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Information Pamphlet No. 30

SAND AND GRAVEL RESOURCES IN
HUGHES COUNTY, SOUTH DAKOTA

by

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United States Geological Survey,
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and Hughes County

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INTRODUCTION

This pamphlet is the first in a series of reports describing the geology and water resources of Hughes County. It is designed to be an uncomplicated, non-technical aid in the search for sand and gravel deposits.

Other reports in the series include:

- a. Availability and quality of water from major aquifers in Hughes County, South Dakota: South Dakota Geological Survey Information Pamphlet no. 29, Hamilton, Louis J., U.S. Geological Survey (in preparation).
- b. Water resources of Hughes County, South Dakota: U.S. Geological Survey Water Resources Investigations Report no. 84, Hamilton, Louis J., (in preparation).
- c. Geology of Hughes County, South Dakota: South Dakota Geological Survey Bulletin no. 36, Duchossois, George (in preparation).

The first report describes the availability, quality, and location of major aquifers (water-bearing deposits) in a short, easy to read pamphlet. The second report describes a more technical and somewhat more exhaustive investigation of the water resources of the County. The third report describes a scientific investigation of the geology of Hughes County.

GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Hughes County were deposited by glacial ice or melt-water streams which covered the region thousands of years ago. Others have been deposited by streams since the retreat of the glaciers. A short description of geologic terms used in this text follows.

Glacial Till

The glaciers were large masses of ice that thousands of years ago, originated from snow accumulations to the north. These glaciers flowed southward to the area which is now Hughes County, picking up earth debris as they went. Some of this debris, a mixture of clay, silt, sand, gravel, and boulders was redeposited directly from the ice. Till, the term used to describe this mixture, is also often called "blue clay" or "boulder clay." In the Hughes County area the till is made up of primarily clay and is not considered a source of sand and gravel. However, small isolated sand and gravel hills or lenses may occur within the till.

Glacial Outwash

Glacial outwash is the term used to describe any deposit of glacial debris which has been washed and sorted by water flowing from melting glacier ice. The grain size of these deposits depends upon the velocity of the water which deposited it and the type of material. Deposits left by a slow flowing stream are made up of primarily silts and clays. Rapidly flowing streams may have left streambeds composed entirely of boulders. Most glacial outwash, however, is made up of an assortment of sand and gravel with minor amounts of finer and coarser materials. Deposits of glacial outwash are the major source of sand and gravel in Hughes County.

Alluvium

Alluvium is the term used to describe the material deposited by streams since the retreat of the glaciers. Grain size of the alluvial deposits is determined by the same factors as glacial outwash. Alluvium is found in the valleys of present-day streams and can often be a good source of sand and gravel.

Terrace Deposits

Terrace deposits are flat-topped alluvial or outwash deposits that are remnants of former flood plains. The streams which originally deposited the material have since cut their channels deeper and developed new flood plains at lower levels. Much of the sand and gravel found in Hughes County occurs in this type of deposit.

Bedrock

Bedrock is defined as the older, consolidated rocks that lie beneath the glacial deposits. In Hughes County, the bedrock directly underlying the glacial deposits is Pierre Shale, a gray to black, very clayey material. It is exposed at the surface in many areas along the Missouri River and other stream valleys in Hughes County. The Pierre Shale, which is several hundred feet thick, contains no deposits of sand and gravel.

EXPLANATION OF TABLES

Table 1 is a list of only those test holes in which sand or gravel was encountered in the upper 25 feet. This table gives the location of the test hole, and the depth and description of the sand and gravel deposits. The complete logs of all the test holes drilled in Hughes County are in the files of the South Dakota Geological Survey. The South Dakota Geological Survey, the United States Geological Survey, the South Dakota Division of Water

Rights, the United States Bureau of Reclamation, and private drillers all contributed test-hole logs to this list.

Table 2 is a list of sand, gravel, and filler pits on file with the South Dakota Division of Highways. This table gives the landowner and location of the pit, the thickness of overburden, the thickness of sand and gravel being mined and the type of aggregate deposit. The actual thickness of a deposit may be greater than that which is listed in the table as being mined.

EXPLANATION OF MAP

The map shows the locations of the test holes and sand and gravel pits. It also shows the towns, major highways, and major lakes, rivers, and creeks.

Test-hole data are shown on the map using three types of symbols. A dot (.) represents a test hole in which sand or gravel was found within 25 feet of the land surface, with less than 5 feet of overburden. A square ([]) indicates that sand or gravel was found within 25 feet of the land surface but there was greater than 5 feet of overburden. These two types of symbols are numbered and the pertinent test-hole information is listed in table 1. The third symbol is an open circle (O), which indicates that no sand or gravel was found within 25 feet of the land surface. Logs of these test holes are available from the South Dakota Geological Survey. Locations of the sand, gravel, and filler pits are indicated by a crossed pick and shovel (X). The pits which are numbered are listed in table 2, and additional information is on file at the Department of Transportation, Division of Highways, in Pierre. No attempt was made to distinguish the inactive pits from the actively mined pits.

To aid in the delineation of the most promising areas of finding sand and gravel, the map has been divided into three area types, "good," "fair," and "poor." These three types of areas were differentiated using test-hole data, sand and gravel pit locations, soil survey information, topographic map and aerial photo interpretation, and field observations. Areas with "good" and "fair" probability of finding sand and gravel have been assigned a letter on the map and are described in the following section.

Sand and gravel deposits found in the "good" areas are generally thick, have very little overburden, and cover a broad area. In these areas, much mining for sand and gravel has already occurred and is occurring at the present time. Sand and gravel deposits found in the "fair" areas are generally thinner, have more overburden, or are laterally discontinuous. There are sand and gravel deposits in the "poor" areas, but a very expensive and exhaustive exploration program would be needed to locate all of these deposits.

Sand and Gravel

Area "A," designated as "good," is a very thick, continuous deposit of sands and gravels. These deposits are terrace deposits formed by the Ancestral Missouri River, an ice-marginal stream valley now occupied by the Missouri River. There is little or no overburden over most of the area. The deposit has a maximum thickness of greater than 100 feet, with an average thickness of about 50 feet for all test holes drilled.

The areas marked "B" and "C" also contain terrace deposits. These areas have been designated as "fair" because they are relatively thin and less continuous. Glacial till and Pierre Shale are found locally at the surface in these areas. Area "C" also represents outwash deposits on the Joe Creek valley floor.

Area "D," designated as "good," is a large terrace deposit of glacial outwash located between Chapelle Creek and South Chapelle Creek. The deposit ranges in thickness from 10 to 34 feet and has an average of about 3 feet of overburden in the test holes drilled.

Area "E" is also a remnant terrace deposit along South Chapelle Creek. It is, however, a very thin deposit and has been designated as "fair."

The areas marked "F," designated as "fair," are found in the Chapelle Creek valley. Although the sand and gravel is very thick in some areas it remains mostly as discontinuous remnants along the valley walls.

Area "G" is a terrace deposit of the Ancestral Missouri River. The area contains very thick deposits of sand and gravel but has been designated as "fair" because of the large thicknesses of overburden, consisting of silts and clays.

The areas marked "H," designated as "fair," contain remnant terrace deposits of the Ancestral Missouri River. These remnants occur as large hills of sand and gravel between which Pierre Shale can be found exposed at the surface.

Area "I," designated as "good," is a very thick, continuous sand and gravel deposit, which occupies the present-day Missouri River Valley floor. The deposit averages about 60 feet in thickness with little or no overburden.

Area "J," designated as "fair," is located in the valley of Medicine Knoll Creek. It contains remnant outwash deposits along the valley floor and remnant terrace deposits along the valley walls. Very coarse gravels were encountered in the test holes drilled in this area.

Area "K," designated as "fair," contains remnant outwash deposits in the valley of Dry Run. Most of the deposit has been

removed by erosion since the time of glaciation, leaving small isolated hills of sand and gravel.

Area "L," designated as "fair," occupies a large depression with an outlet to the south. Fine sand is found around the flanks of the area and also at depth within the area. An average of about 15 feet of silty overburden covers the sand where it was found in the test holes drilled.

Area "M," designated as "fair," contains sand and gravel deposits within the South Fork Medicine Knoll Creek valley. The outwash deposits are found as remnants of terraces along the valley walls and in discontinuous deposits along the valley floor.

The areas marked "N" and "O" contain sand and gravel deposits which occupy the Medicine Knoll Creek Valley. Area "N," designated as "good," is a terrace deposit on the eastern wall of the Medicine Knoll Creek valley. The sands and gravels here are up to 35 feet thick, with little overburden. Extensive mining for sand and gravel has occurred in this area. Area "O," designated as "fair," is made up of outwash deposits on the valley floor and remnant terrace deposits along the valley walls of Medicine Knoll Creek and a small unnamed creek which enters the valley from the northwest. The valley floor has been designated as "fair" because of the large amounts of silty, clayey overburden which covers the sand and gravel.

Area "P," designated as "fair," contains remnant outwash deposits in small knobs along an east-west trending ridge. The area also includes remnant terrace deposits along the valley walls of a small unnamed creek which enters Medicine Knoll Creek from the northeast.

The areas marked "Q" and "R" represent outwash deposits within the Spring Creek valley. The areas marked "Q" are designated as "fair" because the sand and gravel deposits are laterally discontinuous or have a large amount of overburden. The areas marked "R" have been designated as "good," because the sand and gravel deposits are thicker (up to 98 feet), cover a broad area and have less overburden (average of about 5 feet).

Area "S" is a terrace of the Ancestral Missouri River. This deposit has up to 76 feet of sand and gravel but has been designated as "fair" because an average of about 15 feet of silty overburden was encountered in the test holes drilled.

ECONOMIC CONSIDERATIONS

It should be emphasized that this study is quite general and should be used only as a guide to further exploration and development of the sand and gravel resources. Hughes County contains a large amount of unused sand and gravel. The development of a specific site, however, would depend upon material specifications for the desired use, development costs, transportation costs, and future markets.

TABLE 1. LIST OF TEST HOLES IN HUGHES COUNTY, SOUTH DAKOTA,
WHICH CONTAIN SAND OR GRAVEL IN THE UPPER 25 FEET.

LITHOLOGIC DESCRIPTIONS, AS LISTED, HAVE BEEN CONDENSED FROM
DATA CONTAINED IN LOGS ON FILE AT THE SOUTH DAKOTA GEOLOGICAL
SURVEY OFFICE, VERMILLION, SOUTH DAKOTA, AND CONTAIN ONLY
INFORMATION WHICH HAS BEEN DEEMED MOST USEFUL FOR THIS STUDY.
NUMERICAL VALUES INDICATE DEPTH IN FEET BELOW LAND SURFACE.

TEST HOLE NUMBER: 1
LOCATION: 005N-31E-27CADB
LEGAL LOCATION: NW SE NE SW SEC. 27, T. 005 N., R. 31 E.

0 -	9	SAND, LIGHT-BROWN, FINE
9 -	13	SAND, GRAY, VERY COARSE; SOME CLAY
13 -	21	SAND, BROWN, VERY COARSE, GRAVELLY; SOME CLAY, SOME COAL
21 -	24	SAND, DARK-BROWN, VERY COARSE, GRAVELLY; SOME COAL
24 -	26	SAND, GRAYISH-BROWN, MEDIUM TO COARSE; SOME CLAY

* * * *

TEST HOLE NUMBER: 2
LOCATION: 005N-31E-27CDDA
LEGAL LOCATION: NE SE SE SW SEC. 27, T. 005 N., R. 31 E.

0 -	4	SAND, LIGHT-BROWN, FINE
4 -	9	SAND, DARK-BROWN, FINE; SOME CLAY
9 -	14	SAND, DARK-BROWN, COARSE; SOME SHALE PEBBLES
14 -	25	SAND, DARK-BROWN, COARSE TO VERY COARSE, GRAVELLY
25 -	34	SAND, GRAY, FINE TO VERY COARSE, CLAYEY

* * * *

TEST HOLE NUMBER: 3
LOCATION: 005N-31E-27CDDC
LEGAL LOCATION: SW SE SE SW SEC. 27, T. 005 N., R. 31 E.

0 -	10	SAND, LIGHT-BROWN, FINE; SOME CLAY AT 5 FEET
10 -	20	SAND, DARK-BROWN, MEDIUM TO COARSE
20 -	27	SAND, DARK-GRAY, FINE

* * * *

TEST HOLE NUMBER: 4
LOCATION: 005N-31E-27DCBB
LEGAL LOCATION: NW NW SW SE SEC. 27, T. 005 N., R. 31 E.

0 -	6	SAND, LIGHT-BROWN, VERY FINE TO FINE
6 -	10	SAND, BROWN, COARSE TO VERY COARSE
10 -	17	SAND, BROWN, VERY COARSE, GRAVELLY
17 -	21	SAND, BLACKISH-BROWN, VERY COARSE
21 -	31	SAND, BLACKISH-BROWN, MEDIUM TO COARSE

* * * *

TEST HOLE NUMBER: 5
LOCATION: 005N-31E-27DCBB
LEGAL LOCATION: NW SE SW SE SEC. 27, T. 005 N., R. 31 E.

9 -	15	SAND, DARK-BROWN, COARSE; SOME CLAY
15 -	24	SAND, BLACKISH-BROWN, VERY COARSE
24 -	31	SAND, BLACKISH-BROWN, MEDIUM; SOME CLAY

* * * *

TEST HOLE NUMBER: 6
LOCATION: 005N-31E-34AAAB
LEGAL LOCATION: NW NE NE NE SEC. 34, T. 005 N., R. 31 E.

0 -	4	SAND, DARK-BROWN, VERY FINE TO FINE
12 -	19	SAND, BROWNISH-GRAY, VERY FINE TO MEDIUM
19 -	31	SAND, LIGHT-GRAY, MEDIUM TO VERY COARSE

* * * *

TEST HOLE NUMBER: 7
LOCATION: 005N-31E-34ACBB
LEGAL LOCATION: NW NW SW NE SEC. 34, T. 005 N., R. 31 E.

8 -	19	SAND, BROWN, COARSE TO VERY COARSE; SOME GRAVEL
19 -	25	SAND, GRAY, VERY COARSE; SOME CLAY
25 -	33	SAND, LIGHT-BROWN, MEDIUM TO COARSE; SOME GRAVEL, SOME COAL

* * * *

TEST HOLE NUMBER: 8
LOCATION: 005N-31E-34ADAB
LEGAL LOCATION: NW NE SE NE SEC. 34, T. 005 N., R. 31 E.

0 - 7 SAND, LIGHT-BROWN, VERY FINE; CLAY AT 4 FEET
7 - 11 SAND, DARK-BROWN, MEDIUM TO COARSE
11 - 28 SAND, BROWN, MEDIUM TO VERY COARSE, GRAVELLY AT 15 FEET; SOME CLAY

* * * *

TEST HOLE NUMBER: 9
LOCATION: 005N-31E-35BBCA
LEGAL LOCATION: NE SW NW NW SEC. 35, T. 005 N., R. 31 E.

0 - 3 SAND, LIGHT-BROWN, FINE
3 - 20 SAND, DARK-BROWN, COARSE TO VERY COARSE; SOME GRAVEL
20 - 25 SAND, DARK-BROWN, FINE TO MEDIUM; SOME GRAVEL, SOME CLAY
25 - 26 GRAVEL, DARK-BROWN, FINE; SOME COAL

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TEST HOLE NUMBER: 10
LOCATION: 005N-31E-35BDAB
LEGAL LOCATION: NW NE SE NW SEC. 35, T. 005 N., R. 31 E.

1 - 7 SAND, LIGHT-BROWN, VERY FINE, SILTY
9 - 14 SAND, GRAYISH-BROWN, COARSE TO VERY COARSE
14 - 21 SAND, LIGHT-BROWN, MEDIUM TO COARSE
21 - 30 SAND, LIGHT-BROWN, COARSE TO VERY COARSE; SOME CLAY

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TEST HOLE NUMBER: 11
LOCATION: 005N-31E-35CADA
LEGAL LOCATION: NE SE NE SW SEC. 35, T. 005 N., R. 31 E.

0 - 11 SAND, BROWN, FINE, CLAYEY AT 4 FEET
11 - 13 SAND, BROWN, MEDIUM TO COARSE; SOME CLAY
13 - 20 SAND, GRAY, COARSE, CLAYEY; SOME COAL
20 - 30 SAND, GRAY, COARSE TO VERY COARSE; SOME GRAVEL, SOME COAL

* * * *

TEST HOLE NUMBER: 12
LOCATION: 005N-31E-35DADC
LEGAL LOCATION: SW SE NE SE SEC. 35, T. 005 N., R. 31 E.

0 - 9 SAND, BROWN, VERY FINE, CLAYEY
 9 - 14 SAND, BROWN, COARSE TO VERY COARSE; SOME
 GRAVEL
 14 - 22 SAND, BROWN, FINE TO COARSE; SOME GRAVEL
 22 - 33 SAND, BROWN, VERY COARSE

* * * *

TEST HOLE NUMBER: 13
 LOCATION: 005N-31E-35DBAA
 LEGAL LOCATION: NE NE NW SE SEC. 35, T. 005 N., R. 31 E.

0 - 8 SAND, BROWN, VERY FINE; SOME CLAY
 8 - 14 SAND, BROWN, VERY FINE TO MEDIUM; SOME
 CLAY
 14 - 20 SAND, BROWN, VERY COARSE, GRAVELLY
 20 - 34 SAND, BLACKISH-GRAY, COARSE TO VERY
 COARSE; SOME COAL

* * * *

TEST HOLE NUMBER: 14
 LOCATION: 005N-31E-35DCAA
 LEGAL LOCATION: NE NE SW SE SEC. 35, T. 005 N., R. 31 E.

0 - 5 SAND, LIGHT-BROWN, VERY FINE
 5 - 10 SAND, LIGHT-BROWN, FINE, CLAYEY
 10 - 30 SAND, DARK-GRAY, VERY COARSE; SOME CLAY

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TEST HOLE NUMBER: 15
 LOCATION: 005N-31E-36CCBA
 LEGAL LOCATION: NE NW SW SW SEC. 36, T. 005 N., R. 31 E.

0 - 3 SAND, LIGHT-BROWN, VERY FINE
 6 - 23 SAND, BROWN, COARSE TO VERY COARSE,
 GRAVELLY AT 16 FEET
 23 - 32 SAND, DARK-BROWN, VERY COARSE, GRAVELLY
 AT 28 FEET; SOME COAL

* * * *

TEST HOLE NUMBER: 16
 LOCATION: 108N-73W-17CCCC
 LEGAL LOCATION: SW SW SW SW SEC. 17, T. 108 N., R. 73 W.

9 - 12 SAND, BROWN, FINE
12 - 15 GRAVEL AND SAND, BROWN, SAND IS VERY
COARSE

* * * *

TEST HOLE NUMBER: 17
LOCATION: 108N-73W-18CCCC
LEGAL LOCATION: SW SW SW SW SEC. 18, T. 108 N., R. 73 W.

0 - 7 SAND, LIGHT-BROWN, FINE, SILTY
18 - 29 SAND, DARK-BROWN, MEDIUM TO COARSE,
SILTY; SATURATED

* * * *

TEST HOLE NUMBER: 18
LOCATION: 108N-73W-19BAAC
LEGAL LOCATION: SW NE NE NW SEC. 19, T. 108 N., R. 73 W.

14 - 65 SAND, LIGHT-BROWN, FINE TO MEDIUM,
CLAYEY FROM 17 TO 22 FEET, GRAVELLY
AT 54, 60, AND 62 FEET, WELL SORTED;
SATURATED AT 15 FEET

* * * *

TEST HOLE NUMBER: 19
LOCATION: 108N-73W-19CCCC
LEGAL LOCATION: SW SW SW SW SEC. 19, T. 108 N., R. 73 W.

0 - 6 SAND, LIGHT-BROWN, FINE, SILTY
6 - 19 SAND, YELLOWISH-BROWN, FINE, SILTY
19 - 34 SAND, DARK-BROWN, COARSE TO VERY COARSE;
SATURATED AT 27 FEET

* * * *

TEST HOLE NUMBER: 20
LOCATION: 108N-73W-19DAAC
LEGAL LOCATION: SW NE NE SE SEC. 19, T. 108 N., R. 73 W.

0 - 17 SAND, LIGHT-TAN, FINE, SILTY (LOESS)
17 - 60 GRAVEL, MEDIUM-BROWN, FINE TO VERY
COARSE, VERY SANDY, SILTY; SATURATED,
SOME CLAYEY ZONES

* * * *

TEST HOLE NUMBER: 21
LOCATION: 108N-73W-19DDDD
LEGAL LOCATION: SE SE SE SE SEC. 19, T. 108 N., R. 73 W.

0 - 10 SAND, LIGHT-BROWN, FINE, SILTY (LOESS)
10 - 85 GRAVEL, YELLOWISH-BROWN, FINE TO COARSE,
SANDY, SILTY, WELL SORTED; SATURATED AT
21 FEET

* * * *

TEST HOLE NUMBER: 22
LOCATION: 108N-73W-28CCCC
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 108 N., R. 73 W.

7 - 10 SAND, LIGHT-BROWN, FINE, CLAYEY, GRAVELLY
AT 8 FEET

* * * *

TEST HOLE NUMBER: 23
LOCATION: 108N-73W-29BAAA
LEGAL LOCATION: NE NE NE NW SEC. 29, T. 108 N., R. 73 W.

0 - 6 SAND, TAN, FINE, SILTY, CLAYEY; MOIST
(LOESS)
6 - 10 SAND, MEDIUM-BROWN, FINE TO COARSE,
SILTY; SATURATED
10 - 18 SAND, MEDIUM-BROWN, MEDIUM, SILTY;
SATURATED
18 - 35 SAND, MEDIUM-BROWN, GRAVELLY; SATURATED

* * * *

TEST HOLE NUMBER: 24
LOCATION: 108N-73W-29DBBB
LEGAL LOCATION: NW NW NW SE SEC. 29, T. 108 N., R. 73 W.

0 - 10 SAND, LIGHT-TAN, FINE TO MEDIUM, SILTY
(LOESS)
10 - 36 GRAVEL, DARK-BROWN, FINE TO COARSE,
COBBLY, SANDY, SILTY; SATURATED AT 15
FEET

* * * *

TEST HOLE NUMBER: 25
LOCATION: 108N-73W-29DCCC

LEGAL LOCATION: SW SW SW SE SEC. 29, T. 108 N., R. 73 W.

0 - 5 SAND, TAN, FINE, SILTY (LOESS)
5 - 14 SAND, MEDIUM-YELLOWISH-BROWN, FINE TO
MEDIUM, PEBBLY
14 - 63 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY,
SILTY

* * * *

TEST HOLE NUMBER: 26
LOCATION: 108N-73W-30DDDD 1
LEGAL LOCATION: SE SE SE SE SEC. 30, T. 108 N., R. 73 W.

0 - 1 SAND, LIGHT-BROWN, FINE, SILTY (LOESS)
1 - 12 SAND, MEDIUM-YELLOWISH-BROWN, MEDIUM TO
COARSE, VERY GRAVELLY
12 - 30 GRAVEL, MEDIUM-YELLOWISH-BROWN, FINE,
SANDY; SOME COARSE GRAVEL

* * * *

TEST HOLE NUMBER: 27
LOCATION: 108N-73W-30DDDD 2
LEGAL LOCATION: SE SE SE SE SEC. 30, T. 108 N., R. 73 W.

2 - 20 SAND AND GRAVEL, MEDIUM SAND TO VERY
COARSE PEBBLE GRAVEL
20 - 85 SAND, FINE TO MEDIUM; SOME LAYERS OF
COARSE PEBBLE GRAVEL

* * * *

TEST HOLE NUMBER: 28
LOCATION: 108N-73W-31AAAA
LEGAL LOCATION: NE NE NE NE SEC. 31, T. 108 N., R. 73 W.

3 - 58 GRAVEL, REDDISH-BROWN, MEDIUM TO COARSE,
SANDY

* * * *

TEST HOLE NUMBER: 29
LOCATION: 108N-73W-31ADDD
LEGAL LOCATION: SE SE SE NE SEC. 31, T. 108 N., R. 73 W.

0 - 3 SAND, TAN, FINE, SILTY (LOESS)

3 - 24 GRAVEL, MEDIUM-BROWN, MEDIUM TO COARSE,
VERY SANDY, SILTY, COBBLY
24 - 53 GRAVEL, MEDIUM-BROWN, FINE TO MEDIUM,
SANDY, WELL SORTED; CLEAN

* * * *

TEST HOLE NUMBER: 30
LOCATION: 108N-73W-31CCBB
LEGAL LOCATION: NW NW SW SW SEC. 31, T. 108 N., R. 73 W.

0 - 5 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
5 - 40 GRAVEL, BROWN, MEDIUM TO COARSE, COBBLY

* * * *

TEST HOLE NUMBER: 31
LOCATION: 108N-73W-31DADD
LEGAL LOCATION: SE SE NE SE SEC. 31, T. 108 N., R. 73 W.

0 - 4 SAND, TAN, FINE, SILTY; MOIST (LOESS)
4 - 27 GRAVEL, MEDIUM-BROWN, FINE TO COARSE,
SANDY, COBBLY, SILTY

* * * *

TEST HOLE NUMBER: 32
LOCATION: 108N-73W-32CAA
LEGAL LOCATION: NE NE NE SW SEC. 32, T. 108 N., R. 73 W.

0 - 6 SAND, LIGHT-TAN, FINE, SILTY (LOESS)
6 - 10 SAND, LIGHT-BROWN, COARSE, WELL SORTED;
CLEAN, MOIST
10 - 23 GRAVEL, MEDIUM-BROWN, FINE TO COARSE,
SANDY
23 - 25 SAND, MEDIUM-BROWN, MEDIUM TO COARSE,
WELL SORTED
25 - 32 GRAVEL, MEDIUM-BROWN, FINE TO COARSE,
SANDY, COBBLY; SATURATED

* * * *

TEST HOLE NUMBER: 33
LOCATION: 108N-74W-08BCCC
LEGAL LOCATION: SW SW SW NW SEC. 08, T. 108 N., R. 74 W.

3 - 8 GRAVEL, LIGHT-BROWN, CLAYEY; DRY,
OXIDIZED

8 - 10 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 34
LOCATION: 108N-74W-09ADDD
LEGAL LOCATION: SE SE SE NE SEC. 09, T. 108 N., R. 74 W.

0 - 1 SAND, VERY LIGHT-BROWN, FINE, SILTY
(LOESS)
1 - 9 SAND, DARK-YELLOW, FINE TO MEDIUM, WELL
SORTED

* * * *

TEST HOLE NUMBER: 35
LOCATION: 108N-74W-10BBCD
LEGAL LOCATION: SE SW NW NW SEC. 10, T. 108 N., R. 74 W.

14 - 19 GRAVEL, BROWN, CLAYEY; DRY, MOIST AT 17
FEET
21 - 22 SAND, BROWN, GRAVELLY; SATURATED

* * * *

TEST HOLE NUMBER: 36
LOCATION: 108N-74W-10BCDA
LEGAL LOCATION: NE SE SW NW SEC. 10, T. 108 N., R. 74 W.

0 - 11 SAND, BROWN, CLAYEY; DRY, MOIST AT 8 FEET
11 - 21 SAND, BROWN, FINE TO MEDIUM, GRAVELLY;
MOIST
21 - 26 SAND, BROWN, FINE TO MEDIUM, CLAYEY;
MOIST

* * * *

TEST HOLE NUMBER: 37
LOCATION: 108N-74W-10BCDD
LEGAL LOCATION: SE SE SW NW SEC. 10, T. 108 N., R. 74 W.

8 - 10 SAND, BROWN, FINE TO MEDIUM, GRAVELLY;
DRY
10 - 16 SAND, BROWN, FINE TO MEDIUM, GRAVELLY;
MOIST
16 - 21 SAND, BROWN, FINE TO MEDIUM; MOIST
21 - 28 SAND, BROWN, FINE TO MEDIUM, GRAVELLY;
MOIST

* * * *

TEST HOLE NUMBER: 38
LOCATION: 108N-74W-10CBAD
LEGAL LOCATION: SE NE NW SW SEC. 10, T. 108 N., R. 74 W.

0 - 20 SAND, BROWN, SILTY; DRY

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TEST HOLE NUMBER: 39
LOCATION: 108N-74W-13CCCC
LEGAL LOCATION: SW SW SW SW SEC. 13, T. 108 N., R. 74 W.

0 - 7 SAND, LIGHT-BROWN, FINE, SILTY (LOESS)
7 - 17 SAND, YELLOWISH-BROWN, FINE, SILTY,
CLAYEY
17 - 23 SAND, LIGHT-TAN, FINE, SILTY, CLAYEY

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TEST HOLE NUMBER: 40
LOCATION: 108N-74W-14CCCC
LEGAL LOCATION: SW SW SW SW SEC. 14, T. 108 N., R. 74 W.

0 - 6 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
6 - 10 GRAVEL, LIGHT-YELLOWISH-BROWN, FINE, VERY
SANDY, SILTY, CLAYEY
10 - 16 SAND, LIGHT-YELLOWISH-BROWN, MEDIUM TO
VERY COARSE, SILTY
16 - 32 GRAVEL, DARK-BROWN, COARSE, VERY SANDY,
SILTY, COBBLY

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TEST HOLE NUMBER: 41
LOCATION: 108N-74W-15ABAA
LEGAL LOCATION: NE NE NW NE SEC. 15, T. 108 N., R. 74 W.

0 - 2 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
2 - 7 GRAVEL, LIGHT-TAN, MEDIUM TO COARSE,
SANDY
7 - 10 SAND, LIGHT-TAN, FINE TO MEDIUM
10 - 30 GRAVEL, MEDIUM-BROWN, FINE TO COARSE,
VERY SANDY, SILTY, CLAYEY; DRY, SOME
COBBLES

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TEST HOLE NUMBER: 42
LOCATION: 108N-74W-15CDCD
LEGAL LOCATION: SE SW SE SW SEC. 15, T. 108 N., R. 74 W.

2 - 10 GRAVEL, YELLOWISH-BROWN, COARSE, SANDY,
SILTY, CLAYEY
10 - 19 SAND, MEDIUM-BROWN, COARSE TO VERY
COARSE, SILTY, GRAVELLY, CLAYEY
19 - 27 SAND, MEDIUM-BROWN, MEDIUM TO VERY
COARSE, VERY SILTY, CLAYEY; SOME GRAVEL

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TEST HOLE NUMBER: 43
LOCATION: 108N-74W-17CCCB
LEGAL LOCATION: NW SW SW SW SEC. 17, T. 108 N., R. 74 W.

24 - 33 GRAVEL, COARSE, SILTY, CLAYEY; AUGER
CAUGHT ON ROCKS, ABANDONED HOLE

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TEST HOLE NUMBER: 44
LOCATION: 108N-74W-17DDDC
LEGAL LOCATION: SW SE SE SE SEC. 17, T. 108 N., R. 74 W.

8 - 20 SAND, REDDISH-BROWN, SILTY, PEBBLY,
POORLY SORTED
20 - 24 GRAVEL, BROWN, COBBLY, POORLY SORTED

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TEST HOLE NUMBER: 45
LOCATION: 108N-74W-20ABBB
LEGAL LOCATION: NW NW NW NE SEC. 20, T. 108 N., R. 74 W.

4 - 33 GRAVEL, FINE TO MEDIUM PEBBLE; WIDE
VARIETY OF ROCK TYPES, SEVERAL CLAY
LAYERS

* * * *

TEST HOLE NUMBER: 46
LOCATION: 108N-74W-21AAAA
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 108 N., R. 74 W.

1 - 36 SAND, BROWN, FINE TO MEDIUM; SOME MEDIUM

PEBBLES IN TOP 3 FEET, SOME THIN GRAVEL
LENSES THROUGHOUT, PEBBLES ARE MOSTLY
QUARTZ, SHALE, AND SEDIMENTARY ROCKS

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TEST HOLE NUMBER: 47
LOCATION: 108N-74W-21ABBA
LEGAL LOCATION: NE NW NW NE SEC. 21, T. 108 N., R. 74 W.

0 - 2 GRAVEL, COARSE; SOME COBBLES, DRY
2 - 15 SAND, REDDISH-BROWN, COARSE, SILTY; DRY

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TEST HOLE NUMBER: 48
LOCATION: 108N-74W-22AABA
LEGAL LOCATION: NE NW NE NE SEC. 22, T. 108 N., R. 74 W.

23 - 24 GRAVEL, BROWN, SILTY, POORLY SORTED;
MOIST

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TEST HOLE NUMBER: 49
LOCATION: 108N-74W-22ADDD
LEGAL LOCATION: SE SE SE NE SEC. 22, T. 108 N., R. 74 W.

0 - 1 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
1 - 12 GRAVEL, MEDIUM-BROWN, COARSE, SANDY,
SILTY, COBBLY

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TEST HOLE NUMBER: 50
LOCATION: 108N-74W-22DDDD
LEGAL LOCATION: SE SE SE SE SEC. 22, T. 108 N., R. 74 W.

22 - 67 SAND, LIGHT-BROWN, MEDIUM TO VERY COARSE,
CLAYEY, SILTY; GRAVEL FROM 22 TO 24
FEET AND 27 TO 32 FEET, ABANDONED HOLE

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TEST HOLE NUMBER: 51
LOCATION: 108N-74W-23CCCC
LEGAL LOCATION: SW SW SW SW SEC. 23, T. 108 N., R. 74 W.

20 - 23 GRAVEL, COARSE
25 - 26 GRAVEL, COARSE

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TEST HOLE NUMBER: 52
LOCATION: 108N-74W-23DDDD
LEGAL LOCATION: SE SE SE SE SEC. 23, T. 108 N., R. 74 W.

0 - 1 SAND, LIGHT-BROWN, FINE, SILTY (LOESS)
1 - 36 GRAVEL, YELLOWISH-BROWN, COARSE, SANDY,
SILTY, CLAYEY, POORLY SORTED; SOME
COBBLES

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TEST HOLE NUMBER: 53
LOCATION: 108N-74W-24BBBB
LEGAL LOCATION: NW NW NW NW SEC. 24, T. 108 N., R. 74 W.

4 - 7 SAND, BROWN, FINE; DAMP, DIRTY
7 - 8 GRAVEL, COARSE; DIRTY, DRY
8 - 17 SAND, BROWN, MEDIUM; DIRTY
24 - 25 GRAVEL, COARSE; DIRTY
25 - 47 SAND, LIGHT-YELLOWISH-BROWN, FINE TO
MEDIUM; DIRTY, SATURATED, CALCAREOUS

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TEST HOLE NUMBER: 54
LOCATION: 108N-74W-24BBCB
LEGAL LOCATION: NW SW NW NW SEC. 24, T. 108 N., R. 74 W.

0 - 24 SAND AND GRAVEL, MEDIUM SAND TO FINE
PEBBLE GRAVEL; WIDE VARIETY OF ROCK
TYPES WITH SOME SHALE

* * * *

TEST HOLE NUMBER: 55
LOCATION: 108N-74W-25CCCC 1
LEGAL LOCATION: SW SW SW SW SEC. 25, T. 108 N., R. 74 W.

5 - 66 GRAVEL, MEDIUM-BROWN, COARSE, SANDY,
SILTY, CLAYEY, POORLY SORTED

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TEST HOLE NUMBER: 56
LOCATION: 108N-74W-25CCCC 2
LEGAL LOCATION: SW SW SW SW SEC. 25, T. 108 N., R. 74 W.

0 - 58 GRAVEL, REDDISH-BROWN, FINE TO COARSE,
SILTY, SANDY, POORLY SORTED

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TEST HOLE NUMBER: 57
LOCATION: 108N-74W-25CCCC 3
LEGAL LOCATION: SW SW SW SW SEC. 25, T. 108 N., R. 74 W.

1 - 50 SAND AND GRAVEL, MEDIUM SAND TO COARSE
PEBBLE GRAVEL

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TEST HOLE NUMBER: 58
LOCATION: 108N-74W-25DDDD
LEGAL LOCATION: SE SE SE SE SEC. 25, T. 108 N., R. 74 W.

4 - 6 GRAVEL, FINE TO MEDIUM
6 - 18 SAND, MEDIUM-BROWN, COARSE TO VERY
COARSE, SILTY, CLAYEY
18 - 38 GRAVEL, MEDIUM-BROWN, COARSE, SANDY,
SILTY, CLAYEY

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TEST HOLE NUMBER: 59
LOCATION: 108N-74W-26AAAD
LEGAL LOCATION: SE NE NE NE SEC. 26, T. 108 N., R. 74 W.

0 - 55 SAND, REDDISH-BROWN, VERY GRAVELLY; SOME
CLAY, COARSE GRAVEL AT 28 FEET

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TEST HOLE NUMBER: 60
LOCATION: 108N-75W-07AAAA
LEGAL LOCATION: NE NE NE NE SEC. 07, T. 108 N., R. 75 W.

7 - 11 SAND, YELLOWISH-BROWN, FINE TO COARSE;
SOME FINE GRAVEL
11 - 36 GRAVEL, LIGHT-BROWN, FINE, SANDY; DRY,
SOME COARSE GRAVEL

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TEST HOLE NUMBER: 61
LOCATION: 108N-75W-07CDDD
LEGAL LOCATION: SE SE SE SW SEC. 07, T. 108 N., R. 75 W.

0 - 12 SAND, LIGHT-BROWN, VERY FINE, SILTY,
CLAYEY (LOESS)
12 - 54 GRAVEL, MEDIUM-BROWN, FINE TO VERY
COARSE, SANDY, SILTY

* * * *

TEST HOLE NUMBER: 62
LOCATION: 108N-75W-07DDDD
LEGAL LOCATION: SE SE SE SE SEC. 07, T. 108 N., R. 75 W.

25 - 28 GRAVEL, MEDIUM-BROWN, COARSE, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 63
LOCATION: 108N-75W-10AAAA
LEGAL LOCATION: NE NE NE NE SEC. 10, T. 108 N., R. 75 W.

12 - 21 GRAVEL, FINE TO MEDIUM PEBBLES; ALL
CLASTS ARE SHALE OR CONCRETIONS (BEACH
DEPOSIT?)

* * * *

TEST HOLE NUMBER: 64
LOCATION: 108N-75W-10CCCC
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 108 N., R. 75 W.

0 - 2 SAND, LIGHT-TAN, FINE, SILTY (LOESS)
2 - 9 SAND, LIGHT-TAN, FINE TO MEDIUM; SOME
SILT
9 - 11 SAND, DARK-BROWN, FINE TO COARSE;
CEMENTED WITH CLAY
11 - 47 SAND, YELLOWISH-BROWN, FINE, SILTY;
SATURATED AT 16 FEET

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TEST HOLE NUMBER: 65

LOCATION: 108N-75W-12CADB

LEGAL LOCATION: NW SE NE SW SEC. 12, T. 108 N., R. 75 W.

4 - 12 GRAVEL, BROWN, COARSE, SANDY; DRY,
OXIDIZED
23 - 28 SAND, GRAY, MEDIUM, CLAYEY; SATURATED,
UNOXIDIZED

* * * *

TEST HOLE NUMBER: 66

LOCATION: 108N-75W-12CBDD

LEGAL LOCATION: SE SE NW SW SEC. 12, T. 108 N., R. 75 W.

18 - 26 GRAVEL, BROWN, COARSE; DRY, OXIDIZED,
ABANDONED HOLE

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TEST HOLE NUMBER: 67

LOCATION: 108N-75W-13BBBB

LEGAL LOCATION: NW NW NW NW SEC. 13, T. 108 N., R. 75 W.

0 - 3 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
3 - 15 SAND, LIGHT-BROWN, VERY FINE, SILTY,
CLAYEY (LOESS)

* * * *

TEST HOLE NUMBER: 68

LOCATION: 108N-75W-13CCCD

LEGAL LOCATION: SE SW SW SW SEC. 13, T. 108 N., R. 75 W.

4 - 5 GRAVEL, COARSE; DRY
5 - 10 SAND, REDDISH-BROWN; DRY
18 - 19 GRAVEL, COARSE
19 - 34 SAND, REDDISH-BROWN, SILTY; SOME GRAVEL

* * * *

TEST HOLE NUMBER: 69

LOCATION: 108N-75W-13CDBA

LEGAL LOCATION: NE NW SE SW SEC. 13, T. 108 N., R. 75 W.

0 - 3 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)

3 - 19 SAND, MEDIUM-BROWN, COARSE TO VERY
COARSE; SOME GRAVEL, SATURATED AT 15
FEET

* * * *

TEST HOLE NUMBER: 70
LOCATION: 108N-75W-13DDDD
LEGAL LOCATION: SE SE SE SE SEC. 13, T. 108 N., R. 75 W.

0 - 5 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
11 - 51 GRAVEL, MEDIUM-BROWN, FINE TO MEDIUM,
SANDY, SILTY, CLAYEY; SOME COBBLES

* * * *

TEST HOLE NUMBER: 71
LOCATION: 108N-75W-15CCCC
LEGAL LOCATION: SW SW SW SW SEC. 15, T. 108 N., R. 75 W.

9 - 11 SAND, REDDISH-BROWN, COARSE
11 - 17 GRAVEL, COARSE; HIT ROCK, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 72
LOCATION: 108N-75W-16DDDD
LEGAL LOCATION: SE SE SE SE SEC. 16, T. 108 N., R. 75 W.

0 - 7 SAND, LIGHT-BROWN, FINE, SILTY, PEBBLY
7 - 27 GRAVEL, REDDISH-BROWN, COARSE, SANDY

* * * *

TEST HOLE NUMBER: 73
LOCATION: 108N-75W-17DCCC
LEGAL LOCATION: SW SW SW SE SEC. 17, T. 108 N., R. 75 W.

0 - 4 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
4 - 32 GRAVEL, LIGHT-BROWN, VERY COARSE, SANDY

* * * *

TEST HOLE NUMBER: 74
LOCATION: 108N-75W-18AAAA
LEGAL LOCATION: NE NE NE NE SEC. 18, T. 108 N., R. 75 W.

18 - 22 GRAVEL, MEDIUM-BROWN, FINE TO VERY
COARSE, VERY COBBLY, SILTY, CLAYEY;
TIGHT
22 - 32 GRAVEL, MEDIUM-BROWN, MEDIUM, SANDY, WELL
SORTED

* * * *

TEST HOLE NUMBER: 75
LOCATION: 108N-75W-18ADDD
LEGAL LOCATION: SE SE SE NE SEC. 18, T. 108 N., R. 75 W.

0 - 3 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
3 - 15 SAND, MEDIUM-BROWN, FINE, SILTY, CLAYEY;
SOME GRAVEL, SOME COBBLES, HIT ROCK,
ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 76
LOCATION: 108N-75W-19AAAA
LEGAL LOCATION: NE NE NE NE SEC. 19, T. 108 N., R. 75 W.

0 - 3 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
3 - 14 SAND, LIGHT-BROWN, VERY FINE, SILTY,
CLAYEY; MOIST
14 - 45 GRAVEL, MEDIUM-BROWN, DARK-BROWN AT 27
FEET, COARSE, SANDY, SILTY, CLAYEY

* * * *

TEST HOLE NUMBER: 77
LOCATION: 108N-75W-19DAAA
LEGAL LOCATION: NE NE NE SE SEC. 19, T. 108 N., R. 75 W.

0 - 18 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
18 - 27 GRAVEL, LIGHT-BROWN, FINE TO VERY COARSE,
COBBLY; CLEAN, DRY

* * * *

TEST HOLE NUMBER: 78
LOCATION: 108N-75W-20AAAA
LEGAL LOCATION: NE NE NE NE SEC. 20, T. 108 N., R. 75 W.

0 - 2 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
2 - 7 GRAVEL, COARSE TO VERY COARSE
7 - 12 SAND, MEDIUM-BROWN, FINE TO MEDIUM,
SILTY, GRAVELLY
12 - 67 GRAVEL, MEDIUM-BROWN, COARSE TO VERY
COARSE, VERY SANDY; SOME COBBLES

* * * *

TEST HOLE NUMBER: 79
LOCATION: 108N-75W-20ADDD
LEGAL LOCATION: SE SE SE NE SEC. 20, T. 108 N., R. 75 W.

0 - 8 SAND, DARK-BROWN, VERY FINE, SILTY; MOIST
(LOESS)
8 - 20 GRAVEL, MEDIUM-BROWN, MEDIUM TO VERY
COARSE, VERY SANDY; SATURATED AT 19
FEET

* * * *

TEST HOLE NUMBER: 80
LOCATION: 108N-75W-21BBBB
LEGAL LOCATION: NW NW NW NW SEC. 21, T. 108 N., R. 75 W.

0 - 37 GRAVEL, MEDIUM PEBBLES TO COBBLES; WIDE
VARIETY OF ROCK TYPES, DRY(?)

* * * *

TEST HOLE NUMBER: 81
LOCATION: 108N-75W-22AAAA
LEGAL LOCATION: NE NE NE NE SEC. 22, T. 108 N., R. 75 W.

0 - 5 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
5 - 54 GRAVEL, LIGHT-BROWN, FINE TO COARSE, WELL
SORTED

* * * *

TEST HOLE NUMBER: 82
LOCATION: 108N-75W-22CBCC
LEGAL LOCATION: SW SW NW SW SEC. 22, T. 108 N., R. 75 W.

- 0 - 6 SAND, LIGHT-BROWN, VERY FINE, SILTY,
CLAYEY (LOESS)
6 - 16 GRAVEL, MEDIUM TO COARSE; LOOSE, DRY

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TEST HOLE NUMBER: 83
LOCATION: 108N-75W-23BBBB
LEGAL LOCATION: NW NW NW NW SEC. 23, T. 108 N., R. 75 W.

- 5 - 13 GRAVEL, REDDISH-BROWN, FINE TO COARSE,
SANDY, CLAYEY; MOIST, OXIDIZED
13 - 17 SAND, DARK-BROWN, COARSE, CLAYEY, PEBBLY;
MOIST, OXIDIZED
17 - 21 GRAVEL, REDDISH-BROWN, CLAYEY, SANDY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 84
LOCATION: 108N-75W-23BCCC
LEGAL LOCATION: SW SW SW NW SEC. 23, T. 108 N., R. 75 W.

- 0 - 3 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
3 - 14 GRAVEL, LIGHT-BROWN, FINE TO VERY COARSE,
SANDY, COBBLY; LOOSE, DRY

* * * *

TEST HOLE NUMBER: 85
LOCATION: 108N-75W-24ABAB
LEGAL LOCATION: NW NE NW NE SEC. 24, T. 108 N., R. 75 W.

- 6 - 12 GRAVEL, YELLOWISH-BROWN, VERY COARSE,
SANDY, SILTY, CLAYEY; SATURATED

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TEST HOLE NUMBER: 86
LOCATION: 108N-75W-24ABBC
LEGAL LOCATION: SW NW NW NE SEC. 24, T. 108 N., R. 75 W.

- 4 - 13 GRAVEL, BROWN, FINE TO MEDIUM, SILTY,
SANDY, POORLY SORTED; OXIDIZED

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TEST HOLE NUMBER: 87
LOCATION: 108N-75W-24ACBA
LEGAL LOCATION: NE NW SW NE SEC. 24, T. 108 N., R. 75 W.

12 - 20 SAND, BROWN, FINE TO MEDIUM, GRAVELLY;
MOIST, SATURATED AT 15 FEET
20 - 27 SAND, BROWN, FINE TO MEDIUM; SOME GRAVEL,
SATURATED

* * * *

TEST HOLE NUMBER: 88
LOCATION: 108N-75W-24BBBB
LEGAL LOCATION: NW NW NW NW SEC. 24, T. 108 N., R. 75 W.

7 - 75 SAND, FINE TO COARSE; SOME LAYERS OF FINE
TO MEDIUM GRAVEL, A FEW THIN CLAY
LENSES BETWEEN 20 AND 40 FEET, MANY
QUARTZ CLASTS WITH SOME SHALE,
OTHER ROCK TYPES VARY, DRY(?)

* * * *

TEST HOLE NUMBER: 89
LOCATION: 108N-75W-24BDDD
LEGAL LOCATION: SE SE SE NW SEC. 24, T. 108 N., R. 75 W.

0 - 5 GRAVEL, COARSE
5 - 22 SAND, REDDISH-BROWN, COARSE, SILTY
22 - 27 GRAVEL, COARSE

* * * *

TEST HOLE NUMBER: 90
LOCATION: 108N-76W-01DDDD
LEGAL LOCATION: SE SE SE SE SEC. 01, T. 108 N., R. 76 W.

0 - 14 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
14 - 19 SAND, LIGHT-BROWN, FINE, WELL SORTED
23 - 52 GRAVEL, MEDIUM TO VERY COARSE, SANDY,
SILTY, COBBLY

* * * *

TEST HOLE NUMBER: 91
LOCATION: 108N-76W-12DDDD
LEGAL LOCATION: SE SE SE SE SEC. 12, T. 108 N., R. 76 W.

0 - 18 SAND, LIGHT-BROWN, VERY FINE, SILTY
(LOESS)
18 - 31 GRAVEL, DARK-BROWN, MEDIUM, SILTY,
COBBLY; MOTTLED, HARD

* * * *

TEST HOLE NUMBER: 92
LOCATION: 109N-75W-06ABAA
LEGAL LOCATION: NE NE NW NE SEC. 06, T. 109 N., R. 75 W.

1 - 7 SAND, LIGHT-YELLOWISH-BROWN, SILTY, A FEW
PEBBLES

* * * *

TEST HOLE NUMBER: 93
LOCATION: 109N-75W-31CCCC
LEGAL LOCATION: SW SW SW SW SEC. 31, T. 109 N., R. 75 W.

0 - 7 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
7 - 21 SAND, LIGHT-YELLOWISH-BROWN, VERY FINE TO
FINE, SILTY
21 - 22 GRAVEL, LIGHT-BROWN, FINE TO MEDIUM;
LOOSE

* * * *

TEST HOLE NUMBER: 94
LOCATION: 109N-75W-36ABAA
LEGAL LOCATION: NE NE NW NE SEC. 36, T. 109 N., R. 75 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

4 - 17 SAND AND GRAVEL, COARSE SAND TO MEDIUM
PEBBLE GRAVEL; MOSTLY QUARTZ SAND,
PEBBLES ARE A WIDE VARIETY OF ROCK
TYPES

* * * *

TEST HOLE NUMBER: 95
LOCATION: 109N-76W-36DCDC
LEGAL LOCATION: SW SE SW SE SEC. 36, T. 109 N., R. 76 W.

0 - 4 SAND, LIGHT-TAN, VERY FINE, SILTY (LOESS)
4 - 17 SAND, LIGHT-YELLOWISH-TAN, VERY FINE TO
FINE, SILTY

* * * *

TEST HOLE NUMBER: 96
LOCATION: 110N-74W-02DADA
LEGAL LOCATION: NE SE NE SE SEC. 02, T. 110 N., R. 74 W.

1 - 4 GRAVEL, BROWN, COARSE; MOIST

* * * *

TEST HOLE NUMBER: 97
LOCATION: 110N-74W-04DCBD
LEGAL LOCATION: SE NW SW SE SEC. 04, T. 110 N., R. 74 W.

3 - 4 SAND, GRAVELLY
4 - 5 GRAVEL, COBBLY
8 - 10 SAND, GRAVELLY

* * * *

TEST HOLE NUMBER: 98
LOCATION: 110N-74W-06AAAA
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 110 N., R. 74 W.

5 - 7 GRAVEL, PEBBLE

* * * *

TEST HOLE NUMBER: 99
LOCATION: 110N-74W-27ABBA
LEGAL LOCATION: NE NW NW NE SEC. 27, T. 110 N., R. 74 W.

21 - 24 GRAVEL, FINE TO MEDIUM PEBBLES

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TEST HOLE NUMBER: 100
LOCATION: 110N-75W-02ADAD
LEGAL LOCATION: SE NE SE NE SEC. 02, T. 110 N., R. 75 W.

5 - 15 GRAVEL, BROWN, VERY CLAYEY; MOIST

* * * *

TEST HOLE NUMBER: 101
LOCATION: 110N-75W-02DADD

LEGAL LOCATION: SE SE NE SE SEC. 02, T. 110 N., R. 75 W.

0 - 33 GRAVEL, REDDISH-BROWN, SILTY, CLAYEY;
MOIST

* * * *

TEST HOLE NUMBER: 102
LOCATION: 110N-75W-02DB
LEGAL LOCATION: NW SE SEC. 02, T. 110 N., R. 75 W.

0 - 17 GRAVEL

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TEST HOLE NUMBER: 103
LOCATION: 110N-75W-08DDAA
LEGAL LOCATION: NE NE SE SE SEC. 08, T. 110 N., R. 75 W.

25 - 27 GRAVEL, MEDIUM-BROWN, SILTY, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 104
LOCATION: 110N-75W-10DAAA
LEGAL LOCATION: NE NE NE SE SEC. 10, T. 110 N., R. 75 W.

3 - 15 SAND, BROWN, PEBBLY; DRY, OXIDIZED
15 - 16 GRAVEL, BROWN, COARSE; DRY, OXIDIZED
16 - 20 SAND, BROWN, COARSE, GRAVELLY; MOIST,
OXIDIZED
20 - 26 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 105
LOCATION: 110N-75W-19DCDC
LEGAL LOCATION: SW SE SW SE SEC. 19, T. 110 N., R. 75 W.

4 - 7 GRAVEL, REDDISH-BROWN, FINE TO MEDIUM;
DRY, OXIDIZED
7 - 11 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
CLAYEY, PEBBLY; MOIST, OXIDIZED
11 - 13 GRAVEL, REDDISH-BROWN, FINE, SANDY;
MOIST, OXIDIZED
13 - 17 GRAVEL, REDDISH-BROWN, COARSE, SANDY,

COBBLY; MOIST, OXIDIZED
17 - 24 SAND, REDDISH-BROWN, COARSE, GRAVELLY;
MOIST, OXIDIZED
24 - 33 GRAVEL, REDDISH-BROWN, COARSE, SANDY,
COBBLY; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 106
LOCATION: 110N-75W-20ABDD
LEGAL LOCATION: SE SE NW NE SEC. 20, T. 110 N., R. 75 W.

7 - 11 GRAVEL, GRAYISH-BROWN, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 107
LOCATION: 110N-75W-20DAAB
LEGAL LOCATION: NW NE NE SE SEC. 20, T. 110 N., R. 75 W.

4 - 9 SAND, BROWN, FINE, SILTY, PEBBLY; DRY

* * * *

TEST HOLE NUMBER: 108
LOCATION: 110N-75W-20DDDC
LEGAL LOCATION: SW SE SE SE SEC. 20, T. 110 N., R. 75 W.

0 - 3 SAND, LIGHT-BROWN, FINE TO COARSE; MOIST

* * * *

TEST HOLE NUMBER: 109
LOCATION: 110N-75W-21AAAA
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 110 N., R. 75 W.

3 - 12 SAND, REDDISH-BROWN, POORLY SORTED;
MOIST
12 - 14 GRAVEL, COARSE

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TEST HOLE NUMBER: 110
LOCATION: 110N-75W-22ABBB
LEGAL LOCATION: NW NW NW NE SEC. 22, T. 110 N., R. 75 W.

5 - 11 GRAVEL, REDDISH-BROWN, VERY SILTY; DRY,
OXIDIZED
11 - 14 SAND, REDDISH-BROWN, SILTY, GRAVELLY;
DRY, OXIDIZED
14 - 17 GRAVEL, DARK-BROWN, COARSE, CLAYEY,
SANDY; MOIST, OXIDIZED

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TEST HOLE NUMBER: 111
LOCATION: 110N-75W-22DCDD
LEGAL LOCATION: SE SE SW SE SEC. 22, T. 110 N., R. 75 W.

2 - 10 SAND, LIGHT-BROWN, SILTY, CLAYEY; DRY,
OXIDIZED
10 - 14 SAND, MEDIUM-BROWN, GRAVELLY; DRY,
OXIDIZED
14 - 20 SAND, DARK-BROWN, GRAVELLY; DRY,
OXIDIZED
20 - 22 GRAVEL, DARK-BROWN, SANDY; DRY, OXIDIZED

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TEST HOLE NUMBER: 112
LOCATION: 110N-75W-23BBCB
LEGAL LOCATION: NW SW NW NW SEC. 23, T. 110 N., R. 75 W.

10 - 12 SAND, MEDIUM-BROWN, CLAYEY, PEBBLY,
POORLY SORTED; MOIST, OXIDIZED
12 - 13 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED
23 - 25 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

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TEST HOLE NUMBER: 113
LOCATION: 110N-75W-26CCCC
LEGAL LOCATION: SW SW SW SW SEC. 26, T. 110 N., R. 75 W.

2 - 5 GRAVEL, BROWN, COARSE, CLAYEY, SANDY;
MOIST, OXIDIZED
5 - 6 SAND, REDDISH-BROWN, COARSE, CLAYEY,
GRAVELLY; MOIST, OXIDIZED

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TEST HOLE NUMBER: 114
LOCATION: 110N-75W-26DDCD
LEGAL LOCATION: SE SW SE SE SEC. 26, T. 110 N., R. 75 W.

0 - 2 GRAVEL, MEDIUM-BROWN, SILTY, CLAYEY;
MOIST, OXIDIZED
2 - 7 GRAVEL, MEDIUM-BROWN, VERY COARSE,
CLAYEY; MOIST, OXIDIZED

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TEST HOLE NUMBER: 115
LOCATION: 110N-75W-28AAAB
LEGAL LOCATION: NW NE NE NE SEC. 28, T. 110 N., R. 75 W.

3 - 10 SAND, REDDISH-BROWN, SILTY; MOIST

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TEST HOLE NUMBER: 116
LOCATION: 110N-75W-28CBCC
LEGAL LOCATION: SW SW NW SW SEC. 28, T. 110 N., R. 75 W.

0 - 10 SAND, REDDISH-BROWN, FINE, PEBBLY; DRY

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TEST HOLE NUMBER: 117
LOCATION: 110N-75W-28DDAA
LEGAL LOCATION: NE NE SE SE SEC. 28, T. 110 N., R. 75 W.

2 - 13 SAND, REDDISH-BROWN, POORLY SORTED;
MOIST

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TEST HOLE NUMBER: 118
LOCATION: 110N-75W-32BABB
LEGAL LOCATION: NW NW NE NW SEC. 32, T. 110 N., R. 75 W.

0 - 10 SAND, REDDISH-BROWN, MEDIUM; MOIST

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TEST HOLE NUMBER: 119
LOCATION: 110N-75W-33ADAA
LEGAL LOCATION: NE NE SE NE SEC. 33, T. 110 N., R. 75 W.

6 - 9 SAND, BROWN, FINE

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TEST HOLE NUMBER: 120
LOCATION: 110N-75W-35ADDA
LEGAL LOCATION: NE SE SE NE SEC. 35, T. 110 N., R. 75 W.

1 - 4 GRAVEL, BLACK, COARSE, CLAYEY; DRY
5 - 11 GRAVEL, BLACK, VERY COARSE, SANDY; MOIST

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TEST HOLE NUMBER: 121
LOCATION: 110N-75W-35BBBB
LEGAL LOCATION: NW NW NW NW SEC. 35, T. 110 N., R. 75 W.

0 - 3 SAND, BROWN, FINE TO MEDIUM

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TEST HOLE NUMBER: 122
LOCATION: 110N-75W-36BAAB
LEGAL LOCATION: NW NE NE NW SEC. 36, T. 110 N., R. 75 W.

6 - .9 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 123
LOCATION: 110N-76W-15DDDD
LEGAL LOCATION: SE SE SE SE SEC. 15, T. 110 N., R. 76 W.

6 - 14 GRAVEL, FINE TO MEDIUM PEBBLE

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TEST HOLE NUMBER: 124
LOCATION: 110N-76W-29BDCB
LEGAL LOCATION: NW SW SE NW SEC. 29, T. 110 N., R. 76 W.

6 - 9 SAND, REDDISH-BROWN, PEBBLY; MOIST,
OXIDIZED, CLEAN

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TEST HOLE NUMBER: 125
LOCATION: 110N-76W-31ABBB
LEGAL LOCATION: NW NW NW NE SEC. 31, T. 110 N., R. 76 W.

23 - 25 SAND, LIGHT-BROWN, CLAYEY; DRY, OXIDIZED

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TEST HOLE NUMBER: 126
LOCATION: 110N-76W-32ABAA
LEGAL LOCATION: NE NE NW NE SEC. 32, T. 110 N., R. 76 W.

25 - 28 SAND, LIGHT-BROWN, FINE; DRY, OXIDIZED

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TEST HOLE NUMBER: 127
LOCATION: 110N-76W-32CCBC
LEGAL LOCATION: SW NW SW SW SEC. 32, T. 110 N., R. 76 W.

14 - 58 GRAVEL, FINE PEBBLE TO COBBLE; WITH
COARSE SAND, WIDE VARIETY OF ROCK TYPES

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TEST HOLE NUMBER: 128
LOCATION: 110N-76W-33DCCC
LEGAL LOCATION: SW SW SW SE SEC. 33, T. 110 N., R. 76 W.

1 - 4 SAND, MEDIUM-BROWN, MEDIUM TO COARSE,
GRAVELLY; MOIST, OXIDIZED
4 - 13 SAND, REDDISH-BROWN, FINE TO MEDIUM,
WELL SORTED; MOIST, OXIDIZED
13 - 24 SAND, DARK-REDDISH-BROWN, MEDIUM, PEBBLY;
MOIST, OXIDIZED
24 - 28 SAND, DARK-REDDISH-BROWN, VERY COARSE,
VERY PEBBLY, POORLY SORTED; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 129
LOCATION: 110N-76W-35CCCC
LEGAL LOCATION: SW SW SW SW SEC. 35, T. 110 N., R. 76 W.

17 - 20 SAND, MEDIUM
20 - 32 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; SOME SORTING

* * * *

TEST HOLE NUMBER: 130

LOCATION: 110N-76W-36CABC 1
LEGAL LOCATION: SW NW NE SW SEC. 36, T. 110 N., R. 76 W.

15 - 21 SAND, MEDIUM-BROWN, CLAYEY; VERY MOIST,
OXIDIZED

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TEST HOLE NUMBER: 131
LOCATION: 110N-76W-36CABC 2
LEGAL LOCATION: SW NW NE SW SEC. 36, T. 110 N., R. 76 W.

0 - 6 SAND, BROWN, MEDIUM TO COARSE, VERY
CLAYEY
14 - 23 GRAVEL, FINE PEBBLE; WITH COARSE SAND,
CLASTS ARE SHALE, TAN SEDIMENTARY
ROCKS WITH A WIDE VARIETY OF
ERRATICS

* * * *

TEST HOLE NUMBER: 132
LOCATION: 110N-76W-36DDDD
LEGAL LOCATION: SE SE SE SE SEC. 36, T. 110 N., R. 76 W.

2 - 4 SAND, REDDISH-BROWN, COARSE, SILTY,
PEBBLY; MOIST, OXIDIZED
4 - 6 SAND, DARK-BROWN, COARSE, VERY SILTY,
PEBBLY; MOIST, OXIDIZED
11 - 14 SAND, MEDIUM-BROWN, FINE, SILTY; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 133
LOCATION: 110N-77W-14CBDD
LEGAL LOCATION: SE SE NW SW SEC. 14, T. 110 N., R. 77 W.

15 - 18 GRAVEL, MEDIUM

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TEST HOLE NUMBER: 134
LOCATION: 110N-77W-15ABBB
LEGAL LOCATION: NW NW NW NE SEC. 15, T. 110 N., R. 77 W.

9 - 15 GRAVEL, REDDISH-BROWN, SANDY, POORLY

15 - 18 SORTED; DRY, OXIDIZED
SAND, REDDISH-BROWN, COARSE, PEBBLY; DRY,
OXIDIZED
18 - 22 GRAVEL, REDDISH-BROWN, COARSE, COBBLY;
DRY, OXIDIZED, HIT ROCK, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 135
LOCATION: 110N-77W-15ACCC
LEGAL LOCATION: SW SW SW NE SEC. 15, T. 110 N., R. 77 W.

15 - 22 GRAVEL, COARSE, CLAYEY, COBBLY; DRY, HIT
ROCK, ABANDONED HOLE

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TEST HOLE NUMBER: 136
LOCATION: 110N-77W-15CDDDB
LEGAL LOCATION: NW SE SE SW SEC. 15, T. 110 N., R. 77 W.

15 - 18 GRAVEL, BROWN, SILTY, SANDY; MOIST

* * * *

TEST HOLE NUMBER: 137
LOCATION: 110N-77W-16CCCB
LEGAL LOCATION: NW SW SW SW SEC. 16, T. 110 N., R. 77 W.

16 - 23 SAND, MEDIUM-BROWN, FINE, CLAYEY, WELL
SORTED; SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 138
LOCATION: 110N-77W-22AAAA
LEGAL LOCATION: NE NE NE NE SEC. 22, T. 110 N., R. 77 W.

6 - 17 SAND AND GRAVEL, ROUNDED
21 - 26 SAND AND GRAVEL

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TEST HOLE NUMBER: 139
LOCATION: 110N-77W-22AACA
LEGAL LOCATION: NE SW NE NE SEC. 22, T. 110 N., R. 77 W.

0 - 18 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; CLASTS INCLUDE QUARTZ
PLUS A MIX OF "GLACIAL" GRAVEL, VERY
LITTLE SHALE; A LITTLE BROWN SILTY CLAY

* * * *

TEST HOLE NUMBER: 140
LOCATION: 110N-77W-22ABAA
LEGAL LOCATION: NE NE NW NE SEC. 22, T. 110 N., R. 77 W.

6 - 29 GRAVEL, FINE TO MEDIUM PEBBLE; CLASTS
ARE "GLACIAL" MATERIAL

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TEST HOLE NUMBER: 141
LOCATION: 110N-77W-25DCCA
LEGAL LOCATION: NE SW SW SE SEC. 25, T. 110 N., R. 77 W.

8 - 16 SAND, BROWN, GRAVELLY, POORLY SORTED;
DRY, OXIDIZED
16 - 33 GRAVEL, BROWN, SANDY, POORLY SORTED;
DRY, OXIDIZED

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TEST HOLE NUMBER: 142
LOCATION: 110N-78W-03CADA
LEGAL LOCATION: NE SE NE SW SEC. 03, T. 110 N., R. 78 W.

0 - 12 SAND AND GRAVEL, COARSE SAND TO MEDIUM
PEBBLE GRAVEL; WIDE VARIETY OF ROCK
TYPES WITH MANY CONCRETION FRAGMENTS,
MANY LARGE BOULDERS ON SURFACE
15 - 30 GRAVEL, MEDIUM PEBBLE TO COBBLE; SAME
ROCK TYPES AS FROM 0 TO 12 FEET

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TEST HOLE NUMBER: 143
LOCATION: 110N-78W-04ADDD
LEGAL LOCATION: SE SE SE NE SEC. 04, T. 110 N., R. 78 W.

2 - 18 SAND, MEDIUM-BROWN, CLAYEY, PEBBLY;
MOIST, OXIDIZED
18 - 25 SAND, GRAYISH-BROWN, CLAYEY, PEBBLY; DRY,
OXIDIZED

25 - 28 GRAVEL, GRAYISH-BROWN, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 144
LOCATION: 110N-78W-04CCCC
LEGAL LOCATION: SW SW SW SW SEC. 04, T. 110 N., R. 78 W.

9 - 10 GRAVEL, BROWN, FINE; DRY, OXIDIZED
14 - 16 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED
16 - 20 SAND, REDDISH-BROWN, COARSE, PEBBLY;
MOIST, OXIDIZED

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TEST HOLE NUMBER: 145
LOCATION: 110N-78W-14BCBB
LEGAL LOCATION: NW NW SW NW SEC. 14, T. 110 N., R. 78 W.

17 - 31 SAND, BROWN, VERY FINE; CLEAN

* * * *

TEST HOLE NUMBER: 146
LOCATION: 110N-78W-15BBDD
LEGAL LOCATION: SE SE NW NW SEC. 15, T. 110 N., R. 78 W.

7 - 9 GRAVEL, BLACK, COARSE; DRY

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TEST HOLE NUMBER: 147
LOCATION: 110N-78W-16BABA
LEGAL LOCATION: NE NW NE NW SEC. 16, T. 110 N., R. 78 W.

10 - 11 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 148
LOCATION: 110N-79W-02DABA
LEGAL LOCATION: NE NW NE SE SEC. 02, T. 110 N., R. 79 W.

14 - 15 GRAVEL, BROWN, COARSE, COBBLY; MOIST,
OXIDIZED, ABANDONED HOLE

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TEST HOLE NUMBER: 149
LOCATION: 110N-79W-03CCDC
LEGAL LOCATION: SW SE SW SW SEC. 03, T. 110 N., R. 79 W.

0 -	6	SAND, LIGHT-BROWN, VERY FINE; SOME CLAY
6 -	13	SAND, LIGHT-BROWN, FINE
13 -	17	SAND, BROWN, MEDIUM, CLAYEY
17 -	24	SAND, BROWN, VERY COARSE
24 -	34	SAND, BROWN, VERY COARSE; SOME GRAVEL, SOME COAL

* * * *

TEST HOLE NUMBER: 150
LOCATION: 110N-79W-03DDAD
LEGAL LOCATION: SE NE SE SE SEC. 03, T. 110 N., R. 79 W.

5 -	6	GRAVEL, BROWN, COARSE; DRY, OXIDIZED
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TEST HOLE NUMBER: 151
LOCATION: 110N-79W-04BCBB
LEGAL LOCATION: NW NW SW NW SEC. 04, T. 110 N., R. 79 W.

3 -	5	SAND, LIGHT-BROWN, VERY FINE
24 -	28	SAND, GRAY, VERY COARSE, VERY CLAYEY, GRAVELLY

* * * *

TEST HOLE NUMBER: 152
LOCATION: 110N-79W-04BCBD
LEGAL LOCATION: SE NW SW NW SEC. 04, T. 110 N., R. 79 W.

0 -	3	SAND, BROWN, MEDIUM, SILTY
12 -	18	SAND, LIGHT-BROWN, VERY FINE, CLAYEY
18 -	29	SAND, LIGHT-BROWN, FINE TO MEDIUM; SOME CLAY

* * * *

TEST HOLE NUMBER: 153
LOCATION: 110N-79W-04BCCB
LEGAL LOCATION: NW SW SW NW SEC. 04, T. 110 N., R. 79 W.

8 -	15	SAND, LIGHT-BROWN, COARSE; SOME CLAY
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15 - 19 SAND, LIGHT-BROWN, VERY COARSE; SOME CLAY
19 - 27 SAND, BROWN, VERY COARSE, WELL SORTED;
SOME GRAVEL

* * * *

TEST HOLE NUMBER: 154
LOCATION: 110N-79W-04BCDC
LEGAL LOCATION: SW SE SW NW SEC. 04, T. 110 N., R. 79 W.

21 - 29 SAND, BROWN, MEDIUM, CLAYEY; SOME COAL

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TEST HOLE NUMBER: 155
LOCATION: 110N-79W-04CBAD
LEGAL LOCATION: SE NE NW SW SEC. 04, T. 110 N., R. 79 W.

0 - 6 SAND, LIGHT-BROWN, FINE, CLAYEY
6 - 9 SAND, BROWN, FINE TO MEDIUM
9 - 18 SAND, BROWN, MEDIUM TO COARSE
18 - 26 SAND, BLACKISH-BROWN, MEDIUM TO COARSE

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TEST HOLE NUMBER: 156
LOCATION: 110N-79W-04DDAB
LEGAL LOCATION: NW NE SE SE SEC. 04, T. 110 N., R. 79 W.

0 - 5 SAND, LIGHT-BROWN, VERY FINE
5 - 6 SAND, BROWN, FINE
6 - 9 SAND, BROWN, FINE, CLAYEY
9 - 13 SAND, LIGHT-BROWN, MEDIUM TO COARSE,
CLAYEY

* * * *

TEST HOLE NUMBER: 157
LOCATION: 110N-79W-05ABCC
LEGAL LOCATION: SW SW NW NE SEC. 05, T. 110 N., R. 79 W.

13 - 18 SAND, DARK-BROWN, COARSE, VERY CLAYEY
19 - 33 SAND, BLACKISH-BROWN, COARSE; SOME CLAY

* * * *

TEST HOLE NUMBER: 158
LOCATION: 110N-79W-05ADBA

LEGAL LOCATION: NE NW SE NE SEC. 05, T. 110 N., R. 79 W.

7 -	17	SAND, LIGHT-BROWN, MEDIUM TO COARSE; SOME CLAY
17 -	23	SAND, DARK-BROWN, COARSE TO VERY COARSE; SOME COAL
23 -	30	SAND, DARK-BROWN, MEDIUM TO COARSE

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TEST HOLE NUMBER: 159
LOCATION: 110N-79W-05BAAA
LEGAL LOCATION: NE NE NE NW SEC. 05, T. 110 N., R. 79 W.

0 -	7	SAND, BROWN, VERY FINE
7 -	10	SAND, DARK-BROWN, MEDIUM; SOME CLAY
10 -	14	SAND, BROWN, COARSE; SOME CLAY
14 -	21	SAND, BROWN, COARSE, WELL SORTED
21 -	30	SAND, DARK-BROWN, VERY COARSE; SOME GRAVEL AT 25 FEET

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TEST HOLE NUMBER: 160
LOCATION: 110N-79W-11CBBB
LEGAL LOCATION: NW NW NW SW SEC. 11, T. 110 N., R. 79 W.

5 -	19	SAND, BROWN, FINE, SILTY, CLAYEY; SATURATED, OXIDIZED
25 -	52	SAND, BROWN, MEDIUM TO COARSE; SATURATED, OXIDIZED

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TEST HOLE NUMBER: 161
LOCATION: 110N-79W-12CDAD
LEGAL LOCATION: SE NE SE SW SEC. 12, T. 110 N., R. 79 W.

0 -	3	SAND, BROWN, VERY CLAYEY, SILTY; MOIST, OXIDIZED
3 -	15	SAND, LIGHT-BROWN, VERY CLAYEY, SILTY; SATURATED, OXIDIZED
15 -	56	SAND, LIGHT-BROWN, COARSE, SILTY; SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 162

LOCATION: 110N-79W-12CDDD

LEGAL LOCATION: SE SE SE SW SEC. 12, T. 110 N., R. 79 W.

0 - 5 SAND, FINE
5 - 33 SAND, FINE, CLAYEY

* * * *

TEST HOLE NUMBER: 163

LOCATION: 111N-74W-17ADDA 1

LEGAL LOCATION: NE SE SE NE SEC. 17, T. 111 N., R. 74 W.

3 - 6 GRAVEL, MEDIUM-BROWN, SILTY; DRY,
OXIDIZED
6 - 8 GRAVEL, BROWN, VERY COARSE; DRY,
OXIDIZED, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 164

LOCATION: 111N-74W-17ADDA 2

LEGAL LOCATION: NE SE SE NE SEC. 17, T. 111 N., R. 74 W.

0 - 4 GRAVEL, MEDIUM-BROWN, VERY COARSE, SILTY;
DRY, OXIDIZED
4 - 6 SAND, MEDIUM-BROWN, GRAVELLY; DRY,
OXIDIZED
11 - 23 SAND, DARK-BROWN, GRAVELLY, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 165

LOCATION: 111N-74W-24CCCC 1

LEGAL LOCATION: SW SW SW SW SEC. 24, T. 111 N., R. 74 W.

7 - 8 SAND, DARK-BROWN, CLAYEY, PEBBLY; MOIST,
OXIDIZED
8 - 9 GRAVEL, BROWN, COARSE, COBBLY; MOIST,
OXIDIZED, HIT ROCK, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 166

LOCATION: 111N-74W-24CCCC 2

LEGAL LOCATION: SW SW SW SW SEC. 24, T. 111 N., R. 74 W.

6 - 9 SAND, DARK-BROWN, CLAYEY, GRAVELLY;
MOIST, OXIDIZED
9 - 11 GRAVEL, MEDIUM-BROWN, COARSE, SANDY,
CLAYEY; MOIST, OXIDIZED
13 - 15 SAND, GRAYISH-BROWN, FINE, SILTY; MOIST

* * * *

TEST HOLE NUMBER: 167
LOCATION: 111N-74W-25CBBB
LEGAL LOCATION: NW NW NW SW SEC. 25, T. 111 N., R. 74 W.

15 - 16 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED
17 - 22 SAND, BROWN, COARSE, CLAYEY, PEBBLY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 168
LOCATION: 111N-74W-28DDDD
LEGAL LOCATION: SE SE SE SE SEC. 28, T. 111 N., R. 74 W.

0 - 3 GRAVEL, BROWN, COARSE, SANDY; DRY,
OXIDIZED
3 - 8 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;
DRY, OXIDIZED
8 - 11 GRAVEL, BROWN, MEDIUM TO COARSE; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 169
LOCATION: 111N-74W-31DDCD
LEGAL LOCATION: SE SW SE SE SEC. 31, T. 111 N., R. 74 W.

0 - 5 SAND, LIGHT-BROWN; DRY
5 - 10 SAND, BROWN, SILTY, CLAYEY; MOIST

* * * *

TEST HOLE NUMBER: 170
LOCATION: 111N-74W-32AAAA
LEGAL LOCATION: NE NE NE NE SEC. 32, T. 111 N., R. 74 W.

10 - 17 GRAVEL, BROWN, CLAYEY, POORLY SORTED;
MOIST

* * * *

TEST HOLE NUMBER: 171
LOCATION: 111N-74W-32AADA
LEGAL LOCATION: NE SE NE NE SEC. 32, T. 111 N., R. 74 W.

11 - 21 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; INCLUDES ONE THIN CLAY,
REDDISH-BROWN

* * * *

TEST HOLE NUMBER: 172
LOCATION: 111N-75W-13ADDA
LEGAL LOCATION: NE SE SE NE SEC. 13, T. 111 N., R. 75 W.

7 - 8 GRAVEL, BROWN, COARSE; MOIST

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TEST HOLE NUMBER: 173
LOCATION: 111N-75W-27BBBB
LEGAL LOCATION: NW NW NW NW SEC. 27, T. 111 N., R. 75 W.

0 - 2 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
SILTY; MOIST, OXIDIZED

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TEST HOLE NUMBER: 174
LOCATION: 111N-75W-35CCCC
LEGAL LOCATION: SW SW SW SW SEC. 35, T. 111 N., R. 75 W.

5 - 19 SAND, DARK-YELLOWISH-BROWN, MEDIUM TO
COARSE; WITH SOME FINE PEBBLES

* * * *

TEST HOLE NUMBER: 175
LOCATION: 111N-75W-35DDDD
LEGAL LOCATION: SE SE SE SE SEC. 35, T. 111 N., R. 75 W.

14 - 34 GRAVEL, MEDIUM TO COARSE PEBBLES; WITH
SOME COARSE SAND

* * * *

TEST HOLE NUMBER: 176
LOCATION: 111N-75W-36DDCD

LEGAL LOCATION: SE SW SE SE SEC. 36, T. 111 N., R. 75 W.

0 - 20 GRAVEL, BROWN, SILTY, SANDY, CLAYEY; DRY
25 - 33 GRAVEL, COARSE

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TEST HOLE NUMBER: 177
LOCATION: 111N-76W-19CCCD
LEGAL LOCATION: SE SW SW SW SEC. 19, T. 111 N., R. 76 W.

6 - 10 GRAVEL, FINE TO MEDIUM PEBBLES
15 - 19 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; WIDE VARIETY AT ROCKS
INCLUDING QUARTZ, SHALE, AND CONCRETION
FRAGMENTS

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TEST HOLE NUMBER: 178
LOCATION: 111N-76W-19DCBD
LEGAL LOCATION: SE NW SW SE SEC. 19, T. 111 N., R. 76 W.

5 - 7 GRAVEL, LIGHT-BROWN, SANDY; DRY, OXIDIZED

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TEST HOLE NUMBER: 179
LOCATION: 111N-77W-14ADA
LEGAL LOCATION: NE SE NE SEC. 14, T. 111 N., R. 77 W.

5 - 6 SAND, COARSE; SOME FINE GRAVEL

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TEST HOLE NUMBER: 180
LOCATION: 111N-77W-18BAAA
LEGAL LOCATION: NE NE NE NW SEC. 18, T. 111 N., R. 77 W.

10 - 11 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 181
LOCATION: 111N-77W-22CCD
LEGAL LOCATION: SE SW SW SEC. 22, T. 111 N., R. 77 W.

3 - 11 SAND, BROWN, FINE, CLAYEY

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TEST HOLE NUMBER: 182
LOCATION: 111N-77W-23BBA
LEGAL LOCATION: NE NW NW SEC. 23, T. 111 N., R. 77 W.

11 - 15 SAND, REDDISH-BROWN, CLAYEY; VERY MOIST,
LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 183
LOCATION: 111N-77W-23DAC
LEGAL LOCATION: SW NE SE SEC. 23, T. 111 N., R. 77 W.

22 - 26 SAND, DARK-REDDISH-BROWN, FINE TO COARSE,
CLAYEY; VERY MOIST, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 184
LOCATION: 111N-77W-24DDD
LEGAL LOCATION: SE SE SE SEC. 24, T. 111 N., R. 77 W.

3 - 10 SAND, DARK-BROWN, FINE, VERY CLAYEY,
GRAVELLY; SATURATED, LOOSE, NON-
CALCAREOUS
11 - 18 SAND, DARK-BROWN, FINE TO COARSE, CLAYEY;
SATURATED, LOOSE, NONCALCAREOUS

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TEST HOLE NUMBER: 185
LOCATION: 111N-77W-25ABDC
LEGAL LOCATION: SW SE NW NE SEC. 25, T. 111 N., R. 77 W.

5 - 6 GRAVEL, LIGHT-BROWN, COARSE; DRY,
OXIDIZED
6 - 12 SAND, BROWN, FINE; DRY, OXIDIZED
12 - 16 GRAVEL, BROWN, VERY COARSE, COBBLY; DRY,
OXIDIZED, ABANDONED HOLE

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TEST HOLE NUMBER: 186
LOCATION: 111N-77W-25BBAC

LEGAL LOCATION: SW NE NW NW SEC. 25, T. 111 N., R. 77 W.

4 - 7 GRAVEL, BROWN, VERY COARSE; DRY, OXIDIZED
7 - 12 SAND, BROWN, COARSE; MOIST, OXIDIZED

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TEST HOLE NUMBER: 187
LOCATION: 111N-77W-25DACA
LEGAL LOCATION: NE SW NE SE SEC. 25, T. 111 N., R. 77 W.

19 - 20 GRAVEL, BROWN, COARSE; MOIST
23 - 27 SAND, MEDIUM-BROWN, COARSE, VERY CLAYEY;
MOIST, OXIDIZED, SOME GRAVEL AT 27 FEET

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TEST HOLE NUMBER: 188
LOCATION: 111N-77W-26ACB
LEGAL LOCATION: NW SW NE SEC. 26, T. 111 N., R. 77 W.

7 - 11 SAND, COARSE, GRAVELLY, COBBLY

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TEST HOLE NUMBER: 189
LOCATION: 111N-78W-14BBCB
LEGAL LOCATION: NW SW NW NW SEC. 14, T. 111 N., R. 78 W.

3 - 4 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 190
LOCATION: 111N-78W-17BCCB
LEGAL LOCATION: NW SW SW NW SEC. 17, T. 111 N., R. 78 W.

3 - 8 SAND, MEDIUM TO COARSE; SOME FINE PEBBLES

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TEST HOLE NUMBER: 191
LOCATION: 111N-78W-18CAA
LEGAL LOCATION: NE NE SW SEC. 18, T. 111 N., R. 78 W.

19 - 25 SAND, DARK-BROWN, FINE, VERY CLAYEY;

LOOSE, MOIST, CALCAREOUS

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TEST HOLE NUMBER: 192
LOCATION: 111N-78W-18CAB
LEGAL LOCATION: NW NE SW SEC. 18, T. 111 N., R. 78 W.

6 - 8 SAND, BROWN, FINE, VERY CLAYEY

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TEST HOLE NUMBER: 193
LOCATION: 111N-78W-18DBD
LEGAL LOCATION: SE NW SE SEC. 18, T. 111 N., R. 78 W.

8 - 12 SAND, FINE, CLAYEY

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TEST HOLE NUMBER: 194
LOCATION: 111N-78W-23DCCD
LEGAL LOCATION: SE SW SW SE SEC. 23, T. 111 N., R. 78 W.

7 - 9 SAND, REDDISH-BROWN, CLAYEY, PEBBLY,
POORLY SORTED; MOIST, OXIDIZED
11 - 13 GRAVEL, DARK-BROWN, CLAYEY, SANDY, POORLY
SORTED; MOIST, OXIDIZED
15 - 17 GRAVEL, REDDISH-BROWN, COARSE; SATURATED,
OXIDIZED, DIRTY

* * * *

TEST HOLE NUMBER: 195
LOCATION: 111N-78W-27ADD
LEGAL LOCATION: SE SE NE SEC. 27, T. 111 N., R. 78 W.

2 - 29 SAND, GRAYISH-BROWN, FINE TO MEDIUM,
CLAYEY

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TEST HOLE NUMBER: 196
LOCATION: 111N-78W-27DAAD
LEGAL LOCATION: SE NE NE SE SEC. 27, T. 111 N., R. 78 W.

1 - 3 SAND, MEDIUM-BROWN, FINE TO COARSE,

SILTY, PEBBLY; MOIST, OXIDIZED

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TEST HOLE NUMBER: 197
LOCATION: 111N-78W-36CBBB
LEGAL LOCATION: NW NW NW SW SEC. 36, T. 111 N., R. 78 W.

2 - 3 GRAVEL, BROWN, COARSE; DRY, OXIDIZED
5 - 8 SAND, BROWN, COARSE; DRY, OXIDIZED
10 - 11 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 198
LOCATION: 111N-79W-05CDC
LEGAL LOCATION: SW SE SW SEC. 05, T. 111 N., R. 79 W.

14 - 16 SAND

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TEST HOLE NUMBER: 199
LOCATION: 111N-79W-06AAAA
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 111 N., R. 79 W.

23 - 31 SAND, BROWN, MEDIUM; SOME PEBBLES

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TEST HOLE NUMBER: 200
LOCATION: 111N-79W-06ADCA
LEGAL LOCATION: NE SW SE NE SEC. 06, T. 111 N., R. 79 W.

13 - 17 SAND, REDDISH-BROWN, FINE, VERY CLAYEY

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TEST HOLE NUMBER: 201
LOCATION: 111N-79W-06DABD
LEGAL LOCATION: SE NW NE SE SEC. 06, T. 111 N., R. 79 W.

14 - 15 SAND, BROWN, FINE TO MEDIUM, CLAYEY

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TEST HOLE NUMBER: 202

LOCATION: 111N-79W-06DACC
LEGAL LOCATION: SW SW NE SE SEC. 06, T. 111 N., R. 79 W.

10 - 17 SAND, GRAYISH-BROWN, FINE TO COARSE

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TEST HOLE NUMBER: 203
LOCATION: 111N-79W-10CAD
LEGAL LOCATION: SE NE SW SEC. 10, T. 111 N., R. 79 W.

7 - 16 SAND, GRAYISH-BROWN, FINE, VERY CLAYEY

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TEST HOLE NUMBER: 204
LOCATION: 111N-79W-10CCC
LEGAL LOCATION: SW SW SW SEC. 10, T. 111 N., R. 79 W.

7 - 19 SAND, GRAY, FINE, CLAYEY

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TEST HOLE NUMBER: 205
LOCATION: 111N-79W-15BDD
LEGAL LOCATION: SE SE NW SEC. 15, T. 111 N., R. 79 W.

21 - 37 SAND, GRAY, FINE, VERY CLAYEY

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TEST HOLE NUMBER: 206
LOCATION: 111N-79W-16AAD
LEGAL LOCATION: SE NE NE SEC. 16, T. 111 N., R. 79 W.

18 - 44 SAND, FINE TO COARSE

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TEST HOLE NUMBER: 207
LOCATION: 111N-79W-17ADDD
LEGAL LOCATION: SE SE SE NE SEC. 17, T. 111 N., R. 79 W.

10 - 15 SAND, TAN, FINE TO MEDIUM; CLEAN, WET,
CALCAREOUS

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TEST HOLE NUMBER: 208
LOCATION: 111N-79W-23CBB 2
LEGAL LOCATION: NW NW SW SEC. 23, T. 111 N., R. 79 W.

19 - 34 SAND, BROWN, FINE, GRAVELLY; SOME COAL

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TEST HOLE NUMBER: 209
LOCATION: 111N-79W-24BBBB
LEGAL LOCATION: NW NW NW NW SEC. 24, T. 111 N., R. 79 W.

0 - 5 GRAVEL, MEDIUM; TOPSOIL ABOVE 1 FOOT

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TEST HOLE NUMBER: 210
LOCATION: 111N-79W-32ACBC
LEGAL LOCATION: SW NW SW NE SEC. 32, T. 111 N., R. 79 W.

16 - 40 GRAVEL, BROWN, COARSE, SANDY, POORLY
SORTED; DRY, OXIDIZED

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TEST HOLE NUMBER: 211
LOCATION: 111N-79W-32BCBD
LEGAL LOCATION: SE NW SW NW SEC. 32, T. 111 N., R. 79 W.

0 - 10 SAND, BROWN, VERY FINE, SILTY

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TEST HOLE NUMBER: 212
LOCATION: 111N-79W-32CBAB
LEGAL LOCATION: NW NE NW SW SEC. 32, T. 111 N., R. 79 W.

0 - 4 SAND, LIGHT-BROWN, VERY FINE
10 - 15 SAND, BROWNISH-BLACK, COARSE, CLAYEY
16 - 18 SAND, BROWNISH-BLACK, COARSE, GRAVELLY,
VERY CLAYEY
18 - 26 SAND, DARK-BROWN, MEDIUM TO COARSE,
GRAVELLY, VERY CLAYEY; SOME COAL

* * * *

TEST HOLE NUMBER: 213

LOCATION: 111N-79W-32CDCA

LEGAL LOCATION: NE SW SE SW SEC. 32, T. 111 N., R. 79 W.

0 -	7	SAND, LIGHT-BROWN, MEDIUM
7 -	8	SAND, GRAY, FINE, VERY CLAYEY
8 -	15	SAND, GRAY, MEDIUM, CLAYEY
15 -	18	SAND, LIGHT-BROWN, MEDIUM TO COARSE
18 -	23	SAND, LIGHT-BROWN, COARSE TO VERY COARSE, GRAVELLY
23 -	33	SAND, LIGHT-BROWN, VERY COARSE, GRAVELLY

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TEST HOLE NUMBER: 214

LOCATION: 111N-79W-32CDDB 1

LEGAL LOCATION: NW SE SE SW SEC. 32, T. 111 N., R. 79 W.

0 -	5	SAND, LIGHT-BROWN, FINE
9 -	19	SAND, DARK-BROWN, COARSE TO VERY COARSE, CLAYEY; GRAVEL AT 15 FEET
19 -	24	SAND, LIGHT-BROWN, COARSE TO VERY COARSE, GRAVELLY
24 -	36	SAND, BROWNISH-GRAY, VERY COARSE, GRAVELLY

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TEST HOLE NUMBER: 215

LOCATION: 111N-79W-32CDDB 2

LEGAL LOCATION: NW SE SE SW SEC. 32, T. 111 N., R. 79 W.

0 -	5	SAND, LIGHT-BROWN, VERY FINE
5 -	10	SAND, BROWN, FINE, CLAYEY
10 -	33	SAND, DARK-BROWN, VERY COARSE, GRAVELLY AT 16 FEET; SOME CLAY

* * * *

TEST HOLE NUMBER: 216

LOCATION: 111N-79W-32CDDB 3

LEGAL LOCATION: NW SE SE SW SEC. 32, T. 111 N., R. 79 W.

0 -	15	SAND, BROWN, VERY FINE, SILTY; SOME CLAY AT 4 FEET
15 -	29	SAND, LIGHT-BROWN, COARSE, GRAVELLY AT 19 FEET

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TEST HOLE NUMBER: 217
LOCATION: 111N-79W-34CBAD
LEGAL LOCATION: SE NE NW SW SEC. 34, T. 111 N., R. 79 W.

10 - 11 GRAVEL, BROWN, COARSE
15 - 20 GRAVEL, MEDIUM-BROWN, COARSE, SANDY,
CLAYEY; MOIST
24 - 26 GRAVEL, BROWN, COARSE

* * * *

TEST HOLE NUMBER: 218
LOCATION: 111N-79W-34CBCB
LEGAL LOCATION: NW SW NW SW SEC. 34, T. 111 N., R. 79 W.

1 - 3 SAND, MEDIUM-BROWN, PEBBLY; DRY, OXIDIZED
3 - 6 GRAVEL, BROWN, SANDY; DRY, OXIDIZED
6 - 10 SAND, LIGHT-BROWN, FINE, WELL SORTED;
DRY, OXIDIZED
10 - 18 SAND, BROWN, GRAVELLY, CLAYEY; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 219
LOCATION: 111N-79W-34DBDC
LEGAL LOCATION: SW SE NW SE SEC. 34, T. 111 N., R. 79 W.

3 - 15 SAND, BROWN, FINE; DRY
19 - 22 GRAVEL, COARSE; HIT ROCK, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 220
LOCATION: 112N-74W-01AAAA
LEGAL LOCATION: NE NE NE NE SEC. 01, T. 112 N., R. 74 W.

19 - 25 GRAVEL, PEBBLE TO COBBLE

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TEST HOLE NUMBER: 221
LOCATION: 112N-74W-09DCDC
LEGAL LOCATION: SW SE SW SE SEC. 09, T. 112 N., R. 74 W.

11 - 13 GRAVEL, BROWN, COARSE, CLAYEY; MOIST

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TEST HOLE NUMBER: 222
LOCATION: 112N-74W-13ADDD
LEGAL LOCATION: SE SE SE NE SEC. 13, T. 112 N., R. 74 W.

1 - 17 SAND AND GRAVEL, YELLOWISH-BROWN, MEDIUM
SAND TO PEBBLE GRAVEL

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TEST HOLE NUMBER: 223
LOCATION: 112N-74W-13DAAA
LEGAL LOCATION: NE NE NE SE SEC. 13, T. 112 N., R. 74 W.

5 - 8 SAND, MEDIUM-BROWN, PEBBLY; MOIST
8 - 10 SAND, DARK-BROWN, CLAYEY, PEBBLY; MOIST
10 - 15 SAND, MEDIUM-BROWN, CLAYEY; VERY MOIST
15 - 25 SAND, MEDIUM-BROWN, VERY CLAYEY;
SATURATED

* * * *

TEST HOLE NUMBER: 224
LOCATION: 112N-74W-15ADDD
LEGAL LOCATION: SE SE SE NE SEC. 15, T. 112 N., R. 74 W.

3 - 4 SAND, BROWN, SILTY
15 - 30 SAND, BROWN, MEDIUM, SILTY; SATURATED

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TEST HOLE NUMBER: 225
LOCATION: 112N-74W-16AABB
LEGAL LOCATION: NW NW NE NE SEC. 16, T. 112 N., R. 74 W.

18 - 22 SAND, BROWN, SILTY

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TEST HOLE NUMBER: 226
LOCATION: 112N-74W-16AADA
LEGAL LOCATION: NE SE NE NE SEC. 16, T. 112 N., R. 74 W.

20 - 28 SAND, BROWN, SILTY; SATURATED

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TEST HOLE NUMBER: 227

LOCATION: 112N-74W-16ABDA
LEGAL LOCATION: NE SE NW NE SEC. 16, T. 112 N., R. 74 W.

9 - 10 SAND, BROWN

* * * *

TEST HOLE NUMBER: 228
LOCATION: 112N-74W-16ADAA
LEGAL LOCATION: NE NE SE NE SEC. 16, T. 112 N., R. 74 W.

22 - 24 SAND, BROWN, MEDIUM, CLAYEY; SATURATED

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TEST HOLE NUMBER: 229
LOCATION: 112N-74W-16BDAA
LEGAL LOCATION: NE NE SE NW SEC. 16, T. 112 N., R. 74 W.

7 - 12 GRAVEL, BROWN, SILTY
16 - 35 SAND, BROWN, FINE TO MEDIUM, CLAYEY;
SATURATED

* * * *

TEST HOLE NUMBER: 230
LOCATION: 112N-74W-17ADAA 1
LEGAL LOCATION: NE NE SE NE SEC. 17, T. 112 N., R. 74 W.

3 - 32 SAND AND GRAVEL, MEDIUM SAND TO FINE
PEBBLE GRAVEL

* * * *

TEST HOLE NUMBER: 231
LOCATION: 112N-74W-17ADAA 2
LEGAL LOCATION: NE NE SE NE SEC. 17, T. 112 N., R. 74 W.

5 - 7 SAND, BROWN, SILTY
24 - 30 SAND; SOME COARSE GRAVEL, SATURATED

* * * *

TEST HOLE NUMBER: 232
LOCATION: 112N-74W-17ADAA 3
LEGAL LOCATION: NE NE SE NE SEC. 17, T. 112 N., R. 74 W.

12 - 20 SAND, COARSE

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TEST HOLE NUMBER: 233
LOCATION: 112N-74W-17DBBB
LEGAL LOCATION: NW NW NW SE SEC. 17, T. 112 N., R. 74 W.

0 - 3 SAND AND GRAVEL, BROWN
3 - 5 SAND, BROWN, MEDIUM; SATURATED

* * * *

TEST HOLE NUMBER: 234
LOCATION: 112N-74W-18DADA
LEGAL LOCATION: NE SE NE SE SEC. 18, T. 112 N., R. 74 W.

10 - 11 SAND, LIGHT-BROWN, COARSE; VERY MOIST

* * * *

TEST HOLE NUMBER: 235
LOCATION: 112N-74W-18DDDD
LEGAL LOCATION: SE SE SE SE SEC. 18, T. 112 N., R. 74 W.

1 - 18 SAND AND GRAVEL

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TEST HOLE NUMBER: 236
LOCATION: 112N-75W-14AADA
LEGAL LOCATION: NE SE NE NE SEC. 14, T. 112 N., R. 75 W.

5 - 11 SAND, REDDISH-BROWN, GRAVELLY; MOIST
11 - 12 GRAVEL, BROWN, COARSE, COBBLY; MOIST,
ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 237
LOCATION: 112N-75W-14ADAD
LEGAL LOCATION: SE NE SE NE SEC. 14, T. 112 N., R. 75 W.

5 - 7 SAND, LIGHT-BROWN, MEDIUM TO COARSE,
PEBBLY; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 238
LOCATION: 112N-76W-02ABAA
LEGAL LOCATION: NE NE NW NE SEC. 02, T. 112 N., R. 76 W.

12 - 30 GRAVEL, REDDISH-BROWN, SANDY; SOME CLAY;
SATURATED

* * * *

TEST HOLE NUMBER: 239
LOCATION: 112N-76W-02ACBD
LEGAL LOCATION: SE NW SW NE SEC. 02, T. 112 N., R. 76 W.

4 - 7 SAND, BROWN, FINE, VERY CLAYEY, GRAVELLY;
SATURATED, LOOSE, CALCAREOUS
7 - 19 SAND, REDDISH-BROWN, MEDIUM, VERY
GRAVELLY, SILTY; SATURATED, LOOSE,
CALCAREOUS
19 - 30 SAND, GRAY, FINE, VERY CLAYEY, GRAVELLY;
SATURATED, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 240
LOCATION: 112N-76W-02ACDD
LEGAL LOCATION: SE SE SW NE SEC. 02, T. 112 N., R. 76 W.

2 - 3 GRAVEL, BROWN, COARSE; DRY
3 - 8 SAND, LIGHT-BROWN, FINE TO MEDIUM, WELL
SORTED; DRY

* * * *

TEST HOLE NUMBER: 241
LOCATION: 112N-76W-02BBBB
LEGAL LOCATION: NW NW NW NW SEC. 02, T. 112 N., R. 76 W.

0 - 3 GRAVEL, REDDISH-BROWN, COARSE; DRY

* * * *

TEST HOLE NUMBER: 242
LOCATION: 112N-76W-02BCBC
LEGAL LOCATION: SW NW SW NW SEC. 02, T. 112 N., R. 76 W.

9 - 37 SAND, BROWN, FINE TO COARSE, GRAVELLY;
SATURATED, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 243
LOCATION: 112N-76W-02DCCC
LEGAL LOCATION: SW SW SW SE SEC. 02, T. 112 N., R. 76 W.

11 - 12 SAND, MEDIUM-BROWN, CLAYEY, GRAVELLY;
MOIST, OXIDIZED
14 - 33 SAND, MEDIUM-BROWN, SILTY, CLAYEY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 244
LOCATION: 112N-76W-03AAAA
LEGAL LOCATION: NE NE NE NE SEC. 03, T. 112 N., R. 76 W.

2 - 12 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL

* * * *

TEST HOLE NUMBER: 245
LOCATION: 112N-76W-03ABBB 2
LEGAL LOCATION: NW NW NW NE SEC. 03, T. 112 N., R. 76 W.

7 - 8 GRAVEL, COARSE

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TEST HOLE NUMBER: 246
LOCATION: 112N-76W-03BCBC
LEGAL LOCATION: SW NW SW NW SEC. 03, T. 112 N., R. 76 W.

10 - 34 SAND, BROWN, FINE TO MEDIUM; SATURATED,
LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 247
LOCATION: 112N-76W-03DDAA 1
LEGAL LOCATION: NE NE SE SE SEC. 03, T. 112 N., R. 76 W.

5 - 19 SAND, REDDISH-BROWN, MEDIUM, VERY
GRAVELLY, CLAYEY; DRY, LOOSE,
CALCAREOUS

* * * *

TEST HOLE NUMBER: 248
LOCATION: 112N-76W-03DDAA 2
LEGAL LOCATION: NE NE SE SE SEC. 03, T. 112 N., R. 76 W.

1 - 15 GRAVEL, REDDISH-BROWN, COARSE, SANDY;
MOIST

* * * *

TEST HOLE NUMBER: 249
LOCATION: 112N-76W-03DDCC
LEGAL LOCATION: SW SW SE SE SEC. 03, T. 112 N., R. 76 W.

8 - 16 GRAVEL, BROWN, COARSE, CLAYEY

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TEST HOLE NUMBER: 250
LOCATION: 112N-76W-05BDDA
LEGAL LOCATION: NE SE SE NW SEC. 05, T. 112 N., R. 76 W.

5 - 8 GRAVEL, REDDISH-BROWN, COARSE, SILTY;
DRY, OXIDIZED
8 - 15 SAND, REDDISH-BROWN, CLAYEY, GRAVELLY;
DRY, OXIDIZED
20 - 24 GRAVEL, BROWN, COARSE, SILTY, CLAYEY;
DRY, OXIDIZED
24 - 28 GRAVEL, DARK-BROWN, FINE, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 251
LOCATION: 112N-76W-05CABA
LEGAL LOCATION: NE NW NE SW SEC. 05, T. 112 N., R. 76 W.

7 - 11 SAND, LIGHT-BROWN, FINE TO MEDIUM, WELL
SORTED; MOIST, OXIDIZED
22 - 24 GRAVEL, BROWN, COARSE, SANDY, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 252
LOCATION: 112N-76W-08ACDC

LEGAL LOCATION: SW SE SW NE SEC. 08, T. 112 N., R. 76 W.

9 - 15 SAND, BROWN, FINE TO COARSE, GRAVELLY;
DRY, LOOSE, CALCAREOUS
15 - 20 SAND, BROWN, FINE TO MEDIUM, CLAYEY;
MOIST, CALCAREOUS

* * * *

TEST HOLE NUMBER: 253
LOCATION: 112N-76W-08DBBB
LEGAL LOCATION: NW NW NW SE SEC. 08, T. 112 N., R. 76 W.

13 - 14 GRAVEL, BROWN, COARSE; MOIST

* * * *

TEST HOLE NUMBER: 254
LOCATION: 112N-76W-09ADDA
LEGAL LOCATION: NE SE SE NE SEC. 09, T. 112 N., R. 76 W.

14 - 20 GRAVEL, REDDISH-BROWN, SILTY; MOIST

* * * *

TEST HOLE NUMBER: 255
LOCATION: 112N-76W-09CBAA
LEGAL LOCATION: NE NE NW SW SEC. 09, T. 112 N., R. 76 W.

17 - 21 SAND, GRAY, FINE, VERY CLAYEY; MOIST,
CALCAREOUS

* * * *

TEST HOLE NUMBER: 256
LOCATION: 112N-76W-09CDDD
LEGAL LOCATION: SE SE SE SW SEC. 09, T. 112 N., R. 76 W.

5 - 6 SAND, MEDIUM-BROWN, CLAYEY; MOIST,
OXIDIZED
6 - 13 SAND, MEDIUM-BROWN, SILTY; VERY MOIST,
OXIDIZED
13 - 20 SAND, MEDIUM-BROWN, SILTY, PEBBLY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 257
LOCATION: 112N-76W-09DAAA
LEGAL LOCATION: NE NE NE SE SEC. 09, T. 112 N., R. 76 W.

4 - 10 SAND, LIGHT-BROWN, MEDIUM, CLAYEY,
GRAVELLY; DRY, LOOSE, CALCAREOUS
11 - 16 SAND, BROWN, MEDIUM, CLAYEY, GRAVELLY;
DRY, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 258
LOCATION: 112N-76W-10ABCD
LEGAL LOCATION: SE SW NW NE SEC. 10, T. 112 N., R. 76 W.

22 - 39 SAND, BROWN, FINE TO COARSE, GRAVELLY;
SATURATED, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 259
LOCATION: 112N-76W-10BBBB
LEGAL LOCATION: NW NW NW NW SEC. 10, T. 112 N., R. 76 W.

7 - 12 SAND, FINE; SOME CLAY
18 - 24 GRAVEL, PEA-SIZE; SOME ROCKY CLAY,
ABOUT 70 PERCENT PEA-SIZE GRAVEL,
SAMPLED AT 20 FEET
24 - 42 GRAVEL, PEA-SIZE; ROCKY CLAY, 50 PERCENT
PEA-SIZE GRAVEL

* * * *

TEST HOLE NUMBER: 260
LOCATION: 112N-76W-10DAAC
LEGAL LOCATION: SW NE NE SE SEC. 10, T. 112 N., R. 76 W.

5 - 23 SAND, LIGHT-BROWN, FINE, VERY CLAYEY;
MOIST, CALCAREOUS
23 - 35 SAND, BROWN, MEDIUM, CLAYEY, GRAVELLY;
VERY MOIST, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 261
LOCATION: 112N-76W-10DCCC
LEGAL LOCATION: SW SW SW SE SEC. 10, T. 112 N., R. 76 W.

24 - 30 SAND, LIGHT-BROWN, MEDIUM TO COARSE,
CLAYEY, PEBBLY; SATURATED

* * * *

TEST HOLE NUMBER: 262
LOCATION: 112N-76W-10DDCD
LEGAL LOCATION: SE SW SE SE SEC. 10, T. 112 N., R. 76 W.

16 - 23 SAND, GRAYISH-BROWN, FINE, CLAYEY;
SATURATED, LOOSE, CALCAREOUS
23 - 35 SAND, GRAYISH-BROWN, FINE TO MEDIUM,
GRAVELLY, CLAYEY; SATURATED, LOOSE,
CALCAREOUS

* * * *

TEST HOLE NUMBER: 263
LOCATION: 112N-76W-15BBBB
LEGAL LOCATION: NW NW NW NW SEC. 15, T. 112 N., R. 76 W.

15 - 17 SAND, GRAYISH-BLACK, FINE, CLAYEY; VERY
MOIST, CALCAREOUS, COME COAL

* * * *

TEST HOLE NUMBER: 264
LOCATION: 112N-76W-17ADAB
LEGAL LOCATION: NW NE SE NE SEC. 17, T. 112 N., R. 76 W.

9 - 19 SAND, LIGHT-BROWN, FINE TO MEDIUM,
CLAYEY; DRY, CALCAREOUS, MOIST BELOW 9
FEET

* * * *

TEST HOLE NUMBER: 265
LOCATION: 112N-76W-17DBBB
LEGAL LOCATION: NW NW NW SE SEC. 17, T. 112 N., R. 76 W.

7 - 12 SAND, BROWN, FINE TO COARSE, CLAYEY,
GRAVELLY; DRY, CALCAREOUS
12 - 17 SAND, BROWN, FINE, CLAYEY, GRAVELLY;
MOIST, LOOSE, CALCAREOUS

* * * *

TEST HOLE NUMBER: 266

LOCATION: 112N-76W-20BAAA
LEGAL LOCATION: NE NE NE NW SEC. 20, T. 112 N., R. 76 W.

1 - 8 GRAVEL, MEDIUM TO FINE PEBBLE

* * * *

TEST HOLE NUMBER: 267
LOCATION: 112N-76W-22AABA
LEGAL LOCATION: NE NW NE NE SEC. 22, T. 112 N., R. 76 W.

10 - 15 SAND, MEDIUM-BROWN, CLAYEY; SATURATED,
OXIDIZED

* * * *

TEST HOLE NUMBER: 268
LOCATION: 112N-76W-22CDDD
LEGAL LOCATION: SE SE SE SW SEC. 22, T. 112 N., R. 76 W.

24 - 28 GRAVEL, MEDIUM-BROWN, SILTY, SANDY,
CLAYEY; VERY MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 269
LOCATION: 112N-76W-23BBBB
LEGAL LOCATION: NW NW NW NW SEC. 23, T. 112 N., R. 76 W.

14 - 32 SAND AND GRAVEL, YELLOWISH-BROWN, MEDIUM
SAND TO MEDIUM PEBBLE GRAVEL; MANY
CLASTS ARE SHALE

* * * *

TEST HOLE NUMBER: 270
LOCATION: 112N-76W-33CDDD
LEGAL LOCATION: SE SE SE SW SEC. 33, T. 112 N., R. 76 W.

3 - 7 GRAVEL, BROWN, MEDIUM, SANDY; DRY,
OXIDIZED
7 - 10 GRAVEL, BROWN, VERY COARSE, SANDY; DRY,
OXIDIZED, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 271

LOCATION: 112N-76W-33DDCC

LEGAL LOCATION: SW SW SE SE SEC. 33, T. 112 N., R. 76 W.

8 - 10 GRAVEL, LIGHT-BROWN, MEDIUM TO COARSE;
DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 272

LOCATION: 112N-77W-05BBBB

LEGAL LOCATION: NW NW NW NW SEC. 05, T. 112 N., R. 77 W.

1 - 8 SAND, MODERATE-YELLOWISH-BROWN, VERY
FINE, SILTY (LOESS)

* * * *

TEST HOLE NUMBER: 273

LOCATION: 112N-77W-26DDDD

LEGAL LOCATION: SE SE SE SE SEC. 26, T. 112 N., R. 77 W.

1 - 4 GRAVEL, BROWN, SILTY; DRY, OXIDIZED
17 - 19 GRAVEL, MEDIUM-BROWN, FINE TO COARSE,
CLAYEY; MOIST, OXIDIZED
23 - 28 GRAVEL, BROWN, VERY COARSE, CLAYEY,
SANDY; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 274

LOCATION: 112N-77W-35ADAD

LEGAL LOCATION: SE NE SE NE SEC. 35, T. 112 N., R. 77 W.

8 - 16 GRAVEL, LIGHT-BROWN, CLAYEY; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 275

LOCATION: 112N-78W-11CBBC

LEGAL LOCATION: SW NW NW SW SEC. 11, T. 112 N., R. 78 W.

17 - 18 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 276

LOCATION: 112N-78W-18CCCC

LEGAL LOCATION: SW SW SW SW SEC. 18, T. 112 N., R. 78 W.

16 - 34 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; WIDE VARIETY OF ROCKS,
CLAYEY

* * * *

TEST HOLE NUMBER: 277

LOCATION: 112N-78W-29ADDA 2

LEGAL LOCATION: NE SE SE NE SEC. 29, T. 112 N., R. 78 W.

8 - 13 SAND AND GRAVEL, MEDIUM SAND TO COARSE
PEBBLE GRAVEL; SOME SILTY CLAY

* * * *

TEST HOLE NUMBER: 278

LOCATION: 112N-78W-29DADD

LEGAL LOCATION: SE SE NE SE SEC. 29, T. 112 N., R. 78 W.

3 - 5 SAND, REDDISH-BROWN, CLAYEY, PEBBLY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 279

LOCATION: 112N-79W-14CCCC 1

LEGAL LOCATION: SW SW SW SW SEC. 14, T. 112 N., R. 79 W.

1 - 21 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; WIDE VARIETY OF CLASTS
DOMINATED BY CARBONATES AND SHALE,
ANGULAR TO SUBANGULAR; THIN BROWN CLAY
AT 15 FEET

* * * *

TEST HOLE NUMBER: 280

LOCATION: 112N-79W-15BCCC

LEGAL LOCATION: SW SW SW NW SEC. 15, T. 112 N., R. 79 W.

4 - 11 GRAVEL, BROWN, COARSE, SANDY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 281
LOCATION: 112N-79W-16CCCC
LEGAL LOCATION: SW SW SW SW SEC. 16, T. 112 N., R. 79 W.

10 - 28 GRAVEL, FINE TO MEDIUM; HAS LOTS
OF SHALE FRAGMENTS WITH SOME VERY
COARSE SAND

* * * *

TEST HOLE NUMBER: 282
LOCATION: 112N-79W-16CCCD
LEGAL LOCATION: SE SW SW SW SEC. 16, T. 112 N., R. 79 W.

8 - 29 SAND AND GRAVEL, COARSE SAND TO MEDIUM
PEBBLE GRAVEL

* * * *

TEST HOLE NUMBER: 283
LOCATION: 112N-79W-16DCCC
LEGAL LOCATION: SW SW SW SE SEC. 16, T. 112 N., R. 79 W.

11 - 13 GRAVEL, BROWN, MEDIUM, SILTY, CLAYEY;
DRY, OXIDIZED
15 - 17 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 284
LOCATION: 112N-79W-17DDAA
LEGAL LOCATION: NE NE SE SE SEC. 17, T. 112 N., R. 79 W.

3 - 9 GRAVEL, MEDIUM-BROWN, SILTY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 285
LOCATION: 112N-79W-18CBCB
LEGAL LOCATION: NW SW NW SW SEC. 18, T. 112 N., R. 79 W.

11 - 12 GRAVEL, LIGHT-BROWN, COARSE, CLAYEY;
MOIST, OXIDIZED
14 - 15 GRAVEL, MEDIUM-BROWN, COARSE, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 286
LOCATION: 112N-79W-20ADDD
LEGAL LOCATION: SE SE SE NE SEC. 20, T. 112 N., R. 79 W.

10 - 11 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 287
LOCATION: 112N-79W-26CBBB
LEGAL LOCATION: NW NW NW SW SEC. 26, T. 112 N., R. 79 W.

9 - 14 SAND, LIGHT-BROWN, CLAYEY, SILTY,
POORLY SORTED; VERY MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 288
LOCATION: 112N-80W-02BBBB
LEGAL LOCATION: NW NW NW NW SEC. 02, T. 112 N., R. 80 W.

2 - 14 SAND, YELLOWISH-BROWN, FINE TO MEDIUM,
WITH SILT
24 - 48 GRAVEL, COARSE TO FINE PEBBLES; SOME
SAND, SOMEWHAT RUSTY

* * * *

TEST HOLE NUMBER: 289
LOCATION: 112N-80W-02BBCC
LEGAL LOCATION: SW SW NW NW SEC. 02, T. 112 N., R. 80 W.

3 - 5 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 290
LOCATION: 112N-80W-02DBCC
LEGAL LOCATION: SW SW NW SE SEC. 02, T. 112 N., R. 80 W.

1 - 15 GRAVEL, MEDIUM TO COARSE PEBBLES; WIDE
VARIETY OF ROCK TYPES INCLUDING
CONCRETION FRAGMENTS
15 - 35 SAND AND GRAVEL, MEDIUM SAND TO FINE
PEBBLE GRAVEL; CLASTS INCLUDE BOTH
LOCAL AND "WESTERN" ROCKS

* * * *

TEST HOLE NUMBER: 291
LOCATION: 112N-80W-02DCBB
LEGAL LOCATION: NW NW SW SE SEC. 02, T. 112 N., R. 80 W.

4 - 35 GRAVEL, COARSE; SOME MEDIUM PEBBLE GRAVEL
TO COARSE SAND, WIDE VARIETY OF ROCK
TYPES INCLUDING SHALE

* * * *

TEST HOLE NUMBER: 292
LOCATION: 112N-80W-03BBBB
LEGAL LOCATION: NW NW NW NW SEC. 03, T. 112 N., R. 80 W.

24 - 64 SAND, MEDIUM TO COARSE; WITH SOME FINE
PEBBLES, MOSTLY QUARTZ WITH SOME SHALE
AND LESSER AMOUNTS OF "WESTERN" EXOTICS
AND TAN SEDIMENTARY CLASTS

* * * *

TEST HOLE NUMBER: 293
LOCATION: 112N-80W-04ADAA
LEGAL LOCATION: NE NE SE NE SEC. 04, T. 112 N., R. 80 W.

6 - 8 GRAVEL, MEDIUM-BROWN, FINE, SANDY; DRY

* * * *

TEST HOLE NUMBER: 294
LOCATION: 112N-80W-06AAAB
LEGAL LOCATION: NW NE NE NE SEC. 06, T. 112 N., R. 80 W.

9 - 18 SAND, BROWN, VERY FINE, SILTY; DRY

* * * *

TEST HOLE NUMBER: 295
LOCATION: 112N-80W-09ADAA
LEGAL LOCATION: NE NE SE NE SEC. 09, T. 112 N., R. 80 W.

3 - 6 GRAVEL, BROWN, SILTY, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 296

LOCATION: 112N-80W-09BBBC

LEGAL LOCATION: SW NW NW NW SEC. 09, T. 112 N., R. 80 W.

9 - 18 SAND, REDDISH-BROWN; DRY, OXIDIZED
18 - 20 SAND, REDDISH-BROWN, SILTY, CLAYEY;
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 297

LOCATION: 112N-80W-10CCCC

LEGAL LOCATION: SW SW SW SW SEC. 10, T. 112 N., R. 80 W.

0 - 16 SAND AND GRAVEL, FINE SAND TO MEDIUM
PEBBLE GRAVEL

* * * *

TEST HOLE NUMBER: 298

LOCATION: 112N-80W-11BBBC

LEGAL LOCATION: SW NW NW NW SEC. 11, T. 112 N., R. 80 W.

10 - 23 GRAVEL, BROWN, COARSE, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 299

LOCATION: 112N-80W-11DCDC

LEGAL LOCATION: SW SE SW SE SEC. 11, T. 112 N., R. 80 W.

25 - 28 SAND, LIGHT-BROWN, FINE, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 300

LOCATION: 112N-80W-12DDAA

LEGAL LOCATION: NE NE SE SE SEC. 12, T. 112 N., R. 80 W.

21 - 51 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM
PEBBLE GRAVEL; CLASTS INCLUDE SHALE,
QUARTZ, TAN SEDIMENTARY ROCKS, AND RED
AND BLACK EXOTICS; LESS SAND AT BASE

* * * *

TEST HOLE NUMBER: 301
LOCATION: 112N-80W-14BBBB
LEGAL LOCATION: NW NW NW NW SEC. 14, T. 112 N., R. 80 W.

0 - 10 SAND, YELLOW, FINE
21 - 38 SAND, YELLOW-BROWN, CLAYEY

* * * *

TEST HOLE NUMBER: 302
LOCATION: 112N-80W-15BCCC
LEGAL LOCATION: SW SW SW NW SEC. 15, T. 112 N., R. 80 W.

8 - 12 SAND, MEDIUM; MOSTLY QUARTZ WITH SOME
EXOTICS

* * * *

TEST HOLE NUMBER: 303
LOCATION: 112N-80W-15CCCC
LEGAL LOCATION: SW SW SW SW SEC. 15, T. 112 N., R. 80 W.

10 - 17 SAND, MEDIUM-BROWN, CLAYEY; MOIST,
OXIDIZED
17 - 18 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 304
LOCATION: 112N-80W-16AAAA
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 112 N., R. 80 W.

3 - 11 SAND, LIGHT-BROWN, COARSE, PEBBLY; MOIST
11 - 16 SAND, DARK-BROWN, COARSE, CLAYEY; MOIST

* * * *

TEST HOLE NUMBER: 305
LOCATION: 112N-80W-16BABB
LEGAL LOCATION: NW NW NE NW SEC. 16, T. 112 N., R. 80 W.

10 - 15 SAND, MEDIUM-BROWN, WELL SORTED; DRY,
OXIDIZED
15 - 16 SAND, BROWN, GRAVELLY; MOIST, OXIDIZED
16 - 20 SAND, REDDISH-BROWN, CLAYEY; SATURATED,
OXIDIZED
20 - 25 SAND, GRAY, VERY CLAYEY; SATURATED

* * * *

TEST HOLE NUMBER: 306
LOCATION: 112N-80W-17ADDD
LEGAL LOCATION: SE SE SE NE SEC. 17, T. 112 N., R. 80 W.

10 - 14 SAND, REDDISH-BROWN, FINE, SILTY, CLAYEY;
MOIST, OXIDIZED
14 - 19 SAND, REDDISH-BROWN, COARSE, CLAYEY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 307
LOCATION: 112N-80W-17BAAA
LEGAL LOCATION: NE NE NE NW SEC. 17, T. 112 N., R. 80 W.

15 - 25 SAND, LIGHT-BROWN, CLAYEY; MOIST,
OXIDIZED, SATURATED AT 20 FEET,
COARSENS AND BECOMES LESS CLAYEY WITH
DEPTH

* * * *

TEST HOLE NUMBER: 308
LOCATION: 112N-80W-19AAAA
LEGAL LOCATION: NE NE NE NE SEC. 19, T. 112 N., R. 80 W.

10 - 17 SAND AND FINE GRAVEL, SILTY

* * * *

TEST HOLE NUMBER: 309
LOCATION: 112N-80W-21DDDD
LEGAL LOCATION: SE SE SE SE SEC. 21, T. 112 N., R. 80 W.

10 - 11 SAND, REDDISH-BROWN, FINE, CLAYEY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 310
LOCATION: 112N-81W-22DACC
LEGAL LOCATION: SW SW NE SE SEC. 22, T. 112 N., R. 81 W.

16 - 76 GRAVEL, FINE TO COARSE PEBBLE; WITH

COARSE SAND, WIDE VARIETY OF ROCK
TYPES INCLUDING CONCRETION FRAGMENTS

* * * *

TEST HOLE NUMBER: 311
LOCATION: 112N-81W-22DDCC
LEGAL LOCATION: SW SW SE SE SEC. 22, T. 112 N., R. 81 W.

21 - 38 SAND, BROWN, SILTY, GRAVELLY, CLAYEY;
SATURATED, GRADING TO GRAVEL WITH
DEPTH

* * * *

TEST HOLE NUMBER: 312
LOCATION: 112N-81W-22DDCD
LEGAL LOCATION: SE SW SE SE SEC. 22, T. 112 N., R. 81 W.

15 - 40 GRAVEL, FINE AND MEDIUM PEBBLES; SOME
COARSE SAND, MOSTLY QUARTZ CLASTS
(WESTERN DERIVED ALLUVIUM)

* * * *

TEST HOLE NUMBER: 313
LOCATION: 112N-81W-23BDDDB
LEGAL LOCATION: NW SE SE NW SEC. 23, T. 112 N., R. 81 W.

18 - 30 SAND, BROWN, FINE TO MEDIUM, PEBBLY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 314
LOCATION: 112N-81W-23CCCC
LEGAL LOCATION: SW SW SW SW SEC. 23, T. 112 N., R. 81 W.

15 - 25 GRAVEL, BROWN, COARSE, SANDY; DRY
25 - 33 SAND, LIGHT-BROWN, FINE TO COARSE; DRY

* * * *

TEST HOLE NUMBER: 315
LOCATION: 112N-81W-23DCCC
LEGAL LOCATION: SW SW SW SE SEC. 23, T. 112 N., R. 81 W.

19 - 28 SAND, COARSE, DIRTY, SOME PEBBLES

* * * *

TEST HOLE NUMBER: 316
LOCATION: 112N-81W-25AAAA
LEGAL LOCATION: NE NE NE NE SEC. 25, T. 112 N., R. 81 W.

15 - 16 GRAVEL, BROWN, COARSE; DRY, OXIDIZED
19 - 20 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED,
HIT ROCK, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 317
LOCATION: 112N-81W-26ABAA
LEGAL LOCATION: NE NE NW NE SEC. 26, T. 112 N., R. 81 W.

20 - 21 SAND, BROWN, FINE, SILTY, CLAYEY; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 318
LOCATION: 112N-81W-26BBBB
LEGAL LOCATION: NW NW NW NW SEC. 26, T. 112 N., R. 81 W.

17 - 19 SAND; SOME PEBBLES, DIRTY, MOIST,
CALCAREOUS

* * * *

TABLE 2. List of sand, gravel, and filler pits in Hughes County, South Dakota, which are on file at Department of Transportation Division of Highways, in Pierre, South Dakota.

EXPLANATION:

- a. Landowner and address
 - b. Location - given in quarter or half section, section number, township, and range
 - c. Aggregate type
 - d. Average thickness of deposits being mined, in feet
 - e. Average thickness of overburden in feet.
-

Pit 1

- a. Landowner: Walt Pruess - Pierre
- b. Location: SW 1/4 sec. 21, T. 108 N., R. 75 W.
- c. Aggregate type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 2

- a. Landowner: Walt Pruess - Pierre
- b. Location: NW 1/4 sec. 28, T. 108 N., R. 75 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 3

- a. Landowner: Jerome Irving - Harrold
- b. Location: SW 1/4 sec. 22, T. 108 N., R. 75 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 4

- a. Landowner: Elmer Roundhead
- b. Location: SE 1/4 sec. 31, T. 109 N., R. 74 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): ----

Pit 5

- a. Landowner: H. C. Calhoun - DeGray
- b. Location: NW 1/4 sec. 6, T. 109 N., R. 75 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 6

- a. Landowner: Not listed
- b. Location: SW 1/4 sec. 1, T. 110 N., R. 74 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 7

- a. Landowner: George Mathews - Blunt
- b. Location: SE 1/4 sec. 2, T. 110 N., R. 75 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 8

- a. Landowner: Charles Bowman - DeGray
- b. Location: NE 1/4 sec. 31, T. 110 N., R. 75 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 9

- a. Landowner: Not listed
- b. Location: SW 1/4 sec. 1, T. 110 N., R. 76 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 10

- a. Landowner: Leland Johnson - Pierre
- b. Location: NE 1/4 sec. 31, T. 110 N., R. 76 W.
- c. Aggregate type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 11

- a. Landowner: Charles Leischer - Pierre
- b. Location: SW 1/4 sec. 32, T. 110 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.2
- e. Overburden thickness (ft): 2.3

Pit 12

- a. Landowner: Charles Leischer - Pierre
- b. Location: SE 1/4 sec. 32, T. 110 N., R. 76 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 13

- a. Landowner: Ray Byrum - DeGray
- b. Location: NE 1/4 SE 1/4 sec. 33, T. 110 N., R. 76 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 14

- a. Landowner: School and Public Lands
- b. Location: SE 1/4 sec. 36, T. 110 N., R. 76 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): 5.0

Pit 15

- a. Landowner: George Steinel - Pierre
- b. Location: SE 1/4 sec. 14, T. 110 N., R. 77 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 16.9
- e. Overburden thickness (ft): 2.8

Pit 16

- a. Landowner: George Steinel - Pierre
- b. Location: NE 1/4 sec. 15, T. 110 N., R. 77 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.7
- e. Overburden thickness (ft): 3.3

Pit 17

- a. Landowner: George Steinel - Pierre
- b. Location: SE 1/4 sec. 15, T. 110 N., R. 77 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.8
- e. Overburden thickness (ft): 1.4

Pit 18

- a. Landowner: James Hunt - Pierre
- b. Location: NE 1/4 sec. 17, T. 110 N., R. 77 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.9
- e. Overburden thickness (ft): 0.8

Pit 19

- a. Landowner: Corps of Engineers
- b. Location: NE 1/4 sec. 20, T. 110 N., R. 77 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 8.2
- e. Overburden thickness (ft): 1.7

Pit 20

- a. Landowner: L. C. Peck - Pierre
- b. Location: NW 1/4 sec. 25, T. 110 N., R. 77 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.0
- e. Overburden thickness (ft): 1.7

Pit 21

- a. Landowner: Daniel Baade - Pierre
- b. Location: NE 1/4 sec. 36, T. 110 N., R. 77 W.
- c. Aggregate type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 22

- a. Landowner: Myril Arch - Pierre
- b. Location: N 1/2 sec. 3, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.3
- e. Overburden thickness (ft): 5.6

Pit 23

- a. Landowner: Myril Arch - Pierre
- b. Location: SW 1/4 sec. 3, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.3
- e. Overburden thickness (ft): 4.9

Pit 24

- a. Landowner: Myril Arch - Pierre
- b. Location: SE 1/4 sec. 4, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.6
- e. Overburden thickness (ft): 9.6

Pit 25

- a. Landowner: Myril Arch - Pierre
- b. Location: NE 1/4 sec. 9, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.9
- e. Overburden thickness (ft): 11.9

Pit 26

- a. Landowner: Frank Kirley - Pierre
- b. Location: Sec. 9, T. 110 N., R. 78 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 27

- a. Landowner: Myril Arch - Pierre
- b. Location: SE 1/4 sec. 9, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.5
- e. Overburden thickness (ft): 8.3

Pit 28

- a. Landowner: City of Pierre
- b. Location: NW 1/4 NE 1/4 sec. 10, T. 110 N., R. 78 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 0.5

Pit 29

- a. Landowner: Stanley Gould - Pierre
- b. Location: NW 1/4 sec. 10, T. 110 N., R. 78 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 30

- a. Landowner: L. R. Zigler - Pierre
- b. Location: SW 1/4 sec. 10, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.8
- e. Overburden thickness (ft): 3.8

Pit 31

- a. Landowner: Stanley Gould - Pierre
- b. Location: SW 1/4 sec. 10, T. 110 N., R. 78 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 5.0

Pit 32

- a. Landowner: Myril Arch - Pierre
- b. Location: SE 1/4 sec. 10, T. 110 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.0
- e. Overburden thickness (ft): 1.3

Pit 33

- a. Landowner: Not listed
- b. Location: SE 1/4 sec. 15, T. 110 N., R. 78 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 34

- a. Landowner: State Highway Department
- b. Location: NE 1/4 sec. 3, T. 110 N., R. 79 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 35

- a. Landowner: City of Pierre
- b. Location: Pierre
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 36

- a. Landowner: Corps of Engineers
- b. Location: SE 1/4 sec. 4, T. 110 N., R. 79 W.
- c. Aggregate type: Filler and sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 37

- a. Landowner: Corps of Engineers
- b. Location: SW 1/4 NE 1/4 sec. 10, T. 110 N., R. 79 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 5.4
- e. Overburden thickness (ft): 5.0

Pit 38

- a. Landowner: Benadictine Order - Pierre
- b. Location: SE 1/4 sec. 10, T. 110 N., R. 79 W.
- c. Aggregate type: Filler and sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 39

- a. Landowner: Not listed
- b. Location: SE 1/4 sec. 11, T. 110 N., R. 79 W.
- c. Aggregate type: Sand and filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 40

- a. Landowner: Hughes County
- b. Location: Pierre
- c. Aggregate type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 41

- a. Landowner: Hughes County
- b. Location: Pierre
- c. Aggregate type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 42

- a. Landowner: Floyd Putman - Harrold
- b. Location: SW 1/4 sec. 27. T. 111 N., R. 74 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 43

- a. Landowner: Erma K. Broneman - Harrold
- b. Location: NE 1/4 NW 1/4 sec. 33, T. 111 N., R. 74 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 44

- a. Landowner: Fred Stiner - Pierre
- b. Location: NE 1.4 sec. 33, T. 111 N., R. 74 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 45

- a. Landowner: Arthur Metzinger - Pierre
- b. Location: NE 1/4 sec. 8, T. 111 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.4
- e. Overburden thickness (ft): 5.1

Pit 46

- a. Landowner: Ervin Korkow - Blunt
- b. Location: NE 1/4 NW 1/4 sec. 35, T. 111 N., R. 77 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.5
- e. Overburden thickness (ft): 5.6

Pit 47

- a. Landowner: Leo Stoner - Pierre
- b. Location: E 1/2 sec. 23, T. 111 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.8
- e. Overburden thickness (ft): 5.8

Pit 48

- a. Landowner: Melvin Jensen - Pierre
- b. Location: NE 1/4 sec. 27, T. 111 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.6
- e. Overburden thickness (ft): 6.5

Pit 49

- a. Landowner: Stan Caldwell - Pierre
- b. Location: SW 1/4 sec. 30, T. 111 N., R. 78 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 4.5

Pit 50

- a. Landowner: George Pietrus -
- b. Location: SW 1/4 sec. 14, T. 111 N., R. 79 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 10.9
- e. Overburden thickness (ft): 2.9

Pit 51

- a. Landowner: Pete Lien -
- b. Location: NW 1/4 sec. 16, T. 111 N., R. 79 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 52

- a. Landowner: Not listed
- b. Location: Sec. 29, T. 111 N., R. 79 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 53

- a. Landowner: Church of God - Pierre
- b. Location: NW 1/4 sec. 34, T. 111 N., R. 79 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 54

- a. Landowner: George Specker - Pierre
- b. Location: SE 1/4 sec. 34, T. 111 N., R. 79 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 3.4

Pit 55

- a. Landowner: Ewald Mattheis - Harrold
- b. Location: SE 1/4 sec. 9, T. 112 N., R. 74 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.0
- e. Overburden thickness (ft): 4.9

Pit 56

- a. Landowner: Charles Marso - Harrold
- b. Location: NE 1/4 sec. 16, T. 112 N., R. 74 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 8.0
- e. Overburden thickness (ft): 3.9

Pit 57

- a. Landowner: Orlo Mercer - Blunt
- b. Location: SE 1/4 sec. 17, T. 112 N., R. 75 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 58

- a. Landowner: C. E. Mercer - Blunt
- b. Location: Sec. 2., T. 112 N., R. 76 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 3.0

Pit 59

- a. Landowner: Hughes County
- b. Location: Sec. 2, T. 112 N., R. 76 W.
- c. Aggregate type: Sand and gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 60

- a. Landowner: Hughes County
- b. Location: SE 1/4 sec. 2, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.5
- e. Overburden thickness (ft): 3.2

Pit 61

- a. Landowner: Dick Nighswonger - Blunt
- b. Location: SE 1/4 sec. 3, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 5.5
- e. Overburden thickness (ft): 2.7

Pit 62

- a. Landowner: John Bourk - Blunt
- b. Location: W 1/2 sec. 5, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.9
- e. Overburden thickness (ft): 4.8

Pit 63

- a. Landowner: Gene Hoyt - Blunt
- b. Location: SE 1/4 sec. 5, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 4.2

Pit 64

- a. Landowner: John Bourk, Jr., - Blunt
- b. Location: NE 1/4 sec. 6, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.6
- e. Overburden thickness (ft): 3.9

Pit 65

- a. Landowner: Robert Spaid - Blunt
- b. Location: SE 1/4 sec. 28, T. 112 N., R. 76 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.1
- e. Overburden thickness (ft): 3.0

Pit 66

- a. Landowner: John Pitlick - Pierre
- b. Location: SW 1/4 sec. 17, T. 112 N., R. 79 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.0
- e. Overburden thickness (ft): 6.0

Pit 67




- a. Landowner: Corps of Engineers
- b. Location: NW 1/4 sec. 4, T. 112 N., R. 80 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 5.8
- e. Overburden thickness (ft): 3.2

Pit 68

- a. Landowner: Joe Winckler - Pierre
- b. Location: NE 1/4 sec. 9, T. 112 N., R. 80 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.8
- e. Overburden thickness (ft): 7.2

Pit 69

- a. Landowner: Ivan Alleman - Pierre
- b. Location: SE 1/4 sec. 10, T. 112 N., R. 80 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.9
- e. Overburden thickness (ft): 5.8

-  Good probability of finding sand or gravel deposits.
-  Fair probability of finding sand or gravel deposits.
-  Poor probability of finding sand or gravel

Letters A through S designate areas described in the text.

- 117 ● Test hole containing sand or gravel within 25 feet of the land surface with 0-5 feet of overburden.
 - 118 ■ Test hole containing sand or gravel within 25 feet of the land surface with 6-25 feet of overburden.
- } Number refers to table 1.

- Test hole containing no sand or gravel within 25 feet of the land surface.

- (7) ✂ Sand and gravel pits-those with a number are listed in Table 2.

 Approximate boundary

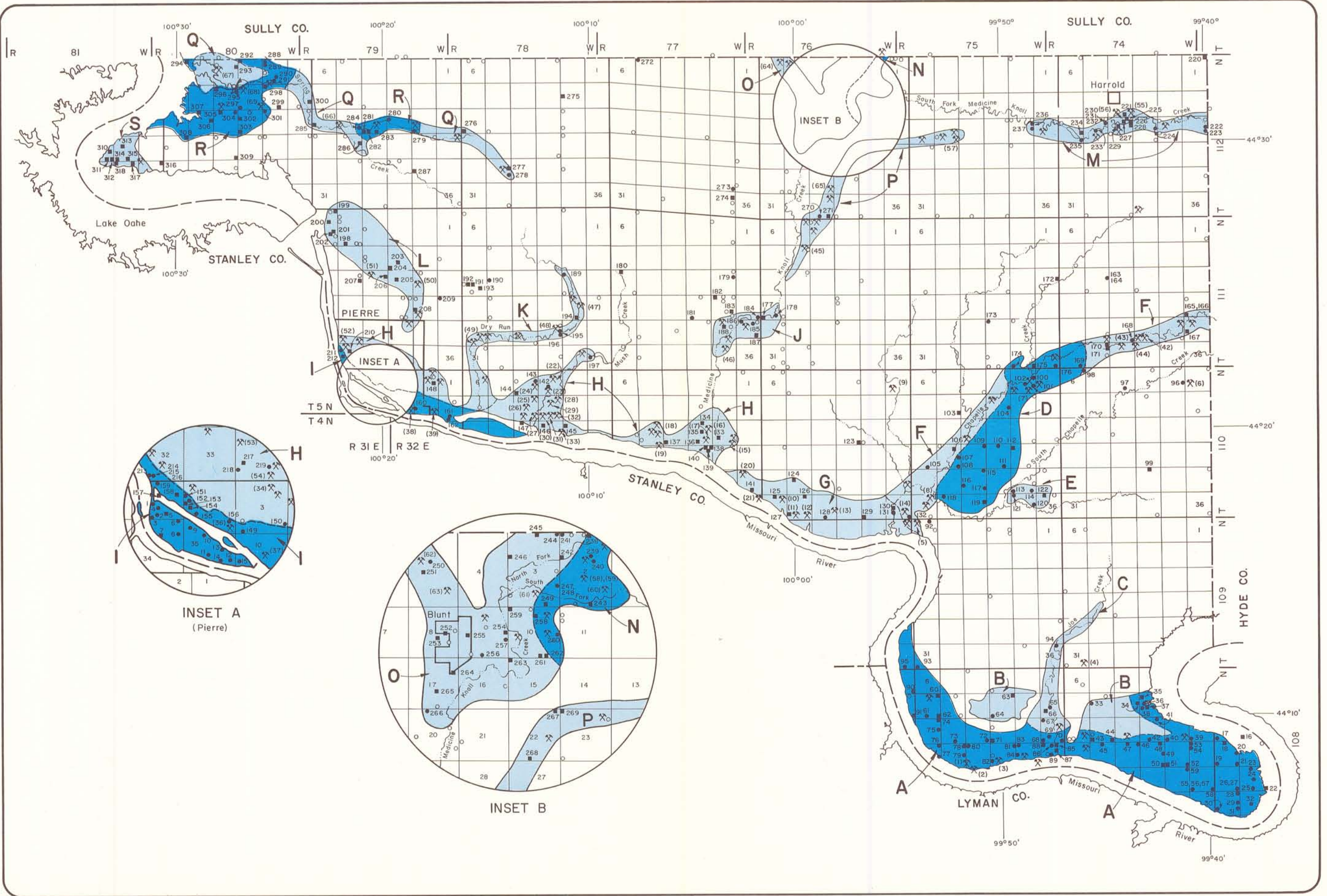


Index map of South Dakota showing location of Hughes County

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Sectionized township

Map showing test holes, sand and gravel pits, and sand and gravel deposits in Hughes County.



INSET A
(Pierre)

INSET B

