STATE OF SOUTH DAKOTA
William J. Janklow, Governor

DEPARTMENT OF WATER AND NATURAL RESOURCES
Warren R. Neufeld, Secretary

GEOLOGICAL SURVEY
Merlin J. Tipton, State Geologist

Open-File Report No. 42-UR

SANITARY LANDFILL INVESTIGATION FOR THE CITY OF BROOKINGS, SOUTH DAKOTA

by

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INTRODUCTION

This report contains the results of an investigation conducted by the South Dakota Geological Survey for the City of Brookings to locate a suitable site for a municipal sanitary landfill. The study was financed by the City of Brookings, the East Dakota Water Development District, and the State of South Dakota.

The City of Brookings had selected four potential sites for investigation. The locations of the four sites are shown on figure 1 and the legal locations are listed below:

Site A - West 1/2 sec. 36, T. 111 N., R. 50 W.

Site B - NE 1/4 sec. 3, T. 110 N., R. 50 W.

Site C - SE 1/4 sec. 3, T. 110 N., R. 50 W.

Site D - SW 1/4 sec. 3, T. 110 N., R. 50 W.

HYDROGEOLOGY OF THE AREA

All sites are located in early Wisconsin (25,000 - 80,000 years before present) ground moraine that resulted from continental glaciation during the Pleistocene Epoch of geologic time (fig. 1). Ground moraine is the accumulation of glacial drift deposited by the glacier. Glacial drift consists of nonstratified sediment called till and stratified sediment called outwash. Till was deposited directly by the glacier and consists of unsorted sand, pebbles, and cobbles in a clay and silt matrix with pockets of stratified sediment. Outwash is material that was transported away from the glacier by flowing water and consists mainly of silt, sand, and gravel deposited in layers. Thickness of the glacial drift in the investigation area exceeds 400 feet (Gary Johnson, oral communication, 1985).

Since deposition of the ground moraine, much weathering has taken place within the till. The weathering processes create micro- and macro-fractures throughout the till. The weathered zone may extend down to 50 feet below the land surface (ML 33, 38, 61, app. A). Weathering changes the color of the till from gray to yellow brown or reddish brown through an oxidation reaction.

Fracturing caused by weathering increases the hydraulic conductivity of till. Hydraulic conductivity is defined as the rate at which water is transmitted through a unit cross-sectional area of the sediment under a unit hydraulic gradient. Unweathered till has hydraulic conductivity values ranging from 0.000096 to 0.000280 feet/day while the hydraulic conductivity of weathered till ranges from 0.00057 to 0.144 feet/day (Hendry, 1982). Outwash deposits typically have much greater hydraulic conductivity values ranging from 2.83 to 283.39 feet/day (Barari and Hedges,

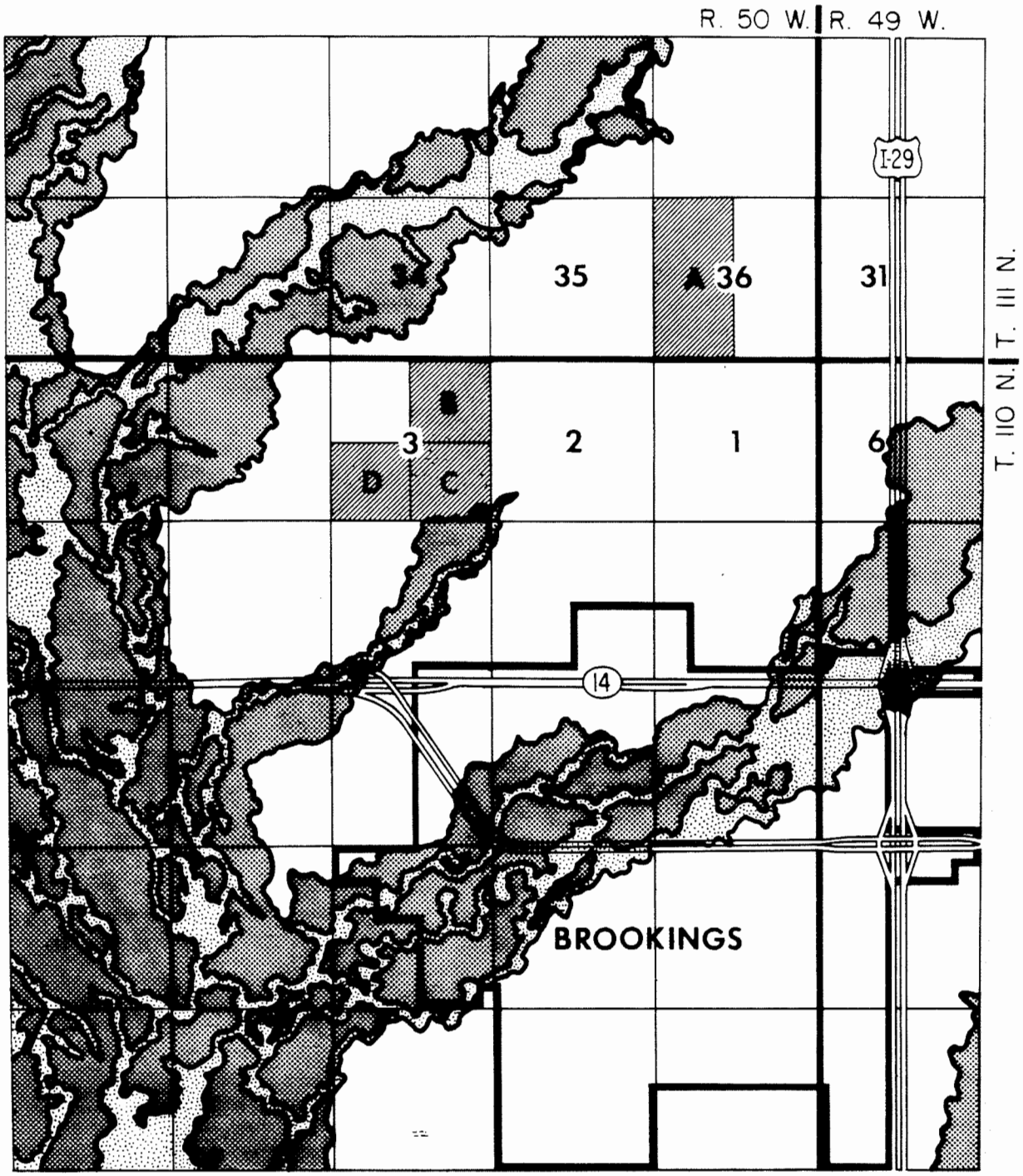


Figure 1. Geologic map of the Brookings area showing the location of potential landfill sites.

1985). Thus, it becomes apparent that till, because of its very low hydraulic conductivity values, is the better material for siting a landfill.

LANDFILL SITING REQUIREMENTS

Regulations require that wastes shall not be placed where they can cause pollution of any waters of the State (SDCL 34A-2-21). Accordingly, the siting of new solid waste disposal sites must meet the following requirements as outlined in Administration Rules of South Dakota 74:27:03:08:

1. Shall not be within a 100 year floodplain.

2. Shall not be within an area from which solid waste or leaching can be carried into any surface water.

3. Shall not be in an area where leaching from solid waste is likely to have a detrimental effect on ground water.

4. Shall not be in an area where the lowest portion of solid waste is less than 6 feet above the area's normal high water table.

The City of Brookings is considering installation of trenches between 10 and 20 feet deep below the land surface. Therefore, the fourth requirement listed above would dictate that the water table must be at least 16 to 26 feet below the land surface at the site.

METHODS OF INVESTIGATION

The sites were investigated by drilling test holes in a grid pattern (except Site D) to determine the subsurface sediments and depth to water. At the four sites, 78 test holes were drilled (figs. 2 and 3), 72 using two flight auger drilling rigs, and 6 using a rotary drilling rig. The holes were augered to depths ranging from 13 to 48 feet, with most being 48 feet deep. Five of the rotary holes were drilled to a depth of 96 feet, and one was drilled to a depth of 106 feet. When pockets of stratified sediment (sand lenses) were encountered, the adjacent area was drilled to investigate the areal extent of the sand lense. Pockets of sand were encountered in Holes 47 and 50 on the north edge of Site A; in Holes 1, 2, and 5 along the north edge of Site B; and also in Holes 42 and 45 on the south edge of Site C. Three additional holes were drilled in Site C between the rows of the grid to delineate the extent of the sand but none was found. Additional holes were not drilled around the other two areas because high water levels were encountered, which eliminated these areas from further consideration.

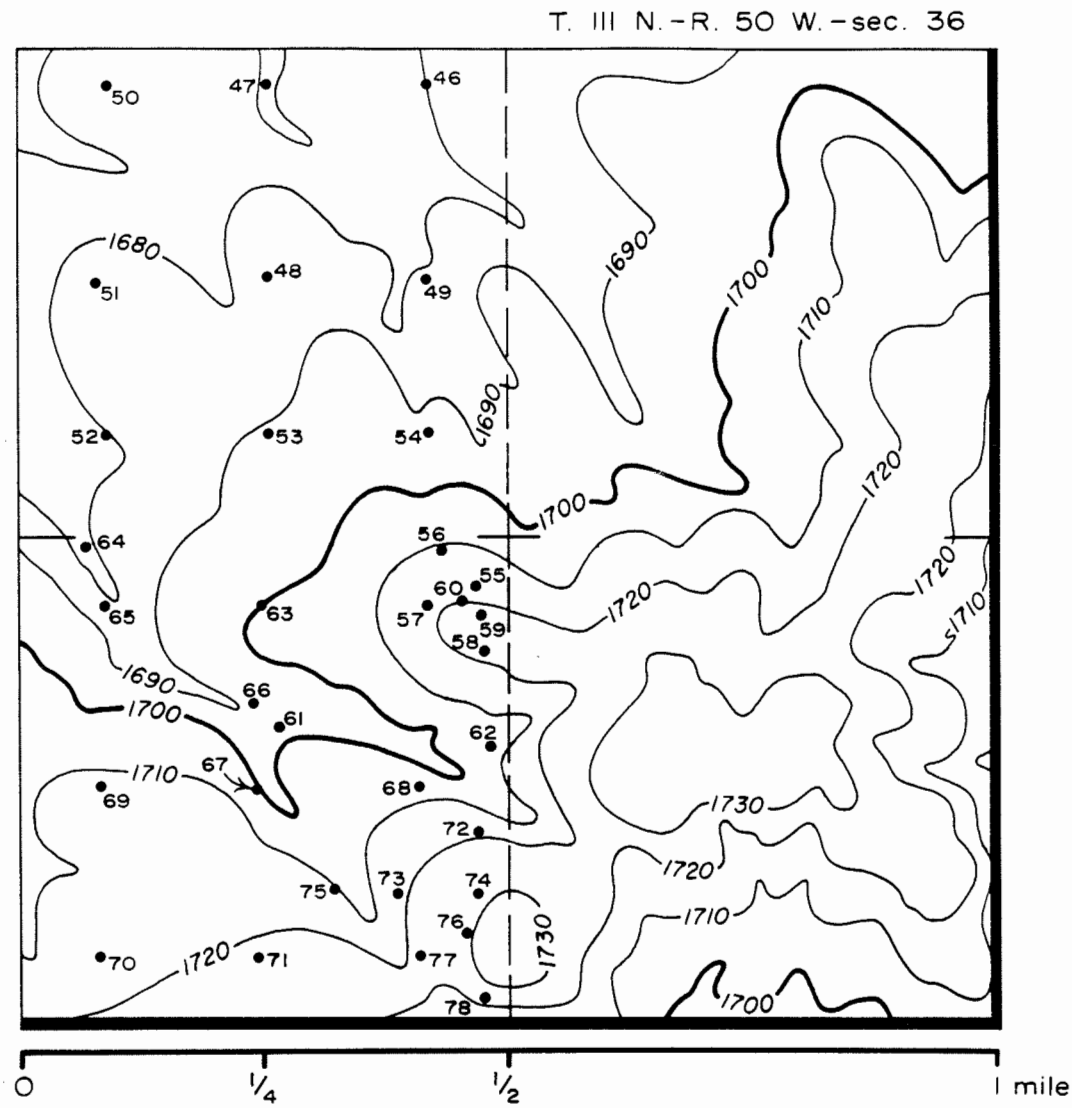


Figure 2. Topographic map of Site A showing location and numbering of test holes.

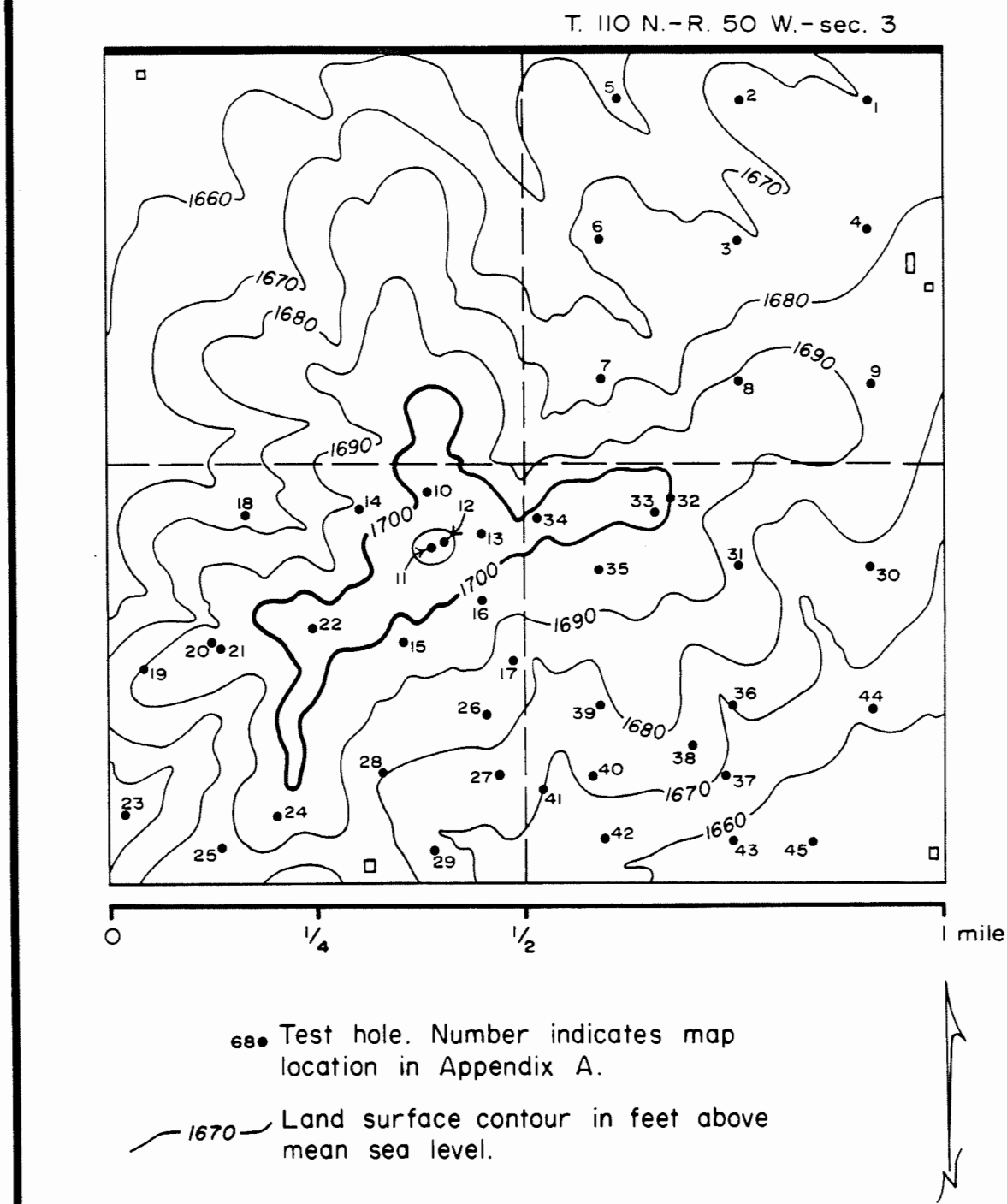


Figure 3. Topographic map of Sites B, C and D showing location and numbering of test holes.

WATER-LEVEL MEASUREMENTS

All water levels were measured in open holes and no wells were installed to obtain measurements from a specific depth. The water levels were measured the day after the holes were drilled. Holes with deep water levels were measured more than once to see if any changes occurred. In four of the holes (24, 53, 63 and 69), extreme changes did occur.

The water level in hole 24 rose from 23.5 feet to 8.1 feet below ground surface after a 3-inch rain and Holes 53, 63, and 69 also indicated a rise in water level from 22.8 to 6.2 feet, 39.5 to 19.7 feet, and 26.4 to 6.7 feet below ground surface respectively after a half inch rain. The holes were situated where surface-water runoff would not enter them. The macro-fractures in the till are avenues for water flow and if a drill hole intersects one or more of these fractures, water would enter the hole. It is inferred that these holes intersected one or more macro-fractures.

At Hole 64 water could be heard running into the hole after it was drilled. There is a loess layer above the till at this location and after heavy precipitation, when the ground is not frozen, water will move through the loess layer and collect at the loess/till contact. When the hole was drilled through this contact, the water ran into the hole, filling it to the level of the contact.

In table 1 there are markings near some of the water-level readings indicating that the holes were bridged at this depth. A tape measure was used to take the readings, and at a number of holes, the sediment had collapsed across the hole (bridging) preventing a water-level reading from being taken. At the beginning of the study, the first two plugged holes were recorded as having zero depth to water (46 and 52). After that, the depth to the plug was recorded. Still later in the study, it was found that tremie pipe could be used to break through the bridging layer and a water-level reading obtained. In a number of instances, it was found that the water-level reading was just below this point of bridging (18 and 35), but there also were others where the water level was well below the bridging point (i.e., 11, 22, and 33). In the earlier holes that were bridged but not broken through, the depth of the bridge was used as the minimum depth to water as shown on figures 4 and 5. This was done because the true water level was unknown, although the water level was not above this point.

SITE EVALUATIONS

The sites were evaluated based on the requirements of the State of South Dakota and the City of Brookings. None of the sites are located in the 100 year floodplain of the Big Sioux River (U.S. Geological Survey, 1971a,b). The only possible

TABLE 1. Water-Level Measurements

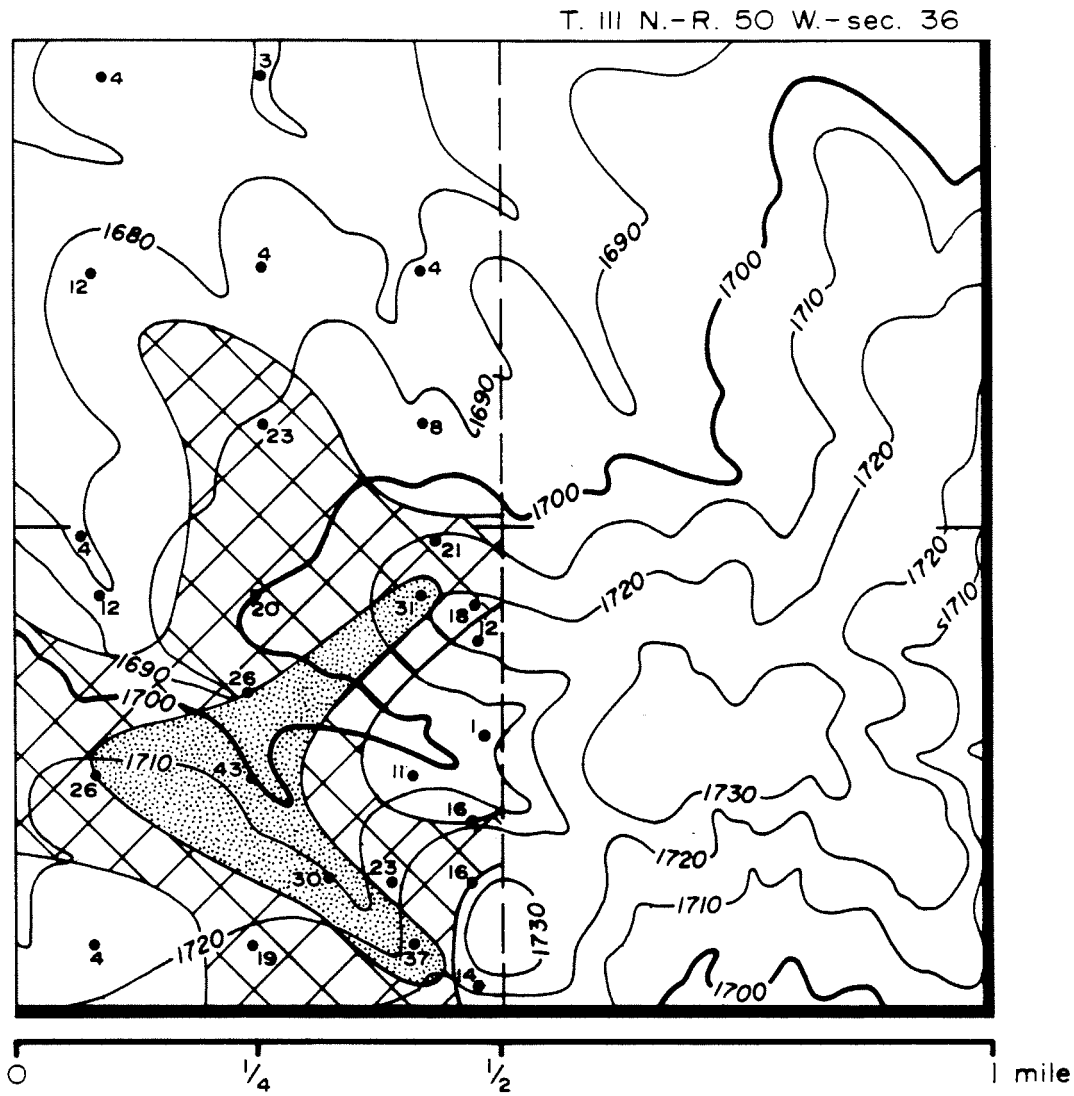
1985

Test Hole Map Location No.*	Depth to water below ground surface (ft) Dates 7-12	7-17	7-18	8- 5	8- 7	8- 7	8-14	8-14
1	----	1.7	----	----	----	----	----	----
2	----	5.0	----	----	----	----	----	----
3	----	5.9	----	----	----	----	----	----
4	----	6.4	----	----	----	----	----	----
5	----	2.0	----	----	----	----	----	----
6	----	4.5	----	----	----	----	----	----
7	----	3.1**	----	----	----	----	----	----
8	----	13.0	----	----	----	----	----	----
9	----	10.8	----	----	----	----	----	----
10	----	----	----	----	17.7**	22.7	17.5**	23.3
11	----	----	----	----	9.0**	28.7	31.4	31.4
12	----	----	----	----	----	----	----	----
13	----	----	----	----	13.1**	30.6	30.4	30.4
14	----	----	----	----	5.0**	13.7	14.1	14.1
15	----	----	----	----	13.6**	20.6	20.8	20.8
16	----	----	----	----	12.6**	19.3	19.8	19.8
17	----	----	----	----	7.5**	15.8	16.9	16.9
18	----	----	----	----	5.1**	7.6	5.3**	5.5
19	----	----	----	----	----	----	29.1	29.1
20	----	----	----	----	6.0**	13.0	11.9	11.9
21	----	----	----	----	----	----	----	----
22	----	----	----	----	6.0**	32.0	30.2	30.2
23	----	----	----	----	5.6	5.6	4.6	4.6
24	----	----	----	----	21.5**	23.5	7.2**	8.1
25	----	----	----	----	9.0**	15.8	13.3	13.3
26	----	----	----	----	18.4	18.4	18.2	18.2
27	----	----	----	----	19.3	19.3	7.1**	22.1
28	----	----	----	----	6.7	6.7	6.6	6.6
29	----	----	----	----	5.2	7.8	6.7	6.7
30	----	4.6	----	----	----	----	----	----
31	----	12.5	12.6	14.4	----	----	----	----
32	----	----	----	----	----	----	----	----
33	----	----	16.6**	----	----	29.5	14.0**	32.0
34	----	----	28.3	27.6	----	----	27.5	27.5
35	----	22.6	22.1	23.0**	----	23.3	23.2**	23.3
36	----	3.4	----	4.8	----	----	----	----
37	----	5.5	----	----	----	----	----	----
38	----	----	----	----	----	----	----	----
39	----	13.3	13.1	15.2	----	----	15.5	15.5
40	----	7.5	----	9.3	----	----	----	----

Test Hole Map Location No.*	Depth to water below ground surface (ft) Dates							
	7-12	7-17	7-18	8- 5	8- 7	8- 7	8-14	8-14
41	----	12.2	12.2	14.1	----	----	----	----
42	----	5.1	----	----	----	----	----	----
43	----	5.9	----	----	----	----	----	----
44	----	4.3	----	----	----	----	----	----
45	----	5.9	----	----	----	----	----	----
46	0.0**	----	----	----	----	----	----	----
47	2.5	----	----	----	----	----	----	----
48	3.5	----	----	----	----	----	----	----
49	3.5	----	----	----	----	----	----	----
50	4.1	----	----	----	----	----	----	----
51	11.5	----	----	----	----	----	----	----
52	0.0**	----	----	----	----	----	----	----
53	22.8	----	6.2	----	----	----	----	----
54	8.2	----	----	----	----	----	----	----
55	----	----	----	----	----	----	----	----
56	----	----	20.8	----	----	----	----	----
57	35.7	----	35.2	----	----	----	----	----
58	----	----	12.1	----	----	----	----	----
59	----	----	18.3	----	----	----	----	----
60	----	----	----	----	----	----	----	----
61	----	----	----	----	----	----	----	----
62	1.2	----	----	----	----	----	----	----
63	39.5	----	19.7	----	----	----	----	----
64	3.6	----	----	----	----	----	----	----
65	11.9**	----	----	----	----	----	----	----
66	26.4	----	----	----	----	----	----	----
67	43.1**	----	----	----	----	----	----	----
68	10.6**	----	----	----	----	----	----	----
69	26.4	----	6.7	----	----	----	----	----
70	3.7	----	----	----	----	----	----	----
71	18.5**	----	----	----	----	----	----	----
72	----	----	15.7	----	----	----	----	----
73	----	----	22.9	----	----	----	----	----
74	----	----	15.6**	----	----	----	----	----
75	----	----	30.4	----	----	----	----	----
76	----	----	----	----	----	----	----	----
77	36.8	----	33.9	----	----	----	----	----
78	----	----	14.4	----	----	----	----	----

* Refer to figures 2 and 3 for location

** Holes bridged at this depth.



43● Test hole. Number is depth to water.

Greater than 16 feet to water.

Greater than 26 feet to water.

1690 Land surface contour in feet above mean sea level.

Figure 4. Topographic map of Site A showing depth to water.

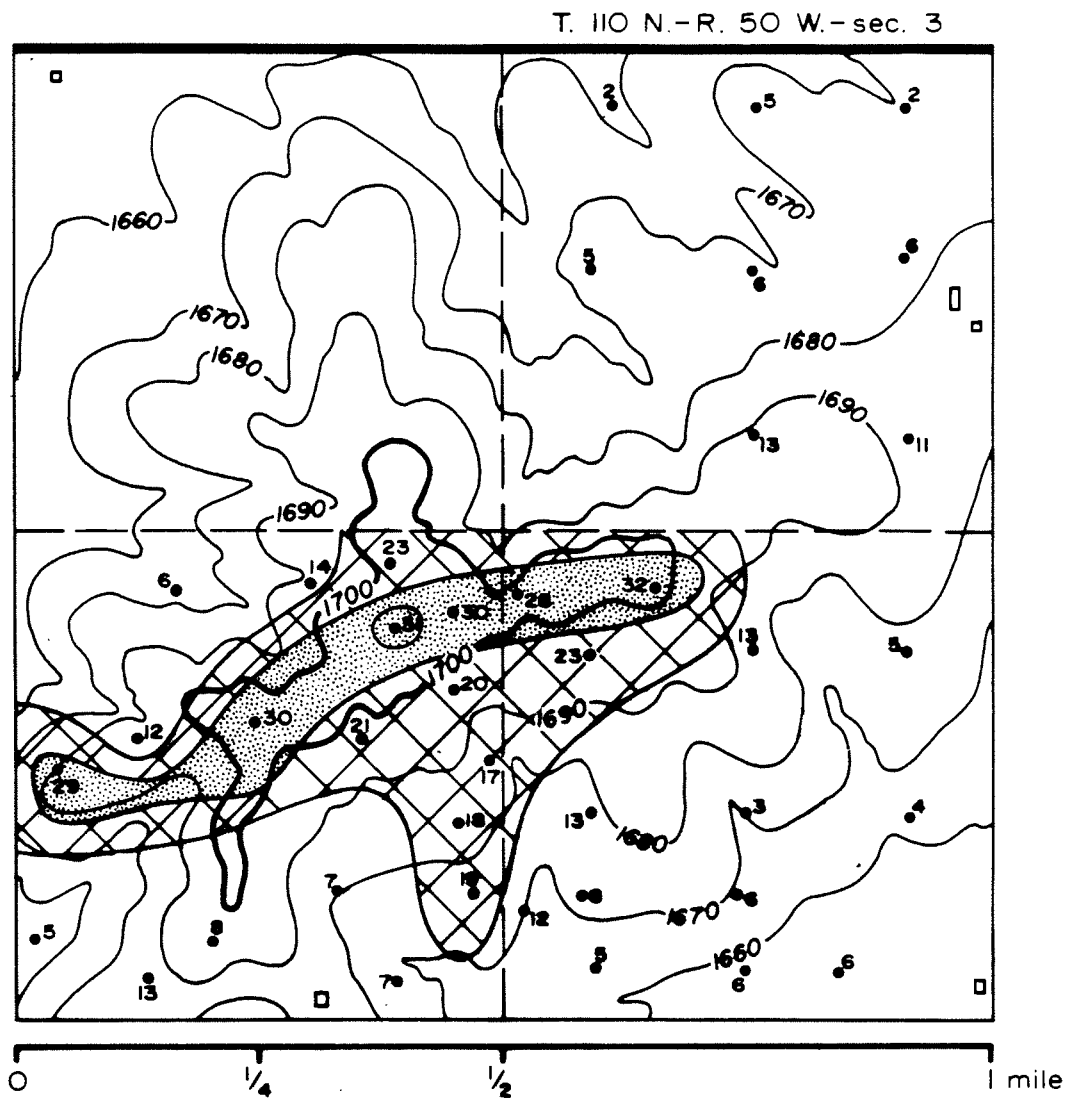


Figure 5. Topographic map of Sites B, C and D showing depth to water.

surface-water problem is the presence of an intermittent stream that bisects Site A. Sites B, C, and D do not contain any such problem. Although many small bodies of outwash were encountered in the drilling, they were found to be of limited lateral extent and do not appear to have a hydraulic connection to local groundwater supplies or the Big Sioux River drainage system, except along the south edge of Site C.

Figures 4 and 5 show the depth to water at the four sites. The cross hatches show the areas that have the minimum depths required by the City of Brookings for utilization of the site as a landfill.

Site A appears to meet the requirements because of the composition of the till and a significant amount of area with water levels at the depths required. Sand lenses were found in the top 7 feet in Holes 57, 58, and 59. The drawback to this site, in addition to the surface drainage mentioned earlier, are the high water levels encountered in the north end.

Site B was eliminated from consideration because of the high water levels encountered over most of the area.

Site C appears to merit consideration in only the northwest corner because of the high water levels in the east and south parts (table 1). Also from the geologic map (fig. 1), it appears that the sand encountered on the south edge of the site may be hydraulically connected to the Big Sioux River Valley. The northwest corner contains part of a ridge that is well suited for a landfill because of the depth to water, till composition, and lack of sand lenses. Its small size is the limiting factor.

Site D meets all the major requirements because of its dominant feature which consists of a ridge composed of till. The site also has good surface drainage because of the slope of the ridge. The exception to the requirements is around the edge of the ridge where high water levels were encountered (fig. 5).

CONCLUSIONS

Two of the four sites that were selected by the City for investigation appear to be suitable for a sanitary landfill. They are as follows:

1. The SW 1/4 of sec. 3, T. 110 N., R. 50 W. (Site D) including the NW 1/4 of the SE 1/4 of sec. 3 (Site C); and

2. The SW 1/4 of sec. 36, T. 111 N., R. 50 W. (south half of Site A).

Additional hydrologic evaluation of these two sites should be done before actual work begins on siting the pits. This would consist of the installation of nested monitoring wells to

determine the maximum fluctuation of the water levels over time, to define vertical and horizontal hydraulic gradients, to conduct on-site or laboratory hydraulic conductivity tests and to collect baseline water-quality data. Figures 4 and 5 show the areas that would allow the placement of the trenches according to State regulations. After studying the information obtained from the nested monitor wells these areas may be extended or reduced.

Because the recommended sites are in till that is weathered to depths exceeding the depth of trenching, the secondary permeability caused by the micro- and macro-fractures, if it is found to be significant, will have to be dealt with. This secondary permeability can be significantly reduced by sealing the bottom and sides of any pits that will be used. This procedure should be done by following proper engineering methods or recommendations of a certified engineer.

REFERENCES

Barari, A., and Hedges, L. S., 1985, Movement of water in glacial till, in Hydrogeology of rocks of low permeability: International Association of Hydrogeologists Memoirs, v. 17, pt. I, Proceedings, p. 129-136.

Hendry, M. J., 1982, Hydraulic conductivity of a glacial till in Alberta: Ground Water, v. 20, no. 2, p. 162-169.

Lee, K. Y., 1957, Geology of the Brookings quadrangle, South Dakota: South Dakota Geological Survey, Geologic quadrangle map, scale 1:62,500.

U.S. Geological Survey, 1971a, Map of flood-prone areas, Brookings quadrangle: scale 1:24,000.

----- 1971b, Map of flood-prone areas, Brookings NE quadrangle: scale 1:24,000.

APPENDIX A

Logs of test holes

MAP LOCATION (ML)

A number which is arbitrarily assigned to the log according to the order in which it is listed (see LEGAL LOCATION and LOCATION). This number corresponds to the numbers shown on figures 2 and 3.

LEGAL LOCATION and LOCATION

The logs are listed by smallest township number, then the smallest range number, the smallest section number, and then by quarter section: NE = A; NW = B; SW = C; SE = D. A comparison of LEGAL LOCATION and LOCATION is as follows. A LEGAL LOCATION of NW SE NE SW sec. 30, T. 99 N., R. 64 W. is the same as a LOCATION OF 099N-64W-30CADB.

LATITUDE and LONGITUDE

A format is DD.MMSS where D is degrees, M is minutes, and S is seconds.

DRILLING COMPANY

SDGS is an abbreviation for South Dakota Geological Survey.

COUNTY: BROOKINGS LOCATION: 110N-50W-03AAAC
MAP LOCATION: 1
LEGAL LOCATION: SW NE NE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2208 LONGITUDE: 96.4834
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1671.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-210
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BLACK-BROWN, VERY SILTY; MOIST (TOPSOIL)
4 -	10	CLAY, YELLOW-BROWN, VERY SILTY; FEW PEBBLES; OXIDIZED; SATURATED
10 -	20	CLAY, YELLOW-BROWN, VERY SILTY; FEW PEBBLES; SOME SAND; OXIDIZED; SATURATED
20 -	31	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; SATURATED
31 -	40	CLAY, YELLOW-BROWN, SILTY, SANDY; OXIDIZED; SATURATED
40 -	45	SAND, YELLOW-BROWN, FINE TO MEDIUM, CLAYEY, SILTY; OXIDIZED; SATURATED
45 -	48	CLAY, YELLOW-BROWN, VERY SANDY, SILTY; OXIDIZED; VERY MOIST

* * * *

COUNTY: BROOKINGS LOCATION: 110N-50W-03AABC
MAP LOCATION: 2
LEGAL LOCATION: SW NW NE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2208 LONGITUDE: 96.4846
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1672.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-211
USGS HYDROLOGICAL UNIT CODE: 10170202

ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY; MOIST (LOESS?)
1 -	6	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
6 -	11	SAND, YELLOW-BROWN, FINE TO MEDIUM, CLAYEY, SILTY; FEW PEBBLES; OXIDIZED; MOIST
11 -	34	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
34 -	39	CLAY, YELLOW-BROWN, VERY SILTY, SANDY; FEW PEBBLES; OXIDIZED; VERY MOIST
39 -	41	CLAY, YELLOW-BROWN, SLIGHTLY SANDY; OXIDIZED; SATURATED
41 -	44	CLAY, YELLOW-BROWN, SILTY, SANDY; OXIDIZED; VERY MOIST
44 -	48	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY; OXIDIZED; VERY MOIST

* * * *

COUNTY: BROOKINGS LOCATION: 110N-50W-03AACC
MAP LOCATION: 3
LEGAL LOCATION: SW SW NE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2159 LONGITUDE: 96.4847
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1671.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-212
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; FEW PEBBLES; MOIST (TOPSOIL)
2 -	8	CLAY, LIGHT-YELLOW-BROWN, VERY SILTY,

		SANDY; FEW PEBBLES; OXIDIZED; MOIST
8 -	15	SILT, YELLOW-BROWN, VERY CLAYEY, SANDY; OXIDIZED; MOIST
15 -	16	CLAY, LIGHT-YELLOW-BROWN, VERY SILTY, SANDY; OXIDIZED; SATURATED
16 -	32	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; OXIDIZED; VERY MOIST
32 -	48	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; OXIDIZED; SATURATED

* * * *

COUNTY: BROOKINGS LOCATION: 110N-50W-03AADC
MAP LOCATION: 4
LEGAL LOCATION: SW SE NE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2200 LONGITUDE: 96.4835
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1678.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-211
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY, PEBBLY; MOIST (TOPSOIL)
1 -	14	SILT, LIGHT-YELLOW-BROWN, CLAYEY; FEW PEBBLES; OXIDIZED; MOIST
14 -	45	CLAY, YELLOW-BROWN, VERY SILTY; SANDY; VERY FEW PEBBLES; OXIDIZED; MOIST (TILL)
45 -	48	CLAY, YELLOW-BROWN, SILTY, PEBBLY, SANDY; OXIDIZED; SATURATED (TILL)

* * * *

COUNTY: BROOKINGS LOCATION: 110N-50W-03ABBD
MAP LOCATION: 5
LEGAL LOCATION: SE NW NW NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2208 LONGITUDE: 96.4858

LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1659.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-212
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	5	CLAY, BLACK, SILTY; MOIST (TOPSOIL)
5 -	15	CLAY, GRAY-BROWN, SILTY, PEBBLY; SOME SAND; OXIDIZED; MOIST
15 -	25	SAND, YELLOW-BROWN, CLAYEY; FEW PEBBLES; OXIDIZED; SATURATED
25 -	48	CLAY, YELLOW-BROWN, SANDY, SILTY; FEW PEBBLES; OXIDIZED; VERY MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03ABCD
MAP LOCATION: 6
LEGAL LOCATION: SE SW NW NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2159 LONGITUDE: 96.4859
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-15-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1672.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-213
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; FEW PEBBLES; MOIST (TOPSOIL)
2 -	10	SILT, YELLOW-BROWN, VERY CLAYEY, SANDY; VERY FEW FINE PEBBLES; OXIDIZED; MOIST

10 -	12	SILT, LIGHT-YELLOW-BROWN, VERY CLAYEY, SANDY; OXIDIZED; SATURATED
12 -	30	CLAY, YELLOW-BROWN, SILTY, PEBBLY, VERY SANDY; OXIDIZED; VERY MOIST
30 -	48	CLAY, GRAY, SILTY; SOME SAND; SOME PEBBLES; UNOXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03ACCA
MAP LOCATION: 7
LEGAL LOCATION: NE SW SW NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2149 LONGITUDE: 96.4858
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1678.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-216
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, CLAYEY, SANDY; FEW PEBBLES; SLIGHTLY MOIST (TOPSOIL)
2 -	7	CLAY, BROWN, SILTY, SANDY; FEW PEBBLES; OXIDIZED; MOIST
7 -	30	CLAY, LIGHT-YELLOW-BROWN, SANDY, SILTY; FEW PEBBLES; OXIDIZED; VERY MOIST
30 -	43	CLAY, YELLOW-BROWN, VERY SILTY, SANDY; OXIDIZED; SATURATED
43 -	48	CLAY, YELLOW-BROWN, SANDY, GRAVELLY, SILTY; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03ADCB
MAP LOCATION: 8
LEGAL LOCATION: NW SW SE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2150 LONGITUDE: 96.4846
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY

DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1691.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-215
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; FEW PEBBLES; SLIGHTLY MOIST
2 -	15	CLAY, BROWN, VERY SILTY; OXIDIZED; MOIST (LOESS?)
15 -	48	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; VERY FEW FINE PEBBLES; OXIDIZED; MOIST; SATURATED FROM 30 FEET (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03ADDB
MAP LOCATION: 9
LEGAL LOCATION: NW SE SE NE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2149 LONGITUDE: 96.4835
LAND OWNER: J. OINES
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1689.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-214
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; FEW PEBBLES (TOPSOIL)
2 -	23	SILT, REDDISH-BROWN, CLAYEY; OXIDIZED; MOIST
23 -	25	SILT, YELLOW-BROWN, CLAYEY, SANDY; VERY FEW PEBBLES; OXIDIZED; VERY MOIST

25 - 48 SILT, LIGHT-YELLOW-BROWN, CLAYEY, SANDY; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CAAB
MAP LOCATION: 10
LEGAL LOCATION: NW NE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2143 LONGITUDE: 96.4917
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1702.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-238
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 - 2 CLAY, BLACK, SANDY, SILTY; SOME PEBBLES (TOPSOIL)
2 - 6 CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; SOME FINE PEBBLES; OXIDIZED (TILL)
6 - 48 CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; SOME FINE PEBBLES; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CAAC 1
MAP LOCATION: 11
LEGAL LOCATION: SW NE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2139 LONGITUDE: 96.4913
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1713.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-243
USGS HYDROLOGICAL UNIT CODE: 10170202

ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	5	SILT, BLACKISH-BROWN, SANDY, PEBBLY, GRAVELLY; OXIDIZED
5 -	11	SILT, YELLOW-BROWN, SLIGHTLY CLAYEY, VERY SANDY, PEBBLY; OXIDIZED, SAND LENSE AT 8 TO 9 FEET
11 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY; FEW SMALL PEBBLES; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CAAC 2
MAP LOCATION: 12
LEGAL LOCATION: SW NE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2140 LONGITUDE: 96.4912
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-14-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1713.00 T
TOTAL DRILL HOLE DEPTH: 96 TEST HOLE NUMBER: CO-85-101
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

HOLE PLUGGED WITH 55 SECOND MUD.

0 -	2	TOPSOIL, BLACK, SILTY
2 -	5	CLAY, LIGHT-BROWN, SILTY
5 -	14	SAND, LIGHT-BROWN, FINE TO COARSE, VERY COARSE FROM 12 TO 14 FEET
14 -	19	CLAY, YELLOW-BROWN, SILTY, SANDY
19 -	48	CLAY, LIGHT-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; 36 TO 46 FEET SANDIER TILL (TILL)
48 -	96	CLAY, GRAY, SILTY, SANDY, PEBBLY; UNOXIDIZED; HARD

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CAAD
MAP LOCATION: 13
LEGAL LOCATION: SE NE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2141 LONGITUDE: 96.4908
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1704.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-237
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	3	CLAY, BLACK, SILTY, SANDY, PEBBLY (TOPSOIL)
3 -	32	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY, VERY PEBBLY; OXIDIZED (TILL)
32 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CABB
MAP LOCATION: 14
LEGAL LOCATION: NW NW NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2141 LONGITUDE: 96.4923
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: L. SCHULZ DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1689.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-248
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY; DRY (TOPSOIL)
2 -	6	CLAY, YELLOW-BROWN, VERY SILTY, VERY SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
6 -	30	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
30 -	48	CLAY, GRAY-BROWN, SILTY, SLIGHTLY SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CACD
MAP LOCATION: 15
LEGAL LOCATION: SE SW NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2133 LONGITUDE: 96.4917
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1698.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-239
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, LIGHT-BROWN, SANDY, SILTY; FEW PEBBLES (TOPSOIL)
4 -	18	CLAY, LIGHT-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED
18 -	40	CLAY, LIGHT-YELLOW-BROWN, SILTY, SLIGHTLY SANDY; FEW PEBBLES; OXIDIZED; MOIST
40 -	48	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CADA
MAP LOCATION: 16
LEGAL LOCATION: NE SE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2135 LONGITUDE: 96.4912
LAND OWNER: F. KROGMANN

PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1697.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-242
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY (TOPSOIL)
2 -	5	SILT, REDDISH-BROWN, SLIGHTLY CLAYEY, SANDY, PEBBLY; OXIDIZED
5 -	9	CLAY, REDDISH-BROWN, VERY SILTY, VERY SANDY, PEBBLY; OXIDIZED (TILL)
9 -	22	CLAY, YELLOW-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
22 -	35	CLAY, YELLOW-BROWN, VERY SILTY, SANDY; OXIDIZED; MOIST (TILL)
35 -	48	CLAY, YELLOW-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CADD
MAP LOCATION: 17
LEGAL LOCATION: SE SE NE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2132 LONGITUDE: 96.4906
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1685.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-236
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BLACK, SILTY, SANDY; SOME PEBBLES;

		SLIGHTLY MOIST (TOPSOIL)
4 -	39	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; SOME PEBBLES; OXIDIZED; MOIST (TILL)
39 -	48	CLAY, LIGHT-YELLOW-BROWN, VERY SILTY, SANDY; SOME FINE PEBBLES; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CBAC
MAP LOCATION: 18
LEGAL LOCATION: SW NE NW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2142 LONGITUDE: 96.4931
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1675.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-249
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BLACK, SILTY, SANDY, PEBBLY; MOIST (TOPSOIL)
4 -	15	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
15 -	20	CLAY, GRAY-BROWN, SILTY, SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
20 -	35	CLAY, PALE-GRAY-BROWN, SILTY; GREASY; OXIDIZED; MOIST, HIT WATER AT 21 FEET (LAKE BOTTOM?)
35 -	46	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY; FEW SMALL PEBBLES; GREASY; OXIDIZED; MOIST
46 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CBCC
MAP LOCATION: 19

LEGAL LOCATION: SW SW NW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2133 LONGITUDE: 96.4939
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-14-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1690.00 T
TOTAL DRILL HOLE DEPTH: 43 TEST HOLE NUMBER: A2-85-270
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY; MOIST (TOPSOIL)
2 -	26	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
26 -	32	CLAY, LIGHT-BROWN, SILTY, SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
32 -	40	CLAY, YELLOW-BROWN, VERY SILTY, SLIGHTLY SANDY; OXIDIZED; MOIST
40 -	43	CLAY, GRAY-BROWN, VERY SILTY, SLIGHTLY SANDY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CBDC 1
MAP LOCATION: 20
LEGAL LOCATION: SW SE NW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2134 LONGITUDE: 96.4932
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1694.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-247
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY; DRY (TOPSOIL)
2 -	5	SILT, YELLOW-BROWN, VERY CLAYEY, SANDY; SMALL PEBBLES; OXIDIZED; DRY
5 -	34	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
34 -	44	CLAY, YELLOW-BROWN, VERY SILTY, SLIGHTLY SANDY; FEW SMALL PEBBLES; OXIDIZED; VERY MOIST (LOESS?)
44 -	48	CLAY, GRAY, VERY SILTY, SLIGHTLY SANDY; VERY FEW SMALL PEBBLES; UNOXIDIZED; VERY MOIST, HIT WATER AROUND 46 FEET

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CBDC 2
MAP LOCATION: 21
LEGAL LOCATION: SW SE NW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2134 LONGITUDE: 96.4931
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-14-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1695.00 T
TOTAL DRILL HOLE DEPTH: 96 TEST HOLE NUMBER: CO-85-102
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

HOLE PLUGGED WITH 55 SECOND BENTONITE MUD.

0 -	2	TOPSOIL, BLACK, SILTY
2 -	8	CLAY, LIGHT-YELLOW-BROWN TO LIGHT-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED
8 -	33	CLAY, LIGHT-BROWN TO LIGHT-GRAY, SILTY, SANDY, PEBBLY; FIRM; OXIDIZED (TILL)
33 -	36	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; FIRM; OXIDIZED (TILL)
36 -	39	CLAY, GRAY, SILTY, SANDY, PEBBLY; UNOXIDIZED
39 -	51	CLAY, PINKISH-BROWN, SILTY, SANDY, PEBBLY, A BIT GRAVELLY AT 49 TO 51 FEET; OXIDIZED
51 -	96	CLAY, YELLOW-BROWN TO LIGHT-BROWN, SILTY, SANDY, PEBBLY, A BIT GRAVELLY FROM 51 TO 55 FEET; OXIDIZED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CBDD
MAP LOCATION: 22
LEGAL LOCATION: SE SE NW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2135 LONGITUDE: 96.4924
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: L. SCHULZ DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1706.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-246
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	SILT, BLACK, SLIGHTLY SANDY; DRY (TOPSOIL)
1 -	6	SILT, YELLOW-BROWN, SANDY, CLAYEY, PEBBLY; OXIDIZED; DRY
6 -	29	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
29 -	48	CLAY, GRAY-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CCCB
MAP LOCATION: 23
LEGAL LOCATION: NW SW SW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2125 LONGITUDE: 96.4939
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-07-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1666.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-251
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:

SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BLACK, SILTY, SANDY, SLIGHTLY PEBBLY; MOIST (TOPSOIL)
4 -	10	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
10 -	30	CLAY, GRAY-BROWN, SILTY, SANDY, PEBBLY; VERY COMPACT; OXIDIZED, HIT WATER AROUND 17 FEET
30 -	48	CLAY, YELLOW-BROWN, VERY SILTY, VERY SANDY; FEW PEBBLES; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CCDA
MAP LOCATION: 24
LEGAL LOCATION: NE SE SW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2123 LONGITUDE: 96.4926
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1694.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-241
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BROWN, SANDY, SILTY, PEBBLY; DRY (TOPSOIL)
4 -	11	CLAY, LIGHT-YELLOW-BROWN, SANDY, SILTY, PEBBLY; OXIDIZED; SLIGHTLY MOIST
11 -	38	CLAY, LIGHT-REDDISH-BROWN, SANDY, SILTY, PEBBLY; SOME LARGE PEBBLES; OXIDIZED; MOIST
38 -	48	CLAY, GRAY, SANDY, SILTY, PEBBLY; UNOXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CCDC
MAP LOCATION: 25
LEGAL LOCATION: SW SE SW SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2121 LONGITUDE: 96.4930
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: L. SCHULZ DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1688.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-250
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY; DRY
2 -	30	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; DRY (TILL)
30 -	45	CLAY, GRAY-BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST, HIT WATER AT 45 FEET (TILL)
45 -	48	CLAY, YELLOW-BROWN, VERY SILTY, VERY SANDY; FEW PEBBLES; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CDAA
MAP LOCATION: 26
LEGAL LOCATION: NE NE SE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2129 LONGITUDE: 96.4908
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-05-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1683.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-241
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:

NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY, PEBBLY (TOPSOIL)
2 -	6	CLAY, YELLOW-BROWN, VERY SILTY; FEW PEBBLES; OXIDIZED
6 -	11	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED (TILL)
11 -	13	CLAY, GRAYISH-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
13 -	23	CLAY, YELLOW-BROWN, SILTY, SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
23 -	31	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
31 -	33	CLAY, YELLOW-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; VERY MOIST (TILL)
33 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CDAD
MAP LOCATION: 27
LEGAL LOCATION: SE NE SE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2126 LONGITUDE: 96.4908
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1676.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-244
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	SILT, BLACK, SANDY, PEBBLY (TOPSOIL)
1 -	5	SILT, YELLOW-BROWN, CLAYEY, SANDY, PEBBLY; OXIDIZED; DRY
5 -	11	CLAY, YELLOW-BROWN, SILTY, SANDY; FEW SMALL PEBBLES; OXIDIZED; MOIST (TILL)
11 -	30	CLAY, YELLOW-BROWN, SILTY, SANDY; OXIDIZED; MOIST (TILL)

30 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST, BECAME VERY MOIST AT 44 TO 48 FEET (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CDBD
MAP LOCATION: 28
LEGAL LOCATION: SE NW SE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2126 LONGITUDE: 96.4918
LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1681.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-240
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	CLAY, BLACK, SANDY, SILTY, PEBBLY (TOPSOIL)
4 -	15	CLAY, LIGHT-YELLOW-BROWN, SANDY, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)
15 -	20	CLAY, GRAY, SLIGHTLY SILTY; SOME FINE PEBBLES; UNOXIDIZED; MOIST
20 -	24	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; SOME PEBBLES; OXIDIZED; MOIST
24 -	25	CLAY, LIGHT-YELLOW-BROWN, SILTY, SANDY; OXIDIZED; SATURATED
25 -	33	CLAY, LIGHT-YELLOW-BROWN, SILTY, VERY SANDY; SOME PEBBLES; OXIDIZED; MOIST, LAYERED WITH GRAY TILL ON SAMPLES
33 -	48	CLAY, BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03CDDC
MAP LOCATION: 29
LEGAL LOCATION: SW SE SE SW SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2121 LONGITUDE: 96.4914

LAND OWNER: F. KROGMANN
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-06-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1676.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-245
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	4	SILT, BLACK, SLIGHTLY SANDY; DRY (TOPSOIL)
4 -	11	CLAY, REDDISH-BROWN, VERY SILTY, VERY SANDY, VERY PEBBLY; OXIDIZED; MOIST
11 -	16	CLAY, YELLOW-BROWN, SILTY, SANDY; FEW SMALL PEBBLES; OXIDIZED; MOIST (TILL)
16 -	24	CLAY, DARK-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY; OXIDIZED; MOIST, HIT WATER AT 22 FEET (TILL)
24 -	48	CLAY, YELLOW-BROWN, VERY SILTY, SLIGHTLY SANDY; FEW SMALL PEBBLES; VERY COMPACT; OXIDIZED; VERY MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DAAC
MAP LOCATION: 30
LEGAL LOCATION: SW NE NE SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2140 LONGITUDE: 96.4835
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1678.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-213
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK-BROWN, SILTY; MOIST (TOPSOIL)
2 -	15	CLAY, LIGHT-BROWN, SILTY; OXIDIZED; MOIST
15 -	21	CLAY, LIGHT-BROWN, SILTY; OXIDIZED; SATURATED (TILL)
21 -	27	CLAY, LIGHT-BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED; SATURATED
27 -	30	CLAY, LIGHT-BROWN, SILTY; OXIDIZED; SATURATED
30 -	38	CLAY, LIGHT-BROWN, VERY SILTY, SLIGHTLY SANDY; OXIDIZED; SATURATED
38 -	48	CLAY, LIGHT-TAN-BROWN, VERY SILTY, SLIGHTLY SANDY; OXIDIZED; SATURATED (LOESS?)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DABC
MAP LOCATION: 31
LEGAL LOCATION: SW NW NE SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2140 LONGITUDE: 96.4848
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1685.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-214
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY (TOPSOIL)
1 -	2	SAND, REDDISH-BROWN, SLIGHTLY CLAYEY, SLIGHTLY PEBBLY; OXIDIZED
2 -	5	CLAY, LIGHT-BROWN, VERY SILTY, SANDY; OXIDIZED; MOIST (ALLUVIUM?)
5 -	27	CLAY, LIGHT-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED, BECAME LESS SANDY AND PEBBLY FROM 16 TO 27 FEET, WAS MOIST (TILL)
27 -	29	CLAY, LIGHT-YELLOW-BROWN, SILTY, VERY SLIGHTLY SANDY; OXIDIZED; SATURATED (LOESS)
29 -	48	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY, BECAME LESS SANDY AND PEBBLY FROM 35 TO 46 FEET; FROM 46 TO 48 FEET CLAY WAS

VERY SANDY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DBAB
MAP LOCATION: 32
LEGAL LOCATION: NW NE NW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2141 LONGITUDE: 96.4854
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1700.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-222
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BROWN, CLAYEY, SANDY (TOPSOIL)
2 -	4	CLAY, LIGHT-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY, COBBLY
4 -	48	CLAY, REDDISH-BROWN, SILTY; VERY LITTLE SAND; FEW SMALL PEBBLES; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DBAC
MAP LOCATION: 33
LEGAL LOCATION: SW NE NW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2142 LONGITUDE: 96.4852
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-15-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1702.00 T
TOTAL DRILL HOLE DEPTH: 96 TEST HOLE NUMBER: CO-85-103
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:

SAMPLES:

HOLE PLUGGED WITH 55 SECOND BENTONITE MUD.

0 -	2	TOPSOIL, BLACK, SILTY
2 -	5	CLAY, YELLOW-BROWN, VERY SILTY; OXIDIZED
5 -	17	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED (TILL)
17 -	31	CLAY, GRAY, SILTY, SANDY, PEBBLY; UNOXIDIZED (TILL)
31 -	96	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY, AT 64 TO 65 FEET GRAVELLY, 69 TO 71 FEET SANDY, 82 TO 83 FEET GRAVELLY; FROM 66 FEET ON CLAY BECAME FIRM

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DBBC
MAP LOCATION: 34
LEGAL LOCATION: SW NW NW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2141 LONGITUDE: 96.4904
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1702.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-220
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY (TOPSOIL)
1 -	14	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY; OXIDIZED (TILL)
14 -	24	CLAY, DARK-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED (TILL)
24 -	26	CLAY, DARK-BROWN, VERY SILTY, SLIGHTLY SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
26 -	46	CLAY, YELLOW-BROWN, VERY SILTY, SANDY; FEW PEBBLES; OXIDIZED; MOIST (TILL)
46 -	48	CLAY, YELLOW-BROWN, VERY SITLY, SANDY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DBBD
MAP LOCATION: 35
LEGAL LOCATION: SE NW NW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2140 LONGITUDE: 96.4858
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1698.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-215
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK-BROWN, SILTY (TOPSOIL)
2 -	5	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
5 -	8	CLAY, GRAY-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
8 -	20	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
20 -	35	CLAY, BROWN, VERY SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
35 -	48	CLAY, BROWN, VERY SILTY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCAA
MAP LOCATION: 36
LEGAL LOCATION: NE NE SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2131 LONGITUDE: 96.4847
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1670.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-217

USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK-BROWN, SILTY; MOIST (TOPSOIL)
2 -	24	CLAY, LIGHT-YELLOW-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
24 -	31	CLAY, GRAY-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST
31 -	35	CLAY, GRAY, SILTY, SLIGHTLY PEBBLY; UNOXIDIZED; MOIST
35 -	43	CLAY, GRAY-BROWN, SILTY; FEW PEBBLES; OXIDIZED; MOIST
43 -	48	CLAY, GRAY-BROWN, SILTY; FEW PEBBLES; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCAD 1
MAP LOCATION: 37
LEGAL LOCATION: SE NE SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2127 LONGITUDE: 96.4848
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1669.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-219
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	5	SAND, LIGHT-BROWN, CLAYEY, SILTY; FEW PEBBLES; OXIDIZED; MOIST
5 -	9	CLAY, LIGHT-BROWN, VERY SANDY, SILTY; FEW PEBBLES; OXIDIZED; MOIST
9 -	16	CLAY, LIGHT-BROWN, VERY SILTY; FEW PEBBLES; OXIDIZED; MOIST
16 -	31	CLAY, LIGHT-BROWN, SANDY, PEBBLY; OXIDIZED; SATURATED

31 -	36	CLAY, GRAY-BROWN, SANDY, PEBBLY; OXIDIZED; SATURATED
36 -	41	CLAY, GRAY-BROWN, VERY SILTY; OXIDIZED; SATURATED
41 -	48	CLAY, GRAY-BROWN, SILTY; SOME SAND; FEW PEBBLES; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCAD 2
MAP LOCATION: 38
LEGAL LOCATION: SE NE SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2128 LONGITUDE: 96.4850
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-15-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1676.00 T
TOTAL DRILL HOLE DEPTH: 96 TEST HOLE NUMBER: CO-85-104
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

HOLE PLUGGED WITH 55 SECOND BENTONITE MUD.

0 -	2	TOPSOIL, BLACK, SILTY
2 -	5	CLAY, YELLOW-BROWN, VERY SILTY
5 -	45	CLAY, YELLOW-BROWN TO REDDISH-BROWN, SILTY, SANDY, PEBBLY
45 -	50	GRAVEL, FINE TO MEDIUM
50 -	96	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY; BECAME MORE FIRM AT 66 FEET AND ON IN DEPTH

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCBA
MAP LOCATION: 39
LEGAL LOCATION: NE NW SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2131 LONGITUDE: 96.4858
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS

DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1679.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-216
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	SILT, BLACK, SLIGHTLY SANDY (TOPSOIL)
1 -	5	CLAY, LIGHT-BROWN, SILTY, VERY SANDY; FEW PEBBLES; OXIDIZED
5 -	7	CLAY, YELLOWISH-BROWN, VERY SILTY; FEW PEBBLES; OXIDIZED
7 -	11	CLAY, GRAY, SILTY, PEBBLY; UNOXIDIZED; MOIST (TILL)
11 -	20	SILT, YELLOWISH-BROWN, CLAYEY; PLASTIC; OXIDIZED; MOIST (LACUSTRINE?)
20 -	48	CLAY, GRAY, VERY SILTY; UNOXIDIZED; SATURATED (TILL?)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCBD
MAP LOCATION: 40
LEGAL LOCATION: SE NW SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2127 LONGITUDE: 96.4858
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1672.00 T
TOTAL DRILL HOLE DEPTH: 28 TEST HOLE NUMBER: A1-85-221
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, PEBBLY, CLAYEY, SILTY; MOIST (TOPSOIL)
2 -	13	CLAY, LIGHT-YELLOW-BROWN, VERY SILTY;

		VERY FEW PEBBLES; SOME SAND; OXIDIZED; MOIST
13 -	14	CLAY, LIGHT-YELLOW-BROWN, VERY SITLY; OXIDIZED; SATURATED
14 -	28	CLAY, LIGHT-YELLOW-BROWN, VERY SITLY; OXIDIZED; VERY MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCCB
MAP LOCATION: 41
LEGAL LOCATION: NW SW SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2126 LONGITUDE: 96.4904
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1670.00 T
TOTAL DRILL HOLE DEPTH: 28 TEST HOLE NUMBER: A1-85-220
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; MOIST (TOPSOIL)
2 -	8	CLAY, WHITISH-GRAY, VERY SILTY; MOIST
8 -	13	CLAY, REDDISH-BROWN, VERY SILTY; SMALL PEBBLES; MOIST
13 -	16	CLAY, LIGHT-BROWN, SILTY; LITTLE SAND; VERY SMALL PEBBLES; MOIST
16 -	23	CLAY, LIGHT-BROWN, SILTY; MOIST
23 -	28	CLAY, LIGHT-BROWN, SILTY; SATURATED

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCCD
MAP LOCATION: 42
LEGAL LOCATION: SE SW SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2122 LONGITUDE: 96.4857
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS

DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1664.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-219
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY, SILTY; SOME PEBBLES; MOIST (TOPSOIL)
2 -	7	CLAY, BROWN, VERY SANDY, VERY GRAVELLY, SILTY; OXIDIZED; MOIST
7 -	9	CLAY, LIGHT-YELLOW-BROWN, VERY SANDY, VERY GRAVELLY, SILTY; OXIDIZED; VERY MOIST
9 -	10	SAND AND GRAVEL, YELLOW-BROWN, FINE TO COARSE SAND, FINE TO MEDIUM GRAVEL, CLAYEY; OXIDIZED; SATURATED
10 -	20	CLAY, YELLOW-BROWN, SILTY, VERY SANDY, VERY PEBBLY; OXIDIZED; VERY MOIST
20 -	48	CLAY, REDDISH-BROWN, SILTY, SANDY; SOME PEBBLES; OXIDIZED; VERY MOIST

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DCDD
MAP LOCATION: 43
LEGAL LOCATION: SE SE SW SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2122 LONGITUDE: 96.4848
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1659.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-218
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY; FEW PEBBLES; MOIST
2 -	13	CLAY, REDDISH-BROWN, SANDY, SILTY; MOIST
13 -	32	CLAY, LIGHT-REDDISH-BROWN, SANDY, SILTY; SATURATED
32 -	48	CLAY, REDDISH-BROWN, SANDY, SILTY; FEW PEBBLES; SATURATED, INCREASING CLAY CONTENT WITH DEPTH

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DDAB
MAP LOCATION: 44
LEGAL LOCATION: NW NE SE SE SEC. 03, T. 110 N., R. 50 W.
LATITUDE: 44.2131 LONGITUDE: 96.4834
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1662.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-218
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY, SLIGHTLY PEBBLY (TOPSOIL)
2 -	3	CLAY, GRAY-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)
3 -	9	CLAY, DARK-YELLOW-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)
9 -	45	CLAY, YELLOW-BROWN, SILTY, SLIGHTLY SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)
45 -	48	CLAY, YELLOWISH-BROWN, VERY SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 110N-50W-03DDCD
MAP LOCATION: 45
LEGAL LOCATION: SE SW SE SE SEC. 03, T. 110 N., R. 50 W.

LATITUDE: 44.2122 LONGITUDE: 96.4838
LAND OWNER: L. STERUD
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-16-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1657.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-217
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK; FEW PEBBLES; MOIST (TOPSOIL)
2 -	5	CLAY, LIGHT-BROWN, SANDY, PEBBLY, SILTY; OXIDIZED; MOIST (TILL)
5 -	6	SAND AND GRAVEL, BROWN, FINE TO COARSE SAND, FINE TO MEDIUM GRAVEL, VERY CLAYEY; OXIDIZED; MOIST
6 -	9	CLAY, BROWN, VERY SANDY, GRAVELLY, SILTY; OXIDIZED; MOIST
9 -	10	CLAY, BROWN, SILTY, SANDY; OXIDIZED; SATURATED
10 -	24	CLAY, BROWN, VERY SANDY, GRAVELLY, SILTY; OXIDIZED; VERY MOIST
24 -	28	CLAY, DARK-BROWN, SANDY, PEBBLY, SILTY; OXIDIZED; VERY MOIST (TILL)
28 -	38	SAND(?), BROWN, FINE, VERY SILTY; CLAY CONTENT INCREASES WITH DEPTH; NO RETURN, BUT RIG ACTION INDICATES THIS
38 -	48	CLAY, GREEN-GRAY, VERY SANDY, VERY GRAVELLY, SILTY; UNOXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BAAB
MAP LOCATION: 46
LEGAL LOCATION: NW NE NE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2259 LONGITUDE: 96.4644
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1680.00 T

TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-199
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY, SANDY; MOIST (TOPSOIL)
2 -	48	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BABB
MAP LOCATION: 47
LEGAL LOCATION: NW NW NE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2259 LONGITUDE: 96.4655
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1669.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-200
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	3	CLAY, BLACK, SILTY, PEBBLY (TOPSOIL)
3 -	30	CLAY, TAN-BROWN, VERY SILTY, PEBBLY; MOIST; OXIDIZED (TILL)
30 -	36	CLAY, TAN-BROWN, VERY SILTY, SANDY, PEBBLY; MOIST; OXIDIZED (TILL)
36 -	48	SILT, TAN-BROWN, VERY CLAYEY, VERY SANDY; SATURATED; OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BACC
MAP LOCATION: 48

LEGAL LOCATION: SW SW NE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2250 LONGITUDE: 96.4655
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1682.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-202
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SANDY, SILTY; MOIST (TOPSOIL)
2 -	25	CLAY, LIGHT-TAN-BROWN, VERY SILTY, PEBBLY; OXIDIZED; MOIST (TILL)
25 -	45	CLAY, LIGHT-TAN-BROWN, SILTY, SANDY; OXIDIZED; SATURATED
45 -	48	CLAY, LIGHT-TAN-BROWN, SILTY, SANDY, GRAVELLY; VERY MOIST; OXIDIZED

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BADC
MAP LOCATION: 49
LEGAL LOCATION: SW SE NE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2250 LONGITUDE: 96.4644
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: J. KELLEY DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1679.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-201
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SANDY, SILTY; MOIST

(TOPSOIL)
1 - 8 CLAY, LIGHT-TAN-BROWN, SANDY, SILTY, PEBBLY; MOIST; OXIDIZED (TILL)
8 - 48 CLAY, TAN-BROWN, SANDY, SILTY, PEBBLY; SATURATED; OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BBBA
MAP LOCATION: 50
LEGAL LOCATION: NE NW NW NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2259 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1672.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-201
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 - 36 CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
36 - 45 CLAY, TAN-BROWN, VERY SILTY, SANDY; OXIDIZED; MOIST (TILL)
45 - 48 SAND, TAN-BROWN, CLAYEY, SILTY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BBCD
MAP LOCATION: 51
LEGAL LOCATION: SE SW NW NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2250 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: J. KELLEY DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1681.00 T

TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-203
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY, CLAYEY; MOIST (TOPSOIL)
2 -	48	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; MOIST, OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BCCA
MAP LOCATION: 52
LEGAL LOCATION: NE SW SW NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2240 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1680.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-202
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY, PEBBLY (TOPSOIL)
1 -	36	CLAY, TAN-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)
36 -	44	CLAY, TAN-BROWN, VERY SILTY, SANDY; OXIDIZED; SATURATED
44 -	48	CLAY, TAN-BROWN, VERY SILTY, VERY SANDY; OXIDIZED; SATURATED

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BDCB
MAP LOCATION: 53

LEGAL LOCATION: NW SW SE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2240 LONGITUDE: 96.4655
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1691.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-203
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	24	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY; OXIDIZED; MOIST (TILL)
24 -	40	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
40 -	48	CLAY, TAN-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36BDDB
MAP LOCATION: 54
LEGAL LOCATION: NW SE SE NW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2240 LONGITUDE: 96.4644
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1693.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-204
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY, SANDY (TOPSOIL)
1 -	16	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY; OXIDIZED; MOIST (TILL)

16 -	35	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
35 -	48	CLAY, TAN-BROWN, VERY SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAA
MAP LOCATION: 55
LEGAL LOCATION: NE NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2233 LONGITUDE: 96.4641
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1717.00 T
TOTAL DRILL HOLE DEPTH: 13 TEST HOLE NUMBER: A2-85-225
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY (TOPSOIL)
2 -	13	CLAY, BROWNISH-GRAY, VERY SILTY, SLIGHTLY SANDY; PARTIALLY OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAB
MAP LOCATION: 56
LEGAL LOCATION: NW NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2235 LONGITUDE: 96.4643
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1711.00 T
TOTAL DRILL HOLE DEPTH: 33 TEST HOLE NUMBER: A2-85-224
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:

NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	10	CLAY, GRAY-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED, SLIGHTLY MOIST (TILL)
10 -	16	CLAY, BROWN, SILTY, SLIGHTLY PEBBLY, SLIGHTLY SANDY; OXIDIZED (TILL)
16 -	30	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY, SLIGHTLY PEBBLY; OXIDIZED (TILL)
30 -	33	CLAY, TAN-BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAC
MAP LOCATION: 57
LEGAL LOCATION: SW NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2231 LONGITUDE: 96.4644
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1718.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-206
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, SILTY, PEBBLY, CLAYEY; MOIST (TOPSOIL)
2 -	48	CLAY, LIGHT-TAN-BROWN, SANDY, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAD 1
MAP LOCATION: 58
LEGAL LOCATION: SE NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2230 LONGITUDE: 96.4640
LAND OWNER: J. CHRISTOPHERSON

PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1721.00 T
TOTAL DRILL HOLE DEPTH: 28 TEST HOLE NUMBER: A1-85-226
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, SILTY, CLAYEY, PEBBLY (TOPSOIL)
2 -	18	CLAY, REDDISH-BROWN, VERY SILTY, SANDY, SLIGHTLY PEBBLY; MOIST (TILL)
18 -	19	CLAY, REDDISH-BROWN, VERY SANDY, SILTY, PEBBLY; VERY MOIST
19 -	28	CLAY, TAN-BROWN, VERY SANDY, SILTY, PEBBLY; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAD 2
MAP LOCATION: 59
LEGAL LOCATION: SE NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2232 LONGITUDE: 96.4640
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1721.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-225
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY, SANDY, PEBBLY; MOIST (TOPSOIL)
2 -	5	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; SLIGHTLY MOIST (TILL)

5 -	7	SAND AND GRAVEL, LIGHT-TAN, FINE TO COARSE SAND, FINE TO COARSE GRAVEL, VERY CLAYEY; OXIDIZED; GRAVEL STRINGERS
7 -	24	CLAY, TAN-BROWN, VERY SILTY, SLIGHTLY SANDY, VERY SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)
24 -	48	CLAY, LIGHT-TAN-BROWN, VERY SILTY, SLIGHTLY SANDY; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CAAD 3
MAP LOCATION: 60
LEGAL LOCATION: SE NE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2233 LONGITUDE: 96.4643
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1720.00 T
TOTAL DRILL HOLE DEPTH: 13 TEST HOLE NUMBER: A2-85-226
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	6	CLAY, LIGHT-BROWN, VERY GRAVELLY, SANDY; MANY LIMESTONE PEBBLES (TILL)
6 -	13	CLAY, LIGHT-TAN-BROWN, VERY SILTY, SLIGHTLY SANDY; MOIST

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CACC
MAP LOCATION: 61
LEGAL LOCATION: SW SW NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2227 LONGITUDE: 96.4655
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X

DATE DRILLED: 08-15-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1698.00 T
TOTAL DRILL HOLE DEPTH: 106 TEST HOLE NUMBER: CO-85-105
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

HOLE PLUGGED WITH 55 SECOND BENTONITE MUD.

0 -	3	TOPSOIL, BLACK, SILTY
3 -	43	CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY
43 -	64	CLAY, YELLOW-BROWN TO GRAY, SILTY, SANDY, PEBBLY
64 -	80	CLAY, GRAY, SILTY, SANDY, PEBBLY; AT 73 FEET SAMPLES OF MORE ORGANIC CLAY, VERY SILTY (LAKE DEPOSITS?)
80 -	84	CLAY, GREENISH, SILTY, SANDY, PEBBLY; FIRM
84 -	100	SAND AND GRVEL, MEDIUM TO COARSE SAND, MEDIUM GRAVEL; WITH SOME CLAY CONTENT
100 -	106	CLAY, GRAY(?), SILTY, SANDY, PEBBLY; VERY FIRM, DID NOT GET VERY GOOD SAMPLES OF THE CLAY

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CADD
MAP LOCATION: 62
LEGAL LOCATION: SE SE NE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2227 LONGITUDE: 96.4640
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1708.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-208
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY, PEBBLY; MOIST

(TOPSOIL)
1 - 9 SILTY, GRAY-BROWN, CLAYEY, PEBBLY; OXIDIZED; MOIST (LOESS?)
9 - 15 CLAY, TAN-BROWN, PEBBLY, SILTY; OXIDIZED; MOIST (TILL)
15 - 48 CLAY, TAN-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; MOIST; DRILLER REPORTS THAT INTERVAL FROM 26 TO 48 FEET IS GREASIER THAN INTERVAL FROM 15 TO 26 FEET (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CBAD
MAP LOCATION: 63
LEGAL LOCATION: SE NE NW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2231 LONGITUDE: 96.4655
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: J. KELLEY DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1700.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-205
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 - 2 SAND, BLACK, SILTY, PEBBLY, CLAYEY; MOIST (TOPSOIL)
2 - 48 CLAY, LIGHT-BROWN, SANDY, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CBBA
MAP LOCATION: 64
LEGAL LOCATION: NE NW NW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2235 LONGITUDE: 96.4709
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:

GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1679.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-210
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	5	CLAY, BLACK, PEBBLY, SILTY; MOIST (TOPSOIL)
5 -	7	SILT, TAN-BROWN, SLIGHTLY SANDY, CLAYEY, PEBBLY; OXIDIZED; SATURATED (LOESS?)
7 -	48	CLAY, TAN-BROWN, SLIGHTLY SANDY, SILTY, PEBBLY; OXIDIZED; VERY MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CBBD
MAP LOCATION: 65
LEGAL LOCATION: SE NW NW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2231 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1682.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-204
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SILT, BLACK, SANDY, PEBBLY, CLAYEY; MOIST (TOPSOIL)
2 -	48	CLAY, LIGHT-TAN-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CBDA
MAP LOCATION: 66
LEGAL LOCATION: NE SE NW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2227 LONGITUDE: 96.4657
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1692.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-209
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY, SANDY, PEBBLY; MOIST (TOPSOIL)
2 -	25	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
25 -	40	CLAY, TAN-BROWN, VERY SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)
40 -	48	CLAY, GRAY-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CCAA
MAP LOCATION: 67
LEGAL LOCATION: NE NE SW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2222 LONGITUDE: 96.4656
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1700.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-206
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	3	CLAY, VERY DARK-BROWN, SILTY, PEBBLY (TOPSOIL)
3 -	11	CLAY, LIGHT-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED (TILL)
11 -	29	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
29 -	48	CLAY, LIGHT-BROWN, SILTY, SLIGHTLY SANDY; OXIDIZED; DRY

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CCAB
MAP LOCATION: 68
LEGAL LOCATION: NW NE SW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2222 LONGITUDE: 96.4645
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-10-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1705.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-205
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	3	CLAY, BLACK, SILTY, SANDY, PEBBLY (TOPSOIL)
3 -	48	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CCBA
MAP LOCATION: 69
LEGAL LOCATION: NE NW SW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2222 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER

GROUND SURFACE ELEVATION: 1711.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A2-85-207
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	CLAY, BLACK, SILTY, SANDY, PEBBLY (TOPSOIL)
1 -	6	SAND, LIGHT-BROWN, PEBBLY, CLAYEY; OXIDIZED
6 -	10	CLAY, TAN-BROWN, SANDY, SILTY, PEBBLY; OXIDIZED; MOIST
10 -	20	CLAY, TAN-BROWN, SILTY, PEBBLY; LITTLE SAND, OXIDIZED; MOIST
20 -	48	CLAY, TAN-BROWN, SILTY, PEBBLY; OXIDIZED; MOIST

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CCCA
MAP LOCATION: 70
LEGAL LOCATION: NE SW SW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2213 LONGITUDE: 96.4708
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: J. KELLEY DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1716.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-209
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, CLAYEY; MOIST (TOPSOIL)
2 -	13	SILT, LIGHT-GRAY-BROWN, CLAYEY; OXIDIZED; MOIST (LOESS?)
13 -	48	CLAY, TAN-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CCDA
MAP LOCATION: 71
LEGAL LOCATION: NE SE SW SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2213 LONGITUDE: 96.4656
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1722.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-208
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, PEBBLY, SILTY, CLAYEY; MOIST (TOPSOIL)
2 -	7	CLAY, BROWN, VERY SILTY; OXIDIZED; MOIST (LOESS?)
7 -	48	CLAY, LIGHT-TAN-BROWN, SILTY, SLIGHTLY SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDAA
MAP LOCATION: 72
LEGAL LOCATION: NE NE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2223 LONGITUDE: 96.4639
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1719.00 T
TOTAL DRILL HOLE DEPTH: 33 TEST HOLE NUMBER: A2-85-221
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	5	CLAY, TAN-BROWN, SILTY, SLIGHTLY SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)
5 -	10	CLAY, BROWN, SILTY; OXIDIZED; MOIST (TILL)
10 -	15	CLAY, TAN-BROWN, SILTY; OXIDIZED; MOIST (TILL)
15 -	30	CLAY, BROWN, VERY SILTY; OXIDIZED; MOIST; SATURATED AT 28 FEET (TILL)
30 -	33	CLAY, TAN-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDAC
MAP LOCATION: 73
LEGAL LOCATION: SW NE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2218 LONGITUDE: 96.4637
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. WUNDER DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1717.00 T
TOTAL DRILL HOLE DEPTH: 28 TEST HOLE NUMBER: A2-85-222
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BLACK, SILTY, SLIGHTLY PEBBLY; MOIST (TOPSOIL)
2 -	10	CLAY, LIGHT-BROWN, SILTY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)
10 -	28	CLAY, TAN-BROWN, SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDAD
MAP LOCATION: 74
LEGAL LOCATION: SE NE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2218 LONGITUDE: 96.4639

LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: D. SINGLETON DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1728.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-223
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	1	SAND, BLACK, PEBBLY, CLAYEY, SILTY; SLIGHTLY MOIST (TOPSOIL)
1 -	35	CLAY, TAN-BROWN, VERY SILTY, SANDY, PEBBLY; OXIDIZED; MOIST (TILL)
35 -	48	CLAY, LIGHT-TAN-BROWN, VERY SILTY, VERY SANDY, SLIGHTLY PEBBLY; OXIDIZED; SATURATED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDBD
MAP LOCATION: 75
LEGAL LOCATION: SE NW SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2218 LONGITUDE: 96.4653
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: C. WORSNOP DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1710.00 T
TOTAL DRILL HOLE DEPTH: 33 TEST HOLE NUMBER: A2-85-223
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	10	CLAY, BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED (TILL)
10 -	23	CLAY, TAN-BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED (TILL)

23 - 33 CLAY, BROWN, SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDDA
MAP LOCATION: 76
LEGAL LOCATION: NE SE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2215 LONGITUDE: 96.4640
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: S. MITCHELL DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 08-15-1985 DRILLING METHOD: ROTARY
GROUND SURFACE ELEVATION: 1729.00 T
TOTAL DRILL HOLE DEPTH: 96 TEST HOLE NUMBER: CO-85-106
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

HOLE PLUGGED WITH 55 SECOND BENTONITE MUD.

0 - 2 TOPSOIL, BLACK, SILTY
2 - 5 CLAY, YELLOW-BROWN, SILTY
5 - 14 CLAY, YELLOW-BROWN, SILTY, SANDY, PEBBLY
14 - 40 CLAY, LIGHT-BROWN, SILTY, SANDY; SOFT
40 - 96 CLAY, YELLOW-BROWN TO GRAY, SILTY, SANDY, PEBBLY; SOFT

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDDB
MAP LOCATION: 77
LEGAL LOCATION: NW SE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2213 LONGITUDE: 96.4645
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: J. KELLEY DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-11-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1727.00 T
TOTAL DRILL HOLE DEPTH: 48 TEST HOLE NUMBER: A1-85-207
USGS HYDROLOGICAL UNIT CODE: 10170202

ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	SAND, BLACK, SILTY, PEBBLY, CLAYEY; MOIST (TOPSOIL)
2 -	18	SILT, LIGHT-GRAY-BROWN, CLAYEY; MOIST (LOESS?)
18 -	48	CLAY, MEDIUM-BROWN, VERY SILTY, PEBBLY; OXIDIZED; MOIST (TILL)

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COUNTY: BROOKINGS LOCATION: 111N-50W-36CDDD
MAP LOCATION: 78
LEGAL LOCATION: SE SE SE SW SEC. 36, T. 111 N., R. 50 W.
LATITUDE: 44.2211 LONGITUDE: 96.4639
LAND OWNER: J. CHRISTOPHERSON
PROJECT: BROOKINGS LANDFILL STUDY
DRILLING COMPANY: SDGS
DRILLER: K. MCINTOSH DRILLER'S LOG:
GEOLOGIST: L. FRYKMAN GEOLOGIST'S LOG: X
DATE DRILLED: 07-17-1985 DRILLING METHOD: AUGER
GROUND SURFACE ELEVATION: 1723.00 T
TOTAL DRILL HOLE DEPTH: 33 TEST HOLE NUMBER: A1-85-224
USGS HYDROLOGICAL UNIT CODE: 10170202
ELECTRIC LOG INFORMATION:
SPONTANEOUS POTENTIAL: SINGLE POINT RESISTIVITY:
NATURAL GAMMA: EXTRA:
SAMPLES:

0 -	2	CLAY, BROWN, VERY SILTY, SANDY (TOPSOIL)
2 -	33	CLAY, TAN-BROWN, VERY SILTY, SANDY, SLIGHTLY PEBBLY; OXIDIZED; MOIST (TILL)

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