

Water Right Number 3561-3

1. Considered 2-23, 1977
2. Name of Applicant Harold Hise
3. Post Office Address Twin Brooks
4. Amount of Water claimed 3.85
5. Source of Water supply 275' well
6. Water to be used for irrigation
- Acres to be irrigated 270
7. Water to be diverted and used in Grant County
- about 1N, 1W miles of Twin Brooks
8. Proof of Publication Received 2-16-77
- Not Received _____
9. Application Approved 1-31-79
- Subject to well sent Milbank FL
- Not Approved _____
- Action Deferred _____
10. Remarks:

No. 2367-3Map No. 2142-3 Water Division No. 3 WHEATSTONE CREEK District
(Blanks to be filled by the Engineer for the W. R. 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 ~~xxxxxxx~~ Wiese, Russell & Roger
 Postoffice address Rt 1 Twin Brooks, State S. Dak.
 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 Project 1
 4. Amount of water claimed (cubic feet per second) 3.85 cfs
 5. Source of water supply Well
 6. Location of point of diversion 1100 ft N of the SE corner of the NW 1/4
Section 10 T120 R50
 _____ County Grant
 7. Annual period or periods during which water is to be used April - November
 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 270

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.
SW 1/4 of the NW 1/4 Sec 10 T120 R50	40	South 500' of the NW 1/4 of the	
SE 1/4 of the NW 1/4 "	40	NE 1/4 Sec 10, T120 R50	30
SE 1/4 of the NE 1/4 "	40	NW 1/4 of the SE 1/4 Sec 10 T120 R50	40
SW 1/4 of the NE 1/4 "	40	NE 1/4 of the SE 1/4 Sec 10 T120 R50	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 4 years.
 11. Choice of newspaper for Notice of Intent to Appropriate Water publication Water town Public Opinion
 12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source. WellB. Works proposed to transport water to place of use. PipeC. Works proposed to apply water to beneficial use. Irrigation SystemEstimated Total Cost \$ 30,000Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map
(See instructions concerning preparation.)

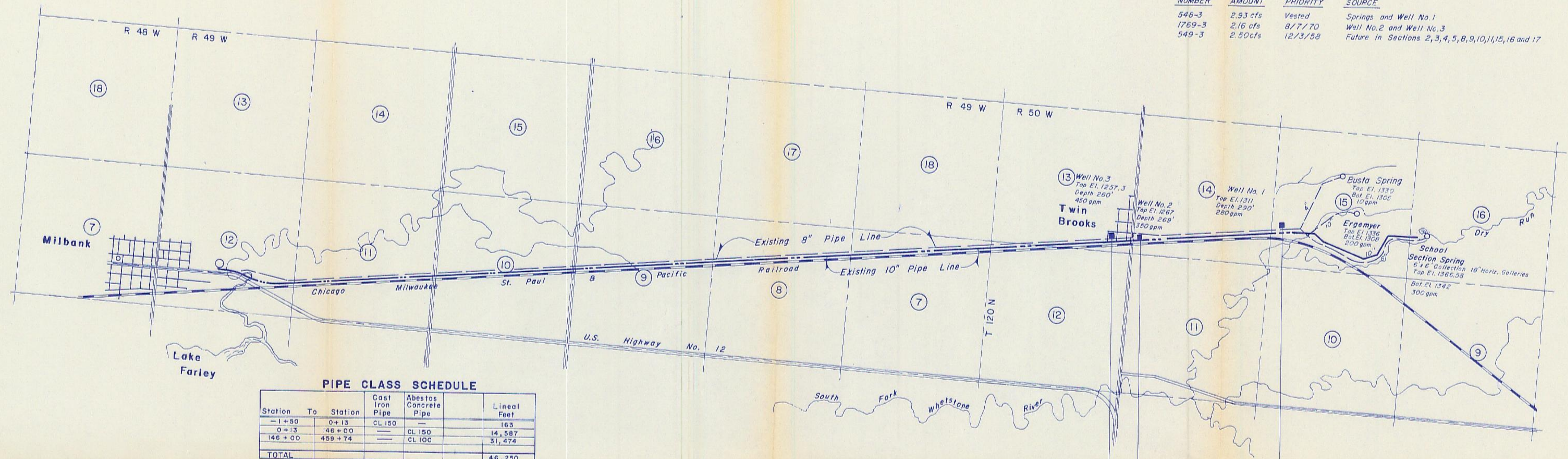
STATE OF SOUTH DAKOTA)

County of Deuel) ss.I, Russell Wiese, 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 Russell WieseSubscribed and sworn to before me this 22 day of Nov., 1976

Notary Public (or other qualified officer)

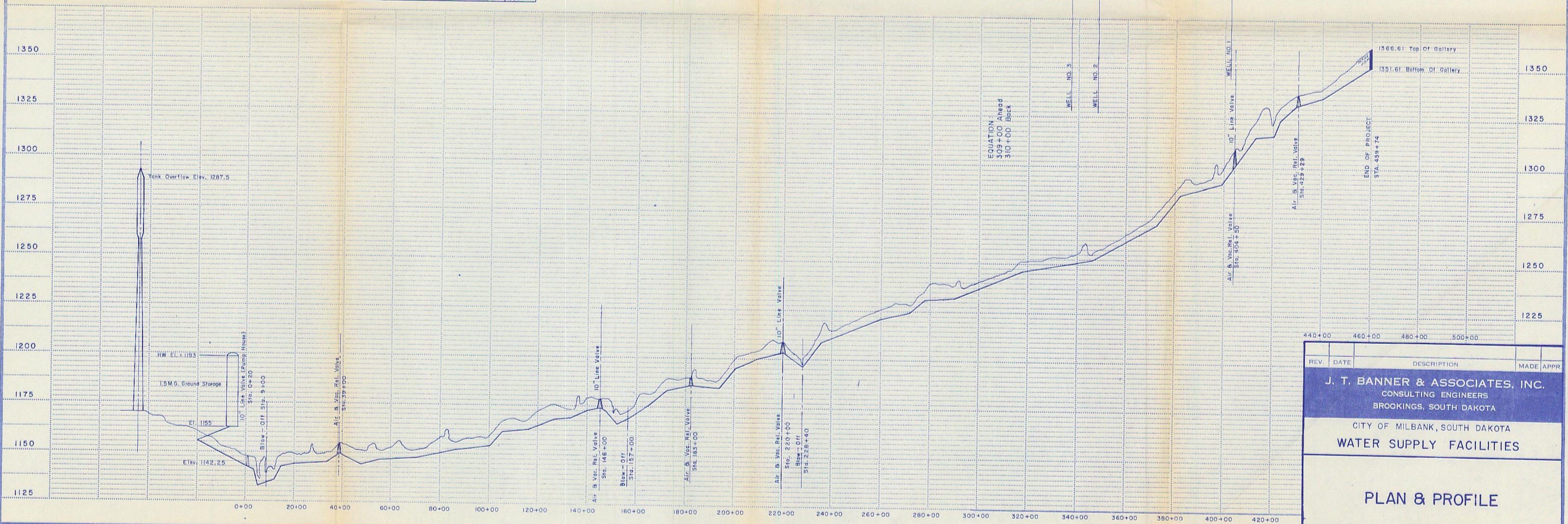
WATER RIGHTS - CITY of MILBANK

NUMBER	AMOUNT	PRIORITY	SOURCE
548-3	2.93 cfs	Vested	Springs and Well No. 1
1769-3	2.16 cfs	8/7/70	Well No. 2 and Well No. 3
549-3	2.50 cfs	12/3/58	Future in Sections 2, 3, 4, 5, 8, 9, 10, 11, 15, 16 and 17



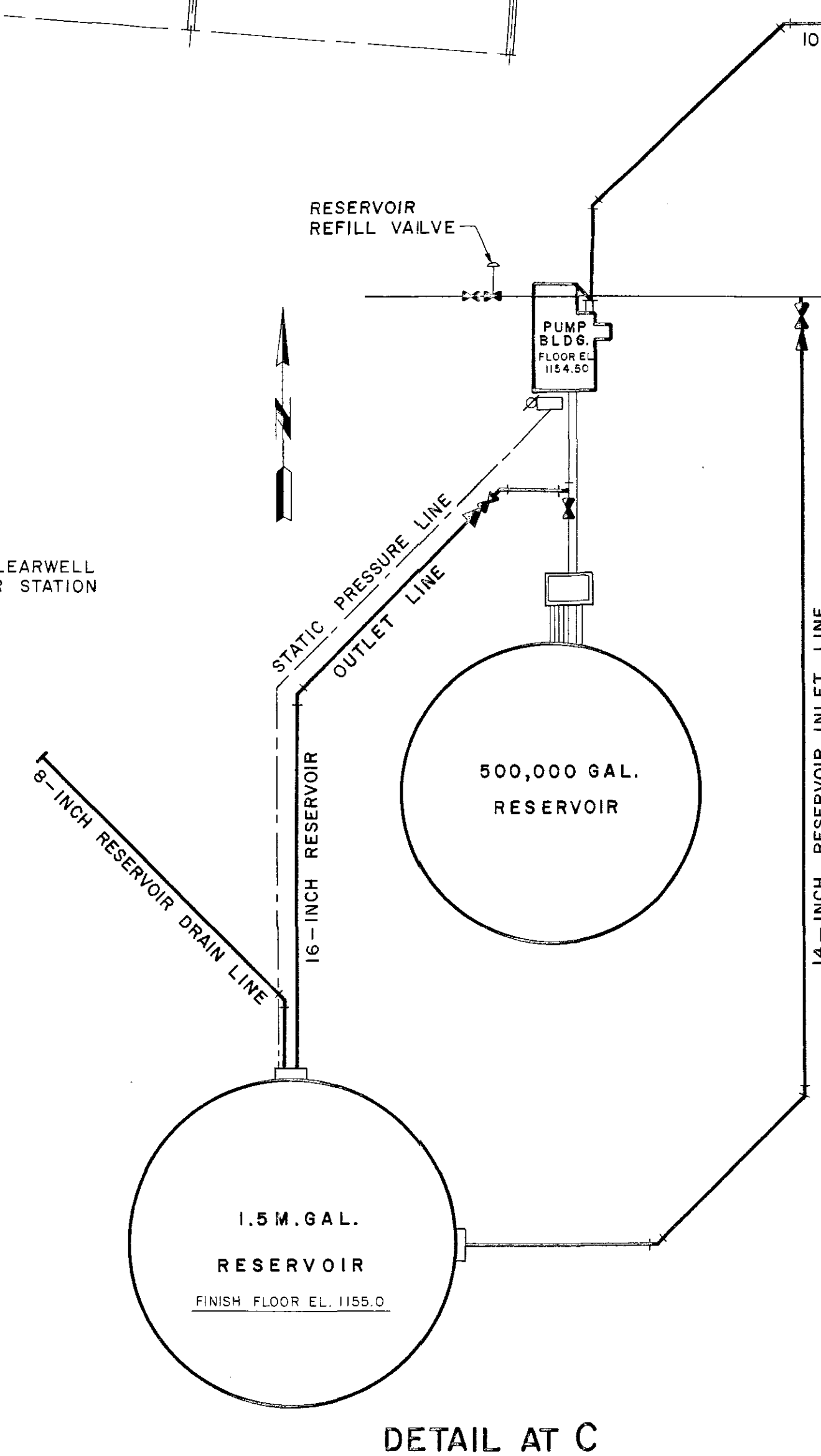
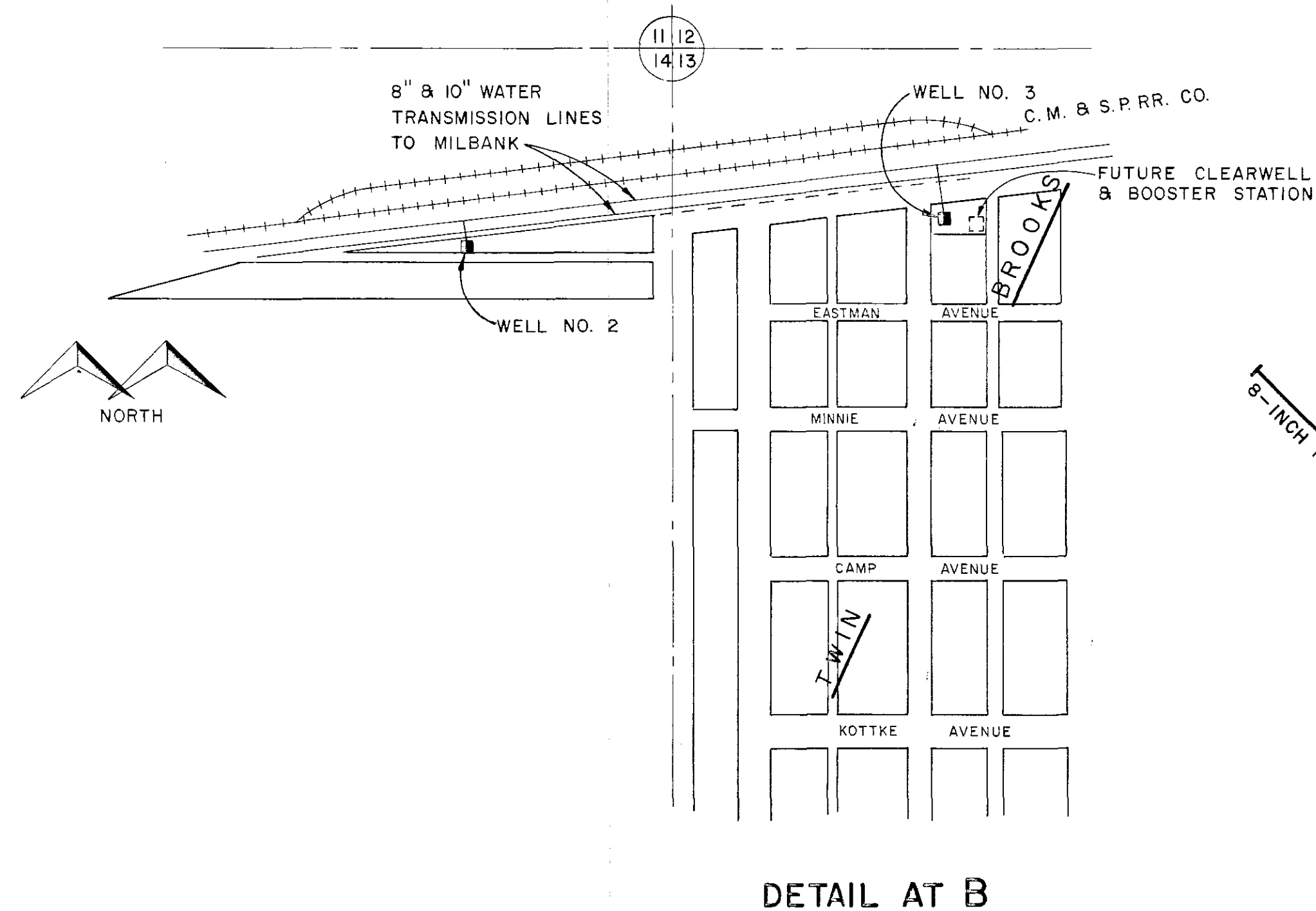
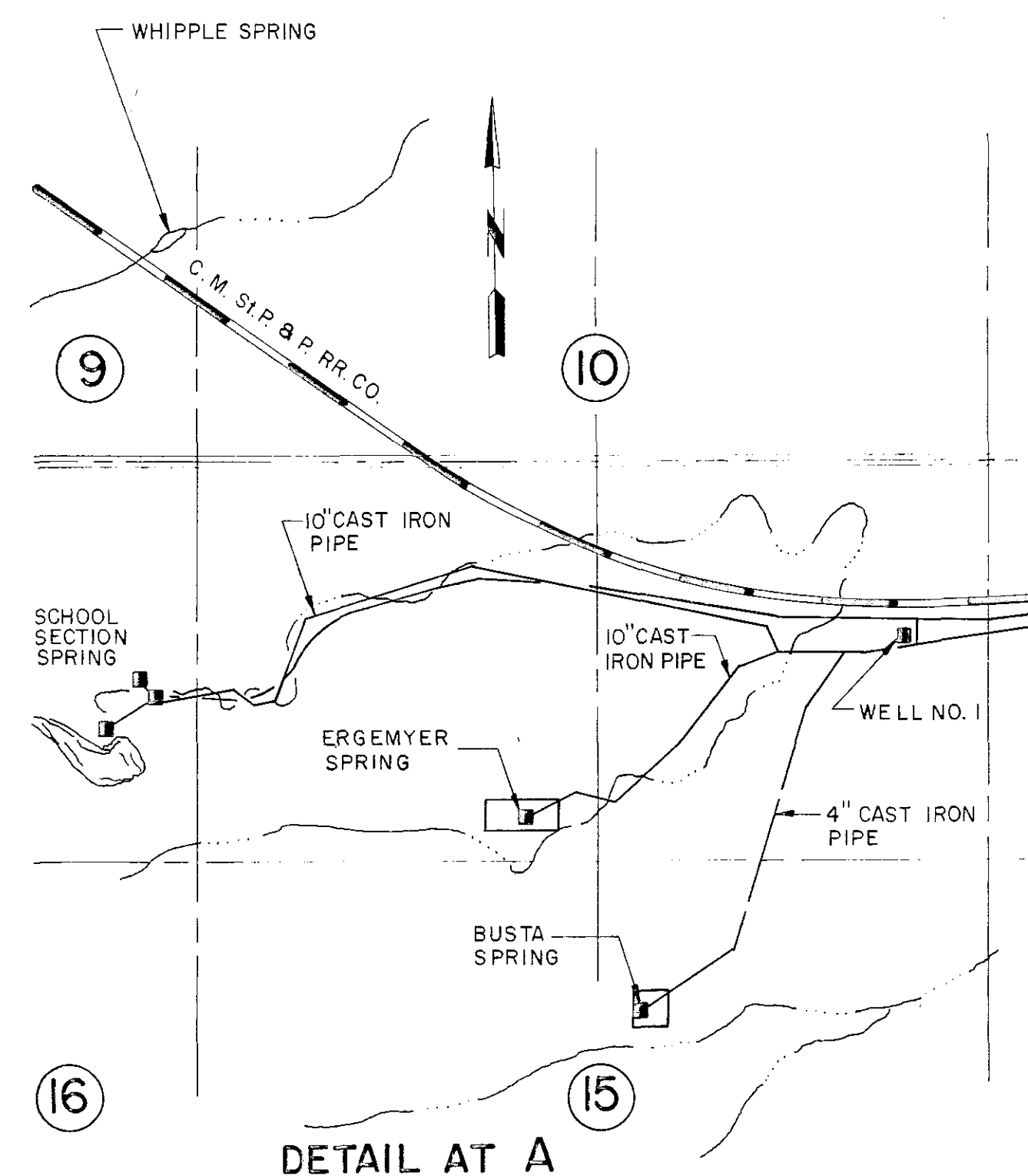
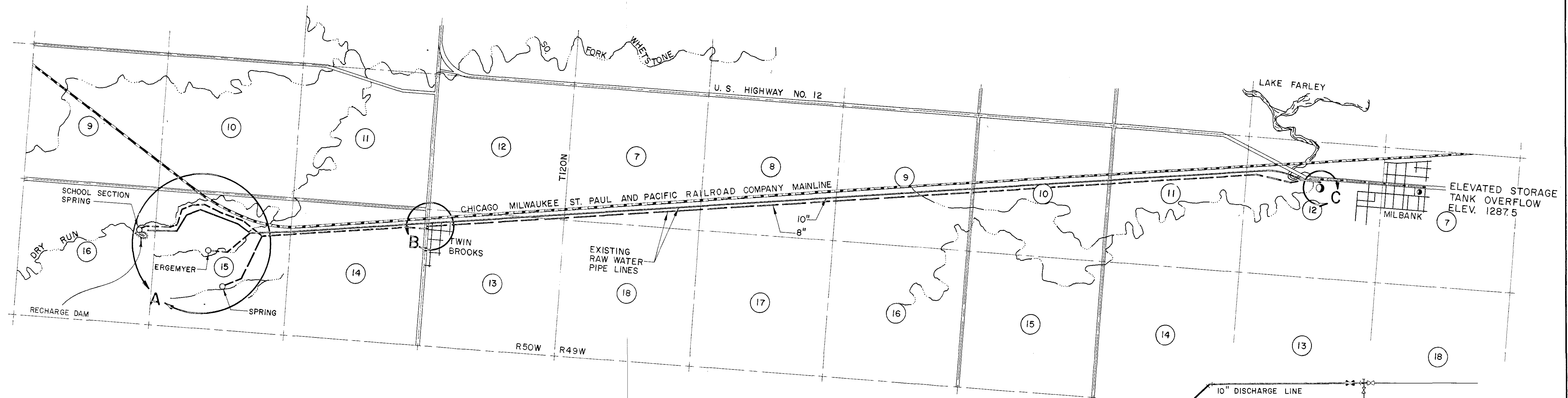
PIPE CLASS SCHEDULE

Station	To Station	Cast Iron Pipe	Asbestos Concrete Pipe	Lineal Feet
-1+50	0+13	CL 150	—	163
0+13	146+00	CL 150	—	14,587
146+00	459+74	CL 100	—	31,474
TOTAL				46,250



REV.	DATE	DESCRIPTION	MADE	APPR.
J. T. BANNER & ASSOCIATES, INC. CONSULTING ENGINEERS BROOKINGS, SOUTH DAKOTA				
CITY OF MILBANK, SOUTH DAKOTA WATER SUPPLY FACILITIES				

PLAN & PROFILE



REV.	DATE	DESCRIPTION	MADE	APPR.
J. T. BANNER & ASSOCIATES, INC. CONSULTING ENGINEERS BROOKINGS, SOUTH DAKOTA				
WATER SUPPLY FACILITIES MILBANK, SOUTH DAKOTA				
PROJECT 5051-2 PART III SUPERVISORY CONTROL SYSTEM				
GENERAL LAYOUT				
DRAWN: G.A.M.	APPROVED: _____			
DESIGNED: R.L.B.	DATE: _____			
CHECKED: R.L.B.	APPROVED: _____			
DATE: 6-16-76	DATE: _____ FOR J. T. BANNER & ASSOC. INC.			
SCALE: SHEET 1 OF 1		DRAWING NUMBER 5051-2		

W/R 3501-3

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 3561-3

~~WALTER WIESE~~ WIESE, Russell & Roger
(Applicant)

TWIN BROOKS
(Post Office Address)

SOUTH DAKOTA 57269 With the following modifications:
(State)

The irrigation well approved under this Permit will be located near domestic wells and other irrigation 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 adequate domestic wells or in irrigation wells having prior water rights.

The City of Milbank has priority rights to portions of this water under future use withdrawal permits, and this application is approved subject to these prior rights if or when the City develops the reserved water supply.

Date of first receipt of application NOVEMBER 29, 1976

Date of return to applicant for correction, amendments or changes required _____, 19____

Date of receipt of corrected application DECEMBER 8, 1976

Approved JANUARY 31, 1979, Recorded in Book 20 Page 130

WATER RIGHT PERMIT NO. 3561-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 3561-3 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 NOVEMBER 29, 1976.
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before JULY 31, 1981.
3. The whole of said work is to be completed on or before JANUARY 31, 1984.
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is JANUARY 31, 1988.
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 3.85 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-hundredth (1/100) 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 JANUARY 31, 1988; said water to be used during the following described annual period: APRIL - NOVEMBER

Witness my hand this 12th day of FEBRUARY, 1979

WATER RIGHTS COMMISSION

By:

John Hatch
Chief Engineer, Executive Officer

Certificate of Construction Issued _____, 19____

Water License Issued _____, 19____

Form 2A - Wells, Dugouts or Water Storage Dams (Supplement to form 2)

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

D. Well Information or Estimates

- (1) Drill Hole, Diameter 14 in, Depth 275 ft
- (2) Casing, Type Steel Diameter 12 in Thickness 0.375 in
(wood, concrete, steel, etc.)
- (3) Perforated Screen.
Type wire wrap, Diameter 12 in, Length 30 ft
- (4) Gravel Pack, Thickness None, Length of gravel pack Second layer to be screened

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 last well log if available.)

Character of Water bearing materials 74-125 Blue Clay 149-191 hard shale
0-2 top soil 10-25 Blue Clay 125-126 Rock 194-195 Sandstone
2-7 yellow clay 25-60 Blue shale 126-147 Blue Clay 195-226 hard shale
7-10 sandy clay 60-74 sand 147-149 sandy clay 226-275 sand
 Depth to top of water bearing material 1st layer 60 ft
2nd layer 226 ft
 Depth to bottom of water bearing material 1st layer 74 ft
2nd layer 275 ft
 Thickness of water bearing material 1st layer 14 ft
2nd layer 49 ft
 Depth to water (ground surface to water level) 108 ft

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

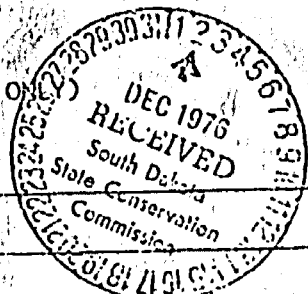
On same owner's property 157 rds. On property owned by others 177 rds.

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.

Wilfred Wise
Signature of Applicant

STATE CONSERVATION COMMISSION
SUPPORTING INFORMATION
FOR APPROPRIATION OF GROUND WATER IN ACCORDANCE
WITH SDCL 46-6-3 AS AMENDED
(THIS FORM REQUIRED FOR PROPOSED GROUND WATER IRRIGATION ONLY)



NAME Wilfred Wiese
ADDRESS Rt 1 Twin Brooks S. Dak
COUNTY Grant

LEGAL DESCRIPTION

1. WELL LOCATION 1100' N of the SE corner of the NW 1/4 Section 10 T120 R50
S 1/2 of the NW 1/4 N 1/2 of the SE 1/4
2. LOCATION OF AREA TO BE IRRIGATED S 1/2 of the NW 1/4 S 1/2 of the NW 1/4 of the NE 1/4
all Section 10 T120 R50

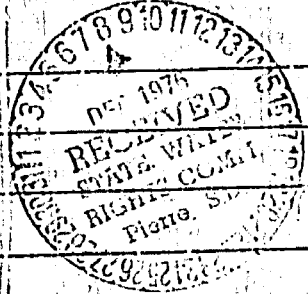
TYPE OF IRRIGATION

3. GRAVITY _____ TOWLINE u CENTER PIVOT X GUN _____

4. CROPS TO BE IRRIGATED Alfalfa small grain
(primarily for alfalfa mol)
(small grain only for alfalfa establishment)

WATER QUALITY

5. SAMPLE NUMBER 76-1779
6. SALINITY (EC X 10⁶) 1604 (high)
7. SODIUM (SAR) 2.71 (low)
8. RESIDUAL SODIUM CARBONATE (meq/l.) 0



I do hereby certify that a chemical analysis of the ground water representative of that used to irrigate shall be acquired from South Dakota State University and: the soils information has been acquired from _____ Conservation District, County Extension Office or Soil Conservation Service. and: that the legal description for the location of the well and land to be irrigated is true and correct.

Wilfred Wiese
APPLICANT'S SIGNATURE

SUBSCRIBED AND SWORN BEFORE ME THIS
7th DAY OF June 19 76

[Signature]
(TITLE OR SEAL)

[Signature]
APPROVED/DISAPPROVED

(SOILS INFORMATION ON REVERSE SIDE)

REPORT OF ANALYSIS
Water Quality Laboratory
Water Resources Research Institute
South Dakota State University
Brookings, South Dakota 57005

Submitted by: Russell Wiese
Address: Rt. 1
Twin Brooks, SD 57269

Date Rec'd: November 5, 1976
Sample No. 76-1779
Identification: Well-27
NW 1, Sec. 10, T. 120N, R. 50W

WATER ANALYSIS

Calcium (Ca)	147	ppm*	7.35	me/l*
Magnesium (Mg)	56	ppm	4.59	me/l
Sodium (Na)	152	ppm	6.61	me/l
Potassium (K)	10	ppm	0.26	me/l
Sulfate (SO ₄)	640	ppm	13.31	me/l
Nitrate (as N)		ppm		me/l
Chloride (Cl)	18	ppm	0.50	me/l
Bicarbonate (HCO ₃)	449	ppm	7.36	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)	368	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	1604	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	2.71			
Sodium	35.14	% of cations		
Residual sodium carbonate	0.00	me/l		
pH	7.73			
Others:				

*ppm=parts per million

**me/l=millequivalents per liter

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

COMMENTS: Total cations 18.81 me/l
Total anions 21.17 me/l

By: Shirley Mitten

Service Performed	Amount Due
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Irrigation analysis	\$8.00
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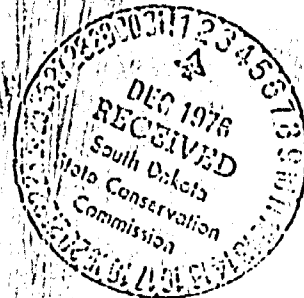
Make checks payable to: Water Quality Laboratory

Cut along dotted line and return the lower portion with payment

Sample No. 76-1779

Amount Enclosed \$

Signed



November 29, 1976

Mr. Wilfred A. Russell Wiese
R.R. #1
Twin Brooks, SD 57269

Dear Mr. Wiese:

Your water sample (Lab. No. 76-1779) has been analyzed and the results are reported on the accompanying sheet, which is your copy to keep.

I am also enclosing a copy of AES pamphlet #13 for your use. The quality of your water for irrigation use is plotted approximately by means of the red cross in the chart on the outside back cover.

Your water, as indicated by this analysis, is satisfactory for use on the soils you indicate will be irrigated. If a salt problem or a water table problem should develop, contact extension personnel for assistance.

The WI-1, soils information, and a copy of the water analysis are being forwarded to the State Conservation Commission for their action.

Sincerely yours,

L. O. Fine

L. O. Fine
Water Quality Lab

LOF:ckb

Enclosures

cc: State Conservation Commission

P.S. Be on the alert for salt accumulations in the surface soil. Poor crop growth, gray crusts on the soil surface mean salt is building up. Soil analyses should be made and water management practices changed if this occurs.

Form 6 - Notice of Intent to Appropriate Water

No. 3561-3

Publish first publication, on or before February 10, 1977

NOTICE
INTENT TO APPROPRIATE WATER

Pierre, South Dakota 57501

February 3, 1977

Notice is hereby given that Wilfred Wiese
whose post office address is Twin Brooks, 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
3.65 cubic feet of water per second of time from the ground water through the
Wilfred Wiese Rt. 1, the point of diversion of which is to be located in the
Center of the N $\frac{1}{4}$
of Section 10, Twp. 120N, Range 50W. Said water to be used for the purpose
of providing irrigation on the following described land:

S $\frac{1}{2}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, Section 10-T120N-R50W.

This application No. 3561-3 will be considered by the Water Rights Commission at their office at
Pierre upon the 23 day of February, 1977, at 10:00 A. M. All interested
persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

BURTON F. JONES
Water Rights Specialist

BFJ/bw

cc: Wilfred Wiese, Rt. 1, Twin Brooks, South Dakota 57269

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

No. 3561-3

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Codington) ss.

I, John R. Lowrie hereby
certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Watertown Public Opinion

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 Watertown

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

Feb. 8th, 1977

Feb. 15, 1977

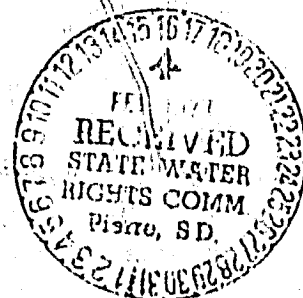
General Manager

(Title)

Feb. 15th, 1977

(Date Signed)

PUBLIC NOTICE
NO: 3561-3
NOTICE INTENT TO
APPROPRIATE WATER
I, John R. Lowrie, of Pierre, South Dakota 57501,
do hereby give notice that
Notice is hereby given that
Willfred Wiese, whose post office
address is Twin Brooks, 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 3.85 cubic feet of water per
second of time from the ground
water through the Willfred Wiese No. 1,
the point of diversion of which is to
be located in the center of the NW 1/4
of Section 10, Twp. 120N, Range 50W.
Said water to be used for the purpose
of providing irrigation on portions of
the following described land, SW 1/4,
NW 1/4, NW 1/4, NW 1/4, SE 1/4, Section
10, Twp. 120N, Range 50W, 50W, 120N, 50W.
This application No. 3561-3 will be
considered by the Water Rights
Commission at their office at Pierre
upon the 23rd day of February, 1977,
at 10:00 A.M. All interested persons
may appear and be heard.
WATER RIGHTS
COMMISSION
By: BURTON F. JONES
Water Rights Specialist
(February 8, 1977)



GROUND-WATER STUDY FOR THE CITY OF MILBANK

At the request of the City of Milbank, the South Dakota Geological Survey conducted a ground water study in and around the City of Milbank. The field work was conducted during the summers of 1974 and 1975.

The purpose of this study was to assist the city in locating a future water supply. The results of this study indicate that there are two potential water sources for the City.

1. Twin Brooks Area. This area is located approximately seven miles west of Milbank. The City is pumping water from 3 wells and springs in this area. Table 1 shows the results of analysis of water samples collected in the Milbank area. Samples W-11, W-12, W-13 were collected from City wells No. 1, 2, and 3 respectively. These samples have an average of 1372 parts per million total solids, 537 ppm sulfate, and 569 ppm hardness. The iron content of these waters are over the limits recommended by the South Dakota Department of Health. Sample W-14 was collected from a spring used by the City. This water has 532 ppm total solids, 164 ppm sulfate, and 442 ppm hardness. There is very limited data on the water levels and pumping rates of the City wells. Wells No. 1 and No. 2 do not have operational water level gauges and the accuracy of the lengths of air line in Well No. 3 is questionable. Because of a flowing water zone in this area, the Geological Survey did not drill any test holes. Based on the available data from the City files,

J. T. Banner and Associates, Inc., and the well drillers, it is concluded that the area probably could sustain additional well(s).

If the City should decide to test this area and develop additional wells, it is recommended that a pump test be conducted in the area and more accurate water level and pumping rate records should be kept for future reference.

2. Northeast of Milbank. The results of the test hole drilling in this area indicate there is an outwash deposit in and around Section 20, Township 121 North, Range 47 West (approximately one mile east and three miles north of the city which may contain enough water for a city supply). For location of test holes see figure 1 and for logs see Appendix A, B. and C. Water samples W-1 and W-2 in table 1 were collected from North Fork Whetstone River. For the location of water samples see figure 2. These samples have approximately 1100 ppm total solids, 500 ppm sulfates, and 690 ppm hardness.

Samples W-4, W-5 were collected from ground water in Section 10 and W-8, W-9 were collected from Section 29 south of Section 20. These 4 samples have an average of 573 ppm hardness, 288 ppm sulfate, and 791 ppm total solids. From all the samples collected in the area, samples W-4 and W-6 have higher nitrate than the recommended limits set by the State of South Dakota. The most promising locations for development of a new

water source is northeast of Milbank in the vicinity of test holes A-15, B-8, and B-18 in Section 20.

If the City should decide to test this area, it is recommended that a pump test be conducted and water samples collected and analyzed. This pump test and water analysis will help to determine the quantity and quality of water.

Before a permanent well is drilled, the City officials should contact the Division of Water Rights, Department of Natural Resource Development, Pierre, South Dakota, to obtain water rights and a permit to drill a municipal well. The Department of Environmental Protection should also be contacted for assistance in determining the biological and chemical suitability of the water.

This report was prepared by Assad Bazari, June 1976.

Table 1. CHEMICAL ANALYSES OF WATER SAMPLES FROM THE MILBANK AREA

Sample	Source	Parts Per Million										
		Calcium	Sodium	Magnesium	Chlorides	Sulfate	Iron	Manganese	Nitrate	Fluoride	Hardness CaCO ₃	Total Solids
A		--	--	--	250	500 ¹	0.3	0.05	10.0	0.9- 1.7 ²	--	1000
W-1	R	130	50	90	20	600	0.7	0.6	5		690	1208
W-2	R	130	30	90	14	500	0.7	0.2	2.0		690	1004
W-3	G	160	20	60	10	265	0.1	0.2	0.5		650	820
W-4	G	96	15	62	14	146			17	0.25	490	682
W-5	G	255	150	50	25	500	2.0	0.15	0.5		850	1190
W-6	G	170	20	95	94	430	0.5	0.1	>14		813	1324
W-7	G	160	40	84	3	659		0.0	2	0.4	735	1202
W-8	G	53	15	46	18	168			6.0	0.2	312	468
W-9	G	130	20	76	16	340	1.5	0.2	1.0		640	824
W-10	G	128	10	25		142	0.1	0.0	1.0	0.25	422	672
W-11	G	124	240	58	49	667	1.4		4.	0.25	542	1452
W-12	G	126	230		29	365	1.2		3.		532	1374
W-13	G	256	144		13	580	1.9		3.	0.25	635	1290
W-14	S	11	10	104		164			1.		442	532

A - Drinking water standards, U.S. Public Health Service (1962)

1 - Modified for South Dakota by the Department of Health
(written communication, Water Sanitation Section, September 24, 1968)

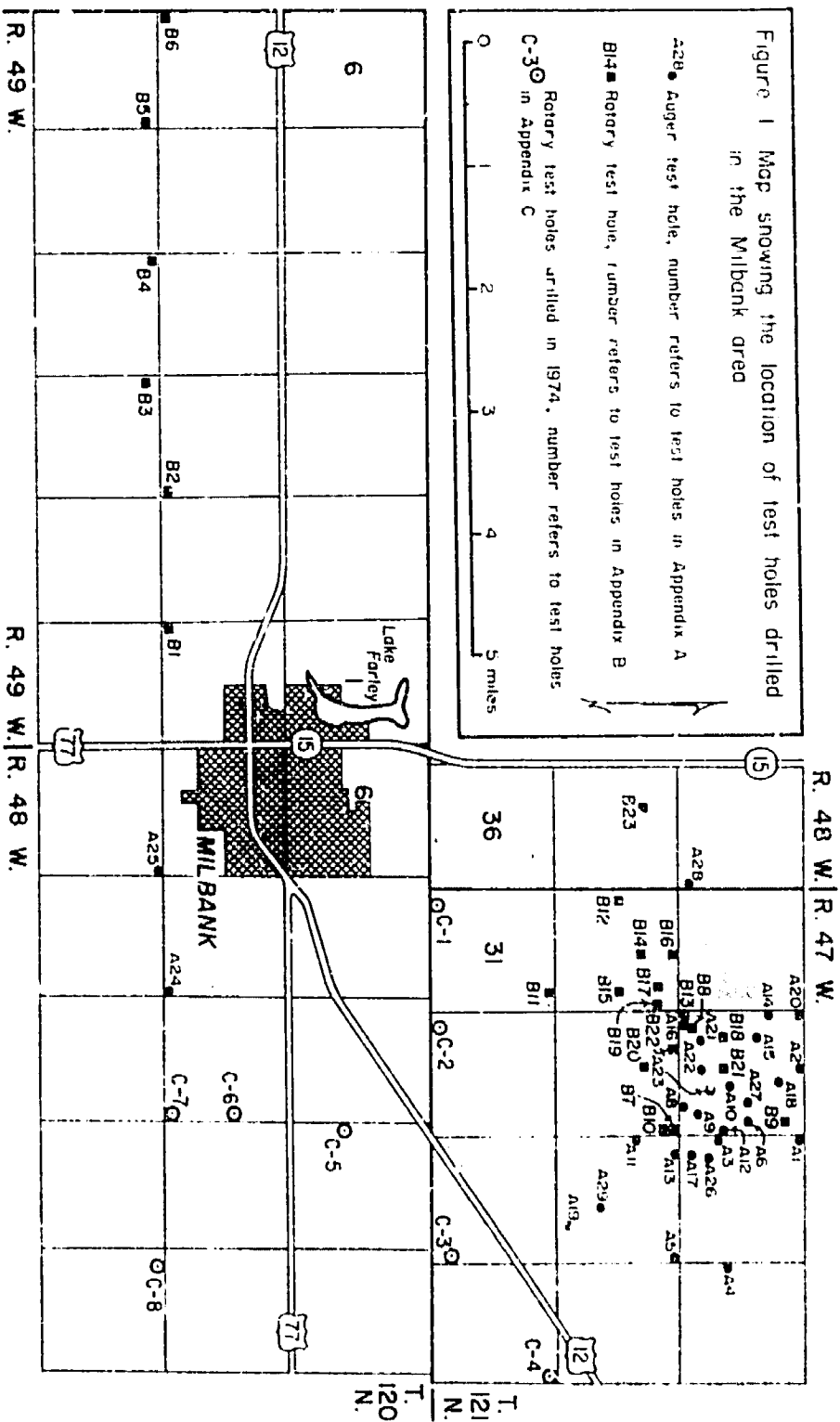
2- 1.2 is optimum for South Dakota

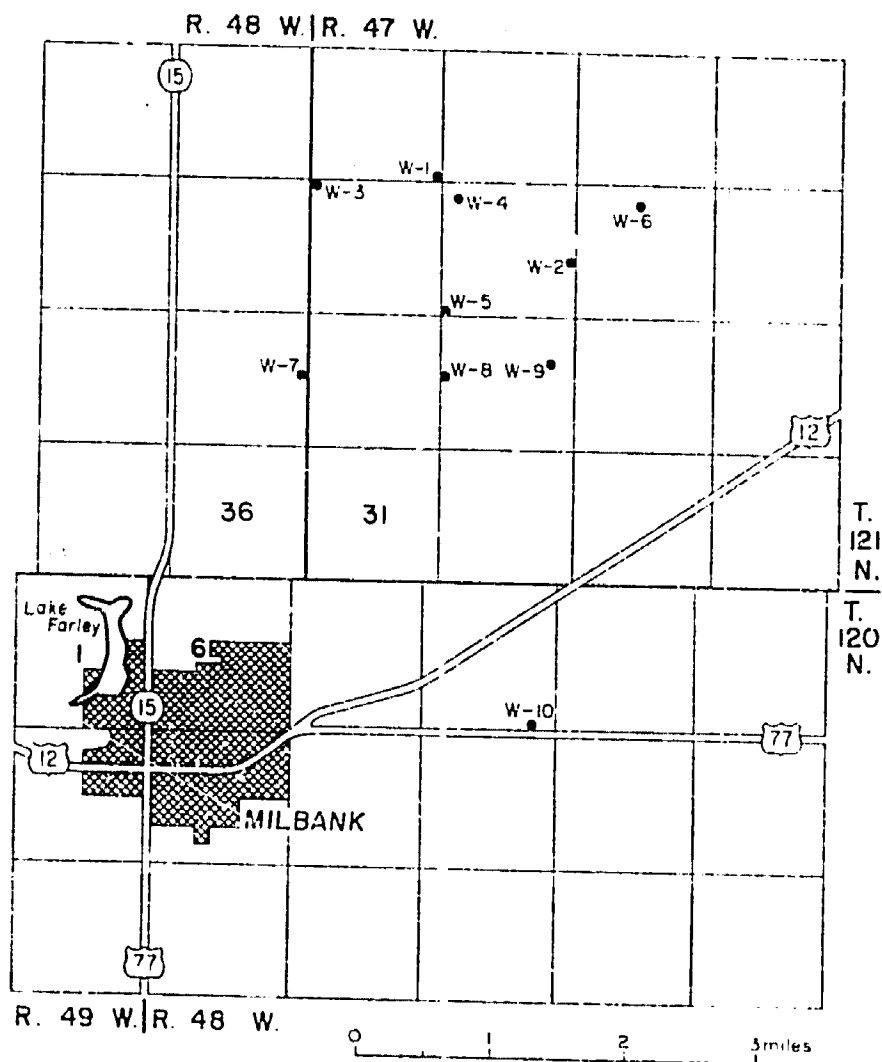
Source - R - river; G - ground water; S - spring.

Samples W-1, W-2, W-3, W-5, W-6 and W-9 were analyzed by the South Dakota Geological Survey. The remaining samples were analyzed by the State Chemical Laboratory.

Location of Water Samples
(for map location see Figure 2)

- W-1 SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 18 T121N R47W, North Fork Whetstone River.
- W-2 SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 20 T121N R47W, North Fork Whetstone River.
- W-3 NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 19 T121N R47W, W. Grove, 60 feet deep, water level 40? feet.
- W-4 NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 20 T121N R47W D. E. Trapp, 34 feet deep.
- W-5 SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 20 T121N R47W, Test hole A16.
- W-6 NE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 21 T121N R47W, L. Fryer, 50 feet deep, water level 32 feet.
- W-7 SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 25 T121N R48W, H. Peters, 28 feet deep.
- W-8 SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 29, T121N R47W, T. Dinter, tenant, 30 feet deep.
- W-9 SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 29 T121N R47W, P. Tuchscherer, 86 feet deep, water level, 51 feet.
- W-10 SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 4 T120N R48W, D. Schultz, 160 feet deep, water level, 100? feet.
- W-11 Milbank City Well No. 1, in the Twin Brooks area, 260 feet deep, water level 70? feet
- W-12 Milbank City Well No. 2, in the Twin Brooks area, 260 feet deep, water level 70? feet.
- W-13 Milbank City Well No. 3, in the Twin Brooks area, 260 feet deep, water level 60? feet.
- W-14 Spring water, used by the City of Milbank, in the Twin Brooks area.





W-7. Water sample No. 7, (samples W-11 through W-14 are in the Twin Brooks area and are not included on this map)

Figure 2 Map showing the location of water samples collected in the Milbank area

121 47 21 bbbb

Appendix A

A-1

SOUTH DAKOTA GEOLOGICAL SURVEY

Location 121 47 21 bbbb Section: 21 T. 121 N. S. R. 47 E. W.
 Well: no Test Hole: A-1 Land Owner: Duane Trapp
 County: Grant Date 7-8-75 Elevation: 1950 (X,Y,T)
 E-Log: no Samples: yes Drilling Company: Sds Auger
 Source of Data: Dave LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Silt, black, clayey, moist	0-3
	2	Clay, dark gray, silty, partly, sandy, moist	3-5
	1	Clay, gray, sandy, moist	5-6
	2	Sand, gray, slightly clayey; some coarse gravel,	
		saturated	6-8
	3	Sand, brown, medium-coarse, slightly clayey,	
		some coarse gravel	9-16
	2	Gravel, coarse	16-24
	7	Gravel, with brown clay, sandy	24-31
	3	Clay, black, silty, with some coarse gravel	31-34
	4	Clay, black, silty	34-38
	9	Sand, gray, medium, clayey	38-47
	12	Clay, gray, sandy	47-59
		Pulled out because clay was too sticky	
		T.D. - 59 feet	
		M.T. - 5 feet	

Location NE 1/4 Sec 20 Section: 20 T. 121 N. 38 R. 47 W.
Well: non Test Hole: A-2 Land Owner: _____
County: Grant Date 7-9-75 Elevation: 1055 (MKT)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Dave La France

[illegible]

Location 100 S. JEFFERSON Section: 21 T. 121 N. S. R. 37 E. W.
Well: no Test Hole: A3 Land Owner: _____
County: Grant Date 7-10-75 Elevation: 1050 (X) (A, T)
E-Log: no Samples: yes Drilling Company: das
Source of Data: Dave LaFrance

[illegible]

121 47 22 ccbcb

Appendix A

A-4

SOUTH DAKOTA GEOLOGICAL SURVEY

Location 100 S.W. 1/4 Sec 22 Section: 22 T. 121 N. XX R. 47 E. W.
 Well: A0 Test Hole: A4 Land Owner: _____
 County: Grant Date 7-10-75 Elevation: 1043 (M.T.)
 E-Log: no Samples: yes Drilling Company: SDGS
 Source of Data: Dave LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Silt, light brown, dry	0-2
	5	Clay, dark brown, silty, dry	2-7
	2	Clay, dark brown, silty, moist	7-9
	3	Sand, dark gray, medium, clayey, saturated	9-12
	3	Sand, brown, fine to medium, slightly clayey	12-15
	1	Sand, brown, fine to medium, some coarse gravel	15-16
	3	Sand, light brown, very coarse; with some coarse	
		gravel, very slightly clayey	16-19
	2	Gravel, coarse	19-21
	22	Clay, gray, with some coarse sand (till)	21-43
	15	Silt, gray, very fine; with fine sand	43-58
		Rock	
		T.D. - 58 feet	
		W.T. - 9 feet	

121 47 23 aaaa

Appendix A

A-5

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE 1/4 NE 1/4 NE 1/4 Section: 28 T. 121 N. R. 47 E. W.

Well: no Test Hole: A-5 Land Owner: _____

County: Grant Date 7-10-75 Elevation: 1058 (881,T)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Daye LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Silt, brown, dry	0-3
	2	Silt, brown, moist	3-5
	1	Gravel, coarse, with orange brown clay	5-6
	4	Gravel, medium to coarse, with medium sand and coarse orange brown silt, moist	6-10
	5	Sand, fine; with coarse orange brown silt	10-15
	4	Sand, fine; with coarse orange brown silt and some medium gravel, moist	15-19
	2	Sand, brown, coarse; with fine gravel, moist	19-21
	9	Sand, orange brown, coarse, with fine gravel and slightly clayey	21-30
	20	Clay, gray; with coarse sand and fine gravel (till)	30-50
		T.D. - 59 feet	
		W.T. - 21 feet	

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW 1/4 Sec 20, T. 121 N. R. 17 W. Section: 20 T. 121 N. 17 R. 17 W.
 Well: no Test Hole: A6 Land Owner: _____
 County: Grant Date 7-11-75 Elevation: 1045 (ASLT)
 E-Lcg: no Samples: yes Drilling Company: SDGS
 Source of Data: Dave LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Silt, brown, clayey, moist	0-5
	2	Clay, brown, with medium sand and some fine gravel, moist	5-7
	2	Sand, brown, medium to coarse, some fine gravel clayey, saturated	7-9
	5	Sand, brown, medium to coarse, some fine gravel, slightly clayey	9-14
	6	Sand, gray brown, medium to coarse, some fine gravel, clayey	14-20
	5	Clay, gray, silty, with fine sand, soft	20-25
	21	Sand, brown, medium to coarse, clayey	25-46
	5	Gravel, coarse	46-51
	18	Sand, brown, medium to coarse, clean, with some medium gravel	51-69
	5	Clay, gray with coarse sand and fine gravel (till)	69-74
		T.D. - 74 feet	
		W.T. - 7 feet	

A-c.

Source of Data: Dave LaFrance

[illegible]

[illegible]

121 47 20 dbhd

Appendix A

A-10

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 NE 1/4 SE 1/4 Section: 20 T. 121 N. R. 47 E. W.
 Well: no Test Hole: A10 Land Owner: _____
 County: Grant Date 7-12-75 Elevation: 1030 (ALT)
 E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Topsoil, clay, black	0-5
	2	Sand, dark brown-gray, coarse, clayey, saturated	5-7
	3	Sand, dark brown, coarse, clayey	7-10
	5	Sand, gray brown, coarse, clayey; with some	
		fine gravel	10-15
	9	Sand, gray brown, coarse, with some fine	
		gravel; clean	15-24
	21	Sand, brown, coarse, slightly clayey; with	
		some fine gravel	24-45
	9	Sand, gray, coarse, clayey, with some fine	
		gravel	45-54
	9	Silt, gray, some coarse sand, very clayey	51-63
	7	Gravel, coarse	63-70
	23	Clay, gray, pebbly; hard (till)	70-93
		T.O. - 93 feet	
		W.T. - 7 feet	

121 47 26 bcbc

Appendix A

A-11

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW 1/4 Sec 28 T. 121 N. R. 17 E. W. 4 Section: 28 T. 121 N. 17 E. W. 4
Well: no Test Hole: All Land Owner: _____
County: Grant Date 7-14-75 Elevation: 1070 (W, T)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Phil Olse

[illegible]

121 47 20 dadd

Appendix A

A-12

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE₄SE₄NE₄SE₄ Section: 20 T. 121 N. 8S R. 47 WE. W.
Well: no Test Hole: A12 Land Owner: _____
County: Grant Date 7-14-75 Elevation: 9070 (XX,T)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Phil Olsen

[illegible]

[illegible]

121 47 20 bcbb

Appendix A

A-14

SOUTH DAKOTA GEOLOGICAL SURVEY

Location WW4SW4444 Section: 20 T. 121 N. S. R. 47 E. ~~WW~~

Well: no Test Hole: A-14 Land Owner: _____

County: Grant Date 7-15-75 Elevation: 1080 (S, X, T)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Phil Olsen

[illegible]

121 47 20 bcda

Appendix A

A-15

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE1/4SE1/4SW1/4NW1/4 Section: 20 T. 121 N. & R. 47 E. W.

Well: no Test Hole: A15 Land Owner: _____

County: Grant Date 7-16-75 Elevation: 1170 (A.M.T.)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Phil Olsen

[illegible]

121 47 20 cccd

Appendix A

A-6

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE₁SW₁SW₁SW₁ Section: 20 T. 121 N. X R. 47 X E. W.
Well: no Test Hole: A16 Land Owner: _____
County: Grant Date 7-16-75 Elevation: 1065 XXX (X, Y, T)
E-Log: no Samples: yes Drilling Company: SDCS
Source of Data Phil Olsen

[illegible]

Location NW 1/4 SW 1/4 SW 1/4 Section: 21 T. 121 N. S. R. 47 E. W.
Well: no Test Hole: A17 Land Owner: _____
County: Grant Date 7-17-75 Elevation: 1060 (X, T)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Phil Olsen

121 47 20 at,cd

Appendix A

A-13

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 NW 1/4 Section: 20 T. 121 N. 8 R. 47 E. W.

Well: no Test Hole: A1E Land Owner: _____

County: Grant Date 7-17-75 Elevation: 1055 ~~XXXX~~ T

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Phil Olsen

[illegible]

121 47 20 dcdd

Appendix A

A - 19

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE1;SE2;SW1;SE4 Section: 26 T. 121 N. S. R. 47 E. W.

Well: no Test Hole: A10 Land Owner: _____

County: Grant Date 7-23-75 Elevation: 1060 (XXX)T

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Phil Olsen

[illegible]

121 47 23 6666

Appendix A

A-20

SOUTH DAKOTA GEOLOGICAL SURVEY

Location INDIAN LAKE Section: 20 T. 121 N. 88 W. R. 47 E. W.

Well: no Test Hole: A20 Land Owner: _____

County: Grant Date 7-28-75 Elevation: 1670 (881.1)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Phil Olsen

[illegible]

[illegible]

121 47 20 cdad

Appendix A

A-22

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE₄NE₄SE₄SW₄ Section: 20 T. 121 N. 85 R. 47 E. W.

Well: 10 Test Hole: A22 Land Owner: _____

County: Grant Date 7-31-75 Elevation: 1060 (X,Y,T)

E-Log: 40 Samples: yes Drilling Company: Sigs

Source of Data: Phil Olsen

[illegible]

121 47 29 decab

Appendix A

A - 23

SOUTH DAKOTA GEOLOGICAL SURVEY

Location ARCADE SW 25E 4 Section: 20 T. 121 N. R. 47 E. W.

Well: NO Test Hole: A23 Land Owner: _____

County: Grant Date 1-4-75 Elevation: 1025 (XLT)

County: Franklin Date: 11/1/88
E-Log: 110 Samples: yes Drilling Company: SDGS

Source of Data: Dave LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Silt, gray-brown, dry	0-3
	2	Silt, gray-brown, with coarse gravel, dry	3-5
	2	Sand, gray-brown, medium; silty with some	
		medium gravel; slightly moist	5-7
	3	Sand, light brown, medium to coarse, slightly	
		moist	7-10
	9	Sand, brown, very coarse, pebbly, clayey,	
		saturated	10-19
	17	Sand, brown, very coarse, with some fine	
		gravel, clean	19-36
	7	Clay, gray, silty, soft	36-43
	15	Till, gray, hard	43-58
		T.O. - 58 feet	
		W.T. - 10 feet	

120 45 3 dddd

Appendix A

A-24

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¹/SE¹/SE¹/SE¹ Section: 6 T. 120 N. 45 R. 45 XE. W.
 Well: no Test Hole: A24 Land Owner: _____
 County: Grant Date 8-4-75 Elevation: 1196 (X,Y,T)
 E-Log: no Samples: yes Drilling Company: SDGS
 Source of Data: Dave LaFrance

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	4	Silt, dark brown, clayey, dry	0-4
	5	Clay, brown, silty, with some medium to	
		coarse sand, moist	4-10
	3	Clay, dark brown, silty, with some medium to	
		coarse sand, moist	10-13
	2	Clay, dark brown, silty, with some medium	
		to coarse sand, saturated	13-20
	4	Clay, brown, silty	20-24
	4	Clay, gray, some sand (till)	24-28
	2	Clay, brown, very sandy	28-30
	9	Clay, gray, some sand (till)	30-39
	3	Clay, brown, very sandy	39-42
	13	Clay, gray, some sand (till)	42-61
		T.D. - 61 feet	
		W.T. - 13 feet	

120 45 10 aaaa

Appendix A

A-25

SOUTH DAKOTA GEOLOGICAL SURVEY

Location DEL DEL DEL DEL Section: 19 T. 120 N. 38 R. 48 E. W.

Well: no Test Hole: A25 Land Owner: _____

County: Grant Date 5-4-75 Elevation: 1216 (WLT)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Dave La France

[illegible]

121 47 21 cbdc

Appendix A

A-26

SOUTH DAKOTA GEOLOGICAL SURVEY

Location S.W. SE 1/4, NW 1/4 Section: 21 T. 121 N ~~XX~~ R. 47 W. ~~W.~~

Well: no Test Hole: A26 Land Owner: _____

County: Grant Date 8-4-75 Elevation: 1055 (W, T)

E-log: no Samples: yes Drilling Company: SDGS

Source of Data: Dave LaFrance

[illegible]

— *Full page* — *Full page*

A-27

Location UT-SUB-SEV-TFL Section: 20 T. 121 N. 89 R. 47 EX W.

Well: no Test Hole: A27 Land Owner:

County: Grant Date 8-5-75 Elevation: 1052 (W.M.T)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Dave LaFrance

[illegible]

121 48 24 ddda

Appendix A

A-28

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¹/₄ SE¹/₄ SE¹/₄ Section: 24 T. 121 N. 38 R. 48 WE. W.

Well: no Test Hole: A28 Land Owner: _____

County: Grant Date 8-15-75 Elevation: 1125 (XMT)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Dave LaFrance

[illegible]

Appendix A

A-29

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 NW 1/4 SE 1/4 Section: 26 T. 121 N. 89 R. 47 ~~W.~~ E.

Location _____
Well: no Test Hole: A29 Land Owner: _____
Elevation: 1055 — (XLT)

Well: _____ No. _____ Test Hole: _____ Elevation: 1055 (XMT)
County: Grant Date 3-5-75 Drilling Company: SDGS

County: Grant Date:
E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Dave LaFrance

[illegible]

120 49 12 cccc

Appendix B

B-1

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW₄SW₄SW₄SW₄ Section: 12 T. 120 N. 8 R. 49 E. W.
Well: no Test Hole: 3-1 Land Owner: in ditch
County: Grant Date 7-24-75 Elevation: 1155 (XN,T)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Ralph Danzl

[illegible]

120 49 10 ddd

Appendix B

B2

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE~~1~~SE~~2~~SE~~3~~ Section: 10 T. 120 N. XX R. 49 XX W.
Well: no Test Hole: B2 Land Owner: _____
County: Grant Date 7-24-75 Elevation: 1166 XXX(T)
E-Log: no Samples: yes Drilling Company: _____
Source of Data: Ralph Danz

[illegible]

Location SW 1/4 NW 1/4 NW 1/4 Section: 15 T. 120 N XX R. 49 XX W.
Well: no Test Hole: R3 Land Owner: _____
County: Grant Date 7-25-75 Elevation: 1186 XXX(T)
E-Log: no Samples: yes Drilling Company: _____
Source of Data: Danzl and Wallace

120 49 16 b1bb

Appendix B

134

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW1/4NW1/4NW1/4 Section: 16 T. 120 N. XXX R. 49 XX W.

Well: no Test Hole: B4 Land Owner: _____

County: Grant Date 7-24-75 Elevation: 1196 (X)(X)(T)

E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Greg Wallace

[illegible]

120 49 18 zaad

Appendix B

85

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 NE 1/4 NE 1/4 Section: 18 T. 120 N. R. 49 E. W.
Well: no Test Hole: B5 Land Owner: _____
County: Grant Date 7-25-75 Elevation: 1216 (XKT)
E-Log: no Samples: yes Drilling Company: SDGS
Source of Data: Greg Wallace

[illegible]

120 49 7 cccc

Appendix B

86

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section: 7 T. 120 N. X R. 49 E. W.
Well: no Test Hole: B6 Land Owner: _____
County Grant Date 7-25-76 Elevation: 1234 XXXI, T)
E-Log no Samples: yes Drilling Company: SDGS
Source of Data: Wallace & Danzl

[illegible]

Appendix B

B7

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE1/4NE1/4 Section: 29 T. 121 N. XX R. 47 E. W.

Well: no Test Hole: B7 Land Owner: _____

County Grant Date 7-31-75 Elevation: 1053 XXX(T)

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Ralph Danzl

[illegible]

121 47 20 cccd

Appendix B

B8

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 SW 1/4 SW 1/4 Section: 20 T. 121 N. R. 47 E. W.
Well: no Test Hole: B8 Land Owner: _____
County Grant Date 7-28-75 Elevation: 1060 XXXX T;
E-Log no Samples: yes Drilling Company: SDGS
Source of Data: Ralph Danzl

[illegible]

121 47 20 aadb

Appendix B

B9

SOUTH DAKOTA GEOLOGICAL SURVEY

Location RW4SE4NE4NE4 Section: 20 T. 121 N. XX R. 47 XX W.
Well: n2 Test Hole: B9 Land Owner: _____
County Grant Date 7-30-75 Elevation: 1065 XXXX T)
E-Log no Samples: yes Drilling Company: SDGS
Source of Data: Greg Wallace

[illegible]

121 47 25 aaaa

Appendix B

E 10

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE NE NE NE Section: 29 T. 121 N. XX R. 47 E. W.

Well: no Test Hole: B10 Land Owner: _____

County Grant Date 8.10 Elevation: 1053 (XXX, T)

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Ralph Danzl

[illegible]

121 47 31 aaba

Appendix B

111

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¹ NW⁴ NE¹ NE⁴ Section: 31 T. 121 N. 8 R. 47 E. W.

Well: no Test Hole: E11 Land Owner: _____

County Grant Date 8-5-75 Elevation: _____ (A, I, T)

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Greg Wallace

[illegible]

121 47 30 bccc

Appendix B

B12

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ NH $\frac{1}{4}$ Section: 30 T. 121 N. XX R. 47 E. W.
Well: no Test Hole: e12 Land Owner: _____
County Grant Date 8-5-7 5 Elevation: 1105 (XXX T.)
E-Log no Samples: yes Drilling Company: SDGS
Source of Data: Greg Wallace

[illegible]

121 47 20 cccc

Appendix B

B13

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW₄SW₄SW₄SW₄ Section: 20 T. 121 N. XX R. 47 X W.

Well: no Test Hole: 16-13 Land Owner: _____

County Grant Date 8-20-75 Elevation: 1100 ~~XXXX~~ T)

E-Log nn Samples: yes Drilling Company: SDGS

Source of Data: Ralph Danzl

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Topsoil, black	0-1
	12	Sand, coarse, subrounded to subangular	1-13
	15	Gravel, fine to medium with coarse sand	13-28
	5	Sand, coarse, subrounded to subangular	28-33
	5	Gravel, fine to medium, some coarse	33-38
	6	Sand, coarse to very coarse, subangular	38-44
	2	Gravel, medium to coarse, rounded	44-46
	8	Sand, coarse to very coarse, subrounded	46-54
	24	Sand, fine to coarse, subrounded	54-78
	30	sand, fine to very fine gravel, rounded	78-108
	18	Gravel, fine to very coarse sand	108-126
	29	Gravel, medium to coarse	126-155
		Rock	155
		TD 155 feet	

121 47 30 acbb

Appendix B

814

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW $\frac{1}{4}$ NH $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section: 30 T. 121 N. R. 47 E. W.

Well: no Test Hole: B14 Land Owner: _____

County Grant Date 8-21-75 Elevation: 1088 (XXX T)

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Ralph Danzl

[illegible]

121 47 30 adcd

Appendix B

815

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 SW 1/4 NE 1/4 Section: 30 T. 121 N. R. 47 E. W.

Well: no Test Hole: B15 Land Owner: _____

County Grant Date 8-22-75 Elevation: 1110 (~~441~~ F)
SDGS

County: Grant Date: _____
E-Log: no Samples: yes Drilling Company: SDGS

Source of Data: Greg Wallace

[illegible]

2.

B: 6

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW 1/4 NW 1/4 NE 1/4 Section: 30 T. 121 N. R. 47 W.

Well: no Test Hole: B16 Land Owner: _____

County Grant Date 8-22-75 Elevation: 1085 XXXX TD

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Greg Wallace

[illegible]

121 47 30 aacb

Appendix B

B17

SOUTH DAKOTA GEOLOGICAL SURVEY

Location nw 1/4 sec 30, T. 121 N. R. 47 E. Section: 30 T. 121 N. 8. R. 47 E. W.

Well: no Test Hole: B17 Land Owner: _____

County Grant Date 8-22-75 Elevation: 1113 (XXX T)

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Greg Wallace

[illegible]

Appendix B

B18

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE 1/4 Sec 18, T. 121 N., R. 47 W. Section: 20 T. 121 N. 47 W.Well: no Test Hole: B18 Land Owner: _____County Grant Date 8-25-75 Elevation: 1083 XXXX ToE-Log no Samples: yes Drilling Company: SDGSSource of Data: Ralph Danzl

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Topsoil	0-1
	1	Silt, black, soft	1-2
	6	Gravel, fine to medium, angular to subangular	2-8
	19	Gravel, medium to very coarse, subangular to subrounded	8-27
	12	Gravel, fine to medium, subrounded	27-39
	2	Till, black, silty, sandy	39-41
	2	Gravel, medium to coarse, rounded	41-43
	3	Till, black, silty, sandy	43-46
	20	Gravel, medium to coarse, rounded, clean	46-66
	7	Till, black, silty, sandy	66-73
	94	Sand, medium to very coarse, subrounded	73-167
	4	Gravel, medium to very coarse, rounded	167-171
	24	Clay, black, with very fine silt	171-195
	2	Milbank Granodiorite	195-197
		To 197 feet	

121 47 30 aadb

Appendix B

B19

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW 1/4 SE 1/4 NE 1/4 Section: 30 T. 121 N. 47 R. 47 W.
 Well: no Test Hole: B19 Land Owner: _____
 County Grant Date 8-26-75 Elevation: 1090 (XXX T)
 E-Log no Samples: yes Drilling Company: SDGS
 Source of Data: Greg Wallaro

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Topsoil, brown	0-2
	2	Sand, very coarse, subangular 1	2-4
	27	Gravel, coarse, subrounded, clean	4-31
	47	Sand, medium to coarse, subangular, clean	31-78
	3	Till, gray, sandy, clayey	78-81
	5	Sand, medium to coarse, subangular, clean	81-86
	7	Sand, gray, coarse, subrounded to subangular, clean	86-90
	13	Gravel, gray, medium to coarse, subangular to subrounded, clean	90-103
	5	Gravel, coarse, subangular to subrounded, with some gray till	103-108
	26	Till, gray, gravelly, sandy, clayey	108-134
	3	Boulder, dolomite, white to light gray	134-137
	38	Till, both gray and brick red, sandy, clayey	137-175
	15	Shale, gray, greasy	175-190
		TD 190 feet	

Appendix B

B20

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE 1/4 SE 1/4 NW 1/4 Section 29 T. 121 N. X R. 47 X W.
 Well: no Test Hole: B20 Land Owner: _____
 County Grant Date 8-26-75 Elevation: 1074 (XXX. F)
 L-Log no Samples: yes Drilling Company: SDGS
 Source of Data: Greg Wallace

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	8	Silt, black to brown, fine	0-8
	7	Sand, coarse, subrounded, clean	8-15
	3	Gravel, medium, subrounded, clean	15-18
	7	Sand, gray, fine to very fine, subrounded, silty	18-25
	3	Silt, gray, very fine, some coal	25-28
	6	Sand, gray, very fine to medium interbedded	
		with gray silts and clays	28-34
	61	Sand, very fine to fine, subrounded	34-95
	80	Silt, gray, sandy, very clayey	95-175
	7	Silt, gray to black	175-182
	4	Cobbles and dolomite chips	182-186
	8	Till, gray and Red brown	186-194
	6	Milbank weathering surface, bluish white,	
		weathered granite	194-200
		TD 200 feet	

121 47 20 cada

Appendix B

B21

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section: 20 T. 121 N. R. 47 E. W.

Well: 110 Test Hole: C21 Land Owner: _____

County Grant Date 8-27-75 Elevation: 1082 XXXX T

E-Log no Samples: yes Drilling Company: SDGS

Source of Data: Ralph Danz

[illegible]

121 47 29 b a st

Appendix B

B22

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW 1/4 NE 1/4 Section: 29 T. 121 N. 8 R. 47 E. W.
Well: n2 Test Hole: B22 Land Owner: _____
County Grant Date 8-27-75 Elevation: 1082 (XXX T)
E-log no Samples: yes Drilling Company: SDCS
Source of Data: Ralph Danz

[illegible]

[illegible]

Appendix C

C-1

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¹/₄SE¹/₄SW¹/₄ Section: 31 T. 121 N. 38 R. 47 E. W.
 Well: no. Test Hole: C1 Land Owner: _____
 County: Grant Date: _____ Elevation: 1126.12 (A.I.T.)
 E-Log: 10 Samples: _____ Drilling Company: SDGS-Combination
 Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Topsoil	0-3
	20	Till, yellow-brown, very sandy, clayey, pebbly	3-23
	7	Till, gray, sandy, clayey, pebbly	23-30
	8	Sand, coarse to fine gravel	30-38
	3	Sand, coarse to gravel, with gray clay	38-41
	27	Till, gray, clayey, pebbly, slightly sandy	41-68
	4	Sand, coarse to fine gravel, clayey	68-72
	7	Clay, gray, very sandy and gravelly	72-79
	5	Gravel, slightly clayey	79-84
	24	Till, gray, extremely sandy, also clayey and pebbly	84-108
	21	Clay, gray, sandy, pebbly	108-129
	9	Clay, gray, pebbly	129-138
	22	Clay, gray, pebbly, shaley	138-160
		T.O. - 160 feet	

Source of Data: _____

[illegible]

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE 1/4 Sec 33 Section: 33 T. 121 N. S. R. 47 E. W.
Well: no Test Hole: C3 Land Owner: _____
County: Grant Date _____ Elevation: 1076 (A) (F)
E-Log. no Samples: _____ Drilling Company: SDGS-Combination
Source of Data: _____

[illegible]

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE1/4NE1/4E1/4 Section: 34 T. 121 ~~NXN~~ R. 47 E. XWWell: no Test Hole: C4 Land Owner: _____County: Grant Date _____ Elevation: 1072 (A) ~~(X)~~E-Log: no Samples: _____ Drilling Company: SDGS-Combination

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Clay, brown, silty, sandy, some pebbles	0-8
	19	Clay, brown, slightly silty and sandy, some large pebbles	8-27
	20	Clay, gray, sandy, silty, slightly pebbly	27-47
	13	Clay, gray, very sandy and silty	47-60
	6	Sand, very coarse to fine gravel	60-66
	9	Clay, gray	66-75
	10	Sand, very coarse to fine gravel, clayey	75-85
	3	Clay, sandy, silty	85-88
	3	Sand	88-91
	1	Clay	91-92
	1	Sand, very fine	92-93
	21	Gravel 7 fine to medium, some coarse, with clay	93-114
	6	Sand, medium, clayey	114-120

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW₄ NW₄ NW₄ SW₄ Section: 3 T. 120 N. 88 P. 43 E. W.Well: _____ Test Hole: 15 Land Owner: _____County: _____ Date 8-12-74 Elevation: _____ (A,I,T)E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black	0-2
	12	Clay, yellow-brown, pebbly (till), large rocks	2-14
	4	Clay, gray, pebbly, lot of rocks (till)	14-18
	81	Clay, gray, sandy, gravelly, gravel stringers	
		(till)	18-99
	5	Gravel	99-104
	19	Clay, gray, gravelly gravel stringers (till)	104-123
	14	Gravel	123-137
	73	Shale cuttings	137-210
	30	Shale & chalk, chalk effervesces, shale	210-240?
		is brown & slightly silty, some chatter	
	50	Sand, white, clayey, all quartz grains, takes	
		10-15 GMP while drilling, pink feldspar grains	
		from 281-290	240?-290
		Granite, white-pink-blk- rock flakes coming up	290
		T.D. - 290 feet	

120 44-9-dddd

Appendix C

C-6

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE4SE4SE4SE4 Section: 9 T. 120 N. XX R. 43 E. W.
Well: _____ Test Hole: T6 Land Owner: _____
County: Grant Date 8-13-74 Elevation: _____ (A,I,T)
E-Log: _____ Samples: _____ Drilling Company: SDGS
Source of Data: _____

[illegible]

C-7

Location SE1/4SE1/4E1/4 Section: 9 T. 12N N. S. R. 4E E. W.
Well: _____ Test Hole: C7 Land Owner: _____
County: Grant Date 9-15-74 Elevation: _____ (A,I,T)
E-Log: _____ Samples: _____ Drilling Company: SDGS
Source of Data: _____

[illegible]

Location NE 1/4 Sec 120 T. 120 N. R. 42 E. W.
 Well: TS Test Hole: TS Land Owner:
 County: Grant Date 5-13-74 Elevation: (A,I,T)
 E-Log: Samples: Drilling Company: SDGS
 Source of Data:

[illegible]

BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

Handwritten: Banner Associates, Inc.

January 5, 1977

Twin Brooks Alfalfa Mill, Inc.
Box 10
Twin Brooks, S. Dak. 57269

RE: Static Water Levels
City of Milbank Wells
Located in Twin Brooks

Gentlemen:

I am forwarding the information requested on the Milbank Municipal Wells located in Twin Brooks, S.D. Both wells are located in Twin Brooks proper.

West Twin Brooks Well

Drilled 1960

Static water level Feb. 4, 1961 - 56.58'

Water level after pumping 24 hrs. @ 200 gpm to 300 gpm = 70.83'

East Twin Brooks Well

Drilled July, 1968

Static water level July 18, 1968 - 51'

Well pumped @ 306 gpm for 3 hrs. - Water level 71'

Well pumped @ 402 gpm for next 3 hrs. - Water level 77'

Well pumped @ 502 gpm for next 3 hrs. - Water level 86'

Well pumped @ 602 gpm for next 3 hrs. - Total of 12 hrs. -

Water level 95'

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

Sincerely yours,

Handwritten signature: H. D. Williams

H. D. Williams, P.E.

HDW/bas

cc: Dick Frederickson
Frederickson's, Inc.
Box 231
Hutchinson, MN 55350

RECOVERY GRAPH

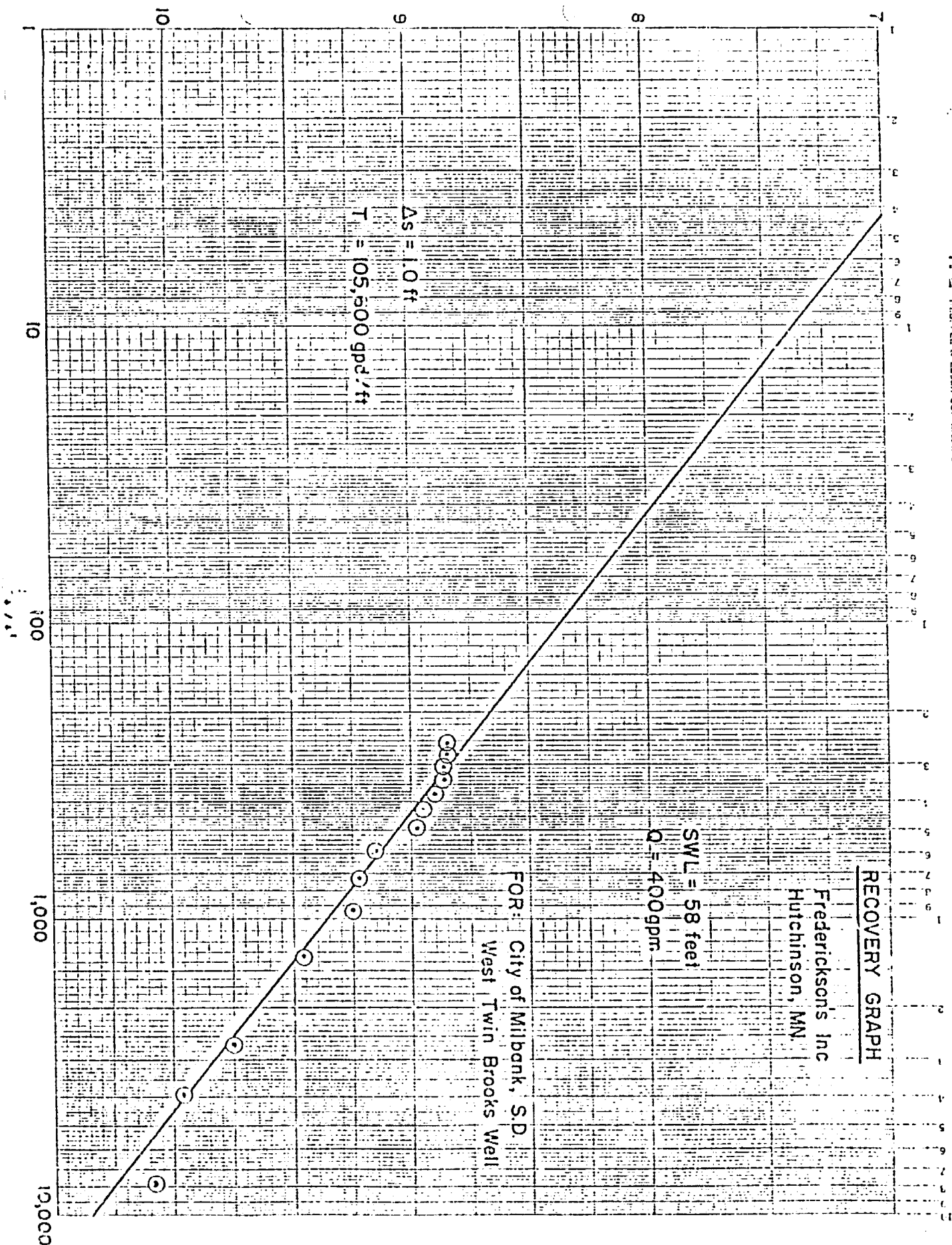
Fredericksons Inc
Hutchinson, MN

SWL = 58 feet
Q = 400 gpm

FOR: City of Milbank, S.D.
West Twin Brooks Well

$\Delta s = 1.0$ ft
 $T = 105,500$ gpd/ft

Drawdown, in feet



Pump running steady since 10:00 4-8 Dec. 18

West Twin Forks

PUMP TEST DATA SHEET

OBSERVATION WELL NO. _____

DATE 17 Dec 18

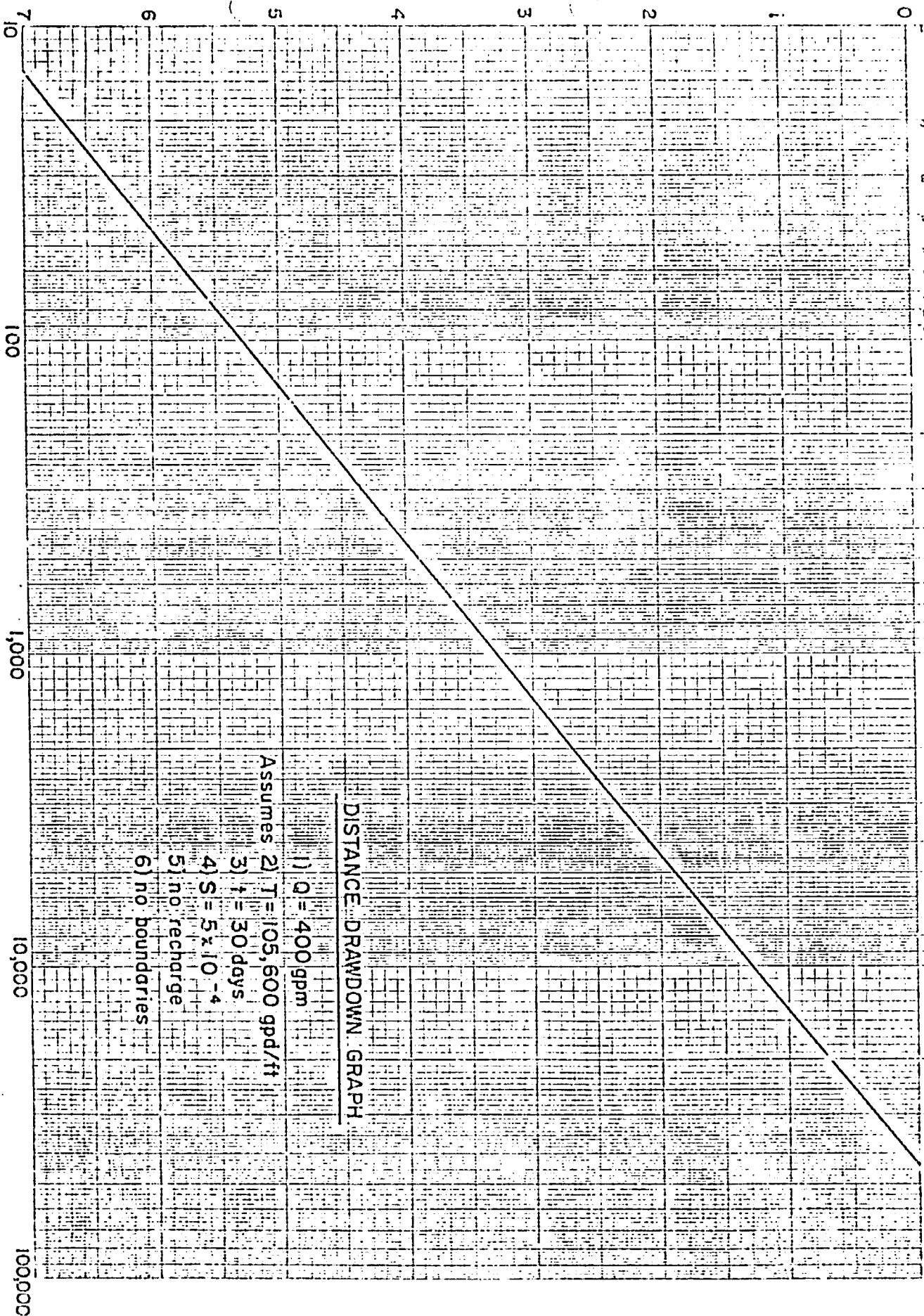
STATIC READING _____

Pumping level with pump running - 91'-0"
Pump shut down 10:26 - 17 Dec.

Observation Number	Time Since Pump Test Started t Min	Time Since Pump Test Stopped t ¹ Min	Depth to Water H	Residual Drawdown s ft.
0			91'-0"	
1		2	68'-1"	
2		4	67-11 1/2	
3		7	67-9"	
4		12	67-5 1/2	
5		17	67.25	
6		22	67.22	
7		27	67.15	
8		32	66.97	
9		37	66.95	
10		42	66.90	
11		47	66.86	
12		52	66.86	
13		57	66.85	
14		62	66.85	

Fox Valley Hillsboro Mills

Drawdown - ft



DISTANCE DRAWDOWN GRAPH

1) $Q = 400$ gpm

Assumes 2) $T = 105,600$ gpd/ft

3) $t = 30$ days

4) $S = 5 \times 10^{-4}$

5) no recharge

6) no boundaries

Distance from pumped well - ft

Johnson Division
P.O. Box 3118 • St. Paul, Minnesota 55165
Telephone 612-636-3900 • Telex 29-7451



January 20, 1977

Dick Frederickson
Frederickson's, Inc.
Hutchinson, Minnesota 55350

RE: Pumping Test
West Twin Brooks Well,
City of Milbank, South Dakota

Dear Dick:

Thank you for sending us the pumping test data from this well for our analysis and interpretation. We have plotted the recovery data from the pumping test on semi log graph paper and are enclosing for your file copies of this graph.

After carefully studying this information, we have the following comments.

We estimate the transmissivity of the water bearing formation at this site to be 105,600 gpd/ft. Thus, a reasonable efficient, fully penetrating well should produce a specific capacity in the vicinity of 40 gpm/ft of drawdown while a partially penetrating well would naturally have a slightly lower specific capacity than this.

In order to estimate possible interference effects due to long term pumping of another well in this aquifer, we have constructed a distance drawdown graph which shows what the interference drawdown levels would be at various distances from the center of pumpage. In order to prepare the distance drawdown graph, it was necessary to make a number of assumptions since the pumping test data we have is not complete enough to let us determine all of the aquifer characteristics. The basic assumptions we used are as follows:

1. We have used a pumping rate of 400 gpm. Under pumping conditions which differ from this rate, the drawdown values will change in direct proportion. In other words, if the pumping rate were doubled to 800 gpm,

Dick Frederickson
Frederickson's, Inc.
January 20, 1977

- 2 -

the drawdown values shown on the graph would double.

2. We have used the transmissivity value of 105,600 gpd/ft.
3. We have assumed a pumping period of 30 days continuous pumping.
4. In order to carry out the calculations, we chose a typical artesian storage coefficient of 5×10^{-4} which very likely fairly describes this aquifer.
5. We have assumed that there is no recharge to the aquifer.
6. We have assumed that the aquifer is infinite in areal extent, that is, it has no negative boundaries.

One rather confusing part of the pumping test data we should point out is the drawdown value observed in the East Twin Brooks well 1200 ft away from the pumped well. The well hydraulics theory would normally predict observations of about 2 ft of drawdown whereas only negligible drawdown was actually observed. This could indicate possible branching of the aquifer, that is, the aquifer may consist of several fingers or branches which are interconnected in a rather indirect sense rather than directly.

If this is the case, we would expect the following results:

1. Any given water well would have a lower specific capacity than normally predicted.
2. The interference drawdown caused in one well by another would be less than what we have predicted, assuming the two wells are located in separate branches of the main aquifer.

After reviewing the enclosed information and comments, if you have any further questions for us, please let us know.

Very truly yours,

David C. Schafer
Regional Sales Manager

DCS:DM



BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

Wyoming: Laramie, Cheyenne
South Dakota: Brookings, Rapid City

1024 6th Street, P.O. Box 298, Brookings, South Dakota 57006 Telephone 605 692-6342

March 7, 1977

Mayor & City Council
City Hall
Milbank, South Dakota 57252

Gentlemen:

The City of Milbank has the following water rights for municipal purposes.

SOURCE	WATER RIGHT				REMARKS
	Number	Amount cfs	Type	Priority Date	
<u>Springs</u> School Sect. Ergemyer Busta	548-3	2.93	Vested	Before 12/3/58	NE $\frac{1}{4}$ S16, NE $\frac{1}{4}$ S15, NW $\frac{1}{4}$ S15 and SE $\frac{1}{4}$ S15 all in T120N, R50W 5th P.M.
<u>Well No. 1</u>	548-3				
<u>Well No. 2</u>	1769-3	2.16	Approp.	Aug. 7, 1970	NE $\frac{1}{4}$ S14, T120N, R50W NW $\frac{1}{4}$ S13, T120N, R50W
<u>Well No. 3</u>	1769-3				
Future	549-3	2.50	Approp.	12/3/58	Sections 2,3,4,5,8,9, 10,11,15,16,17 all in T120N, R50W

In 1924 the Ergemyer and Busta springs were developed for municipal supply for the City of Milbank. In 1933 additional supply was developed from the school section springs. A dam above the school section springs was constructed later to provide recharge to the ground water formations by seepage. Well No. 1 was constructed during this same time period.

Well No. 2 was added to the system in 1960 and Well No. 3 in 1968. The development of an additional well will be required in the near future.

Information pertaining to static water levels and drawdowns for well No. 1 are somewhat unknown and have not been maintained or logged on a regular basis.

BANNER ASSOCIATES, P.C.
CONSULTING ENGINEERS & ARCHITECTS

Mayor & City Council
Milbank, SD
March 7, 1977
Page 2.

The static water level in Well No. 2 measured 56.58 feet prior to the final test pumping on February 7, 1961. The drawdown was about 10 feet at a pumpage rate of 278 gpm. The static level in Well No. 2 measured during a test conducted December 17, 1976 was about 66.5 feet. The drawdown in the well was about 24 feet.

The static water level in Well No. 3 before the pumping test conducted on July 18, 1968 was 51 feet. The drawdown during the pumping test was about 26 feet at a pumping rate of 400 gpm.

It is significant that the water table in the formation has lowered about 10 feet since these wells have been in operation indicating that the recharge rate is not equal to the amounts extracted from the formation. In addition, these wells have not operated on a full time basis during this period of time. When improved transmission capacity is provided the pumping period of the wells will increase and use restrictions then may not be necessary.

The industrial demand of the City combined with the domestic requirements the past five years has increased the production from the wells plus the contribution from the springs from 378 to about 390 million gallons per year. The required production capacity required to meet the present demands will vary from 800,000 gallons per day for winter use to about 1,400,000 gallons per day to meet peak day requirement. In 1980 the peak day requirement is estimated to be about 1,480,000 gallons per day. In 1990 the requirement is estimated to be about 1,680,000 gallons per day to meet peak day. In 2010 the estimate is over 2 million gallons per day.

The evidence is not conclusive but the indication of static levels in the formation area does indicate some mining of water. As the City requirements increase and greater pumpage of the ground water formation takes place, this lowering of the water table will be more pronounced. If additional large draws of water proposed to be made from this formation are carried out, the City's future production from this formation may be limited. Certainly before additional water development from this formation is allowed a thorough aquifer test should be carried out to determine the potential of the formation. Indiscriminate withdrawals may result in a severe depletion of this source of supply.

The City of Milbank has considerable investment in this source of supply and the plans are being developed to continue upgrading the system with large expenditures of money required in the near future.

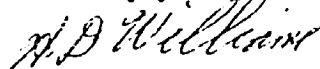
BANNER ASSOCIATES,
CONSULTING ENGINEERS & ARCHITECTS

Mayor & City Council
Milbank, SD
March 7, 1977
Page 3.

The present value of the present facilities and present improvements underway exceeds \$800,000. The necessary production system improvements that will be required and should be considered in the near future will exceed \$1,000,000.

The City must have some assurance that the aquifer will not be depleted to the extent to effect the future production requirements of the City and that the production pumping costs will not be excessive by the increased production head resulting from the lowering of the static water level in the formation.

Sincerely yours,



Henry D. Williams, P.E.

HDW/db



Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501

Phone 605/224-3151

March 8, 1977

Wilfred Wiese
Twin Brooks, South Dakota 57269

Dear Mr. Wiese:

The Water Rights Commission deferred action on your Application
No. 3561-3 at the February 23-24, 1977 meeting.

Sincerely,

JOHN HATCH, Chief Engineer
Water Rights Commission

JH/kb

File
10.R 3561-3

10 Mar 77

Borten Jones :

This seems to me to
be some what misleading -
we don't want another deal
like the one we had in
the water town area last year.

Should a member of the
Commission make statements
out of a Commission Hearing on
water Rights problems

It seems to add fuel
to the fire whenever we have
a News Paper story such as
this

S. J. Ill

James A. Johnson
Getting Industries
Reville, So Dak.



CITY OF MILBANK

AUDITOR'S OFFICE

MILBANK, SOUTH DAKOTA, 57252

March 15, 1977

Board of Natural Resources
South Dakota Water Rights Commission
Joe Foss Building
Pierre, South Dakota 57501



Re.: The Irrigation Permit of Wilfred Wiese for land one mile north and one mile west of Twin Brooks, South Dakota, Permit Number 356-3

Gentlemen:

Please be advised that the Council of the City of Milbank has gone on record requesting that the Application for Irrigation of Wilfred Wiese be denied by your Department. This Application is now pending before your Department and was tabled for further study.

Please be advised that the City of Milbank has as its sole source of water, the water within the aquifer that is being considered in this Application. There is no other wells or available water for the purpose of supplying the said City with an adequate source of water. All of the said City's water is from this area. This water is located eight miles from the City of Milbank.

Please be advised further that upon notification of the intent of this Irrigation Permit, the City had its Engineer make a detailed study of the situation. Enclosed is a copy of the study made by the City Engineer which is self explanatory in this matter. This Engineer's report shows the content and the lowering of the water table as far as it pertains at this time and the present needs of the City and the possible future needs of the City.

There is no doubt that the Irrigation Permit of Mr. Wiese is in the future right use of the Cities water supply. It is noted that the City is expanding its growth drastically and that the future needs of the City will increase also. Mr. Wiese's Application is to take approximately 3.35 cubic feet of water per second which would amount to more than 2,000,000 gallons a day. It is noted in the Engineering Report to the City, that to his best knowledge and information, there is no surplus water in this aquifer for the purpose of irrigation. That all of the water in this aquifer is needed for the Town of Milbank, South Dakota, and also for the Town of Twin Brooks. It is recommended by the City Engineer that your Commission not grant the Irrigation Permit.

"YOU'LL LIKE MILBANK"

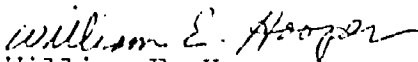
Board of Natural Resources
March 15, 1977
Page Two

Pursuant to the Resolution of the City and the facts herein contained, we respectfully request that the Irrigation Permit of Wilfred Wiese be denied. In the alternative, we would sincerely suggest that a complete test be made by the State Department of Engineers to determine first if there is a surplus of water over the needs of the said City and if in the event there is, what rate that would be and how much water would be available that would be surplus. We have the Report of the City Engineer that there is no surplus water in this area beyond the needs and the future needs of the City of Milbank.

Please be advised further that the said City of Milbank has had to make extensive and very expensive repairs and improvements on their existing water supply and lines and has expended large sums of money. This has necessitated additional lines to that area for the flow of water, additional and larger pumps to pump the said water, additional storage facilities within the said City of Milbank, and that this expenditure is close to the total sum of \$1,000,000.00. The City of Milbank has laid and maintained an eight inch line and a twelve inch line to this well which is approximately eight miles away.

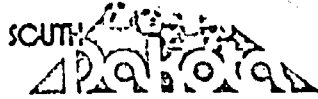
If the Commission wishes us to appear in person in support of this and to have our Engineer also present, please feel free to inform us of the same and we will be glad to appear in person to offer up testimony on the same. If additional information is wanted on this matter, please feel free to contact our Engineer about the same, he being the person with the most knowledge about this situation as it exists. Please feel free to contact the City of Milbank Mayor, or this Office if we can be of further service to you.

Respectfully submitted,



William E. Hooper
Attorney for the City of Milbank

SOUTH



3651-3

Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501

Phone 605/224-3151

March 25, 1977

James A. Johnson
Gettling Industries
Reville, South Dakota 57259

Dear Mr. Johnson:

This will acknowledge receipt of your note regarding the article in the Milbank paper in reference to Wilfred Wiese's application.

In answer to your question, yes, Mr. Fischer certainly has every right to discuss water problems as they affect the City of Milbank water rights, both as a member of this Commission and as a private citizen. I cannot see anything in the article that you can construe to be misleading, and can see no justification for you condemning Mr. Fischer's comments, or inferring that he was the cause of the troubles north of Watertown.

Yours truly,

BURTON F. JONES
Water Rights Specialist

BFJ/bw

cc: Milton E. Fischer, Box 307, Milbank, S.D. 57252

Report on
Wilfred Wiese Application No. 3561-3
March 15, 1978

The Water Rights Commission deferred action upon Application No. 3561-3 for Wilfred Wiese in February of 1977 because the application was located inside of Milbank's future use area. This application requests 3.85 cfs from a 275 foot deep well located in the N $\frac{1}{2}$ of Section 30, T120N, R50W. (see map)

Summary of Water Rights

USE	SOURCE	Water Right Diversion	Amount Used
548-3 Municipal (Milbank)	3 springs #1 well-7'	2.1 cfs	
549-3 Municipal (Milbank) (future use)		2.5 cfs	Assuming an average use of 1 million GPD for the entire year 1.55 cfs - 1120 AF
1769-3 Municipal (Milbank)	#2 well-147' #3 well-254'	.67 1.49 2.16 cfs	
2266-3 Irrigation	1-well- 80'	5.0 cfs	1.39 cfs - 48. AF
3133-3 "	1-well-108'	2.22 cfs	2.22 cfs - 186. AF
3134-3 "	1-well- 76'	2.22 cfs	2.01 cfs - 184. AF
3241-3 "	1-well- 56'	.8 cfs	no report
4048-3 Municipal (Twin Brooks)	3-wells-67'	.33 cfs	

Note: Well #2 was approved from the future use area thus this leaves Milbank with 1.83 cfs remaining in future use. Milbank's future use permit covers an area of 11 sections. (see map)

Water Level Information

Observation Well GT-76E

6-21-77	31.9
7- 6-77	32.0
8- 3-77	32.4
8-16-77	32.4
9- 8-77	32.1
9-20-77	32.1
12- 1-77	30.8

Observation wells GT-77H, I, J, and K were drilled in the fall of 1977 and have not been developed or tested. The addition of these wells enables the Water Rights Commission to monitor the water levels closely. A report by the City Engineer for

Milbank, Henry D. Williams, Banner & Associates, indicates a 10 foot decline in the water levels during the last ten years. He also states that the evidence is not conclusive, but the static water levels indicated some mining. Other than the records Milbank has kept, there are no historical data available.

Test Pumping Data

(from report of City Engineer)

#2 well	2- 7-61 12-17-76	Reported a 10' drawdown at 278 gpm Reported a 24' drawdown (looks as if this well is deteriorating)
#3 well	7-18-68	Reported a 26' drawdown at 400 gpm

Discussion:

1. Test drilling and water level information suggest that there is at least 2 separate aquifers because the static water level of the deeper formation is 50 - 60 feet lower than the upper formation.
2. The aquifers are under artesian conditions. This suggests the possibility of well interference.
3. The test drilling the Water Rights Commission Staff has completed thus far indicates that the area has good potential for further development. Extensive testing will be necessary before the aquifer can be fully developed, but at this time the Water Rights Commission Staff does not anticipate any problem.
4. The Water Rights Commission Staff now has the ability to monitor the water levels should this application be approved.
5. The amount of water withdrawn can be determined. The irrigators used approximately 420 AF and the Towns of Milbank and Twin Brooks used approximately 1200 AF. This totals about 1620 AF being withdrawn per year. Milbank has the future use permit to more than double the yearly withdrawal.
6. The Wilfred Wiese application is for a well into the deeper formation which is probably the same as observation well GT-77K and the City wells #2 and #3. The water levels of the Twin Brooks wells and those of the other irrigation permits do not match up with the Wiese application and those of Milbank's wells #2 and #3.
7. The area is complicated hydrologically. There are many flowing wells in the area and further development may affect these flows during the pumping season.
8. The Water Rights Commission needs to address the problem of well spacing and the location of the application inside the future use area. In order to prevent possible disputes between Mr. Wiese and the City of Milbank the location of future diversion points for the City will need to be located so as not to cause excessive interference. This could be a problem if the City decided to develop the area Mr. Wiese intends to irrigate if the application were approved.

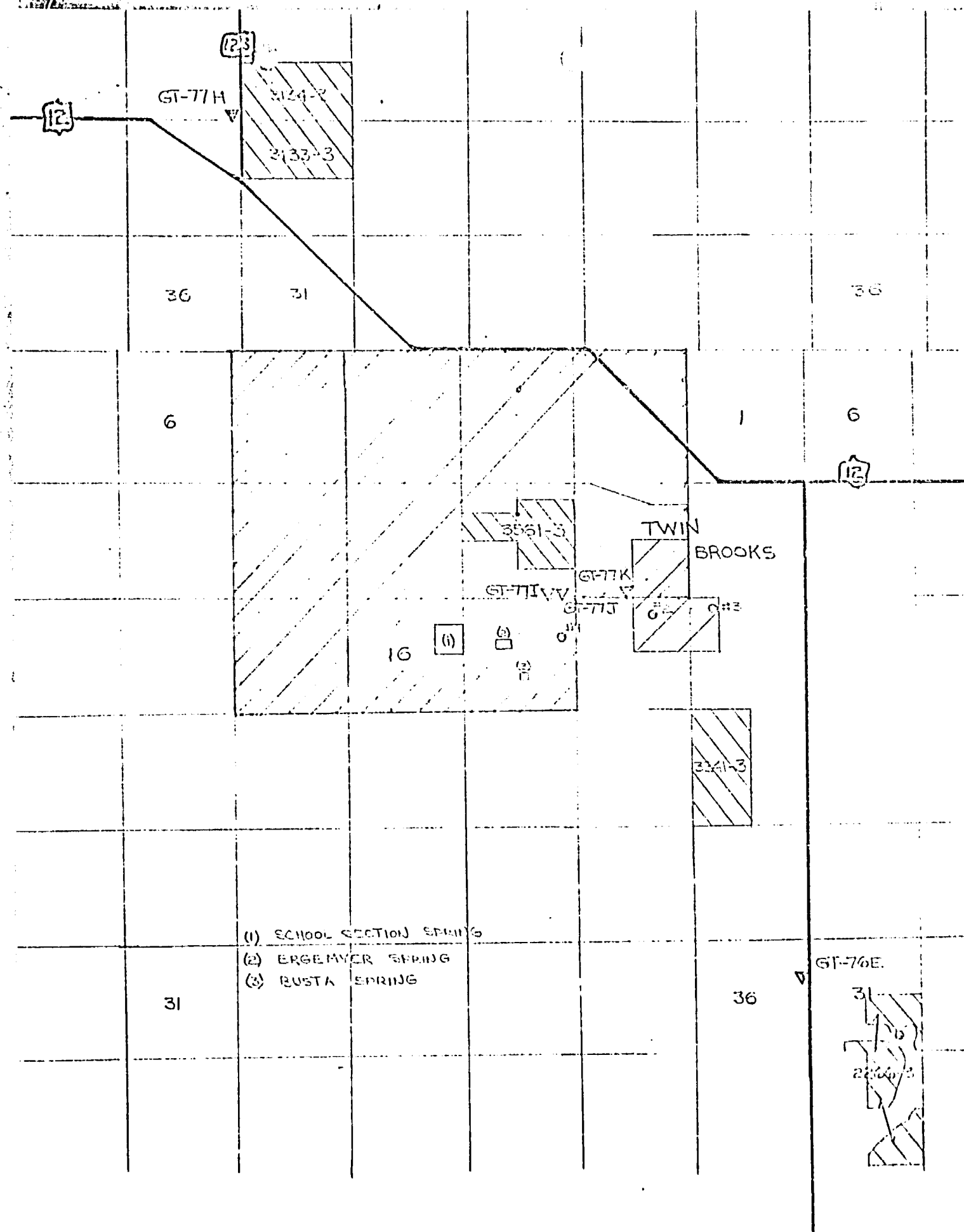
Report on Wilfred Wiese
March 15, 1978
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Recommendations:

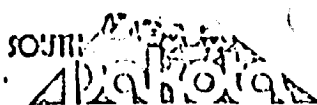
The data collected thus far indicates unappropriated water is available and the Water Rights Commission Staff recommends approval of Application No. 3651-3 for Wilfred Wiese with the following restrictions and subject to SDCL 46-5-40.

1. The irrigation well approved under this Permit will be located near domestic wells and other 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 adequate domestic wells or in wells having prior water rights.
2. The City of Milbank has priority rights to this water under a future use withdrawal permit, and this application is approved subject to these prior rights, if or when the City develops the reserved water supply.

JAMES GOODMAN
Hydrologist



3561-3



Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Foss Building, Pierre, South Dakota 57501
Phone 605/224-3151

March 21, 1978

TO: Persons concerned with deferred Application No. 3561-3 for Wilfred Wiese
FROM: John Hatch, Chief Engineer, Water Rights Commission
SUBJECT: Reconsideration of deferred Application No. 3561-3

The Water Rights Commission will reconsider Water Right Application No. 3561-3 at 4:00pm, March 28, 1978, at the Guest House, 101 North Broadway, Watertown, South Dakota.

This reconsideration hearing will be conducted in accordance with the provisions of SDCL 46-1-1 thru 46-1-8; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41, 46-5-38 thru 46-5-40; 46-6-3, 46-6-5, 46-6-6.1, 46-6-10, 46-6-14 and Commission Rules ARSD 52:01:01:01 thru 52:01:01:13, 52:01:01:21.

Application No. 3561-2 was deferred by the Water Rights Commission during February, 1977, pending Staff investigation.

After reconsideration of Application No. 3561-3 the Commission can approve, defer, or deny all or part of the Application. A copy of the "Report on Wilfred Wiese Application No. 3561-3" is enclosed for your information.

Very truly yours,

A handwritten signature in cursive script, appearing to read "John Hatch".

JOHN HATCH, Chief Engineer
Water Rights Commission

JH:plh

Enclosure



Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Ross Building, Pierre, South Dakota 57501

Phone 605/224-3151.

April 5, 1978

Wilfred Weise
Twin Brooks,
South Dakota 57269

Dear Mr. Weise:

This letter is to inform you that your water right application was brought up for reconsideration at the regular meeting of the Water Rights Commission on March 28-29, 1978, at Watertown, South Dakota. The Commission has, at this time, decided it remain in a deferred status.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Commission

JH:plh



BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

Wyoming: Laramie, Cheyenne

South Dakota: Brookings, Rapid City

1024 6th Street, P.O. Box 298, Brookings, South Dakota 57006 Telephone 605 692-6342

September 12, 1978

John Hatch
Chief Engineer
Water Rights Commission
Joe Foss Building
Pierre, South Dakota 57501

RE: Water Supply Data
Wells 1, 2 and 3
City of Milbank, SD

Dear Mr. Hatch:

The following report of operational data for water supply wells serving the City of Milbank is for your use and file.

WELL NO. 1 - Top Elevation 1311 feet

Constructed in May 1942, the well consists of 270 feet of 12" casing cemented in place with 20 feet of Everdur metal screen for a total well depth of 290± feet. The design production was 250+ gallons per minute.

It was hoped that this well could be utilized to obtain additional drawdown data for a continuous period of operation. Unfortunately this well failed and has been removed from service. Repairs to the well are planned later this year.

WELL NO. 2 - Top Elevation 1267 feet

Well No. 2 was drilled in 1960 and was pump tested in February 1961. The well is 269 feet in depth. It is constructed of 180 feet of 10 inch casing cemented in and 89 feet of 6 inch blind casing and screen swedged in. The design production of this well is 350 gpm.

Water levels were measured from the pump head base during the pumping test in February 1961. The

BANNER ASSOCIATES, I. C.
CONSULTING ENGINEERS & ARCHITECTS

John Hatch
September 12, 1978
Page 2.

static level was 56.68 feet. The pumping level after 24 hours pumping at a range from 200 gpm to a maximum of 300 gpm was 70.83 feet. After an extended period of pumping at 310 gpm the level was 75+ feet. Yield 17 gal/min/ft.

Additional pumping data was taken in 1976. The pumping level measured on December 17, 1976 after continuous pumping from December 6, 1976 was 95+ feet.

In 1978 observations were made of the pumping level on August 25, 1978. The level was 98.34 feet after an extended period of operation at 400 gpm.

WELL NO. 3 - Top Elevation 1257 feet

The well was constructed during July 1968. The well consists of 230 feet of 12 inch casing and 12 inch stainless steel wire wrap screen for a total well depth of 260 feet; the well production target was 400 gpm.

The static level on July 18, 1968 was 51 feet. The pumping level after 12 hours operation to a maximum production of 602 gpm was 95 feet.

In 1976 the well was shut down November 2. The static level taken on December 17, 1976 was 58'-7" measured while well No. 2 had been operating since December 6, 1976.

The static water level taken on August 25, 1978 while well No. 2 was operating read 83.3 feet.

We are sorry that we could not have a continuous record of operating conditions for the municipal wells serving Milbank but with the failure of Well No. 1 and control equipment problems during the summer has prevented us from obtaining this data in a timely manner.

The control problems appear to be resolved and as soon as Well No. 1 can be repaired additional water formation data will be obtained and submitted to you for your file.

BANNER ASSOCIATES, I. C.
CONSULTING ENGINEERS & ARCHITECTS

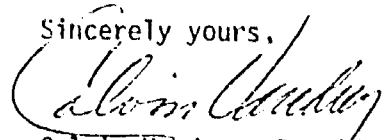
John Hatch
September 12, 1978
Page 3

Enclosed herewith are some additional data for your file.

- 1 copy - plan and profile, Milbank City water transmission system
- 1 copy - General layout of Milbank City water production system
- 1 copy - Construction specification, Well No. 1.

If you desire additional information or data, please advise me.

Sincerely yours,



Calvin Vaudrey, President

CV/db
Enclosure
cc: Dale Gold, City Finance Officer, Milbank, SD

McCarthy

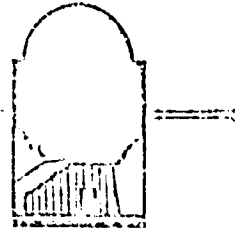
SPECIALIZING IN WELL DRILLING
SINCE 1865

WELL COMPANY

Well Drilling Contractors,

NORTHWEST'S LARGEST
WATER DEVELOPERS

DRILLING ESTOR 1122



MINNEAPOLIS & ST. PAUL

Address Only to:
670 EUSTIS ST.-ST. PAUL, MINN.

April 22, 1942

Mr. A. A. Blomquist
City Auditor
Milbank, South Dakota

Dear Mr. Blomquist:

Thank you very much for your letter of April 18th. I am sorry that I have been riding you to get answers to my letters because after we get everything all lined up then we are prohibited from moving our heavy equipment over the highways by the Highway Department, but they are going to notify us as soon as restrictions are lifted. The only restriction on the highway is from Benson to Ortonville, Minnesota, and I have written to the county highway engineers in the two counties involved to try to get permission from them to move over perhaps some county graveled road. In any event we will follow this through and get under way just as quickly as we are allowed to.

I have contacted the bonding company today to supply the certificate of authorization which you require. I am sure this will be coming through the mail in very short order.

In answer to your request for information to fill in data under paragraph E-2 I wish to submit the following.

- (I) A 12" and 6" gravel packed well approximately 290 feet deep.
- (II) A potable, safe, dependable supply of water for public health, fire protection and safety.
- (III) Nothing.
- (IV) Service of construction of a well cannot be rendered in any other way, and with the water bearing formations at a depth of about 290 feet is necessary to have the following amounts of material.
- (V) Cost of materials- \$1374.22.
- (VI) -
- (VII) 270 feet of 12" black steel drive pipe.
270 feet of 6" black steel drive pipe.
20 feet of 6" non-ferrous screen.
1- 12" standard pattern drive shoe.
1- 6" standard pattern drive shoe.



SPECIFICATION FOR GRAVEL WALL WELL TO BE INSTALLED
FOR THE CITY OF MILBANK, SOUTH DAKOTA.

INTENT

It is the declared intention of these specifications to secure an additional supply of well water for the City of Milbank, South Dakota, of one hundred gallons per minute from one well to supplement the present water supply of the city.

The Contractor shall make all investigations, tests, and analyses to determine whether this amount of water is available from underground strata and shall then proceed to develop a gravel wall well which he will guarantee to produce this amount of water and assume all responsibility on the basis of a complete and satisfactory installation or no pay.

INVESTIGATION

If the indications for the required quantity of water are not satisfactory to the Contractor he may abandon the work on the contract and remove all tools and equipment furnished or installed by him and neither party to the contract shall be liable for any sums whatsoever.

PERMANENT WELL

The Contractor being satisfied that one hundred gallons per minute or more can be secured from one well, he shall proceed to construct the permanent well as follows;

METHOD OF CONSTRUCTION

The well shall be approximately two hundred ninety six (296) feet in depth, and the diameter of the well shall be not less than forty-two (42) inches at that depth. Because of the fine sand which will be encountered in the well it is important that the wall of gravel surrounding the screen shall be of uniform thickness and of at least this diameter.

While the City does not guarantee the formations to be encountered, the log of a test well drilled at or near the site of the proposed well shows as follows:

<u>Depth</u>			<u>Formation</u>
0	to	1 ft.	Top soil
1	to	14 ft.	Yellow clay
14	to	14½ ft.	Sand and gravel
14½	to	20 ft.	Yellow clay
20	to	22 ft.	Yellow clay, boulders, show of sand and gravel.
22	to	23 ft.	Softer yellow clay
23	to	30 ft.	Boulder.
30	to	60 ft.	Blue clay, showing gravel and some sand.
60	to	68 ft.	Sand and gravel, boulders and gray clay.
68	to	90 ft.	Sand and gravel, boulders and clay.
90	to	93 ft.	Boulders.
93	to	130 ft.	Blue clay, showing gravel.
130	to	165 ft.	Blue clay, showing gravel and sand.
165			Boulders
165	to	201 ft.	Blue clay, showing gravel and some sand.
201	to	203 ft.	Soft fine dirty sand
203	to	246 ft.	Blue clay, boulders and fine sand.
246	to	261 ft.	Blue clay, showing fine sand and boulders.
261	to	283 ft.	Medium and fine sand, gravel, some clay.
283	to	296 ft.	Coarse gravel to fine sand, some clay.
296	to	300 ft.	Blue clay.

The well shall be installed as follows: The Contractor shall drill an open hole to a depth of two hundred forty six feet. The diameter of this hole shall be at least five (5) inches larger than the permanent casing to be installed in the well. The diameter of the permanent casing shall be of sufficient size to permit the drilling of a forty-two (42) inch hole through the water-bearing formation using either solid tool or rotary mechanical or hydraulic under-reamer or both. Permanent casing shall be at least 3/8" wall standard steel with suitable couplings, if over 12" in diameter.

Because of unsatisfactory water which is encountered in overlying formations and to prevent these undesirable waters as well as surface seepage from entering the well, the contractor shall cement the permanent casing in the well by circulating pure cement and water between the casing and the open hole under pressure from the bottom up.

After the cement grout has been allowed to set the Contractor shall drill a 42 inch hole through the water bearing formations encountered between the depths of 246 ft. and 296 ft. If contract-ors method of drilling does not permit the drilling of an open hole through the fine sand formations without sloughing, temporary casing must be used and pulled back after gravel has been placed.

Inside the forty-two (42) inch hole and concentric with it shall be installed a six (6) inch diameter screen. The screen shall be of sufficient length to properly develop all water bearing formations encountered between the depths of 246 and 296 feet. It shall be made of Everaur metal or Silicon Manganese Bronze (96% Copper, 3% Silicon, & 1% Manganese) and shall weigh 18 pounds or more per foot of length, depending on type of screen used. The screen openings shall be of proper size to permit the passage of fine sand encountered in the formations but to prevent the passage of gravel used in gravelling process into the well, under no circumstance shall the openings be smaller than 1/16 inch.

The screen shall be sealed into the clay formation encountered at a depth of approximately 296 ft. with a concrete plug. This plug shall be placed after the screen has been installed concentrically in the 42 inch hole. After the screen has been placed in the well proper size, round, well graded gravel shall be placed in the well by pumping it into place from the surface. Sufficient blank casing of the same diameter as the screen shall be installed above the screen within the permanent casing and the gravelling continued up into the outer casing to prevent heaving of the native formations.

Upon completion of the well a turbine type test pump will be installed, and as soon as the water is clear from the well a ten (10) hour pumping test shall be run. The contractor shall furnish his own test pump, water level measuring device, orifice, etc., for measuring the capacity of the well. The pump shall have a maximum capacity of three hundred (300) gallons per minute. The City will furnish power for testing operations, lights if required; also water for drilling and ingress and egress to the site of work.

WELL TEST.

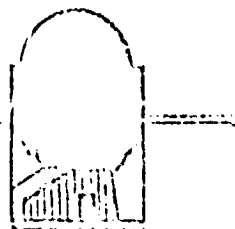
The well must be guaranteed to have sand free qualities in that not more than two tenths of one percent by volume of sand with respect to output of water in gallons per minute will be produced when the well is being pumped. If the well produces more than this amount up to two hundred fifty (250) gallons per minute it will not be accepted. This is to insure satisfactory operation of a turbine pump.

Mc CARTHY

SPECIALIZING IN WELL DRILLING
SINCE 1850

WELL COMPANY

Well Drilling Contractors,



NORTHWEST'S LARGEST
WATER DEVELOPERS

724 N. HASTOR 7114

MINNEAPOLIS & ST. PAUL

(Address Reply to)
670 EUSTIS ST. - ST. PAUL MINN

March 27, 1942

City Council
Milbank, South Dakota

Gentlemen:

The alternate upon which our attached bid is made consists of the construction of the well in accordance with the guarantees as outlined in the specifications, and consists of the drilling of a hole of sufficient size in order to place at least 12" I.D. pipe to the water bearing formation. Said pipe to be standard weight, threaded and coupled and to weigh at least 45# per lineal foot.

We propose to excavate a large hole in the water bearing formation and install therein a washed clean uniform gravel surrounding the screen, by the use of our special methods for gravel packing formations of this type of which we have completed hundreds of wells.

~~Our type of construction also consists of the inner casing coming to the surface of the ground, thereby, leaving you a completely double cased well instead of a single cased well, thereby, allowing you a considerably larger gravel magazine and one which can be regraveled without removing the turbine pump from the hole, and can be done by your superintendent if need be without the services of expert well men. With this type of construction the inner casing coming to the surface allows the entry into the screen for cleaning, or acid treatment, or for future repair.~~

This well will be constructed with the cable tool method and therefore, no foreign mud will be introduced into the water bearing formations. The screen will be set in the native formations in their clean and natural state.

We have found in our 88 years of experience that this type of construction invariably produces a larger quantity of water with less drawdown per gallon per minute, than any other types of gravel wall design.

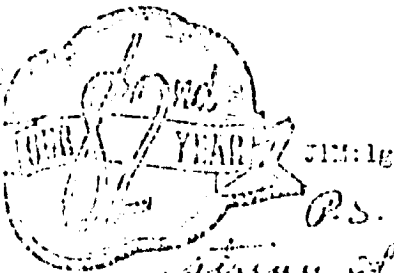
Respectfully submitted,

MC CARTHY WELL COMPANY

BY

Ray Bergeron

P.S. This price is eliminated, the inner string of pipes to the surface.



3561-3



Department of Natural Resource Development

WATER RIGHTS COMMISSION
Joe Foss Building, Pierre, South Dakota 57501
Phone 605/773-3151

January 16, 1979

TO: Persons Concerned with Wilfred Wiese Application No. 3561-3

FROM: John Hatch, Chief Engineer, Water Rights Commission

SUBJECT: Reconsideration of Deferred Application No. 3561-3

The Water Rights Commission will reconsider Water Right Application No. 3561-3 at 2:30 p.m. January 31, 1979 at the South Dakota Education Association Building, 411 E. Capitol, Pierre, South Dakota.

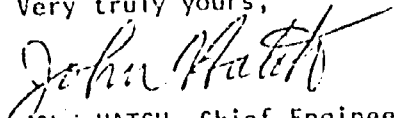
This reconsideration hearing will be conducted in accordance with the provisions of SDCL 46-1-1 thru 46-1-8; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41; 46-6-3, 46-6-5, 46-6-6.1, 46-6-10, 46-6-14 and Commission Rules ARSD 52:01:01:01 thru 52:01:01:13.

Application No. 3561-3 was deferred by the Water Rights Commission on February 23, 1977, pending Staff investigation.

After reconsideration of Application No. 3561-3, the Commission can approve, conditionally approve, defer, or deny all or part of the application.

This hearing is an adversary proceeding. Any person 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 at the hearing. Decisions of the Commission may be appealed to the courts as provided by law.

Very truly yours,


JOHN HATCH, Chief Engineer
Water Rights Commission

JH/gy

CITY OF MILBANK

AUDITOR'S OFFICE

MILBANK, SOUTH DAKOTA, 57252

January 29, 1979

The Water Rights Commission
Department of Natural Resource Development
Joe Foss Building
Pierre, South Dakota 57501

Attn: John Hatch
Chief Engineer

RE: Water Right Application No. 3561-3
Wilfred Wiese

Dear Mr. Hatch:

This is in response to your reconsideration of the Water Right Application No. 3561-3 of Wilfred Wiese at your meeting of the Water Rights Commission on January 31, 1979.

Mr. Wilfred Wiese through Mr. Jim Johnson of Clark Irrigation Co. has agreed that during the development of his irrigation well and prior to use for irrigation will conduct an extended pumping test to determine the cone of influence, and the effect the well may have on the City of Milbank well field by extended use of the irrigation well.

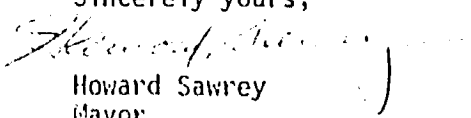
The Wilfred Wiese water right will also be junior to the City's water rights for the present wells and the future wells which the City may develop in the area for which the City holds prior future use rights.

The static water levels in the City wells have shown some improvement since 1976.

The City therefore will not protest the Water Rights Application of Wilfred Wiese for an irrigation well at the location indicated by application No. 3561-3.

The City would request that the Water Rights Commission issue the water right with the restriction that the operation of the irrigation well must stop if there are detrimental effects on the City well field.

Sincerely yours,


Howard Sawrey
Mayor

"YOU'LL LIKE MILBANK"

Comments Prepared
by Gale Selken

1. Was the City well water level stable before the test was started or was the water level rising or falling?
2. Was City Well #1 in operation during the test?
3. What amount of water was pumped by City Wells #2 & #3?
4. There doesn't appear to be enough control on the test to estimate T & S values.
5. After 72 hours continuous pumping at 1700 gpm, the water level is still ≈ 75 ft above the aquifer, the maximum drawdown observed was 35.1 feet in the production well, there is no indication that any boundaries were encountered (but the aquifer is not defined); considering the fact the artesian head is not considered a means of conveyance the City has no basis for complaints.
6. The test probably proves nothing because of the lack of control, aquifer is not defined, and test probably wasn't ran long enough!

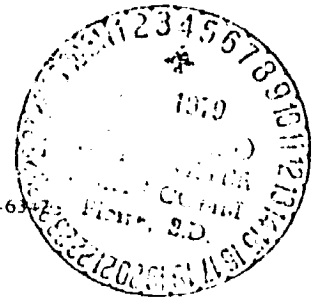
[Handwritten signature]



BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

Wyoming, Laramie, Cheyenne
South Dakota, Brookings, Rapid City

1024 6th Street, P.O. Box 298, Brookings, South Dakota 57006 Telephone 605 692-6342



June 1, 1979

John Hatch, Chief Engineer
Water Rights Commission
Joe Foss Building
Pierre, SD 57501

Re: Water Right Application
No. 3561-3
Wilfred Wiese

Dear Mr. Hatch:

A 72-hour pumping test was conducted by Huron Drilling Inc. on the Wilfred Wiese irrigation well located in Section 10, T120N, R49W, (See Attachment A). The well was pumped at a rate of approximately 1700 gallons per minute from 10:00 A.M. CDT, May 22, 1979 until 10:00 A.M. CDT, May 25, 1979. The rate of flow and drawdown levels at the well were determined and monitored by Huron Drilling.

Personnel from our office took several readings from wells during the pumping test. The location of the observed wells are shown on Attachment A and a summary of the water level readings is shown on Attachment B. Also enclosed is a copy of the history of water level readings at Well GT 77K.

The water level readings for the SDGS Well GT 77K and City of Milbank Well No. 1 are significant. City Well No. 1 had a total drawdown of 10.1 feet during the pumping test and well GT 77K had a drawdown of 10.55 feet. Both wells are approximately 4,500 feet from the Wiese well. In addition, a water level reading was taken on the City Well No. 1 approximately 72 hours after the completion of the pumping test. The well recovered 4.5 feet from the initial drawdown depth of 10.1 feet. This indicates that a continued pumping rate of 1700 GPM from the Wiese well could have a serious impact on the City's water supply source. This pumping rate appears to exceed the normal recharge of the formation and will result in the mining of water.

It appears that the City of Milbank's water production from the formation could be substantially affected by the continuous withdrawal of an additional 1700 gallons per minute from this formation.

BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

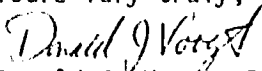
John Hatch
Page 2
June 1, 1979

The City of Milbank will be required to develop additional supply from this formation in the near future. Such large quantities being extracted from a single well could jeopardize the City's rights.

Long term lowering of the static water level in the formation will also result in increased production head, need for greater pump settings, possibly lower water production rates, and increased production pumping costs. We feel that the proposed rate of pumping from the Wiese Well is excessive for the formation and should be reduced substantially and kept within normal recharge rates.

If we can supply additional information, please contact us.

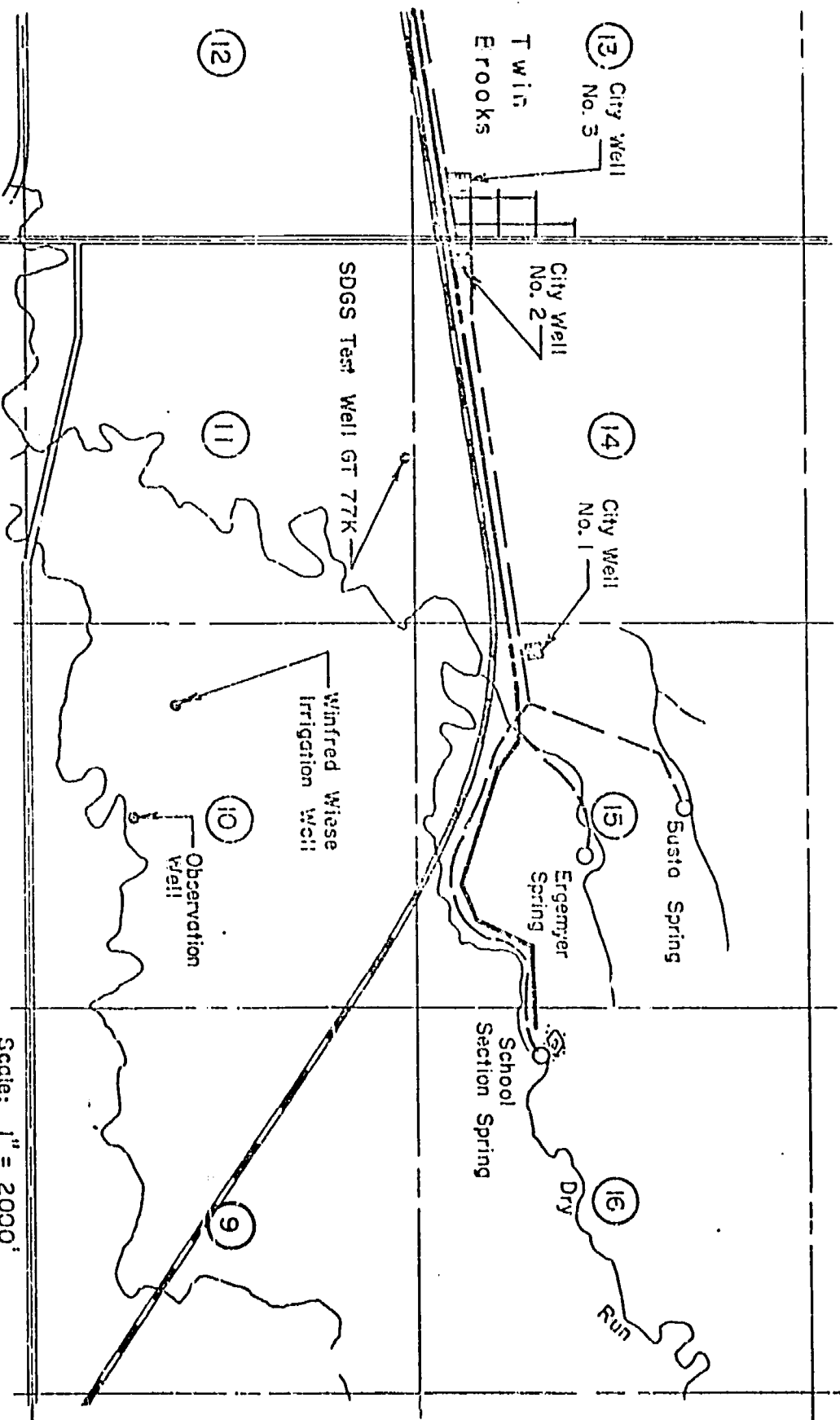
Yours very truly,


Donald J. Voogt, P.E.

DJV/jj
Enclosures
cc: Dale Gold, City Finance Officer
Milbank, SD 57252

WATER RIGHTS - CITY OF MILBANK

NUMBER	AMOUNT	PRIORITY	SOURCE
548-3	2.93 cfs	Vested	Springs and Well No. 1
1769-3	2.16 cfs	8/7/70	Well No. 2 and Well No. 3
549-3	2.50 cfs	12/3/58	Future in Sections 2, 3, 4, 5, 8, 9, 10, 11, 15, 16 and 17



ATTACHMENT "A"

Scale: 1" = 2000'

ATTACHMENT "B"

SUMMARY OF WATER LEVEL READINGS
FOR
WIESE IRRIGATION WELL PUMP TEST

MILBANK, SOUTH DAKOTA

Pump Test @ 1700 gpm
from 10:00 AM 5/22/79 to
10:00 AM 5/25/79

Well	Time & Date	Depth to Water	Water Surface Elevation (USGS Datum)	Drawdown
Wiese Irrigation Well Sec. 10, T120N, R49W	11:00 AM 5/21/79	77.8'	1209.6	0.0
	3:30 PM 5/22/79	106.4'	1181.0	28.6
	9:50 AM 5/25/79	112.9'	1174.5	35.1
4" Obs. Well 1700' N.W. of Irrigation Well	11:00 AM 5/21/79	94.4'	1209.2	0.0
	3:15 PM 5/22/79	98.5'	1205.1	4.1
	9:45 AM 5/25/79	107.6'	1196.0	13.2
City Well #1	1:15 PM 5/21/59	103.4'	1208.6	0.0
	2:55 PM 5/22/79	104.9'	1207.1	1.5
	9:23 AM 5/25/79	113.5'	1198.5	10.1
	10:30 AM 5/28/79	109.0'	1203.0	5.6
GT 77 K (SDGS Well ½ Mile West of Twin Brooks)	11:20 AM 5/21/79	66.75'	1208.74	0.0
	2:45 PM 5/22/79	68.38'	1207.11	1.63
	9:15 AM 5/25/79	77.30'	1198.19	10.55

County Grant

Depth of well 245' Mean Sea Level Elevation of Measuring Point

Pipe length above ground 3.1' Date Drilled Oct. 27 1977 19

Depth to top of aquifer 188' Thickness of aquifer 72' +

Remarks: _____

Water Level Observations

Date	W/L Readings	Elevation	Date	W/L Readings	Elevation
1/1/77	73.9				
1/2/78	69.0				
1/23/78	68.0				
1/8/78	67.6				
1/20/78	67.3				
1/8/78	66.8				
1/18/78	66.6				
1/16/78	69.0				
1/7/78	67.9				
1/27/78	68.1				
10/17/78	69.7				

**SOUTH Dakota Department of
Water & Natural Resources**

Joe Foss Building Water Rights, Water Management Division
Pierre, South Dakota 57501 (605) 773-3352

January 22, 1980

Russell & Roger Wiese
RR #1
Twin Brooks, SD 57269

Dear Sirs:

Please find enclosed a copy of our Form 20, Notice of Transfer of Water Permit. This must be signed by the owner before a notary public and returned to this office with a fee of Two Dollars and Fifty Cents (\$2.50).

Upon receipt of the Form 20 and the \$2.50 filing fee the permit will be transferred to the proper name.

Please advise this office if you have any questions.

Sincerely,

GENNY YOUNG
Staff Assistant

gy

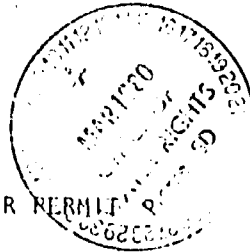
encl

NOTE: Information on new ownership based on 1979 Irrigation Questionnaire received by Wilfred Wiese.

Equal Opportunity Employer

FORM 20

NO. 3561-3



NOTICE OF TRANSFER OF WATER PERMIT

TO: Water Rights
Foss Building
Pierre, SD 57501

Date: 2/3/80

This is to notify you that the title to the lands described as follows:

S $\frac{1}{2}$ NW $\frac{1}{4}$; S $\frac{1}{2}$ NE $\frac{1}{4}$; S 500' N $\frac{1}{2}$ NE $\frac{1}{4}$; N $\frac{1}{2}$ SE $\frac{1}{4}$; Sec. 10, T120N, R50W 270 acres

formerly owned by Wilfred Wiese, Twin Brooks, SD 57269

has been transferred to Russell & Roger Wiese, RR #1, Twin Brooks, SD 57269

together with any rights to the beneficial use of water thereon as evidenced by

Water Right Permit No. 3561-3 as provided for in SDCL 45-5-32 and 46-5-33.

You are therefore hereby requested to file this "Notice of Transfer of Water Permit" in its appropriate file at the Office of the Board of Water Management as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is hereto attached to cover filing fees as required under SDCL 46-2-13.

[illegible]

I, Roger J. Wiese 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 I know of my own personal knowledge that the infor-
mation herein stated is true.

Roger J. Wise
(Signed)

Subscribed and sworn to before me this 27th Day of February, 19 80.

Sandra J. DeYoung
(Notary Public)
Sandra J. DeYoung, Notary Public
Grant County, South Dakota

My Commission expires: 6/9/84

100-100000
 100-100000
 100-100000

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 7405

PIERRE, March 18, 1930

RECEIVED OF Wiese Bros., Russell Wiese, Twin Brooks, SD 57269

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

Fee for Application for Permit to Appropriate Water No. _____ (examination, processing, recording and filing) _____		
Fee for inspecting Construction, and issuing Cert. of Construction No. _____		
Fee for inspecting Beneficial Use, and issuing Water License No. _____		
Fee for issuing Location Certificate-Dry Draw, No. _____		
Fee for filing <u>transfer of water permit No. 3561-3</u>		50
Fee for certified copy of _____		
Fee for Print copy of map _____		
Fee for Certifying _____		
Fee for _____ (any other work as provided by law)		
TOTAL		50

WATER RIGHTS COMMISSION

By J. H. Hatch
Chief Engineer, Executive Officer
J. H. HATCH 99



Department of Water & Natural Resources

Joe Foss Building Water Rights, Water Management Division
Pierre, South Dakota 57501 (605) 773-3352

March 18, 1980

Russell & Roger Wiese
RR #1
Twin Brooks, SD 57269

Dear Sirs:

Enclosed is receipt No. 4 7405 in the amount of \$ 2.50 which you
paid for transfer of Water Right No. 3561-3.

Our records now show you as the owner of this Water Right.

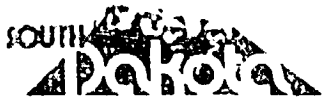
Sincerely,

GENNY YOUNG
Staff Assistant

gy

encl

Equal Opportunity Employer



Department of Water & Natural Resources

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

January 29, 1988

RUSSELL & ROGER WIESE
RR 1
TWIN BROOKS, SD 57269

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). 3561-3. 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). 3561-3 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 57501-3101

February 9, 1988

3561-3
4709-3
4715-3

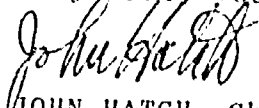
Russell Wiese
RR
Twin Brooks

Dear Mr. Wiese:

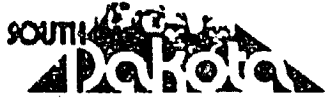
I am writing to acknowledge receipt of your 1987 Irrigation Questionnaire(s). A notice was sent to you January 29, 1988 regarding the requirement to submit the Irrigation Questionnaire(s) for Water Permit No. 3561-3, 4709-3 & 4715-3 and the hearing date before the Water Management Board.

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

(3561-3)
4406-3
4715-3

August 3, 1988

Wiese Brothers Farms
PO Box 10
Twin Brooks, SD 57269

Dear Sirs:

Enclosed are partially completed "Notice of Transfer" forms for use in filing an ownership change on Water Permit Nos. 3561-3, 4406-3 and 4715-3. Please check over the forms and sign them in the presence of a notary public. Upon completion of the forms, return them to our office with a required filing fee of \$2.50 each (total of \$7.50). The water permits will then be transferred to your name.

South Dakota Water Law 46-5-30.3 requires Notice of any sale, grant, lease, conveyance or other transfer of a Water Permit or Water Right to appropriate water to be filed with this office within ninety days.

If you have any questions, please contact us.

Sincerely,

GENNY MCMATH
Natural Resources Analyst
605 773-3352

enclosure



NO. 3561-3



NOTICE OF TRANSFER OF WATER PERMIT

Water Rights
Foss Building
Pierre, SD 57501

Date: August 30, 1988

This is to notify you that the title to the lands described as follows:

270 acres - S $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, S 500' of N $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ Section 10, T120N, R50W

formerly owned by Russell & Roger Wiese

has been transferred to Wiese Brothers Farms, PO Box 10, Twin Brooks SD 57269

(please include complete mailing address)
together with any rights to the beneficial use of water thereon as evidenced by

Water Right Permit No. 3561-3 as provided for in SDCL 46-5-32 and 46-5-33.

You are therefore hereby requested to file this "Notice of Transfer of Water Permit" in its appropriate file at the Div. of Water Rights, Water Management Board as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is hereto attached to cover filing fees as required under SDCL 46-2-13.

STATE OF SOUTH DAKOTA)
County of Grant) ss.

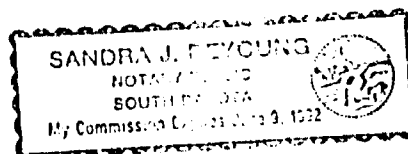
I, Russell Wiese being first duly sworn on my oath despose and say:
That my relation to the above described undertaking is that of Owner, that I have read the above foregoing statement, and I know of my own personal knowledge that the information herein stated is true.

WIESE BROTHERS FARMS

By: Russell Wiese
Partner (Signed)

Subscribed and sworn to before me this 30 Day of August, 1988.

Sandra J. DeYoung
(Notary Public)



 **Department of
Water & Natural Resources**

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

3561-3
4406-3
4715-3

September 1, 1988

Wiese Brothers Farms
%Russell Wiese, Partner
PO Box 10
Twin Brooks, SD 57269

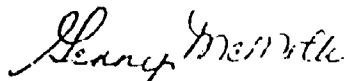
Dear Mr. Wiese:

This will acknowledge receipt of the "Notice of Transfer" forms you submitted for use in filing an ownership change on Water Permit Nos. 3561-3, 4406-3 and 4715-3. The forms were completed properly, however, they can not be filed for record in our office without the required \$2.50 filing fee for each (total of \$7.50).

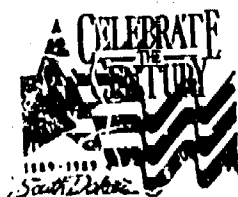
Please remit the \$7.50 in filing fees as soon as possible. Upon receipt of the filing fees from you, the permits will be transferred to Wiese Brothers Farms.

If you have any questions, please contact me.

Sincerely,



GENNY MCMATH
Natural Resources Analyst



RECEIPT

Division of Water Rights
South Dakota Department of Water and Natural Resources

411325

Pierre, September 7, 19 88

RECEIVED OF Wiese Bros. Farms, PO Box 10, Twin Brooks, SD 57269
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct works 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 Transfer Form Permit No. 3561-3 _____		2 50
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)		
Total	2	50

By John Hatch
Chief Engineer JOHN HATCH RS

FILED IN 100-100000

CAMERA OPERATOR

3561-3
4406-3
4715-3



Department of Water & Natural Resources

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

WATER RIGHTS DIVISION
(605) 773-3352

September 7, 1988

Wiese Brothers Farms
PO Box 10
Twin Brooks, South Dakota 57269

Dear Mr. Wiese:

Enclosed are receipt Nos. 411396, 411397 and 411398 in the amount of \$2.50 each which you paid for transfer of Water Right Nos. 3561-3, 4406-3 and 4715-3.

Our records now show Wiese Brothers Farms as the owner of these Water Rights.

Sincerely,

Maxine Stirling
Secretary

ms/
Enc. 3



South Dakota

3561-3

GREAT LACES GREAT PLACES

NOV 21 1992

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
JOE LOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501 3181

5482-3

Russell Wiese
Wiese Brothers Farms
RR 1, Box 36A
Twin Brooks, SD 57269-9301

Dear Mr. Wiese:

Enclosed is Water License No. 5482-3. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 413276 in the amount of \$50.00 which you paid for the inspection and issuance of the Water License.

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. 5482-3, 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
JOHN HATCH, Chief Engineer
Water Rights Division
(605) 773-3352

enclosures

NOTE: The applicable portions of Water Permit Nos. 3561-3, 4406-3 and 4715-3 have been incorporated into this Water License No. 5482-3.

120.50

22.1

9.8 10.5 11.0

19.5 93B

4.8

13.0

3150'

96.8 N12.5°W

Well

51.9

OUT

10

40.4

58.5 Wiltred Wiese
Twin Brooks
S. Dakota

20.2

72.6

55.6

10.2

120.50

Certified Correct
John S. Williams

MAP 120.50 APR 11 1961