac{1}{4}$ SW $\frac{1}{4}$; 4 acres in the NW $\frac{1}{4}$ SE $\frac{1}{4}$; 36 acres in the SW $\frac{1}{4}$ SW $\frac{1}{4}$; 40 acres in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ and 11 acres in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 1 and 6 acres in the NW $\frac{1}{4}$ NW $\frac{1}{4}$; 27 acres in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ and 18 acres in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 12, all in T1S, R9E. *Due to the reduced acreage found during the licensing investigation, the above acreage has been reduced to what is actually being irrigated (see acreage described in (3) of this license).*



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

MAY 03 2016

date

