

1. Considered JULY 24, 1975
2. Name of Applicant SHELDON D. HEIN
3. Post Office Address ILROQUOIS
4. Amount of Water claimed 2.28
5. Source of Water supply 100' DEEP WELL
6. Water to be used for IRRIGATION
- Acres to be irrigated 160
7. Water to be diverted and used in BEADLE County
about 105, 1E miles of CAVOUR
8. Proof of Publication Received 7-22-75
Not Received _____
9. Application Approved _____
Subject to _____
Not Approved _____
Action Deferred _____

10. Remarks:

Check 1180 may add to cap. and motor

2312-3

11-1-75

*Check to see
if 3 million
pic over*

*Sheldon Hein
No. 1180
Pump Dept 96 to motor 23 ft
Pumping 350 gpm Capacity 350 gpm
C/P T 9 h. for 1230
Booster pump at C/P. Haul 45 ft
motor 2520 RPM
No. 6-3705 30-
Pump Body Model 10 KE PDL
Ser # 7680166, 3500 RPM, 10 HP.
Imp Dia 7.5*

*Beard Well depth 90 ft. 23 ft
Pumping 350 gpm Capacity 350
Submersible pump 10 HP.*

10 HP

*Well at C/P. Rel. in air now. 10
pump at 102 gpm over*

No. 2312-3
 Map No. 1694-3 Water Division No. 3 JAMES RIVER District _____
 (Blanks to be filled by the Engineer for the W. H. C.)

APPLICATION FOR PERMIT

To Appropriate Water within the State of South Dakota

(NOTE - Draw a line through items not applicable)

1. Name of Applicant Sheldon D. Heir.
 Postoffice address Rt. 2, Iroquois, State South Dakota 57353
 If a corporation show date and place of incorporation _____
 2. Method of accomplishing work (contract, employment of others, or by direct labor) Contract
 3. Name of diversion work HEIR #1
 4. Amount of water claimed (cubic feet per second) 2.28
 5. Source of water supply Well
 6. Location of point of diversion 20 ft from the middle of the East side of the NW $\frac{1}{4}$ of Section 23.
 _____ County Beadle
 7. Annual period or periods during which water is to be used May 1 -- Sept. 1
 8. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) Irrigation
 9. For irrigation use, Total number of acres to be irrigated 160

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.	Land Description	No. Acres Irr.
NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of S-23-109N-60W	40		
NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of S-23-109N-60W	40		
NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of S-23-109N-60W	40		
NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of S-23-109N-60W	40		

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 5 years. Additional time required to complete application of water to the proposed beneficial use 2 years.
 11. Choice of newspaper for Notice of Intent to Appropriate Water publication Huron Daily Plainsman
 12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.

Bowl pump

B. Works proposed to transport water to place of use.

Main line

C. Works proposed to apply water to beneficial use.

Towline

Estimated Total Cost \$ _____

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map
 (See instructions concerning preparation.)

STATE OF SOUTH DAKOTA)
) ss.
 County of Beadle)

I, Sheldon D. Heir, the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.

Signed Sheldon D. HeirSubscribed and sworn to before me this 11 day of June, 1955

Notary Public (or other qualified officer)

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 2312-3
SHELDON D. HEIN Rt #2, IROQUOIS
 (Applicant) (Post Office Address)
SOUTH DAKOTA 57353 With the following modifications:
 (State)

The irrigation well approved under this Permit is located near domestic wells which may obtain water from the same aquifer. The irrigation well owner, under this Permit, shall control his irrigation withdrawals so there is not a reduction of needed water supplies in existing domestic wells.

Date of first receipt of application JULY 9 19 75
 Date of return to applicant for correction, amendments or changes required _____ 19 ____
 Date of receipt of corrected application _____ 19 ____
 Approved JULY 24 19 75, Recorded in Book 14 Page 11

WATER RIGHT PERMIT NO. 2312-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 2312-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is JULY 9 19 75
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before JANUARY 24 19 78
3. The whole of said work is to be completed on or before JULY 24 19 82
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is JULY 24 19 82
5. The water appropriated shall be used for the purpose of IRRIGATION

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed 2.28 cubic feet per second; neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for beneficial uses served, and if for the irrigation purposes said appropriation must be limited to not more than 3 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is

actually and beneficially applied for irrigation on or before JULY 9 19 75; said water to be used during the following described annual period: MAY 1 TO SEPTEMBER 1

Witness my hand this 4TH day of AUGUST 19 75

WATER RIGHTS COMMISSION

By: Ken W. Butler
 Chief Engineer, Executive Officer

Certificate of Construction Issued _____, 19 ____

Water License Issued _____, 19 ____

12. Principal Features of the Proposed Water Supply System (continued.)

D. Well Information or Estimates

(1) Drill Hole, Diameter 36", Depth 100'(2) Casing, Type FIBERGLASS, Diameter 16", Thickness 1/2"
(wood, concrete, steel, etc)

(3) Perforated Screen.

Type SLOTTED, Diameter 16", Length 25'(4) Gravel Pack, Thickness 10", Length of gravel pack 100'

E. Dugout information or Estimates.

(1) Surface dimensions _____, Depth _____

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Please attach a copy to test well log if available.)

Character of Water bearing materials SANDS AND GRAVELDepth to top of water bearing material 68'Depth to bottom of water bearing material 100'Thickness of water bearing material 32'Depth to water (ground surface to water level) 30'

(2) Distance to nearest existing household or livestock watering wells.

On same owner's property _____ rds. On property owned by others 80 rds.

G. Water Storage Dams.

If the proposed water use system contains one or more water storage dams, please show in the space below, the height, maximum water depth, surface area and storage capacity of each storage dam. The location of each water storage dam should be shown on the water right map.

Sheldon Stein
Signature of Applicant

June 19, 1975

Mr. Sheldon Hein
County Extension Office
Huron, S.D. 57350

Dear Mr. Hein:

Enclosed please find the original copy of the report of analysis for the water sample submitted here about a week ago. Also enclosed is a questionnaire concerning the source of this water, which we would like to have returned to this office. You will also find a copy of Extension Circular 654, which gives some descriptive information on the chemical reactions which soils and water undergo when certain conditions exist. Please read this extension circular carefully. Also, on the outside back cover of this circular you will find an encircled red cross, which denotes the approximate quality of your water for irrigation use. This is adapted from the United States Department of Agriculture handbook on saline and alkali soils and water problems.

The water which you have is in the very high total salinity category and right on the margin between medium and high for sodium hazard. This means that there are two possible things which will occur. First, a very high probability exists that salt will accumulate in the upper part of the root zone unless you undertake conscious leaching procedures. This will involve completely filling the soil reservoir with water in the late fall and hoping for sufficient winter and early spring precipitation to cause some leaching. The second hazard is that of sodium dispersion of clays. This will take place as a result of the increase of degree of saturation of sodium in the clay of your soil, causing a dispersed or jelly-like behavior of the soil when wet and a very harsh and hard behavior when dry. This condition occurs naturally in some soils in Beadle County, and will very likely begin to show up in the Dudley and Stickney soils of your farm if not already present. This is because those soils have a high salt content originally in the subsoil and because they are very low in permeability. It is very likely that the slick spot or alkali soils that have developed in Spink, Brown, Beadle County and others have developed under circumstances of intermittent ponding and poor drainage. The other soils, Prosper and Houdek, on the land which you intend to irrigate, probably will fare all right if this water is used only occasionally. By that I mean once and not more than twice a year, with occasionally a year skipped entirely

Cont.

Mr. Sheldon Hain
June 19, 1975
Page 2.

with no irrigation. Furthermore, when irrigation is accomplished on these soils, it should be in very considerable amounts such as four to five inches at an application. And of course, the application must be made at a rate which is consistent with the intake rate of the soil, otherwise the water will not penetrate to the lower parts of the root zone. If the land is kept largely in alfalfa or alfalfa grass mixtures about 75% of the time, the prospects are that this land will perform satisfactorily for irrigation for twelve to twenty years. Beyond that, I will not predict. In addition, there must be an occasional lucky or fortuitous year every four or five years, which will minimize the need for irrigation and cause some natural leaching and diminishing of sodium to occur.

These are the only circumstances under which I would recommend irrigation development with this water supply.

A copy of this letter and of the water analysis and your WI-1 form and other application materials are being forwarded to the State Conservation Commission.

Sincerely yours,

L. O. Fine

L. O. Fine
Water Quality Lab

LOF:MRB

Enclosures

cc: State Conservation Commission
Richard Fadgen, Beadle County Extension Agent
Darrel Pahl



REPORT OF ANALYSIS
Water Quality Laboratory
Water Resources Research Institute
South Dakota State University
Brookings, South Dakota 57006

Submitted by: Sheldon Hein
 Address: County Ext. Office
Euron, SD 57350

Date Rec'd: June 13, 1975
 Sample No.: 75-491
 Identification: 011-100'

WATER ANALYSIS

Calcium (Ca)	170	ppm*	8.50	me/l**
Magnesium (Mg)	48	ppm	3.94	me/l
Sodium (Na)	480	ppm	20.38	me/l
Potassium (K)	16	ppm	0.43	me/l
Sulfate (SO ₄)	960	ppm	19.97	me/l
Nitrate (as N)		ppm		me/l
Chloride (Cl)	158	ppm	4.41	me/l
Bicarbonate (HCO ₃)	349	ppm	17.2	me/l
Carbonate (CO ₃)		ppm		me/l
Iron (Fe)		ppm		me/l
Fluoride (F)		ppm		me/l
Hardness (EDTA as CaCO ₃)		ppm		g.p.g.***
Alkalinity (Methyl Orange)	286	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	2832	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	8.37			
Sodium	61.86	% of cations		
Residual sodium carbonate	0.00	me/l		
pH	7.91			
Others:				

*ppm=parts per million

**me/l=milliequivalents per liter

***g.p.g.=grains per gallon

COMMENTS: Total cations 33.75 me/l
 Total anions 30.10 me/l

Please fill in the enclosed questionnaire and return with your payment.

By: Shirley Nittan

Service Performed	Amount Due
Irrigation analysis	16.00

Make check payable to: Water Quality Laboratory

Cut along dotted line and return the lower portion with payment

Sample No. 75-491

Amount Enclosed \$

Signed

STATE CONSERVATION COMMISSION
SUPPORTING INFORMATION
FOR APPROPRIATION OF GROUND WATER IN ACCORDANCE
WITH SDCL 46-6-3 AS AMENDED
(This Form Required for Proposed Well Irrigation Only)

FOR COMPLETION USE OF
Irrigation System: _____
Water Quality: _____
Soils Capability: _____
Approved: [Signature]
Disapproved: _____

NAME: Sheldon D. Hein

ADDRESS: RR #2, Iroquois, South Dakota 57353

COUNTY: Beadle

LEGAL DESCRIPTION

1. WELL LOCATION: 20 ft from the middle of the East side of the NW $\frac{1}{4}$ of Section 23.
2. AREA TO BE IRRIGATED: Section 23-109N-60W

TYPE OF IRRIGATION

3. GRAVITY SPRINKLER (Indicate Type): Towline
4. CROPS TO BE IRRIGATED: Corn, Alfalfa

LAND CAPABILITY FOR IRRIGATION

5. PERCENTAGE OF SLOPE: See attached sheets
6. PHYSICAL SOILS CLASSIFICATION FOR IRRIGATION: _____

WATER QUALITY (TO BE COMPLETED BY COMMISSION)

7. SAMPLE NO.: 75-491
8. SALINITY: EC = 2832 micromhos/cm (very high)
9. SODIUM: SAR = 8.37 (high)

I do hereby certify that a chemical analysis of the ground water to be
acquired for irrigation from South Dakota State University and:
the land capability for irrigation information has been acquired from

SCS Soil Scientist

and:

that the legal description for the location of the well and land to be
irrigated is true and correct.

X. Sheldon Hein

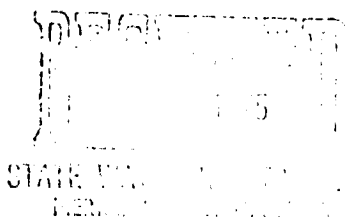
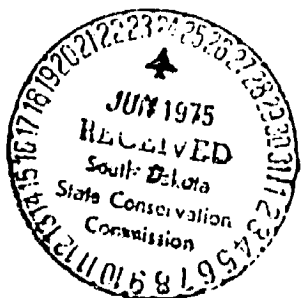
Subscribed and sworn before me this

10th day of June 1975.

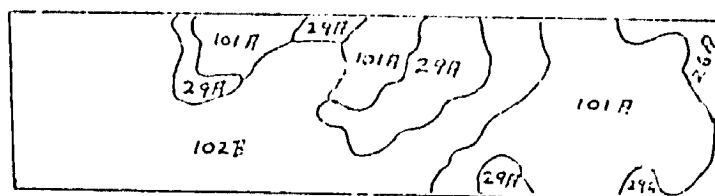
Notary Public

Notary Public

(Title)



SOILS MAP



N¹/₂NE¹/₄ & N¹/₂SW¹/₄ 23, T. 109 N. R. 60 W.

Approx. 1/2 mile

SOIL DESCRIPTION

- 26A Dudley-Stickney silt loam, 0 to 3 percent slopes
This unit consists of moderately well drained soils with 4 to 10 inches of friable loamy surfaces over dense claypan subsoils. Very slow permeability and salts in the subsoil make these soils generally unsuited for irrigation.
- 29A Tetonka-Dudley silt loams, 0 to 2 percent slopes
This unit consists of poorly drained soils in enclosed depressions and in swales. Permeability is very slow and surface drainage is very slow to lacking. Dense compact subsoils limit these soils for irrigation when they are not drained.
- 101A Prosper-Houdek loams, 0 to 2 percent slopes
This unit consists of deep, well and moderately well drained loamy soils with calcareous substrata. The subsoils contain 30-35% clay. Depth of the calcareous clay loam substratum ranges from 18 to 30 inches. Permeability is moderately slow. Included within these areas are small enclosed depressions and small areas of soil with claypan subsoils which contain salts. Drainage or fill of these included areas may become desirable to prevent ponding and excessive wetness.
- 102B Houdek-Prosper loams, 2 to 6 percent slopes
The Houdek and Prosper soils are described in the 101A mapping unit above. This unit differs primarily in the degree of slope.

Sheldon Hein Unit

SCS-Beadle, County

Form 8 - Proof of Publication - Notice of
Intent to Appropriate Water

No. 2312-3

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Beadle) ss.

I, Roderic Murphy hereby
certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Huron Daily Plainsman

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the _____

City Huron of _____

County of Beadle and State of South Dakota;
that the said notice was published in said newspaper on the following
two dates:

July 14, 1975

July 21, 1975

(Signature)

Bookkeeper

(Title)

July 21, 1975

(Date Signed)

PUBLIC NOTICE

F.P. 7-14-75 L.P. 7-21-75
NOTICE OF INTENT TO
APPROPRIATE WATER

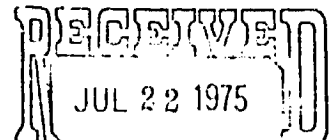
Notice is hereby given that
Sheldon D. Hein whose post office
address is Iroquois, South Dakota,
has made an application in ac-
cordance with the provisions of the
water laws of South Dakota for a
permit to appropriate for beneficial
use 2.28 cubic feet of water per
second of time from ground water
through the Hein No. 1, the point of
diversion of which is to be located in
the SE 1/4 NW 1/4 of Section 23, Twp.
109N, Range 60W. Said water to be
used for the purpose of providing
irrigation on the following described
land: W 1/2 NE 1/4, E 1/2 NW 1/4, Section
23, T109N, R60W.

This application No. 2312-3 will be
considered by the Water Rights
Commission at the North Lounge,
Surbeck Center, S. D. School of
Mines at Rapid City, South Dakota
upon the 24th day of July, 1975, at
2:30 P.M. All interested persons
may appear and be heard.

WATER RIGHTS COMMISSION
By: BURTON F. JONES
Water Rights Specialist

cc: Sheldon D. Hein, Route 2,
Iroquois, S.D. 57353.

No. 373 (adv.)



STATE WATER RIGHTS COMMISSION
PIERRE, SOUTH DAKOTA

Form 6. - Notice of Intent to Appropriate Water

No. 2312-3

Publish first publication, on or before

July 14, 1975

NOTICE OF INTENT TO APPROPRIATE WATER

Pierre, South Dakota 57501

July 10, 1975

Notice is hereby given that Sheldon D. Hein

whose post office address is Iroquois, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for

a permit to appropriate for beneficial use 2.25 cubic feet of water per

second of time from thru ground water through the

Hein #1, the point of diversion of which is to be located in the _____

SE 1/4 NW 1/4

of Section 23, Twp. 100N, Range 60W. Said water to be used for the purpose of providing irrigation on the following described land:
W 1/2 NE 1/4, E 1/2 NW 1/4, Section 23, T109N, R60W

This application No. 2312-3 will be considered by the Water Rights Commission at the North Lodge, Surbeck Center, S.D. School of Mines at Rapid City, South Dakota

upon the 24th day of July, 1975 at 3:30 P.M. All interested persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

BURTON F. JONES, Water Rights Specialist

BFJ/bw

cc: Sheldon D. Hein, Route 2, Iroquois, S.D. 57363



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

January 29, 1988

SHELDON HEIN
RR #2 BOX 76
IROQUOIS, SD 57353

NOTICE

Re: Violation of Requirement To Submit 1987 Irrigation
Questionnaire

Our records indicate that the 1987 Irrigation Questionnaire has not been submitted for Permit No(s). (2312-3). The request for the Questionnaire was dated October 8, 1987. The Water Management Board has directed that owners of water permits who have not submitted 1987 Irrigation Questionnaires be given notice of hearing(s) to be held by the Board to determine if any action is to be taken concerning the violation.

The hearings will be held at 9:00 am, March 2, 1988 in Room 216, Joe Foss Building, 523 E Capitol, Pierre SD.

The hearing will be conducted pursuant to the provisions of SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to procedures contained in SDCL 1-26. Following the hearing(s), the Water Management Board can:

1. Amend Permit No(s). 2312-3 to require the Irrigation Water Use Questionnaire to be submitted each year;
2. Postpone any action;
3. Take no action.

The hearing(s) 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.

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

NOTE: If the questionnaire(s) is received in this office before the March 2 hearing date, your name will be deleted from the agenda for the hearing.



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

February 4, 1988

2312-3

Sheldon Hein
RR #2 Box 76
Iroquois, SD 57353

Dear Mr. Hein:

I am writing to acknowledge receipt of your 1987 Irrigation Questionnaire(s). A notice was sent to you January 29, 1988 regarding the the requirement to submit the Irrigation Questionnaire(s) for Water Permit No. 2312-3 and the hearing date before the Water Management Board.

Since your questionnaire was received prior to the March 2, 1988 Water Management Board Meeting, your name has been deleted from the Board Meeting agenda. If you have any questions, please contact us.

Very truly yours,

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

 **Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

2312A-3

DEC 20 1988

Sheldon Hein
RR 2, Box 76
Iroquois, South Dakota 57353

Dear Mr. Hein:

Enclosed is Water License No. 2312A-3. This is the final water right document completing your process of obtaining a Water Right.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 2312A-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Very truly yours,



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

enclosures

NOTE: Applicable portions of Water Permit No. 2312-3 have been incorporated into this Water License No. 2312A-3

