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Information Pamphlet No. 32

SAND AND GRAVEL RESOURCES IN
LAKE COUNTY, SOUTH DAKOTA

by

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and Lake County

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INTRODUCTION

This pamphlet is one of a series of reports describing the geology and water resources of Lake 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. Major aquifers in Lake and Moody Counties, South Dakota: South Dakota Geological Survey Information Pamphlet no. 31, Hansen, Donald S., U.S. Geological Survey, 1986.
- b. Water resources of Lake and Moody Counties, South Dakota: U.S. Geological Survey Water Resources Investigations Report no. 84-4209, Hansen, Donald S., 1986.
- c. Geology of Lake and Moody Counties, South Dakota: South Dakota Geological Survey Bulletin no. 35, Hammond, Richard (in preparation).

Report (a.) describes the availability, quality, and location of major aquifers (water-bearing deposits) in a short, easy to read, pamphlet. Report (b.) is a more technical and somewhat more exhaustive investigation of the water resources of the Counties. Report (c.) is a scientific investigation of the geology of Lake and Moody Counties.

GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Lake County were deposited by glacial ice or meltwater, that covered the region thousands of years ago. Some sand and gravel has 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 that is now Lake 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 Lake County area the till is made up primarily of clay and is not considered a source of sand and gravel. However, small isolated sand and gravel hills or lenses may occur.

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 slow flowing streams are made up primarily of silts and clays. Very fast 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 Lake 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 made them have since cut their channels deeper and developed new flood plains at lower levels. Some of the sand and gravel found in Lake County occurs in this type of deposit.

EXPLANATION OF TABLES

Table 1 is a list of only those test holes in which sand or gravel was encountered within 25 feet of the land surface. 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 Lake County are on file at the South Dakota Geological Survey in Vermillion, South Dakota.

Table 2 is a list of sand and gravel pits on file with the South Dakota Department of Transportation, Division of Highways in Pierre, South Dakota. Where possible, 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 location 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 map symbols. A dot (●) represents a test hole in which sand or gravel was found within 25 feet of the land surface, with 0 to 5 feet of overburden. A square (■) indicates that sand or gravel was found within 25 feet of the land surface but greater than 5 feet of overburden was encountered. 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 (○), which indicates that no sand or gravel was found within 25 feet of the land surface. Logs of these test holes are available at the South Dakota Geological Survey in Vermillion, South Dakota. Locations of the sand and gravel pits are indicated by a crossed pick and shovel (⌘). 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, South Dakota. 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 photograph interpretation, and field observations. Areas with a "good" or "fair" probability of finding sand and gravel have been assigned a letter on the map and are discussed further 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 thick, continuous deposit of outwash sand and gravel. It encompasses approximately 37 square miles within the Skunk Creek drainage basin. Sand and gravel thicknesses of greater than 50 feet are not uncommon within the area. The area as a whole, however, has an average aggregate thickness of about 30 feet for all the test holes drilled. Very little overburden was encountered; averaging about 3 feet over the area. Glacial till crops out at several spots

within the area, and these spots have been designated as "poor." A great deal of mining for sand and gravel has occurred in this area.

Areas "B" and "C" are outwash deposits associated with the Buffalo Creek and North Buffalo Creek valleys. These areas have been designated as "fair," because the deposits of sand and gravel are thin and discontinuous.

Area "D" is a deposit of sand and gravel located on the side of a large hill. It has been designated as "fair" because portions of the deposit are covered by as much as 20 feet of glacial till.

Area "E," designated as "fair," contains sand and gravel deposits within the valley of the East Fork Vermillion River. The sand and gravel deposits exist as discontinuous terrace remnants on the valley walls and isolated and discontinuous patches on the valley floor. Most of the sand and gravel has been removed by erosion and replaced by a very silty alluvium.

Area "F," designated as "fair," represents sand and gravel deposits in the valley of Bachelor Creek. Most of the area is covered by very silty alluvium, but there are a few isolated patches of sand and gravel. Test hole 77 encountered 22 feet of sand and gravel.

Area "G," designated as "good," is a large body of outwash encompassing about 12 square miles of the Battle Creek valley. It is a fairly continuous body of sand and gravel, averaging about 16 feet in thickness with about a 3-foot average of overburden in the test holes drilled. A good deal of mining for sand and gravel has occurred in this area.

Area "H" contains sand and gravel deposits in the upstream portion of the Battle Creek valley. This area has been designated as "fair" because the deposits here are thin, contain very coarse material, and are discontinuous. There are quite a few gravel pits that once produced from this area.

Area "I," located in the northeast corner of the County contains sand and gravel deposits within the valley of a small unnamed creek. The area has been designated as "fair," because the sand and gravel deposits are thin and discontinuous. Test hole 166 encountered 16 feet of sand and gravel.

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. The development of a specific site will depend upon material specifications for the desired use, development costs, transportation costs, and future markets.

TABLE 1. LIST OF TEST HOLES IN LAKE COUNTY, SOUTH DAKOTA,
WHICH CONTAIN SAND OR GRAVEL WITHIN 25 FEET OF THE
LAND SURFACE.

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: 105N-51W-05BBB
LEGAL LOCATION: NW NW NW SEC. 05, T. 105 N., R. 51 W.

0 - 32 SAND AND GRAVEL, MEDIUM TO COARSE SAND,
FINE GRAVEL

* * * *

TEST HOLE NUMBER: 2
LOCATION: 105N-51W-05CCC
LEGAL LOCATION: SW SW SW SEC. 05, T. 105 N., R. 51 W.

0 - 7 SAND AND GRAVEL, FINE SAND, FINE GRAVEL
17 - 27 SAND AND GRAVEL, FINE TO COARSE SAND,
FINE GRAVEL

* * * *

TEST HOLE NUMBER: 3
LOCATION: 105N-51W-05CDCC
LEGAL LOCATION: SW SW SE SW SEC. 05, T. 105 N., R. 51 W.

1 - 22 SAND, BROWN, CLAYEY, GRAVELLY

* * * *

TEST HOLE NUMBER: 4
LOCATION: 105N-51W-05CDD
LEGAL LOCATION: SE SE SW SEC. 05, T. 105 N., R. 51 W.

2 - 4 GRAVEL, FINE
4 - 14 GRAVEL, FINE TO VERY COARSE
14 - 29 SAND, COARSE

* * * *

TEST HOLE NUMBER: 5
LOCATION: 105N-51W-05DAD
LEGAL LOCATION: SE NE SE SEC. 05, T. 105 N., R. 51 W.

0 - 19 SAND, FINE

* * * *

TEST HOLE NUMBER: 6
LOCATION: 105N-51W-05DDD
LEGAL LOCATION: SE SE SE SEC. 05, T. 105 N., R. 51 W.

12 - 35 SAND AND GRAVEL, MEDIUM TO COARSE SAND,
FINE TO MEDIUM GRAVEL

* * * *

TEST HOLE NUMBER: 7
LOCATION: 105N-51W-08CDD
LEGAL LOCATION: SE SE SW SEC. 08, T. 105 N., R. 51 W.

4 - 9 GRAVEL, COARSE, SILTY
9 - 14 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
14 - 24 SAND, COARSE, SILTY

* * * *

TEST HOLE NUMBER: 8
LOCATION: 105N-51W-08DAA
LEGAL LOCATION: NE NE SE SEC. 08, T. 105 N., R. 51 W.

0 - 4 SAND AND GRAVEL, FINE
4 - 9 GRAVEL, MEDIUM
9 - 29 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL

* * * *

TEST HOLE NUMBER: 9
LOCATION: 105N-51W-09BBBB
LEGAL LOCATION: NW NW NW NW SEC. 09, T. 105 N., R. 51 W.

5 - 13 GRAVEL, COARSE
23 - 51 GRAVEL, FINE TO MEDIUM

* * * *

TEST HOLE NUMBER: 10

LOCATION: 105N-51W-09BCCB

LEGAL LOCATION: NW SW SW NW SEC. 09, T. 105 N., R. 51 W.

3 - 43 SAND, REDDISH-BROWN, COARSE, PEBBLY;
MOIST

* * * *

TEST HOLE NUMBER: 11

LOCATION: 105N-51W-09DAA

LEGAL LOCATION: NE NE SE SEC. 09, T. 105 N., R. 51 W.

3 - 4 GRAVEL, MEDIUM
4 - 9 SAND, MEDIUM TO COARSE
9 - 14 SAND, MEDIUM
14 - 24 SAND, FINE; DIRTY

* * * *

TEST HOLE NUMBER: 12

LOCATION: 105N-51W-11BCC

LEGAL LOCATION: SW SW NW SEC. 11, T. 105 N., R. 51 W.

3 - 11 SAND, MEDIUM TO COARSE

* * * *

TEST HOLE NUMBER: 13

LOCATION: 105N-51W-11CCB

LEGAL LOCATION: NW SW SW SEC. 11, T. 105 N., R. 51 W.

2 - 9 SAND, FINE TO MEDIUM, CLAYEY
9 - 48 SAND AND GRAVEL, MEDIUM TO COARSE SAND,
FINE GRAVEL

* * * *

TEST HOLE NUMBER: 14

LOCATION: 105N-51W-11CCDC

LEGAL LOCATION: SW SE SW SW SEC. 11, T. 105 N., R. 51 W.

2 - 28 GRAVEL, COARSE

* * * *

TEST HOLE NUMBER: 15

LOCATION: 105N-51W-11CDCC

LEGAL LOCATION: SW SW SE SW SEC. 11, T. 105 N., R. 51 W.

0 -	3	SAND, LIGHT-BROWN, MEDIUM TO COARSE, PEBBLY; DRY
3 -	23	SAND, RED, MEDIUM TO COARSE, PEBBLY
23 -	40	SAND, BROWN, COARSE, SILTY, GRAVELLY

* * * *

TEST HOLE NUMBER: 16
LOCATION: 105N-51W-14BBB
LEGAL LOCATION: NW NW NW SEC. 14, T. 105 N., R. 51 W.

7 -	16	SAND, GRAY, FINE TO COARSE
16 -	23	SAND AND GRAVEL, COARSE
23 -	42	SAND, MEDIUM TO COARSE

* * * *

TEST HOLE NUMBER: 17
LOCATION: 105N-51W-15DCC
LEGAL LOCATION: SW SW SE SEC. 15, T. 105 N., R. 51 W.

1 -	68	SAND AND GRAVEL, MEDIUM TO COARSE SAND, FINE GRAVEL
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TEST HOLE NUMBER: 18
LOCATION: 105N-51W-15DDDC
LEGAL LOCATION: SW SE SE SE SEC. 15, T. 105 N., R. 51 W.

1 -	8	SAND, REDDISH-BROWN, PEBBLY, CLAYEY; MOIST
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TEST HOLE NUMBER: 19
LOCATION: 105N-51W-16AAA
LEGAL LOCATION: NE NE NE SEC. 16, T. 105 N., R. 51 W.

0 -	20	SAND AND GRAVEL, FINE TO COARSE SAND, FINE GRAVEL
20 -	25	SAND AND GRAVEL, COARSE SAND, FINE TO COARSE GRAVEL

* * * *

TEST HOLE NUMBER: 20
LOCATION: 105N-51W-16BBB
LEGAL LOCATION: NW NW NW SEC. 16, T. 105 N., R. 51 W.

1 - 4 GRAVEL, FINE
4 - 14 SAND, MEDIUM TO COARSE
14 - 31 SAND, COARSE

* * * *

TEST HOLE NUMBER: 21
LOCATION: 105N-51W-16CBBC 1
LEGAL LOCATION: SW NW NW SW SEC. 16, T. 105 N., R. 51 W.

2 - 28 GRAVEL, BROWN, COARSE

* * * *

TEST HOLE NUMBER: 22
LOCATION: 105N-51W-16CBBC 2
LEGAL LOCATION: SW NW NW SW SEC. 16, T. 105 N., R. 51 W.

2 - 28 GRAVEL, BROWN, COARSE

* * * *

TEST HOLE NUMBER: 23
LOCATION: 105N-51W-16CDD
LEGAL LOCATION: SE SE SW SEC. 16, T. 105 N., R. 51 W.

0 - 13 SAND AND GRAVEL, COARSE SAND, FINE TO
MEDIUM GRAVEL
20 - 35 SAND AND GRAVEL, FINE TO COARSE SAND,
FINE GRAVEL

* * * *

TEST HOLE NUMBER: 24
LOCATION: 105N-51W-16DAAA 1
LEGAL LOCATION: NE NE NE SE SEC. 16, T. 105 N., R. 51 W.

0 - 16 GRAVEL, FINE TO MEDIUM
21 - 76 GRAVEL, COARSE TO MEDIUM

* * * *

TEST HOLE NUMBER: 25

LOCATION: 105N-51W-16DAAA 2

LEGAL LOCATION: NE NE NE SE SEC. 16, T. 105 N., R. 51 W.

3 - 25 SAND AND GRAVEL, FINE; SOME INTERBEDDED
CLAYS
25 - 52 GRAVEL, MEDIUM TO VERY COARSE

* * * *

TEST HOLE NUMBER: 26

LOCATION: 105N-51W-17ADDA

LEGAL LOCATION: NE SE SE NE SEC. 17, T. 105 N., R. 51 W.

0 - 4 SAND, FINE
4 - 30 GRAVEL AND SAND, FINE TO MEDIUM

* * * *

TEST HOLE NUMBER: 27

LOCATION: 105N-51W-17DAD

LEGAL LOCATION: SE NE SE SEC. 17, T. 105 N., R. 51 W.

4 - 17 SAND, COARSE

* * * *

TEST HOLE NUMBER: 28

LOCATION: 105N-51W-17DADA

LEGAL LOCATION: NE SE NE SE SEC. 17, T. 105 N., R. 51 W.

0 - 28 SAND, BROWN, PEBBLY

* * * *

TEST HOLE NUMBER: 29

LOCATION: 105N-51W-17DDD

LEGAL LOCATION: SE SE SE SEC. 17, T. 105 N., R. 51 W.

0 - 9 SAND, FINE, SILTY
9 - 14 SAND, FINE
14 - 19 SAND, MEDIUM

* * * *

TEST HOLE NUMBER: 30

LOCATION: 105N-51W-18BABB

LEGAL LOCATION: NW NW NE NW SEC. 18, T. 105 N., R. 51 W.

2 - 5 GRAVEL, REDDISH-BROWN, MEDIUM TO COARSE;
 DRY, OXIDIZED
 5 - 7 SAND, REDDISH-BROWN, COARSE, GRAVELLY;
 MOIST, OXIDIZED
 7 - 9 SAND, REDDISH-BROWN, VERY CLAYEY; MOIST,
 OXIDIZED
 19 - 29 GRAVEL, GRAY, COARSE; SATURATED,
 UNOXIDIZED

* * * *

TEST HOLE NUMBER: 31
 LOCATION: 105N-51W-18DAA
 LEGAL LOCATION: NE NE SE SEC. 18, T. 105 N., R. 51 W.

0 - 4 SAND, FINE
 4 - 9 SAND, COARSE
 9 - 14 SAND, MEDIUM; DIRTY

* * * *

TEST HOLE NUMBER: 32
 LOCATION: 105N-51W-18DCC
 LEGAL LOCATION: SW SW SE SEC. 18, T. 105 N., R. 51 W.

4 - 29 SAND, SILTY

* * * *

TEST HOLE NUMBER: 33
 LOCATION: 105N-51W-22BBB
 LEGAL LOCATION: NW NW NW SEC. 22, T. 105 N., R. 51 W.

2 - 4 SAND, MEDIUM
 4 - 19 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
 19 - 24 GRAVEL, MEDIUM TO COARSE
 24 - 29 GRAVEL, MEDIUM

* * * *

TEST HOLE NUMBER: 34
 LOCATION: 105N-51W-22BCBC
 LEGAL LOCATION: SW NW SW NW SEC. 22, T. 105 N., R. 51 W.

5 - 21 SAND, REDDISH-BROWN, MEDIUM, CLAYEY;
 MOIST, OXIDIZED, SATURATED AT 9 FEET

21 - 63 GRAVEL, REDDISH-BROWN, VERY FINE, SANDY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 35
LOCATION: 105N-51W-22DAD
LEGAL LOCATION: SE NE SE SEC. 22, T. 105 N., R. 51 W.

0 - 4 SAND, COARSE
4 - 9 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
9 - 14 SAND, MEDIUM TO COARSE
14 - 19 SAND, MEDIUM
19 - 24 GRAVEL, MEDIUM
24 - 29 GRAVEL, MEDIUM TO COARSE

* * * *

TEST HOLE NUMBER: 36
LOCATION: 105N-51W-23AAA
LEGAL LOCATION: NE NE NE SEC. 23, T. 105 N., R. 51 W.

9 - 14 GRAVEL

* * * *

TEST HOLE NUMBER: 37
LOCATION: 105N-51W-23ADAA
LEGAL LOCATION: NE NE SE NE SEC. 23, T. 105 N., R. 51 W.

1 - 10 SAND, LIGHT-BROWN, PEBBLY; MOIST

* * * *

TEST HOLE NUMBER: 38
LOCATION: 105N-51W-23ADD
LEGAL LOCATION: SE SE NE SEC. 23, T. 105 N., R. 51 W.

1 - 15 SAND, REDDISH-BROWN, FINE TO COARSE,
CLAYEY; SOME PEBBLES

* * * *

TEST HOLE NUMBER: 39
LOCATION: 105N-51W-23BAA
LEGAL LOCATION: NE NE NW SEC. 23, T. 105 N., R. 51 W.

12 - 20 SAND, FINE TO MEDIUM, SILTY

* * * *

TEST HOLE NUMBER: 40
LOCATION: 105N-51W-23BBB
LEGAL LOCATION: NW NW NW SEC. 23, T. 105 N., R. 51 W.

1 - 11 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
23 - 62 SAND, MEDIUM TO COARSE

* * * *

TEST HOLE NUMBER: 41
LOCATION: 105N-51W-23BDA
LEGAL LOCATION: NE SE NW SEC. 23, T. 105 N., R. 51 W.

2 - 12 SAND, FINE TO COARSE
12 - 52 GRAVEL, FINE TO COARSE

* * * *

TEST HOLE NUMBER: 42
LOCATION: 105N-51W-23BDB
LEGAL LOCATION: NW SE NW SEC. 23, T. 105 N., R. 51 W.

2 - 17 SAND, FINE TO MEDIUM
17 - 49 GRAVEL, FINE TO COARSE

* * * *

TEST HOLE NUMBER: 43
LOCATION: 105N-51W-23DAAA
LEGAL LOCATION: NE NE NE SE SEC. 23, T. 105 N., R. 51 W.

1 - 20 SAND, LIGHT-RED-BROWN, GRAVELLY
20 - 54 SAND, COARSE

* * * *

TEST HOLE NUMBER: 44
LOCATION: 105N-51W-23DDAA
LEGAL LOCATION: NE NE SE SE SEC. 23, T. 105 N., R. 51 W.

16 - 24 SAND, DARK-GRAY, GRAVELLY; SATURATED

* * * *

TEST HOLE NUMBER: 45
LOCATION: 105N-51W-23DDDD
LEGAL LOCATION: SE SE SE SE SEC. 23, T. 105 N., R. 51 W.

0 - 13 SAND, REDDISH-BROWN, MEDIUM
13 - 18 SAND, BROWN, GRAVELLY

* * * *

TEST HOLE NUMBER: 46
LOCATION: 105N-51W-24BAAA
LEGAL LOCATION: NE NE NE NW SEC. 24, T. 105 N., R. 51 W.

6 - 7 SAND, REDDISH-BROWN, MEDIUM; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 47
LOCATION: 105N-51W-24CBBB
LEGAL LOCATION: NW NW NW SW SEC. 24, T. 105 N., R. 51 W.

8 - 50 GRAVEL, MEDIUM; SAMPLED 21 TO 41 FEET

* * * *

TEST HOLE NUMBER: 48
LOCATION: 105N-51W-24CCB
LEGAL LOCATION: NW SW SW SEC. 24, T. 105 N., R. 51 W.

9 - 14 SAND, MEDIUM, SILTY
14 - 29 SAND, COARSE

* * * *

TEST HOLE NUMBER: 49
LOCATION: 105N-51W-27AAD
LEGAL LOCATION: SE NE NE SEC. 27, T. 105 N., R. 51 W.

9 - 24 SAND, GRAY, SILTY

* * * *

TEST HOLE NUMBER: 50
LOCATION: 105N-51W-34CCCC
LEGAL LOCATION: SW SW SW SW SEC. 34, T. 105 N., R. 51 W.

0 - 3 SAND, MEDIUM

* * * *

TEST HOLE NUMBER: 51
LOCATION: 105N-52W-01BBB
LEGAL LOCATION: NW NW NW SEC. 01, T. 105 N., R. 52 W.

0 - 4 SAND, MEDIUM
4 - 9 SAND, MEDIUM TO COARSE
9 - 15 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL

* * * *

TEST HOLE NUMBER: 52
LOCATION: 105N-52W-01DCCC
LEGAL LOCATION: SW SW SW SE SEC. 01, T. 105 N., R. 52 W.

5 - 6 SAND, REDDISH-BROWN, MEDIUM, PEBBLY;
MOIST, OXIDIZED
9 - 20 SAND, REDDISH-BROWN, GRAVELLY; MOIST,
OXIDIZED, SATURATED AT 15 FEET
20 - 28 SAND, BROWN, GRAVELLY, SILTY, CLAYEY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 53
LOCATION: 105N-52W-01DDA
LEGAL LOCATION: NE SE SE SEC. 01, T. 105 N., R. 52 W.

4 - 14 SAND, FINE

* * * *

TEST HOLE NUMBER: 54
LOCATION: 105N-52W-02DAA
LEGAL LOCATION: NE NE SE SEC. 02, T. 105 N., R. 52 W.

0 - 4 GRAVEL, FINE
4 - 9 SAND, MEDIUM TO COARSE, PEBBLY
9 - 16 GRAVEL, MEDIUM

* * * *

TEST HOLE NUMBER: 55
LOCATION: 105N-52W-04AAAD
LEGAL LOCATION: SE NE NE NE SEC. 04, T. 105 N., R. 52 W.

21 - 46 GRAVEL, MEDIUM TO COARSE; SOME SAND,
COARSE

* * * *

TEST HOLE NUMBER: 56
LOCATION: 105N-52W-04ADD
LEGAL LOCATION: SE SE NE SEC. 04, T. 105 N., R. 52 W.

19 - 24 SAND, COARSE
24 - 77 SAND, MEDIUM-COARSE

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TEST HOLE NUMBER: 57
LOCATION: 105N-52W-12CDD
LEGAL LOCATION: SE SE SW SEC. 12, T. 105 N., R. 52 W.

0 - 4 GRAVEL, FINE TO COARSE
4 - 9 GRAVEL, COARSE, CLAYEY
14 - 19 SAND, COARSE

* * * *

TEST HOLE NUMBER: 58
LOCATION: 105N-52W-12DCCD
LEGAL LOCATION: SE SW SW SE SEC. 12, T. 105 N., R. 52 W.

0 - 3 GRAVEL, COARSE; DRY
10 - 18 SAND, BROWN; SATURATED
18 - 19 GRAVEL, BROWN, COARSE; SATURATED
19 - 25 SAND, BROWN; SATURATED

* * * *

TEST HOLE NUMBER: 59
LOCATION: 105N-52W-14ABBB
LEGAL LOCATION: NW NW NW NE SEC. 14, T. 105 N., R. 52 W.

3 - 5 GRAVEL, BROWN, MEDIUM; DRY
5 - 10 GRAVEL, BROWN, MEDIUM; SATURATED
10 - 33 GRAVEL, BROWN, COARSE; SATURATED

* * * *

TEST HOLE NUMBER: 60

LOCATION: 105N-52W-15CDC
LEGAL LOCATION: SW SE SW SEC. 15, T. 105 N., R. 52 W.

- 2 - 7 SAND, BROWN, COARSE
- 7 - 24 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL, CLAYEY

* * * *

TEST HOLE NUMBER: 61
LOCATION: 105N-52W-19DDDD
LEGAL LOCATION: SE SE SE SE SEC. 19, T. 105 N., R. 52 W.

- 1 - 5 SAND, REDDISH-BROWN, PEBBLY, POORLY SORTED; MOIST, OXIDIZED
- 5 - 13 GRAVEL, BROWN, MEDIUM TO COARSE, CLAYEY, SANDY; MOIST, ABANDONED HOLE

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TEST HOLE NUMBER: 62
LOCATION: 105N-52W-20CBCC
LEGAL LOCATION: SW SW NW SW SEC. 20, T. 105 N., R. 52 W.

- 2 - 6 GRAVEL, BROWN, VERY COARSE; DRY, OXIDIZED

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TEST HOLE NUMBER: 63
LOCATION: 105N-52W-20DAAA
LEGAL LOCATION: NE NE NE SE SEC. 20, T. 105 N., R. 52 W.

- 4 - 7 GRAVEL, MEDIUM TO COARSE, SANDY

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TEST HOLE NUMBER: 64
LOCATION: 105N-52W-22BBBB
LEGAL LOCATION: NW NW NW NW SEC. 22, T. 105 N., R. 52 W.

- 3 - 15 GRAVEL, MEDIUM, SANDY

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TEST HOLE NUMBER: 65
LOCATION: 105N-52W-25ADDA
LEGAL LOCATION: NE SE SE NE SEC. 25, T. 105 N., R. 52 W.

25 - 28 GRAVEL, DARK-BROWN, MEDIUM, SANDY;
SATURATED, OXIDIZED

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TEST HOLE NUMBER: 66
LOCATION: 105N-52W-36BAA
LEGAL LOCATION: NE NE NW SEC. 36, T. 105 N., R. 52 W.

0 - 15 SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
15 - 28 SAND AND GRAVEL, CLAYEY

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TEST HOLE NUMBER: 67
LOCATION: 105N-52W-36CCCD
LEGAL LOCATION: SE SW SW SW SEC. 36, T. 105 N., R. 52 W.

2 - 5 GRAVEL, SANDY

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TEST HOLE NUMBER: 68
LOCATION: 105N-53W-30BCBB
LEGAL LOCATION: NW NW SW NW SEC. 30, T. 105 N., R. 53 W.

2 - 14 GRAVEL, BROWN, CLAYEY

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TEST HOLE NUMBER: 69
LOCATION: 105N-53W-30CCCC
LEGAL LOCATION: SW SW SW SW SEC. 30, T. 105 N., R. 53 W.

1 - 3 SAND, BROWN, FINE TO MEDIUM; MOIST
3 - 28 GRAVEL, REDDISH-BROWN, MEDIUM; SATURATED

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TEST HOLE NUMBER: 70
LOCATION: 105N-53W-31BBBB
LEGAL LOCATION: NW NW NW NW SEC. 31, T. 105 N., R. 53 W.

2 - 19 SAND AND GRAVEL, COARSE; SAMPLED AT 15
FEET

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TEST HOLE NUMBER: 71
LOCATION: 105N-53W-36CDCC
LEGAL LOCATION: SW SW SE SW SEC. 36, T. 105 N., R. 53 W.

1 - 4 SAND, BROWN, MEDIUM, GRAVELLY; DRY,
OXIDIZED
4 - 6 GRAVEL, REDDISH-BROWN, VERY COARSE; DRY,
OXIDIZED
6 - 16 SAND, REDDISH-BROWN, MEDIUM; DRY,
OXIDIZED

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TEST HOLE NUMBER: 72
LOCATION: 105N-54W-24ABAB
LEGAL LOCATION: NW NE NW NE SEC. 24, T. 105 N., R. 54 W.

3 - 5 GRAVEL, COARSE

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TEST HOLE NUMBER: 73
LOCATION: 105N-54W-24BAAA
LEGAL LOCATION: NE NE NE NW SEC. 24, T. 105 N., R. 54 W.

0 - 6 GRAVEL, REDDISH-BROWN, COARSE, COBBLY,
SANDY; DRY

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TEST HOLE NUMBER: 74
LOCATION: 105N-54W-25DDCD
LEGAL LOCATION: SE SW SE SE SEC. 25, T. 105 N., R. 54 W.

4 - 10 GRAVEL, BROWN, COARSE, SANDY; DRY
10 - 14 SAND, BROWN, PEBBLY; MOIST

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TEST HOLE NUMBER: 75
LOCATION: 106N-51W-02CCCD
LEGAL LOCATION: SE SW SW SW SEC. 02, T. 106 N., R. 51 W.

5 - 9 SAND, BROWN, FINE, CLAYEY; SATURATED,

OXIDIZED

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TEST HOLE NUMBER: 76
LOCATION: 106N-51W-03BAAA
LEGAL LOCATION: NE NE NE NW SEC. 03, T. 106 N., R. 51 W.

24 - 26 GRAVEL, BROWN, VERY COARSE; MOIST,
OXIDIZED

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TEST HOLE NUMBER: 77
LOCATION: 106N-51W-03DBDA
LEGAL LOCATION: NE SE NW SE SEC. 03, T. 106 N., R. 51 W.

0 - 16 SAND, BROWN, MEDIUM, GRAVELLY, CLAYEY;
MOIST, OXIDIZED, SATURATED AT 7 FEET
19 - 22 GRAVEL, GRAY, COARSE, SANDY; MOIST

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TEST HOLE NUMBER: 78
LOCATION: 106N-51W-11BAAB
LEGAL LOCATION: NW NE NE NW SEC. 11, T. 106 N., R. 51 W.

1 - 3 SAND, LIGHT-BROWN, FINE, SILTY; MOIST,
OXIDIZED

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TEST HOLE NUMBER: 79
LOCATION: 106N-51W-27CDCC
LEGAL LOCATION: SW SW SE SW SEC. 27, T. 106 N., R. 51 W.

0 - 16 SAND

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TEST HOLE NUMBER: 80
LOCATION: 106N-51W-32BCC
LEGAL LOCATION: SW SW NW SEC. 32, T. 106 N., R. 51 W.

3 - 4 GRAVEL, COARSE
4 - 9 GRAVEL

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TEST HOLE NUMBER: 81
LOCATION: 106N-52W-06BCC
LEGAL LOCATION: SW SW NW SEC. 06, T. 106 N., R. 52 W.

4 - 9 SAND AND GRAVEL, MEDIUM SAND, FINE GRAVEL
9 - 14 SAND, COARSE

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TEST HOLE NUMBER: 82
LOCATION: 106N-52W-07ACC
LEGAL LOCATION: SW SW NE SEC. 07, T. 106 N., R. 52 W.

4 - 9 GRAVEL, COARSE
9 - 14 GRAVEL
14 - 29 GRAVEL, COARSE

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TEST HOLE NUMBER: 83
LOCATION: 106N-52W-08CAAA
LEGAL LOCATION: NE NE NE SW SEC. 08, T. 106 N., R. 52 W.

1 - 44 SAND AND GRAVEL

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TEST HOLE NUMBER: 84
LOCATION: 106N-52W-08CAAD
LEGAL LOCATION: SE NE NE SW SEC. 08, T. 106 N., R. 52 W.

0 - 39 GRAVEL

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TEST HOLE NUMBER: 85
LOCATION: 106N-52W-08CADB
LEGAL LOCATION: NW SE NE SW SEC. 08, T. 106 N., R. 52 W.

0 - 31 SAND AND GRAVEL

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TEST HOLE NUMBER: 86
LOCATION: 106N-52W-08CADB 1
LEGAL LOCATION: NW SE NE SW SEC. 08, T. 106 N., R. 52 W.

12 - 42 GRAVEL, FINE TO COARSE; SOME COAL

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TEST HOLE NUMBER: 87

LOCATION: 106N-52W-08CADB 2

LEGAL LOCATION: NW SE NE SW SEC. 08, T. 106 N., R. 52 W.

13 - 33 GRAVEL, FINE TO COARSE; SOME COAL

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TEST HOLE NUMBER: 88

LOCATION: 106N-52W-08DAAA 1

LEGAL LOCATION: NE NE NE SE SEC. 08, T. 106 N., R. 52 W.

10 - 50 SAND AND GRAVEL, COARSE SAND AND FINE TO
MEDIUM GRAVEL; CLEAN

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TEST HOLE NUMBER: 89

LOCATION: 106N-52W-08DAAA 2

LEGAL LOCATION: NE NE NE SE SEC. 08, T. 106 N., R. 52 W.

8 - 30 GRAVEL, MEDIUM TO COARSE, SANDY

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TEST HOLE NUMBER: 90

LOCATION: 106N-52W-08DDDD

LEGAL LOCATION: SE SE SE SE SEC. 08, T. 106 N., R. 52 W.

0 - 4 GRAVEL, COARSE
8 - 16 GRAVEL, COARSE
22 - 24 GRAVEL

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TEST HOLE NUMBER: 91

LOCATION: 106N-52W-09CBB

LEGAL LOCATION: NW NW SW SEC. 09, T. 106 N., R. 52 W.

9 - 14 GRAVEL, COARSE
14 - 19 GRAVEL
19 - 24 GRAVEL, FINE
24 - 32 SAND, MEDIUM TO COARSE

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TEST HOLE NUMBER: 92
LOCATION: 106N-52W-15BBBC
LEGAL LOCATION: SW NW NW NW SEC. 15, T. 106 N., R. 52 W.

0 - 1 SAND, YELLOW

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TEST HOLE NUMBER: 93
LOCATION: 106N-52W-15CCCB
LEGAL LOCATION: NW SW SW SW SEC. 15, T. 106 N., R. 52 W.

4 - 9 GRAVEL, REDDISH-BROWN, MEDIUM, VERY
SANDY, POORLY SORTED; DRY, OXIDIZED
9 - 21 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
VERY CLAYEY; SATURATED, OXIDIZED
21 - 22 GRAVEL, REDDISH-BROWN, COARSE; SATURATED
22 - 28 SAND, REDDISH-BROWN, COARSE, CLAYEY;
SATURATED, OXIDIZED

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TEST HOLE NUMBER: 94
LOCATION: 106N-52W-16ABB
LEGAL LOCATION: NW NW NE SEC. 16, T. 106 N., R. 52 W.

2 - 15 GRAVEL, FINE TO COARSE
15 - 20 GRAVEL, FINE
20 - 25 GRAVEL, COARSE
25 - 35 GRAVEL, FINE

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TEST HOLE NUMBER: 95
LOCATION: 106N-52W-16CAA
LEGAL LOCATION: NE NE SW SEC. 16, T. 106 N., R. 52 W.

2 - 7 GRAVEL, COARSE
7 - 12 GRAVEL, FINE
12 - 17 GRAVEL, COARSE
17 - 47 GRAVEL, FINE

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TEST HOLE NUMBER: 96

LOCATION: 106N-52W-21ABB 1
LEGAL LOCATION: NW NW NE SEC. 21, T. 106 N., R. 52 W.

0 -	4	SAND AND GRAVEL, COARSE GRAVEL
4 -	9	SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
9 -	11	GRAVEL, FINE
19 -	24	GRAVEL, FINE, SILTY

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TEST HOLE NUMBER: 97
LOCATION: 106N-52W-21ABB 2
LEGAL LOCATION: NW NW NE SEC. 21, T. 106 N., R. 52 W.

1 -	12	GRAVEL, COARSE
12 -	60	GRAVEL, MEDIUM

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TEST HOLE NUMBER: 98
LOCATION: 106N-52W-22BCB
LEGAL LOCATION: NW SW NW SEC. 22, T. 106 N., R. 52 W.

0 -	14	SAND AND GRAVEL, COARSE SAND, FINE GRAVEL
14 -	24	GRAVEL, FINE

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TEST HOLE NUMBER: 99
LOCATION: 106N-52W-22CDCD
LEGAL LOCATION: SE SW SE SW SEC. 22, T. 106 N., R. 52 W.

2 -	28	SAND, REDDISH-BROWN, FINE TO COARSE, SILTY, PEBBLY
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TEST HOLE NUMBER: 100
LOCATION: 106N-52W-26ADD
LEGAL LOCATION: SE SE NE SEC. 26, T. 106 N., R. 52 W.

6 -	9	SAND, FINE
19 -	49	SAND, GRAY, FINE, CLAYEY

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TEST HOLE NUMBER: 101

LOCATION: 106N-52W-26CCC
LEGAL LOCATION: SW SW SW SEC. 26, T. 106 N., R. 52 W.

0 -	4	SAND AND GRAVEL
4 -	9	SAND, MEDIUM TO COARSE
9 -	12	SAND, MEDIUM

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TEST HOLE NUMBER: 102
LOCATION: 106N-52W-27AADD
LEGAL LOCATION: SE SE NE NE SEC. 27, T. 106 N., R. 52 W.

1 -	5	GRAVEL, BROWN, COARSE, SANDY; DRY
5 -	10	SAND, GOLDEN-BROWN, FINE, PEBBLY; DRY
10 -	13	GRAVEL, BROWN, COARSE; DRY
13 -	23	SAND, BROWN, MEDIUM, PEBBLY; DRY

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TEST HOLE NUMBER: 103
LOCATION: 106N-52W-27BBB
LEGAL LOCATION: NW NW NW SEC. 27, T. 106 N., R. 52 W.

0 -	4	SAND, MEDIUM
4 -	9	SAND, TAN

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TEST HOLE NUMBER: 104
LOCATION: 106N-52W-27DCCC
LEGAL LOCATION: SW SW SW SE SEC. 27, T. 106 N., R. 52 W.

2 -	10	SAND, BROWN, PEBBLY; DRY
10 -	28	SAND, BROWN, CLAYEY, PEBBLY; MOIST, SATURATED AT 15 FEET

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TEST HOLE NUMBER: 105
LOCATION: 106N-52W-33AADD
LEGAL LOCATION: SE SE NE NE SEC. 33, T. 106 N., R. 52 W.

3 -	14	GRAVEL, BROWN, VERY SANDY; DRY
14 -	38	SAND, BROWN, MEDIUM; SATURATED

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TEST HOLE NUMBER: 106.
LOCATION: 106N-52W-33DAAD
LEGAL LOCATION: SE NE NE SE SEC. 33, T. 106 N., R. 52 W.

0 - 10 SAND, REDDISH-BROWN, FINE, PEBBLY; DRY,
OXIDIZED
10 - 16 SAND, DARK-REDDISH-BROWN, CLAYEY, PEBBLY;
DRY, OXIDIZED
16 - 28 SAND, REDDISH-BROWN, CLAYEY; MOIST,
OXIDIZED, SATURATED AT 23 FEET

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TEST HOLE NUMBER: 107
LOCATION: 106N-52W-36CAAB
LEGAL LOCATION: NW NE NE SW SEC. 36, T. 106 N., R. 52 W.

1 - 6 SAND, REDDISH-BROWN, PEBBLY, POORLY
SORTED; DRY, OXIDIZED

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TEST HOLE NUMBER: 108
LOCATION: 106N-52W-36DDAA 1
LEGAL LOCATION: NE NE SE SE SEC. 36, T. 106 N., R. 52 W.

0 - 20 SAND, MEDIUM TO COARSE
20 - 40 GRAVEL, MEDIUM TO COARSE, SANDY

* * * *

TEST HOLE NUMBER: 109
LOCATION: 106N-52W-36DDAA 2
LEGAL LOCATION: NE NE SE SE SEC. 36, T. 106 N., R. 52 W.

0 - 39 GRAVEL, MEDIUM TO COARSE, SANDY

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TEST HOLE NUMBER: 110
LOCATION: 106N-53W-03CBCA
LEGAL LOCATION: NE SW NW SW SEC. 03, T. 106 N., R. 53 W.

8 - 17 SAND AND GRAVEL, COARSE SAND AND FINE
GRAVEL
17 - 26 SAND AND GRAVEL, COARSE SAND AND MEDIUM
TO COARSE GRAVEL

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TEST HOLE NUMBER: 111
LOCATION: 106N-53W-03CBCB
LEGAL LOCATION: NW SW NW SW SEC. 03, T. 106 N., R. 53 W.

10 - 11 GRAVEL, BROWN, VERY COARSE

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TEST HOLE NUMBER: 112
LOCATION: 106N-53W-03CCBB
LEGAL LOCATION: NW NW SW SW SEC. 03, T. 106 N., R. 53 W.

0 - 61 GRAVEL, MEDIUM TO COARSE, SANDY

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TEST HOLE NUMBER: 113
LOCATION: 106N-53W-03CDAC
LEGAL LOCATION: SW NE SE SW SEC. 03, T. 106 N., R. 53 W.

6 - 11 GRAVEL, COARSE

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TEST HOLE NUMBER: 114
LOCATION: 106N-53W-03CDDC
LEGAL LOCATION: SW SE SE SW SEC. 03, T. 106 N., R. 53 W.

7 - 20 GRAVEL, COARSE, SANDY

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TEST HOLE NUMBER: 115
LOCATION: 106N-53W-04ADDA
LEGAL LOCATION: NE SE SE NE SEC. 04, T. 106 N., R. 53 W.

18 - 56 SAND, MEDIUM TO COARSE, PEBBLY

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TEST HOLE NUMBER: 116
LOCATION: 106N-53W-06DDDA
LEGAL LOCATION: NE SE SE SE SEC. 06, T. 106 N., R. 53 W.

4 - 14 GRAVEL, RED, MEDIUM; SATURATED

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TEST HOLE NUMBER: 117
LOCATION: 106N-53W-08BBB
LEGAL LOCATION: NW NW NW SEC. 08, T. 106 N., R. 53 W.

1 - 4 GRAVEL, COARSE; WITH COBBLES
4 - 20 SAND AND GRAVEL, CLAYEY

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TEST HOLE NUMBER: 118
LOCATION: 106N-53W-10AAB
LEGAL LOCATION: NW NE NE SEC. 10, T. 106 N., R. 53 W.

4 - 9 SAND, CLAYEY

* * * *

TEST HOLE NUMBER: 119
LOCATION: 106N-53W-11ADAD 1
LEGAL LOCATION: SE NE SE NE SEC. 11, T. 106 N., R. 53 W.

8 - 50 GRAVEL, FINE TO MEDIUM

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TEST HOLE NUMBER: 120
LOCATION: 106N-53W-11ADAD 2
LEGAL LOCATION: SE NE SE NE SEC. 11, T. 106 N., R. 53 W.

8 - 50 GRAVEL, FINE TO MEDIUM

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TEST HOLE NUMBER: 121
LOCATION: 106N-53W-11ADD
LEGAL LOCATION: SE SE NE SEC. 11, T. 106 N., R. 53 W.

4 - 9 GRAVEL, CLAYEY
9 - 14 SAND, COARSE
14 - 29 GRAVEL, FINE

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TEST HOLE NUMBER: 122
LOCATION: 106N-53W-11CAAA
LEGAL LOCATION: NE NE NE SW SEC. 11, T. 106 N., R. 53 W.

3 - 15 GRAVEL, REDDISH-BROWN, COARSE TO VERY
COARSE, SILTY, SANDY, POORLY SORTED;
MOIST, OXIDIZED
15 - 18 SAND, REDDISH-BROWN, SILTY, CLAYEY;
SATURATED, OXIDIZED
18 - 20 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

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TEST HOLE NUMBER: 123
LOCATION: 106N-53W-11DDD
LEGAL LOCATION: SE SE SE SEC. 11, T. 106 N., R. 53 W.

4 - 9 SAND, MEDIUM

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TEST HOLE NUMBER: 124
LOCATION: 106N-53W-12DAA
LEGAL LOCATION: NE NE SE SEC. 12, T. 106 N., R. 53 W.

4 - 14 GRAVEL, MEDIUM TO COARSE
14 - 19 GRAVEL, FINE TO MEDIUM
19 - 24 SAND, COARSE
24 - 26 GRAVEL

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TEST HOLE NUMBER: 125
LOCATION: 106N-53W-12DDA
LEGAL LOCATION: NE SE SE SEC. 12, T. 106 N., R. 53 W.

4 - 9 GRAVEL, FINE; AND PEBBLES
9 - 14 GRAVEL, FINE
14 - 26 GRAVEL, MEDIUM; AND TILL, BLUE

* * * *

TEST HOLE NUMBER: 126
LOCATION: 106N-53W-14ABBB
LEGAL LOCATION: NW NW NW NE SEC. 14, T. 106 N., R. 53 W.

14 - 18 GRAVEL, BROWN, VERY COARSE, COBBLY;

MOIST, OXIDIZED, ABANDONED HOLE

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TEST HOLE NUMBER: 127
LOCATION: 106N-53W-15CCCD
LEGAL LOCATION: SE SW SW SW SEC. 15, T. 106 N., R. 53 W.

0 - 6 SAND, BROWN, BOULDERY

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TEST HOLE NUMBER: 128
LOCATION: 106N-54W-27ABAB
LEGAL LOCATION: NW NE NW NE SEC. 27, T. 106 N., R. 54 W.

4 - 17 GRAVEL, BROWN, CLAYEY, SANDY

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TEST HOLE NUMBER: 129
LOCATION: 106N-54W-34BABB
LEGAL LOCATION: NW NW NE NW SEC. 34, T. 106 N., R. 54 W.

5 - 10 SAND, GOLDEN-BROWN, PEBBLY; DRY
10 - 14 GRAVEL, BROWN, VERY COARSE, SANDY; DRY

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TEST HOLE NUMBER: 130
LOCATION: 106N-54W-34CCDC
LEGAL LOCATION: SW SE SW SW SEC. 34, T. 106 N., R. 54 W.

16 - 18 SAND, BROWN, FINE, PEBBLY; MOIST
18 - 28 GRAVEL, COARSE

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TEST HOLE NUMBER: 131
LOCATION: 106N-54W-34CDDC
LEGAL LOCATION: SW SE SE SW SEC. 34, T. 106 N., R. 54 W.

0 - 16 GRAVEL, REDDISH-BROWN, SANDY; DRY
16 - 33 SAND, BROWN, SILTY, PEBBLY; SATURATED

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TEST HOLE NUMBER: 132
LOCATION: 107N-51W-03ABB
LEGAL LOCATION: NW NW NE SEC. 03, T. 107 N., R. 51 W.

2 - 19 SAND AND GRAVEL

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TEST HOLE NUMBER: 133
LOCATION: 107N-51W-03CBC
LEGAL LOCATION: SW NW SW SEC. 03, T. 107 N., R. 51 W.

1 - 14 SAND AND GRAVEL

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TEST HOLE NUMBER: 134
LOCATION: 107N-51W-03CCDD
LEGAL LOCATION: SE SE SW SW SEC. 03, T. 107 N., R. 51 W.

1 - 24 SAND AND GRAVEL

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TEST HOLE NUMBER: 135
LOCATION: 107N-51W-09AAAA
LEGAL LOCATION: NE NE NE NE SEC. 09, T. 107 N., R. 51 W.

5 - 17 GRAVEL, REDDISH-BROWN, VERY COARSE,
SILTY, SANDY; DRY, OXIDIZED
17 - 33 GRAVEL, MEDIUM-BROWN, SILTY; VERY MOIST,
OXIDIZED

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TEST HOLE NUMBER: 136
LOCATION: 107N-51W-16ABAB
LEGAL LOCATION: NW NE NW NE SEC. 16, T. 107 N., R. 51 W.

4 - 5 GRAVEL

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TEST HOLE NUMBER: 137
LOCATION: 107N-51W-16BAAB
LEGAL LOCATION: NW NE NE NW SEC. 16, T. 107 N., R. 51 W.

0 - 4 SAND, REDDISH-BROWN, SILTY, PEBBLY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 138
LOCATION: 107N-51W-17AAAA
LEGAL LOCATION: NE NE NE NE SEC. 17, T. 107 N., R. 51 W.

0 - 7 GRAVEL, REDDISH-BROWN, FINE TO COARSE,
SANDY, POORLY SORTED; DRY, OXIDIZED
7 - 11 SAND, REDDISH-BROWN, COARSE, VERY PEBBLY,
POORLY SORTED; DRY, OXIDIZED
11 - 19 SAND, REDDISH-BROWN, COARSE, VERY PEBBLY,
VERY CLAYEY, POORLY SORTED; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 139
LOCATION: 107N-51W-17AAAB
LEGAL LOCATION: NW NE NE NE SEC. 17, T. 107 N., R. 51 W.

4 - 6 GRAVEL, COARSE

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TEST HOLE NUMBER: 140
LOCATION: 107N-51W-18ADDD
LEGAL LOCATION: SE SE SE NE SEC. 18, T. 107 N., R. 51 W.

0 - 4 SAND, MEDIUM-BROWN, CLAYEY, SILTY,
PEBBLY; MOIST, OXIDIZED
4 - 5 GRAVEL, MEDIUM-BROWN, SILTY, SANDY;
MOIST, OXIDIZED
11 - 15 SAND, GRAY, CLAYEY; SATURATED
15 - 23 SAND, GRAYISH-BROWN, CLAYEY, SILTY,
GRAVELLY, POORLY SORTED; SATURATED
23 - 25 SAND, GRAY, GRAVELLY; SATURATED

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TEST HOLE NUMBER: 141
LOCATION: 107N-51W-18BBBB
LEGAL LOCATION: NW NW NW NW SEC. 18, T. 107 N., R. 51 W.

13 - 18 SAND, BROWN, MEDIUM; SATURATED

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TEST HOLE NUMBER: 142
LOCATION: 107N-51W-18CBBB
LEGAL LOCATION: NW NW NW SW SEC. 18, T. 107 N., R. 51 W.

6 - 18 SAND, BROWN, MEDIUM; SATURATED

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TEST HOLE NUMBER: 143
LOCATION: 107N-51W-18CDD
LEGAL LOCATION: SE SE SW SEC. 18, T. 107 N., R. 51 W.

4 - 9 SAND AND GRAVEL

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TEST HOLE NUMBER: 144
LOCATION: 107N-51W-19ADDA
LEGAL LOCATION: NE SE SE NE SEC. 19, T. 107 N., R. 51 W.

1 - 2 GRAVEL, MEDIUM-BROWN, CLAYEY, SILTY; DRY,
OXIDIZED

2 - 12 GRAVEL, REDDISH-BROWN, CLAYEY, SILTY,
SANDY; MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 145
LOCATION: 107N-51W-19BBB
LEGAL LOCATION: NW NW NW SEC. 19, T. 107 N., R. 51 W.

1 - 7 SAND AND GRAVEL

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TEST HOLE NUMBER: 146
LOCATION: 107N-51W-20BAAB
LEGAL LOCATION: NW NE NE NW SEC. 20, T. 107 N., R. 51 W.

4 - 6 SAND, BROWN, COARSE, VERY PEBBLY; DRY
6 - 11 SAND, BROWN, COARSE, PEBBLY; MOIST

* * * *

TEST HOLE NUMBER: 147
LOCATION: 107N-51W-20BBB
LEGAL LOCATION: NW NW NW SEC. 20, T. 107 N., R. 51 W.

4 - 11 SAND AND GRAVEL

* * * *

TEST HOLE NUMBER: 148
LOCATION: 107N-52W-05BAAB
LEGAL LOCATION: NW NE NE NW SEC. 05, T. 107 N., R. 52 W.

4 - 10 SAND, BROWN, COARSE, PEBBLY; DRY
10 - 12 GRAVEL, BROWN; SATURATED

* * * *

TEST HOLE NUMBER: 149
LOCATION: 107N-52W-05DAAA
LEGAL LOCATION: NE NE NE SE SEC. 05, T. 107 N., R. 52 W.

3 - 4 GRAVEL, VERY COARSE, SANDY, LARGE
COBBLES; DRY, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 150
LOCATION: 107N-52W-12CDDD
LEGAL LOCATION: SE SE SE SW SEC. 12, T. 107 N., R. 52 W.

5 - 17 GRAVEL, BROWN, COARSE, SILTY

* * * *

TEST HOLE NUMBER: 151
LOCATION: 107N-52W-16ABBB
LEGAL LOCATION: NW NW NW NE SEC. 16, T. 107 N., R. 52 W.

0 - 6 GRAVEL, BROWN, VERY COARSE, SANDY,
COBBLY; DRY, ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 152
LOCATION: 107N-52W-22BBBA
LEGAL LOCATION: NE NW NW NW SEC. 22, T. 107 N., R. 52 W.

4 - 14 SAND, REDDISH-BROWN, MEDIUM, VERY CLAYEY;
SATURATED, OXIDIZED

14 - 28 GRAVEL, GRAYISH-BROWN, FINE, VERY CLAYEY,
SANDY; SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 153
LOCATION: 107N-52W-22BBBB
LEGAL LOCATION: NW NW NW NW SEC. 22, T. 107 N., R. 52 W.

8 - 36 SAND, BROWN; SATURATED

* * * *

TEST HOLE NUMBER: 154
LOCATION: 107N-52W-23AAD
LEGAL LOCATION: SE NE NE SEC. 23, T. 107 N., R. 52 W.

2 - 8 SAND AND GRAVEL

* * * *

TEST HOLE NUMBER: 155
LOCATION: 107N-52W-23ABBB
LEGAL LOCATION: NW NW NW NE SEC. 23, T. 107 N., R. 52 W.

2 - 13 GRAVEL, BROWN, MEDIUM, SILTY; DRY,
SATURATED AT 11 FEET

* * * *

TEST HOLE NUMBER: 156
LOCATION: 107N-52W-23BBCC
LEGAL LOCATION: SW SW NW NW SEC. 23, T. 107 N., R. 52 W.

0 - 3 GRAVEL, BROWN, COARSE; DRY, OXIDIZED
3 - 7 GRAVEL, DARK-BROWN, FINE; SATURATED,
OXIDIZED
7 - 10 GRAVEL, BROWN, COARSE; SATURATED,
OXIDIZED

* * * *

TEST HOLE NUMBER: 157
LOCATION: 107N-52W-24AAAA
LEGAL LOCATION: NE NE NE NE SEC. 24, T. 107 N., R. 52 W.

1 - 26 GRAVEL, SANDY

* * * *

TEST HOLE NUMBER: 158
LOCATION: 107N-52W-24BABB
LEGAL LOCATION: NW NW NE NW SEC. 24, T. 107 N., R. 52 W.

3 - 10 SAND, REDDISH-BROWN, CLAYEY, PEBBLY;
MOIST
10 - 13 GRAVEL, BROWN, COARSE; MOIST
13 - 23 SAND, REDDISH-BROWN, PEBBLY; SATURATED
23 - 32 GRAVEL, BROWN, COARSE, CLAYEY; SATURATED

* * * *

TEST HOLE NUMBER: 159
LOCATION: 107N-53W-22BBBC
LEGAL LOCATION: SW NW NW NW SEC. 22, T. 107 N., R. 53 W.

0 - 4 SAND, GRAY, VERY CLAYEY

* * * *

TEST HOLE NUMBER: 160
LOCATION: 107N-54W-08CBBC
LEGAL LOCATION: SW NW NW SW SEC. 08, T. 107 N., R. 54 W.

17 - 26 GRAVEL, SANDY

* * * *

TEST HOLE NUMBER: 161
LOCATION: 107N-54W-18BBAA
LEGAL LOCATION: NE NE NW NW SEC. 18, T. 107 N., R. 54 W.

1 - 8 GRAVEL, LIGHT-BROWN, SANDY, CLAYEY; MOIST

* * * *

TEST HOLE NUMBER: 162
LOCATION: 107N-54W-33CBBC
LEGAL LOCATION: SW NW NW SW SEC. 33, T. 107 N., R. 54 W.

8 - 21 GRAVEL, LIGHT-BROWN, COARSE, SILTY,
SANDY; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 163
LOCATION: 108N-51W-01DAAA
LEGAL LOCATION: NE NE NE SE SEC. 01, T. 108 N., R. 51 W.

5 - 17 SAND, REDDISH-BROWN, GRAVELLY; DRY,
OXIDIZED
17 - 23 SAND, DARK-BROWN, COARSE, GRAVELLY;
MOIST, OXIDIZED
23 - 28 SAND, MEDIUM-BROWN, SILTY, GRAVELLY; VERY
MOIST, OXIDIZED

* * * *

TEST HOLE NUMBER: 164
LOCATION: 108N-51W-01DDCC
LEGAL LOCATION: SW SW SE SE SEC. 01, T. 108 N., R. 51 W.

2 - 12 SAND, BROWN, FINE; DRY

* * * *

TEST HOLE NUMBER: 165
LOCATION: 108N-51W-02DADD
LEGAL LOCATION: SE SE NE SE SEC. 02, T. 108 N., R. 51 W.

1 - 10 GRAVEL, REDDISH-BROWN, COARSE, SANDY;
DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 166
LOCATION: 108N-51W-03BBBC
LEGAL LOCATION: SW NW NW NW SEC. 03, T. 108 N., R. 51 W.

4 - 22 GRAVEL, MEDIUM, SANDY; THIN CLAY LAYER
AT 16 TO 18 FEET

* * * *

TEST HOLE NUMBER: 167
LOCATION: 108N-51W-04DAAA
LEGAL LOCATION: NE NE NE SE SEC. 04, T. 108 N., R. 51 W.

2 - 3 SAND, BROWN, MEDIUM, CLAYEY; MOIST,
OXIDIZED
15 - 17 SAND, BROWN, MEDIUM, VERY CLAYEY;
SATURATED, OXIDIZED

19 - 22 GRAVEL, BROWN, VERY COARSE; SATURATED,
OXIDIZED

* * * *

TEST HOLE NUMBER: 168
LOCATION: 108N-51W-10AAAA
LEGAL LOCATION: NE NE NE NE SEC. 10, T. 108 N., R. 51 W.

16 - 24 GRAVEL, BROWN, VERY CLAYEY, SILTY, SANDY;
SATURATED, OXIDIZED

* * * *

TEST HOLE NUMBER: 169
LOCATION: 108N-51W-21AAAA
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 108 N., R. 51 W.

0 - 6 SAND, BROWN, CLAYEY

* * * *

TEST HOLE NUMBER: 170
LOCATION: 108N-51W-21BBAB
LEGAL LOCATION: NW NE NW NW SEC. 21, T. 108 N., R. 51 W.

0 - 1 GRAVEL, REDDISH-BROWN, SANDY; DRY
(ROADFILL)

* * * *

TEST HOLE NUMBER: 171
LOCATION: 108N-51W-21CCCC
LEGAL LOCATION: NW SW SW SW SEC. 21, T. 108 N., R. 51 W.

1 - 12 SAND, REDDISH-BROWN, FINE TO MEDIUM,
GRAVELLY, POORLY SORTED; DRY, OXIDIZED
12 - 19 SAND, BROWN, COARSE, GRAVELLY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 172
LOCATION: 108N-51W-23ADAA
LEGAL LOCATION: NE NE SE NE SEC. 23, T. 108 N., R. 51 W.

5 - 10 SAND, BROWN, GRAVELLY; MOIST

13 - 20 SAND, BROWN, FINE; MOIST

* * * *

TEST HOLE NUMBER: 173

LOCATION: 108N-51W-23CDDC

LEGAL LOCATION: SW SE SE SW SEC. 23, T. 108 N., R. 51 W.

4 - 8 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
PEBBLY; MOIST, OXIDIZED

8 - 9 GRAVEL, REDDISH-BROWN, CLAYEY; MOIST,
OXIDIZED

* * * *

TEST HOLE NUMBER: 174

LOCATION: 108N-51W-23DDDC

LEGAL LOCATION: SW SE SE SE SEC. 23, T. 108 N., R. 51 W.

3 - 18 SAND, REDDISH-BROWN, GRAVELLY, POORLY
SORTED; DRY, OXIDIZED

18 - 23 SAND, REDDISH-BROWN, FINE, GRAVELLY,
POORLY SORTED; DRY, OXIDIZED

23 - 26 SAND, REDDISH-BROWN, MEDIUM, WELL
SORTED; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 175

LOCATION: 108N-51W-24CBCB

LEGAL LOCATION: NW SW NW SW SEC. 24, T. 108 N., R. 51 W.

0 - 4 SAND, REDDISH-BROWN, GRAVELLY; DRY,
OXIDIZED

4 - 9 SAND, REDDISH-BROWN, GRAVELLY; SOME
MOISTURE, OXIDIZED

9 - 16 SAND, MEDIUM-BROWN, GRAVELLY; SOME
MOISTURE, OXIDIZED

16 - 20 SAND, REDDISH-BROWN, FINE, GRAVELLY;
SOME MOISTURE, OXIDIZED

20 - 28 SAND, DARK-BROWN, GRAVELLY; DRY, OXIDIZED

* * * *

TEST HOLE NUMBER: 176

LOCATION: 108N-51W-24DDDC

LEGAL LOCATION: SW SE SE SE SEC. 24, T. 108 N., R. 51 W.

0 - 3 GRAVEL, REDDISH-BROWN, FINE TO COARSE,
SANDY; DRY, OXIDIZED
3 - 10 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
GRAVELLY; DRY, OXIDIZED
10 - 15 SAND, REDDISH-BROWN, MEDIUM TO COARSE,
CLAYEY, GRAVELLY; DRY, OXIDIZED
15 - 23 SAND, BROWN, FINE TO COARSE, GRAVELLY;
DRY, OXIDIZED
23 - 28 SAND, DARK-BROWN, MEDIUM, VERY CLAYEY;
MOIST, OXIDIZED, STRINGER OF GRAVEL
AT 25 FEET

* * * *

TEST HOLE NUMBER: 177
LOCATION: 108N-51W-25AADD
LEGAL LOCATION: SE SE NE NE SEC. 25, T. 108 N., R. 51 W.

0 - 5 SAND, DARK-BROWN, SILTY, PEBBLY; DRY,
OXIDIZED
5 - 9 SAND, LIGHT-BROWN, SILTY, PEBBLY; DRY,
OXIDIZED

* * * *

TEST HOLE NUMBER: 178
LOCATION: 108N-51W-25ABBB
LEGAL LOCATION: NW NW NW NE SEC. 25, T. 108 N., R. 51 W.

4 - 24 SAND, BROWN, MEDIUM, GRAVELLY; MOIST,
OXIDIZED, SATURATED AT 9 FEET
24 - 30 SAND, GRAY, COARSE; SATURATED,
UNOXIDIZED, SOME FINE GRAVEL

* * * *

TEST HOLE NUMBER: 179
LOCATION: 108N-51W-25CBCB
LEGAL LOCATION: NW SW NW SW SEC. 25, T. 108 N., R. 51 W.

4 - 6 GRAVEL, REDDISH-BROWN, COARSE; DRY
6 - 12 SAND, REDDISH-BROWN, FINE; DRY

* * * *

TEST HOLE NUMBER: 180
LOCATION: 108N-51W-26AAD
LEGAL LOCATION: SE NE NE SEC. 26, T. 108 N., R. 51 W.

4 - 21 SAND AND GRAVEL

* * * *

TEST HOLE NUMBER: 181
LOCATION: 108N-51W-34AAAA
LEGAL LOCATION: NE NE NE NE SEC. 34, T. 108 N., R. 51 W.

1 - 9 GRAVEL, REDDISH-BROWN, COARSE, SANDY; DRY

* * * *

TEST HOLE NUMBER: 182
LOCATION: 108N-51W-34DAAD
LEGAL LOCATION: SE NE NE SE SEC. 34, T. 108 N., R. 51 W.

4 - 35 GRAVEL, REDDISH-BROWN, COARSE, SANDY;
DRY, SATURATED AT 28 FEET

* * * *

TEST HOLE NUMBER: 183
LOCATION: 108N-51W-35BAB
LEGAL LOCATION: NW NE NW SEC. 35, T. 108 N., R. 51 W.

4 - 28 SAND AND GRAVEL

* * * *

TEST HOLE NUMBER: 184
LOCATION: 108N-52W-30BCCC
LEGAL LOCATION: SW SW SW NW SEC. 30, T. 108 N., R. 52 W.

4 - 18 GRAVEL, VERY COARSE, SANDY, COBBLY; DRY,
ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 185
LOCATION: 108N-52W-30DDDD
LEGAL LOCATION: SE SE SE SE SEC. 30, T. 108 N., R. 52 W.

5 - 15 GRAVEL, BROWN; DRY
15 - 20 SAND, BROWN; SATURATED

* * * *

TEST HOLE NUMBER: 186
LOCATION: 108N-52W-31ADAD
LEGAL LOCATION: SE NE SE NE SEC. 31, T. 108 N., R. 52 W.

5 - 10 SAND, BROWN, COARSE; DRY
10 - 17 GRAVEL, BROWN, VERY COARSE, COBBLY; DRY,
ABANDONED HOLE

* * * *

TEST HOLE NUMBER: 187
LOCATION: 108N-52W-31CBBB
LEGAL LOCATION: NW NW NW SW SEC. 31, T. 108 N., R. 52 W.

20 - 24 SAND AND GRAVEL, MEDIUM

* * * *

TEST HOLE NUMBER: 188
LOCATION: 108N-53W-14BBBB
LEGAL LOCATION: NW NW NW NW SEC. 14, T. 108 N., R. 53 W.

6 - 18 GRAVEL, MEDIUM TO COARSE
21 - 30 GRAVEL, MEDIUM

* * * *

TEST HOLE NUMBER: 189
LOCATION: 108N-53W-15CCCC
LEGAL LOCATION: SW SW SW SW SEC. 15, T. 108 N., R. 53 W.

1 - 3 GRAVEL

* * * *

TEST HOLE NUMBER: 190
LOCATION: 108N-53W-24CCAC
LEGAL LOCATION: SW NE SW SW SEC. 24, T. 108 N., R. 53 W.

4 - 6 GRAVEL, FINE TO MEDIUM, SANDY
10 - 14 GRAVEL, FINE TO MEDIUM, SANDY

* * * *

TEST HOLE NUMBER: 191
LOCATION: 108N-54W-19AADD
LEGAL LOCATION: SE SE NE NE SEC. 19, T. 108 N., R. 54 W.

7 - 9 GRAVEL, MEDIUM TO FINE

* * * *

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

EXPLANATION:

Column Description:

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

Pit 1

- a. Landowner: ----
- b. Location: NW 1/4 sec. 6, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 2

- a. Landowner: Rueben Schaeffer - Chester
- b. Location: SW 1/4 SW 1/4 sec. 11, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.8
- e. Overburden thickness (ft): 2.4

Pit 3

- a. Landowner: -----
- b. Location: SW 1/4 sec. 16, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 4

- a. Landowner: Charles Jensen - Chester
- b. Location: NW 1/4 sec. 23, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.5
- e. Overburden thickness (ft): 2.5

Pit 5

- a. Landowner: Charles Jensen - Chester
- b. Location: W 1/2 SW 1/4 sec. 24, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 6

- a. Landowner: Charles Jensen - Chester
- b. Location: SE 1/4 sec. 24, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 7

- a. Landowner: Charles Jensen - Chester
- b. Location: NW 1/4 sec. 25, T. 105 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 8

- a. Landowner: Joe McAllister - Madison
- b. Location: NE 1/4 sec. 1, T. 105 N., R. 52 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 15.7
- e. Overburden thickness (ft): 4.0

Pit 9

- a. Landowner: ----
- b. Location: NW 1/4 sec. 6, T. 105 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 10

- a. Landowner: Jake Schmidt - Madison
- b. Location: NW 1/4 sec. 14, T. 105 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 3.2

Pit 11

- a. Landowner: Frank Hubell - Orland
- b. Location: NE 1/4 NW 1/4 sec. 24, T. 105 N., R. 54 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.6
- e. Overburden thickness (ft): 1.2

Pit 12

- a. Landowner: Glen Holmberg - Montrose
- b. Location: NE 1/4 sec. 25, T. 105 N., R. 54 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 0.0

Pit 13

- a. Landowner: Mabelle Smith - Madison
- b. Location: SE 1/4 sec. 8, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.3
- e. Overburden thickness (ft): 2.6

Pit 14

- a. Landowner: Genevieve Matson - Madison
- b. Location: NW 1/4 sec. 16, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.0
- e. Overburden thickness (ft): 2.2

Pit 15

- a. Landowner: Genevieve Matson - Madison
- b. Location: W 1/2 sec. 16, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.2
- e. Overburden thickness (ft): 2.9

Pit 16

- a. Landowner: Department of Transportation - Pierre
- b. Location: SE 1/4 sec. 16, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 2.6

Pit 17

- a. Landowner: Hilde Brothers - Madison
- b. Location: NE 1/4 sec. 22, T. 106 N., R. 52 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 18

- a. Landowner: Lake County Highway Department - Madison
- b. Location: SW 1/4 sec. 22, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 19

- a. Landowner: Hilde Brothers - Madison
- b. Location: SE 1/4 sec. 22, T. 106 N., R. 52 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 20

- a. Landowner: Fred Best - Brookings
- b. Location: SE 1/4 sec. 22, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 21

- a. Landowner: Paul Christensen - Madison
- b. Location: NE 1/4 sec. 26, T. 106 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.8
- e. Overburden thickness (ft): 2.6

Pit 22

- a. Landowner: Grant and Charles Hagg - Madison
- b. Location: NE 1/4 SE 1/4 sec. 11, T. 106 N., R. 53 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): 4.5

Pit 23

- a. Landowner: Grant and Charles Hagg - Madison
- b. Location: SE 1/4 SE 1/4 sec. 11, T. 106 N., R. 53 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.0
- e. Overburden thickness (ft): 3.5

Pit 24

- a. Landowner: Mrs. Alma Stensland - Madison
- b. Location: SW 1/4 SW 1/4 sec. 12, T. 106 N., R. 53 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 4.0

Pit 25

- a. Landowner: Lake County Highway Department - Madison
- b. Location: NW 1/4 sec. 3, T. 106 N., R. 54 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 26

- a. Landowner: Kenneth Nighbert - Winfred
- b. Location: NE 1/4 Sec. 9, T. 106 N., R. 54 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 4.5

Pit 27

- a. Landowner: Clifford Hodne - Winfred
- b. Location: E 1/2 NE 1/4 sec. 21, T. 106 N., R. 54 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.0
- e. Overburden thickness (ft): 1.0

Pit 28

- a. Landowner: Clifford Hodne - Winfred
- b. Location: NE 1/4 NW 1/4 sec. 27, T. 106 N., R. 54 W.
- c. Aggregate type: Sand
- d. Deposit thickness (ft): 3.3
- e. Overburden thickness (ft): 1.0

Pit 29

- a. Landowner: William Fritz - Winfred
- b. Location: NE 1/4 sec. 34, T. 106 N., R. 54 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.8
- e. Overburden thickness (ft): 1.8

Pit 30

- a. Landowner: William Fritz - Winfred
- b. Location: NW 1/4 sec. 34, T. 106 N., R. 54 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 16.5
- e. Overburden thickness (ft): 1.9

Pit 31

- a. Landowner: A. J. Marquardt - Rutland
- b. Location: NW 1/4 sec. 3, T. 107 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 32

- a. Landowner: Donald Carper - Rutland
- b. Location: NE 1/4 sec. 17, T. 107 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.9
- e. Overburden thickness (ft): 3.4

Pit 33

- a. Landowner: Herbert Hanneman - Madison
- b. Location: NE 1/4 sec. 16, T. 107 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.0
- e. Overburden thickness (ft): 5.5

Pit 34

- a. Landowner: Walter Hoffman - Madison
- b. Location: SE 1/4 NE 1/4 sec. 16, T. 107 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.0
- e. Overburden thickness (ft): 7.0

Pit 35

- a. Landowner: Walter Hoffman - Madison
- b. Location: SE 1/4 sec. 16, T. 107 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 36

- a. Landowner: Henry Hexom - Rutland
- b. Location: NW 1/4 sec. 24, T. 107 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 37

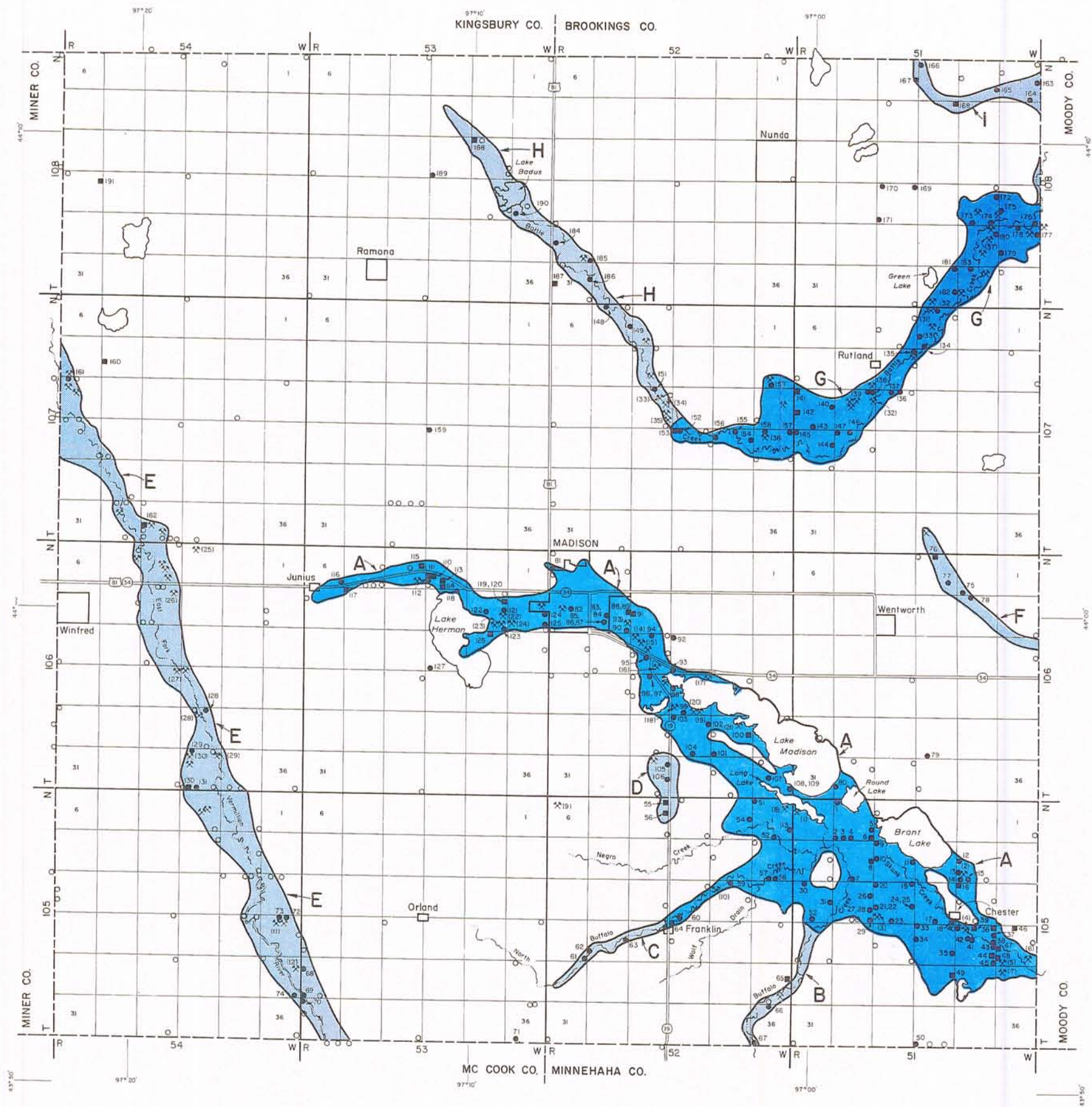
- a. Landowner: Elmer Peterson - Rutland
- b. Location: NE 1/4 sec. 26, T. 108 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----



Index map of South Dakota showing location of Lake 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



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

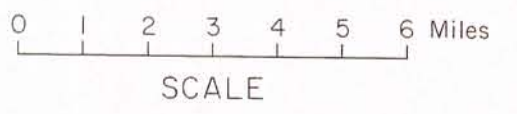
Letters A through I designate areas described in the text.

117. Test hole containing sand or gravel within 25 feet of the land surface with 0-5 feet of overburden. Number refers to Table 1.

118. Test hole containing sand or gravel within 25 feet of the land surface with greater than 5 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.



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