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GROUND-WATER STUDY FOR THE
KINGBROOK RURAL WATER SYSTEM

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At the request of the Kingbrook Rural Water System, the South Dakota Geological Survey conducted a ground-water study in part of Kingsbury County, South Dakota, from July 3 to July 17, 1976. The purpose of the investigation was to assist in locating a water supply for the rural water system.

Included in the study were: (1) an interpretation of the geology, (2) the drilling of 13 rotary and 39 auger test holes, and (3) the collection and analysis of 13 water samples. The area covered during the study was approximately 15 square miles. Locations of test holes are plotted on figure 1, along with locations of water samples. The results of the chemical analyses of the water samples can be found in table 1. The logs of the test holes are in appendix A. An oral report of the findings was presented to the Directors of the Kingbrook Rural Water System on July 27, 1976. The study was financed by the South Dakota Geological Survey, the East Dakota Conservancy Sub-District, and the Kingbrook Rural System.

Located within the area of study is glacial outwash deposited by a stream flowing from melting glacial ice during the last part of the Pleistocene Epoch. The deposits in this area are composed of layers of sand and gravel. Due to the high permeability of the deposit, it constitutes an aquifer in those areas where it occurs below the water table. Beneath the outwash till occurs, which consists of unsorted sand, gravel, and cobbles in a clay matrix, and which has a low permeability.

Test hole drilling was conducted to determine the areal extent of the outwash and to find the locale where the sand and

gravel is thicker. Figure 2 shows the saturated sand and gravel thicknesses for the area, and the data has been contoured to show areas of concentration. The outwash extends in a northwest-southeast direction, and ranges from ¾ to 2 miles in width. The greatest thickness of saturated sand and gravel is 65 feet and is found at Hole 19 (NE¼ NE¼ NW¼ NW¼ sec. 6, T. 111 N., R. 56 W.). In this hole, the saturated sand and gravel ranges from 38 to 103 feet in depth. Hole 28, located in the center of section 6, T. 111 N., R. 56 W., has 59 feet of saturated sand and gravel. Hole 9, (SE¼ SE¼ NE¼ NE¼ sec. 36, T. 112 N., R. 57 W.) has 55 feet, and Hole 4, to the northwest of 9 (SW¼ SW¼ SW¼ SE¼ sec. 25, T. 112 N., R. 57 W.) contains 40 feet of saturated sand and gravel. Holes 39, 32, 35, 36, and 37, all located in an area just to the southeast of Hole 28, ranged in thickness from 31 to 38 feet of saturated sand and gravel. Based on the above data therefore, the most favorable area for a water supply is located in an area approximately 3 to 5 miles north of the town of DeSmet and 2½ miles west, covering portions of the SE¼ sec. 25, T. 112 N., R. 57 W; SW¼ sec. 30, T. 112 N., R. 56 W; NW¼ and SW¼ sec. 31, T. 112 N., R. 56 W.; NE¼, NW¼ and SE¼ sec. 6, T. 111 N., R. 56 W.; and NW¼ sec. 8, T. 111 N., R. 56 W. In this general area the saturated sand and gravel reaches thicknesses of up to 65 feet.

The results of the chemical analyses of 13 water samples collected in June 1976 are found in table 1. Samples 4, 10, 11, 12, and 13 are from wells within the proposed area, and are generally of good quality, with the exception of a high concentration of iron and manganese in samples 10, 11, and 13. Samples 5 and 9 are from wells located along the western border of the

outwash and show an excess of sulfates, iron, magnesium, and total solids. Samples 1, 2, 3, 6, 7, and 8 are from wells not located within the recommended area.

Additional test hole drilling should be done in the recommended area before the construction of a pump test well and after negotiation has taken place with the owners of the land. If the thickness of sand and gravel is satisfactory, a pump test then should be conducted to determine the quantity of available water. The test should be conducted by a hydrologist or a qualified engineer, and conducted for at least 72 hours. Water samples taken during the test should be analyzed for chemical content. The results of the aquifer tests will afford a basis for deciding if the area will provide the required quality and quantity of water, determine the proper spacing of the production wells, and provide data for the design of wells.

The Rural Water System should consult the Division of Water Rights, Department of Natural Resource Development, to obtain water rights and the Environmental Protection Agency to determine the biological and chemical suitability of the water.

This report was prepared by Betsy Slugg and Assad Barari, August 1976

TABLE 1. Chemical analyses of water samples from the DeSmet area

Sample	Depth of well	PARTS PER MILLION										Hardness in Grains
		Calcium	Sodium	Magnesium	Chlorides	Sulfate	Iron	Manganese	Nitrate Nitrogen	Total Solids	Hardness $CaCO_3$[2]	
A		--	---	---	250	500[1]	0.3	0.05	10.0	1000[1]	---	-----
W- 1	28	50	40	45	21	135	0.05	0.05	2	535	310	18.24
W- 2	12	35	25	25	87	30	0.05	0.05	2	476	202	11.88
W- 3	18	95	140	160	171	1000	1.0	4.3	4	3080	894	52.59
W- 4	--	30	0	15	7	60	0.1	0.05	0.5	215	136	8.00
W- 5	--	100	30	100	40	870	0.8	0.4	18	1600	660	38.82
W- 6	18	25	30	40	16	140	4.5	6.0	0.5	544	227	13.35
W- 7	--	20	40	98	25	495	0.5	1.5	0.5	1144	453	26.65
W- 8	15	38	0	27	8	71	0.10	0.08	1.2	296	205	12.06
W- 9	75	120	5	58	12	790	2.60	2.20	0.5	1260	540	31.76
W-10	--	50	20	30	6	65	0.8	0.1	8	304	250	14.71
W-11	--	75	20	35	19	160	2.8	0.65	0.5	540	330	19.41
W-12	--	35	0	14	7	5	0.01	0.05	1	72	145	8.53
W-13	--	45	0	31	8	95	0.6	0.25	0.5	268	240	14.12

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

All samples were analyzed by the South Dakota Geological Survey.

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

[2]To convert to grains, divide parts per million by 17.

LOCATION OF WATER SAMPLES
(For map location, see fig. 1)

1. NE¼ SW¼ NE¼ SE¼ sec. 17, T. 111 N., R. 56 W., D. Pratt, 28 feet deep, water level 22 feet.

2. NW¼ SW¼ SW¼ NE¼ sec. 4, T. 111 N., R. 56 W., T. Leckey, 12 feet deep, 8 feet to water.

3. SE¼ SE¼ NE¼ NE¼ sec. 32, T. 112 N., R. 56 W., A. Hyde, 18 feet deep, 12 feet to water.

4. NE¼ NE¼ NW¼ NW¼ sec. 31, T. 112 N., R. 56 W., M. Ogren.

5. SE¼ SE¼ SE¼ SW¼ sec. 6, T. 111 N., R. 56 W., Olson.

6. NW¼ NE¼ NE¼ NW¼ sec. 30, T. 112 N., R. 56 W., W. Cronchite, 18 feet deep.

7. NW¼ NE¼ NE¼ NE¼ sec. 25, T. 112 N., R. 57 W., Spirit Lake.

8. SE¼ SE¼ SE¼ SE¼ sec. 8, T. 111 N., R. 56 W., C. Stubbe, 15 feet deep, water level 12 feet.

9. SW¼ SW¼ SW¼ SE¼ sec. 25, T 112 N., R. 57 W., test hole 4, 75 feet deep, water level 20 feet.

10. SE¼ SE¼ NW¼ NW¼ sec. 31, T. 112 N., R. 56 W., M. Ogren.

11. SE¼ SW¼ NW¼ NW¼ sec. 31, T. 112 N., R. 56 W., M. Ogren.

12. NW¼ NW¼ NE¼ NW¼ sec. 31, T. 112 N., R. 56 W., M. Ogren.

13. SE¼ SE¼ NW¼ NW¼ sec. 5, T. 111 N., R. 56 W., M. Ogren.

APPENDIX A

112 56 25 abba

Logs ot Test Holes Drilled for the Kingbrook Rural Water System
SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NW¼NW¼NE¼ Section: 25 T. 112 N. XXX R. 57 X W.

Well: _____ Test Hole: 1 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1745 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, light brown, clayey	0-2
	4	Silt, light brown, clayey, gravelly	2-6
	9	Till, oxidized	6-15
	3	Till, unoxidized	15-18
		T.D. 18	
		W.T. not measured	

112 57 25 aada

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼SE¼NE¼ Section: 25 T. 112 N. XX R. 57 XX W.

Well: _____ Test Hole: 2 (auger) Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1730 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Gravel, coarse, sandy	0-5
	5	Sand, light brown, medium, pebbly	5-10
	5	Gravel, silty	10-15
	5	Sand, coarse, silty, fine gravel	15-20
	6	Sand, medium to coarse, silty	20-26
	18	Sand, fine gravel, clean	26-44
	6	Clay	44-50
		T.D. 50'	
		W.T. 8'	

112 56 25 daaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼SE¼ Section: 25 T. 112 N. ~~X~~ R. 56 ~~E~~ W.

Well: _____ Test Hole: 3 (auger) Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1735 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	3	Clay, black	2-5
	3	Sand, medium, silty	5-8
	8	Sand, brown, medium-coarse, silty	8-16
	16	Sand, brown, coarse, very silty	16-32
	26	Coarse sand, gray, slightly silty, gravelly	32-58
	5	Clay, gray, (till)	58-63
		T.D. 63'	
		W.T. 7.5'	

112 56 25 dccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼SE¼ Section: 25 T. 112 N. ~~XX~~ R. 57 ~~XX~~ W.

Well: _____ Test Hole: 4 (Rotary) Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1760 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	4	Soil, black, sandy	0-4
	7	Sand, medium to coarse, coarse gravel	4-11
	7	Clay, brown, silty, sandy, gravelly	11-18
	26	Till, gray, sandy, silty	18-44
	20	Gravel, medium to coarse, sandy, clayey	44-64
	9	Gravel, very coarse, clayey	64-73
	6	Gravel, very coarse	73-79
	5	Coal or large cobbles (coal fragments)	79-84
	16	Clay, gray, sandy, silty	84-100
		T.D. 100'	
		70' observation pipe	
		5' sand point	
		30' slotted	

112 57 36 aaaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼NE¼ Section: 36 T. 112 N. ~~X~~ R. 57 ~~X~~ W.

Well: _____ Test Hole: 5 (auger) Land Owner: _____

County: Kingsbury Date: 6-8-76 Elevation: 1740 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Soil, sandy, gravelly, moist	0-3
	15	Sand, brown, gravelly	3-18
	8	Clay, brown, sandy	18-26
	29	Sand, brown, silty	26-55
	7	Sand, coarse	55-62
	2	Sand, coarse, fine gravel	62-64
	2	Till	64-66
		T.D. 66'	
		W.T. 19'	

112 56 31 bbab

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NE¼NW¼NW¼ Section: 31 T. 112 N. ~~S~~ R. 56 ~~E~~ W.

Well: _____ Test Hole: 6 (rotary) Land Owner: _____

County: Kingsbury Date: 6-16-76 Elevation: 1744 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	4	Soil, black, sandy	0-4
	7	Clay, brown, sandy, gravelly	4-11
	34	Sand, medium to coarse, gravelly, slightly clayey	11-45
	24	Sand, gravel, clay	45-69
	31	Till, silty, sandy, clayey	69-100
		T.D. 100'	
		W.T. 25'	

112 56 31 abbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NE¼ Section: 31 T. 112 N. X R. 56 X W.

Well: _____ Test Hole: 7 (rotary) Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1741 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	11	Sand, medium to coarse	0-11
	15	Sand, coarse	11-26
	6	Gravel, medium to coarse	26-32
	6	Sand, gray, silty, clayey	32-38
	32	Till, gray	38-70
		T.D. 70'	
		W.T. 21'	

112 56 32 bbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NW¼ Section: 32 T. 112 N. X R. 56 X W.

Well: _____ Test Hole: 8 (auger) Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1725 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, black	0-5
	2	Clay, gray	5-7
	4	Sand and gravel, brown, silty	7-11
	7	Sand, brown, silty, clayey	11-18
	4	Sand, brown, silty, fine gravel	18-22
	3	Sand, gray, silty, fine gravel	22-25
	2	Till	25-27
		T.D. 27'	
	W.T.6"		

112 57 36 aadd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SE¼NE¼NE¼ Section: 36 T. 112 N. ~~X~~ R. 57 ~~X~~ W.

Well: _____ Test Hole: 9 (auger) Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1750 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, silty	0-1
	8	Gravel, very coarse	1-9
	6	Clay, brown, very gravelly	9-15
	11	Clay, brown, very sandy	15-26
	8	Sand, medium to coarse, very clayey	26-34
	25	Sand, coarse, silty, fine gravel	34-59
	30	Sand, coarse, slightly silty, medium gravel	59-89
	4	Till	89-93
		T.D. 93'	
		W.T. 26'	

112 56 31 bdcc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SE¼NW¼ Section: 31 T. 112 N. ~~S~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 10 (rotary) Land Owner: _____

County: Kingsbury Date: 6-15-76 Elevation: 1750 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	6	Soil, black, sandy	0-6
	5	Gravel, medium to coarse; sand, medium to coarse	6-11
	25	Sand, gravel, coarse	11-36
	22	Sand, gravel, clay	36-58
	22	Clay, gray, sandy, silty	58-80
		T,D. 80'	
		W.T. 21'	

112 56 31 acdb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼SE¼SW¼NE¼ Section: 31 T. 112 N. ~~XX~~ R. 56 ~~XX~~ W.

Well: _____ Test Hole: 11 (auger) Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1740 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: ~~SDGS~~

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, dark brown, silty	0-2
	10	Gravel, medium to coarse, sandy	2-12
	9	Gravel, brown, fine, sandy, silty	12-21
	2	Gravel, coarse	21-25
	3	Gravel, brown, medium, clayey	23-26
	6	Sand, brown, coarse, clayey	26-32
	6	Till	32-38
		T.D. 38'	
		W.T.26'	

112 56 32 cbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼SW¼ Section: 32 T. 112 N. S R. 56 E W.

Well: _____ Test Hole: 12 Rotary Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1736 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, black	0-1
	19	Sand, coarse, fine gravel	1-20
	4	Till, brown, sandy	20-24
	66	Till, gray	24-90
		T.D. 90'	
		W.T. not measured	

112 56 32 bdbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼SE¼NW¼ Section: 32 T. 112 N. XXX R. 56 XX W.

Well: _____ Test Hole: 13 Auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1735 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, silty	0-1
	3	Sand, brown, medium, pebbly	1-4
	8	Sand, brown, medium to coarse, silty, pebbly	4-12
	6	Sand, brown, medium to coarse, pebbly	12-18
	6	Silt, gray	18-24
	4	Sand, gray, very fine, very silty	24-32
	6	Clay, gray, sandy	32-38
		T.D. 38'	
		W.T. 18?	

112 56 32 bdda

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼SE¼SE¼NW¼ Section: 32 T. 112 N. X R. 56 W.

Well: _____ Test Hole: 14 Auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1725 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	6	Clay, black, silty	0-6
	3	Sand, brown, coarse, silty	6-9
	3	Sand, gray, coarse, silty	9-12
	1	Gravel, sandy, silty	12-13
	15	Till	13-28
		T.D. 28'	
		W.T. 6/feet ?	

112 56 31 cbbc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼NW¼NW¼SW¼ Section: 31 T. 112 N. XX R. 56 XX W.

Well: _____ Test Hole: 15 rotary Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1750 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, black, sandy, silty	0-5
	4	Sand, brown, fine to medium	5-9
	3	Gravel, brown, coarse	9-12
	20	Clay, brown, sandy, silty	12-32
	6	Gravel	32-38
	6	Clay, brown, sandy, silty	38-44
	5	Sand, medium to coarse, gravel, clay	44-49
	51	Clay, gray, sandy, silty, gravelly	49-100
		T.D. 100'	
		W.T. not measured	

112 56 31 cdbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼SE¼SW¼ Section: 31 T. 112 N. ~~S.~~ R. 56 ~~E.~~ W.

Well: _____ Test Hole: 16 Rotary Land Owner: _____

County: Kingsbury Date: 6-16-76 Elevation: 1748 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	13	Soil, black, sandy	0-13
	1	Gravel, coarse	13-14
	20	Sand, medium to coarse	14-34
	16	Till	34-60
	29	Gravel,sand, medium to coarse	60-89
	11	Till, clayey, silty, sandy	89-100
		T.D. 100'	
		W.T. not measured	

112 56 31 acdb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼SE¼SW¼NE¼ Section: 31 T. 112 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 17 auger Land Owner: Ogren

County: Kingsbury Date: 6-76 Elevation: 1740 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, gravelly	0-1
	2	Sand, light brown, gravelly	1-3
	2	Sand, gravel, brown, silty	3-5
	13	Sand, coarse, borwn, gravelly	5-18
	5	Sand, dark brown, coarse, gravelly	18-23
	4	Sand, brown, coarse, silty	23-27
	9	Clay, gray, sandy	27-36
	2	Till	36-38
		T D. 38'	
		W.T. 23'	

111 56 6 bbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NW¼ Section: 6 T. 111 N. XX R. 56 E. XX

Well: _____ Test Hole: 18 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1739 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, sandy	0-1
	3	Clay, black, silty	1-4
	7	Clay, brown, very silty	4-11
	18	Sand, brown, medium, very silty	11-29
	4	Till	29-33
		T.D. 33'	
		W.T. 11'	

111 56 6 bbaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NW¼NW¼ Section: 6 T. 111 N. X&X R. 56 E. W.

Well: _____ Test Hole: 19 auger Land Owner: _____

County: Kingsbury Date: 6-8-76 Elevation: 1240 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, black, silty	0-5
	4	Clay, dark brown, silty	5-9
	13	Clay, brown, sandy	9-22
	10	Silt, brown, sandy	22-32
	6	Silt, lt. brown-gray, sandy	32-38
	10	Sand, gray, coarse, silty	38-48
	55	Sand, gray , coarse, gravel	48-103
	2	Till	103-105
		T.D. 105'	
		W.T. 18'	

111 56 6 baaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼NW¼ Section: 6 T. 111 N. R. 56 W.

Well: _____ Test Hole: 20 rotary Land Owner: _____

County: Kingsbury Date: 6-15-76 Elevation: 1758 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, black, sandy	0-5
	20	Gravel, sand, brown	5-25
	35	Clay	25-60
		T.D. 60'	
		W.T. not measured	

111 56 6 baaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼NW¼ Section: 6 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 21 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1760 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	5	Sand, fine, silty	2-7
	3	Sand, light brown, medium, gravelly	7-10
	3	Gravel, coarse, medium sand	10-13
		Rock	13
		T.D. 13'	
		W.T. not measured	

112 56 31 dddd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SE¼SE¼SE¼ Section: 31 T. 112 N. ~~X~~. R. 56 ~~X~~. W.

Well: _____ Test Hole: 22 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: _____ (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, sandy	0-1
	2	Soil, sandy, pebbly	1-3
	2	Gravel, gray, silty	3-5
	19	Sand, gravel, brown	5-24
	10	Sand, brown, coarse, gravelly, silty	24-34
	13	Sand, coarse, gray	34-47
	4	Clay, gray, silty	47-51
	9	Till	51-60
		T.D. 60'	
		W.T. 24'	

111 56 5 baaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼NW¼ Section: 5 T. 111 N. X~~X~~ R. 56 ~~X~~ E. W.

Well: _____ Test Hole: 23 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1733 (A, I, T)

E Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, sandy, silty	0-1
	6	Sand, light brown, fine, silty	1-7
	2	Sand, brown, fine, silty	7-9
	5	Clay, brown, sandy, silty	9-14
	9	Sand, brown, medium to coarse, silty, pebbly	14-23
	19	Clay, gray, silty	23-42
	11	Clay, gray, pebbly	42-53
		T.D. 53'	
		W.T. 10.5'	

111 56 4 bbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NW¼ Section: 4 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 24 auger Land Owner: _____

County: Kingsbury Date: 6-4-76 Elevation: 1730 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Silt, black	0-2
	4	Sand, light brown, medium	2-6
	4	Sand, brown, silty	6-10
	8	Sand, brown, coarse, silty	10-18
	16	Gravel, gray, fine to medium, silty	18-34
	14	Clay, gray, silty, sandy	34-48
	8	Clay, gray, pebbly	48-56
		T.D. 56'	
		W.T. 6.5'	

111 57 1 aadd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SE¼NE¼NE¼ Section: 1 T. 111 N. XX R. 57 W. W.

Well: _____ Test Hole: 25 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1750 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	2	Clay, black, silty	2-4
	4	Clay, brown, silty	4-8
	1	Till	8-9
		T.D. 9'	
		W.T. not measured	

111 57 5 bcab

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NE¼SW¼NW¼ Section: 5 T. 111 N. ~~X~~X R. 56 ~~X~~E. W.

Well: _____ Test Hole: 26 auger Land Owner: _____

County: Kingsbury Date: 6-8-76 Elevation: 1738 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	3	Sand, brown, fine, silty	2-5
	8	Gravel, brown, sandy, silty	5-13
	15	Sand, brown, medium to coarse, silty	13-28
	14	Sand, gray, coarse, silty	28-42
	11	Clay, gray, sandy	42-53
		T.D. 53'	
		W.T. 15'	

111 56 6 bccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼NW¼ Section: 6 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 27 rotary Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1769 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, black	0-1
	11	Silt, brown, clayey, sandy	1-12
	22	Till, brown	12-34
	28	Till, gray	34-62
	4	Sand, gray, gravelly, clayey	62-66
	3	Gravel, medium to coarse, clean	66-69
	25	Clay, gray	69-94
	4	Gravel, cobbles, silt	94-98
	5	Till	98-103
		T.D. 103'	
		W.T. not measured	

111 56 6 dbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼SE¼ Section: 6 T. 111 N. X R. 56 X W.

Well: _____ Test Hole: 28 rotary Land Owner: _____

County: Kingsbury Date: 6-17-76 Elevation: 1755 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1.5	Soil, black, sandy, silty	0-1.5
	19.5	Clay, sandy, silty, pebbly	1.5-21
	4	Sand, medium to coarse,clayey	21.-25
	63	Gravel, sand	25-88
	2	Till	88-90
		T.D. 90'	
		W.T. 29'	

111 56 5 bccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼NW¼ Section: 5 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 29 auger Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1730 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	3	Clay, black, pebbly	2-5
	5	Sand, brown, coarse, pebbly, silty	5-10
	6	Sand, brown, very silty	10-16
	8	Sand, brown, medium very silty	16-24
	3	Sand, gray, coarse, fine gravel	24-27
	33	Sand, gray, coarse, slightly silty, medium gravel	27-60
	8	Clay, gray, sandy, pebbly	60-68
		T.D. 68'	
		W.T. 8'	

111 56 5 accc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼NE¼ Section: 5 T. 111 N. XX S. R. 56 XX W.

Well: _____ Test Hole: 30 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1745 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, black, silty	0-1
	2	Soil, light brown, sandy, pebbly	1-3
	17	Silt, light brown, gravelly	3020
	2	Silt, brown, sandy, gravelly	20-22
	9	Sand, gravel, brown	22-31
	11	Sand, gravel, silty, brown	31-42
	3	Sand, coarse, gravel, gray, silty	42-45
	6	Clay, gray, silty, sandy	45-51
	9	Clay, gray, silty	51-60
	5	Silt, gray, fine sand	60-65
	2	Till	65-67
		T.D. 67'	
		W.T. 21'	

111 56 4 bccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼NW¼ Section: 4 T. 111 N. ~~XXX~~ R. 56 ~~XX~~ W.

Well: _____ Test Hole: 31 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1727 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	6	Soil, brown, sandy, silty	0-6
	5	Sand, light brown, medium, clayey	6-11
	7	Till	11-18
		T.D. 18'	
		W.T. not measured	

111 56 6 dbdd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SE¼NW¼SE¼ Section: 6 T. 111 N. XX S. R. 56 XX E. W.

Well: _____ Test Hole: 32 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1745 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, brown, silty	0-1
	2	Sand, light brown, fine	2-4
	16	Gravel, brown, med. to coarse, fine sand, silty	4-20
	22	Gravel, brown, fine to medium, clayey	20-42
	6	Sand, brown, very coarse, very silty	42-48
	28	Sand, gray, very coarse, very silty	48-76
	6	Clay, gray, gravelly (till)	76-82
		T.D. 82'	
		W.T. 28'	

111 56 5 ccbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼SW¼SW¼ Section: 5 T. 111 N. R. 56 W.

Well: _____ Test Hole: 33 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1735 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, gravelly	0-1
	11	Sand, brown, medium to coarse, gravel	1-12
	5	Sand, brown, coarse, gravel	12-17
	4	Sand, brown, coarse, gravel, silty	17-21
	2	Till	21-23
		T.D. 23'	
		W.T. not measured	

111 56 6 dcdc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SE¼SW¼SE¼ Section: 6 T. 111 N. XX R. 56 XX W.

Well: _____ Test Hole: 34 rotary Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1750 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil	0-1
	3	Clay, brown, sandy	1-4
	22	Clay, brown, gravelly	4-26
	8	Gravel, clean	26-34
	20	Gravel, cobbles, clean	34-54
	16	Till, gray	54-70
		T.D. 70'	
		W.T. 42'	
		Obs. well 40' (2" pipe)	
		3' Sand point	

111 56 8 bbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NW¼ Section: 8 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 35 rotary Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1732 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Soil, brown, silty, gravelly	0-3
	9	Sand, light brown, fine, silty, pebbly	3-12
	5	Silt, brown, sandy, gravelly	12-17
	11	Sand, brown, silty, pebbly	17-28
	7	Sand, brown, clay	20-35
	3	Gravel, brown, fine, silty	35-38
	28	Gravel, gray, fine, silty	38-66
	6	Till	66-72
		T.D. 72'	
		W.T. 17.1'	

111 56 8 bbba

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NW¼NW¼NW¼ Section: 8 T. 111 N. XXX R. 56 E. W.

Well: _____ Test Hole: 36 Rotary Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1730 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, black, sandy, gravelly	0-5
	44	Sand, medium to coarse, gravel, pebbles	5-49
	15	Sand, medium to coarse, gravel, clay	49-64
	26	Clay, sandy, silty	64-90
		T.D. 90'	
		W.T. 17'	
		2" Obs. pipe-50'	
		Sand point - 4'	
		Slotted - 20'	

111 56 8 baba

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NW¼NE¼NW¼ Section: 8 T. 111 N. XX R. 56 XX W.

Well: _____ Test Hole: 37 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1720 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	4	Clay, black, silty	0-4
	5	Sand, gray, medium to coarse, silty	4-9
	18	Sand, gray, coarse, fine gravel	9-36
	2	Sand, gray, medium to coarse	36-38
	13	Sand, coarse, gravel	38-51
	2	Till	51-53
		T.D. 53'	
		W.T. 4'	

111 56 9bbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼NW¼ Section: 9 T. 111 N. R. 56 E. W.

Well: Test Hole: 38 auger Land Owner:

County: Kingsbury Date: 6-76 Elevation: 1725 (A, I, T)

E-Log: Samples: Drilling Company: SDGS

Source of Data:

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	10	Sand, brown, silty	0-10
	12	Sand, brown, coarse, silty	10-22
	7	Sand, gray, coarse, silty	22-29
	7	Till	29-36
		T.D. 36'	
		W.T. 10'	

111 56 8 bcad

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼NE¼SW¼NW¼ Section: 8 T. 111 N. XX. R. 56 X. W.

Well: _____ Test Hole: 39 auger Land Owner: _____

County: Kingsbury Date: 6-17-76 Elevation: 1730 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, dark brown, silty	0-2
	6	Sand, light brown, fine, gravelly	2-8
	6	Sand, brown, medium, silty, gravelly	8-14
	7	Sand, brown, medium, silty, very gravelly	14-21
	16	Sand, dark brown, medium to coarse, silty, gravelly	21-37
	4	Sand, gray, coarse, gravel, slightly silty	37-41
	12	Sand, gray, coarse, fine gravel	41-53
	10	Clay, gray, gravelly (till)	53-63
		T.D. 63'	
		W.T. 25'	

111 56 7 addd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SE¼SE¼NE¼ Section: 7 T. 111 N. ~~X~~ R. 56 ~~X~~ W.

Well: _____ Test Hole: 40 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1742 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown, silty	0-1
	3	Sand, light brown, fine	1-4
	3	Sand, brown, medium, silty, pebbly	4-7
	3	Sand, brown, medium, clean	7-10
	3	Clay, light brown, gravelly, silty	10-13
	4	Clay, gray	13-17
	6	Sand, brown, medium, clayey	17-23
	6	Clay, brown, silty	23-29
	4	Sand, brown, fine, silty	29-33
	9	Sand, brown, fine to medium, very silty	33-42
	28	Gravel, gray, clean	42-70
	3	Till	70-73
		T.D. 73'	
		W.T. 23'	

111 56 8 bdcc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SE¼NW¼ Section: 8 T. 111 N. X S. R. 56 X E. W.

Well: _____ Test Hole: 41 rotary Land Owner: _____

County: Kingsbury Date: 6-17-76 Elevation: 1734 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, sandy	0-2
	16	Sand, brown, fine to medium	2-18
	17	Gravel, brown, sand, medium to coarse	18-35
	10	Sand, medium to coarse, some gravel	35-45
	12	Sand, gravel, clay	45-57
	11	Sand, gravel, clean	57-68
	12	Till	68-80
		T.D. 80'	
		W.T. 28'	

111 56 9 cbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼NW¼NW¼SW¼ Section: 9 T. 111 N. ~~X~~. R. 56 ~~X~~. W.

Well: _____ Test Hole: 42 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1719 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, dark brown, sandy	0-1
	2	Soil, light brown, sandy, pebbly	1-3
	8	Sand, brown, medium, gravelly	3-11
	5	Sand, brown, medium to coarse, gravelly	11-16
	5	Sand, brown, medium, silty	16-21
	5	Sand, gray, medium, silty	21-26
	14	Sand, gray, medium to coarse	26-40
	3	Till	40-43
		T.D. 43'	
		W.T. 15.1'	

111 56 8 cdcd

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SE¼SW¼SE¼SW¼ Section: 8 T. 111 N. XX R. 56 XX W.

Well: _____ Test Hole: 43 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1725 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	5	Soil, light brown, sandy, gravelly	0-5
	4	Clay, light brown, silty	5-9
	14	Clay, light brown, sandy	9-23
	5	Sand, light brown, clayey	23-28
	18	Sand, brown, clay, silt	28-46
	5	Sand, brown, medium to coarse, silty	46-51
	5	Sand, gray-brown, medium to coarse, silty	51-56
	6	Sand, gray, medium to coarse, silty	56-62
	8	Sand, gray, coarse, fine gravel	62-70
	3	Till	70-73
		T.D. 73'	
		W.T. 40'	

111 56 8 ddcc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SE¼SE¼ Section: 8 T. 111 N. ~~X~~. R. 56 ~~X~~. W.

Well: _____ Test Hole: 44 auger Land Owner: _____

County: Kingsbury Date: 6-17-76 Elevation: 1710 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	6	Clay, black	0-6
	6	Sand, gray, fine to medium, silty	6-12
	11	Sand, gray, medium to coarse, silty	12-23
	13	Sand, medium, fine gravel, slightly silty	23-36
	7	Clay, gray, gravelly	36-43
		T.D. 43'	
		W.T. 6'	

111 56 9 cccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼SW¼ Section: 9 T. 111 N. XX R. 56 XX. W.

Well: _____ Test Hole: 45 auger Land Owner: _____

County: Kingsbury Date: 6-3-76 Elevation: 1125 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown	0-1
	16	Sand, brown, silt	1-17
	3	Sand, brown, coarse, silty	17-20
	8	Sand, gray, coarse, silty, clayey	20-28
	18	Sand, gray, coarse, clayey	28-46
	4	Clay	46-50
		T.D. 50'	
		W.T. 13'	

111 56 10 cccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼SW¼ Section: 10 T. 111 N. XX. R. 56 XX W.

Well: _____ Test Hole: 46 auger Land Owner: _____

County: Kingsbury Date: 6-3-76 Elevation: 1725 (A, I, T)

E Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	1	Soil, brown	0-1
	5	Sand, brown, coarse, silty	1-6
	5	Sand, brown, silty, pebbly	6-11
	1	Gravel, sand, silt, brown	11-12
	9	Sand, brown, coarse, silty	12-21
	21	Sand, clayey	21-42
	9	Clay, sandy	42-51
	4	Clay	51-55
		T.D. 55'	
		Caved in	

111 56 16 bccc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼SW¼SW¼NW¼ Section: 16 T. 111 N. S. R. 56 E. W.

Well: _____ Test Hole: 47 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1708 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	3	Silt, gray	0-3
	2	Sand, brown, very fine, silty	3-5
	2	Sand, brown, medium, very silty	5-7
	4	Sand, gray, coarse, silty	7-11
	4	Sand, fine gravel, slightly silty	11-15
	15	Sand, medium to coarse, clean	15-30
	5	Gravel, fine to medium, silty	30-35
	4	Till	35-39
		T.D. 39'	
		W.T. 7'	

111 56 15 cbbb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NWNWNWSW Section: 15 T. 111 N. ~~S.~~ R. 56 ~~E.~~ W.

Well: _____ Test Hole: 48 auger Land Owner: _____

County: Kingsbury Date: 6-3-76 Elevation: 1725 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	8	Sand, red-brown, medium, pebbly	0-8
	6	Sand, red brown, medium to coarse, clayey	8-14
	5	Clay, brown, sandy, pebbly,	14-19
	4	Clay, brown, sandy	19-23
	5	Clay, gray, sandy, pebbly	23-28
	3	Silt, gray, sandy, clayey	28-31
	17	Clay, gray, sandy, silty	31-48
		T.D. 48'	
		W.T. 19'	

111 56 20 aaaa

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NE¼NE¼NE¼NE¼ Section: 20 T. 111 N. XX R. 56 XX W.

Well: _____ Test Hole: 49 auger Land Owner: _____

County: Kingsbury Date: 6-10-76 Elevation: 1713 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	6	Gravel, brown, coarse, sandy	0-6
	3	Sand, brown, coarse, gravelly	6-9
	27	Sand, gravel, brown	9-36
	8	Sand, gray, coarse, gravelly, silty	36-44
	15	Sand, gray, medium to coarse, silty	44-59
	7	Clay, gray, sandy	59-66
	1	Till	66-67
		T.D. 67'	
		W.T. 7.9'	

111 56 22 bbbc

SOUTH DAKOTA GEOLOGICAL SURVEY

Location SW¼NW¼NW¼NW¼ Section: 22 T. 111 N. XX R. 56 XX. W.

Well: _____ Test Hole: 50 auger Land Owner: _____

County: Kingsbury Date: 6-76 Elevation: 1705 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company: SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	4	Soil, light brown, sandy	0-4
	2	Sand, brown, silty	4-6
	5	Sand, dark brown, silty	6-11
	5	Sand, dark brown, fine gravel	11-16
	5	Sand, gray, fine to medium, clean	16-21
	15	Sand, gray, medium to coarse, clean	21-36
	4	Sand, gray, silty	36-40
	6	Till	40-46
		T.D. 46'	
		W.T. 6.5'	

111 56 22 cbcb

SOUTH DAKOTA GEOLOGICAL SURVEY

Location NW¼SW¼NW¼SW¼ Section: 22 T. 111 N. ~~X~~ R. 56 ~~R~~ W.

Well: _____ Test Hole: 51 auger Land Owner: _____

County: Kingsbury Date: 6-9-76 Elevation: 1708 (A, I, T)

E-Log: _____ Samples: _____ Drilling Company SDGS

Source of Data: _____

Geologic Unit	Thickness	Lithologic Description	From - to Feet
	2	Soil, black, silty	0-2
	3	Clay, brown, gravelly, sandy	2-5
	4	Sand, brown, medium to coarse, silty	5-9
	2	Sand, gray, medium to very coarse, silty	9-11
	25	Sand, gray, coarse, silty, gravel, clay, gray, sandy	11-36
		T.D. 36'	
		W.T. not measured	