

STATE OF SOUTH DAKOTA  
William J. Janklow, Governor

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

GEOLOGICAL SURVEY  
Merlin J. Tipton, State Geologist

Information Pamphlet No. 25

SAND AND GRAVEL RESOURCES IN  
HANSON COUNTY, SOUTH DAKOTA

by

Richard H. Hammond

Prepared in cooperation with the  
United States Geological Survey,  
Lower James Conservancy Sub-District,  
South Dakota Department of Transportation,  
and Hanson County

Science Center  
University of South Dakota  
Vermillion, South Dakota  
1982

## CONTENTS

	Page
INTRODUCTION . . . . .	1
GEOLOGIC OVERVIEW . . . . .	1
Till . . . . .	1
Outwash . . . . .	1
Alluvium . . . . .	2
Bedrock . . . . .	2
EXPLANATION OF TABLES . . . . .	2
EXPLANATION OF MAP . . . . .	3
Sand and gravel . . . . .	3
Quartzite . . . . .	4
ECONOMIC CONSIDERATIONS . . . . .	5

## TABLES

1. List of test holes in Hanson County, South Dakota, which contain sand or gravel in the upper 25 feet . . . . .	6
2. List of sand and gravel pits in Hanson County on file at the District Office, South Dakota Division of Highways, Mitchell, SD . . . . .	30

## ILLUSTRATION

Map showing sand, gravel, and quartzite deposits in Hanson County, South Dakota . . . . .	Following 34
---	--------------

## INTRODUCTION

This pamphlet is the first of a series of reports describing the geology and hydrology of Hanson County. It is designed to be a tool in the search for sand and gravel deposits by focusing the reader's attention upon the most promising areas.

Other reports in the series include:

- a. Major Aquifers in Davison and Hanson Counties, South Dakota: South Dakota Geological Survey, Information Pamphlet 26, Hansen, D. S. (in preparation)
- b. Geology and water resources of Davison and Hanson Counties, South Dakota: South Dakota Geological Survey Bulletin, Christensen, C. M., and Hansen, D. S. (in preparation).

The first report describes the yield, quality, and location of major aquifers (water-bearing deposits) in a short, easy-to-read pamphlet. The second report is a more technical and exhaustive investigation of the geology and hydrology of the counties. All basic data used to complete these reports are available from the South Dakota Geological Survey's open file.

## GEOLOGIC OVERVIEW

Most sand and gravel deposits in Hanson County were deposited by glaciers which covered the region several thousand years ago. Others have been deposited by streams since the glaciers retreated. A short description of the types of earth materials found in Hanson County follows.

### Till

The glaciers that once covered this region were full of debris picked up by the ice earlier in its route. Some of this mixture of boulders, sand, gravel, clay and silt was deposited directly from the ice. Till, the term used to describe this mixture, is often called "blue clay" or "boulder clay" and covers much of Hanson County. Although till is not considered a source of sand and gravel, small isolated gravel hills or lenses may occur within till deposits. Gravel pits in section 25, Township 101 North, Range 59 West are examples of these random deposits.

### Outwash

Glacial outwash is the term geologists use to describe any deposit of glacial debris which has been washed and sorted by flowing glacial meltwater. Outwash grain size depends upon the

velocity of the water depositing it and the type of materials being carried by the water. A lake or slowly flowing stream usually contains silt and clay. Faster water may leave streambeds composed entirely of boulders. Most outwash, however, is made up of an assortment of sand and gravel with minor amounts of finer and coarser materials. Most of the shaded areas shown on the map in this publication represent outwash deposits.

### Alluvium

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

### Bedrock

Bedrock is the older, consolidated rocks beneath the glacial deposits. In Hanson County the bedrock consists of shale, sandstone, chalk, and quartzite (locally known as "pink granite"). Bedrock is exposed along portions of Twelvemile Creek, Enemy Creek, Johnson Creek, Wolf Creek, Pierre Creek, and the James River. Quartzite is the most abundant bedrock exposed at the surface. Quartzite outcrops were mapped during this study because they are potential sources of high-quality aggregate. Generally, however, when bedrock appears at the surface or in a test hole, no sand or gravel can exist below that point.

Sand and gravel can exist as small hills within a valley, or as natural terraces along the valley walls above the bedrock. Examples of both occur in the northwest quarter of section 14, Township 102 North, Range 58 West.

### EXPLANATION OF TABLES

Table 1 is a compilation of test holes which encountered sand or gravel in the upper 25 feet, or quartzite in the upper 10 feet. This table lists: (a) location of the test hole, (b) depth, and (c) description of sand, gravel, and quartzite intervals. The complete set of drill logs are on file at the office of the South Dakota Geological Survey in Vermillion. The South Dakota Geological Survey, United States Geological Survey, South Dakota Division of Water Rights, United States Bureau of Reclamation, and private drillers contributed to this list.

Table 2 is a list of gravel pits on file in 1978 with the South Dakota Division of Highways. The owner, thickness of overburden, thickness of sand and gravel being mined, and aggregate type have been listed. The actual thickness of a deposit may be greater than that mined, because depth to the water table,

changing material characteristics, or available mining equipment may limit excavation.

#### EXPLANATION OF MAP

The map shows the location of quarries, gravel pits, test holes, and a few landmarks. Test holes are represented by a system of map symbols. A dot (●) represents a test which revealed sand or gravel within 25 feet of the land surface with 0 to 5 feet of overburden. A square (■) indicates that sand or gravel was encountered within 25 feet of land surface with 5 or more feet of overburden. Those holes with quartzite less than 10 feet below land surface are labeled by a slash (/) through the map symbol. These symbols are numbered and referred to in table 1. An open circle (○) indicates that no sand or gravel was found in the upper 25 feet. Gravel pits are labeled with a crossed pick and shovel (⌘). Those that are numbered are listed in table 2. Additional information is on file at the Division of Highways District Office in Mitchell.

To help illustrate the most promising locations, the map has been divided into area types indicating "good," "fair," or "poor" probability of finding economic deposits of sand or gravel. These areas have been delineated by use of test drilling, gravel pit locations, topographic map and aerial photo interpretation, and field observations. Areas labeled as "good" and "fair" have been assigned a letter on the map corresponding to their identification in the following text. In addition, quartzite outcrops are mapped to assist the prospector's search for quarry sites.

Sand and gravel deposits in areas labeled "Good" are comparatively thick with thin overburden and underlie large tracts of land. "Fair" areas, on the other hand, lack one or more of these advantages.

#### Sand and Gravel

Areas "A" and "B" (labeled "fair") occupy narrow valleys in the northwestern quadrant of Hanson County. Sand and gravel deposits exist as discontinuous remnants of natural terraces (up to 20 feet thick) on the valley walls and a thin (5 feet), patchy veneer in the valley floors. Area "B" shows the best potential in this portion of the County.

Areas "C," "E," and "G" contain discontinuous terrace deposits along the valleys of the James River and Enemy Creek. Deposits cover relatively little area and are generally less than 10 feet thick.

Area "D" (good) represents the most abundant supply of gravel in the County. Terrace deposits 20 feet thick are common along the James Valley and up to 40 feet thick at the junction of the

James River and Johnson Creek. Deposits thin upstream along Johnson Creek and Pierre Creek toward quartzite outcrops northeast of Fulton and Alexandria.

Area "F" (labeled "fair") is the downstream edge of a large outwash body along Twelvemile Creek in Davison County. Although deposits are discontinuous over very shallow chalk bedrock, a few tests revealed aggregate thicknesses of up to 15 feet near Ethan Lake.

Area "H" is designated as "good" because deposits are locally thick (15 feet) and are covered by 2 feet or less of overburden. Prospects for economic deposits are best in the northern portion of this unit.

Area "I" (labeled "fair") represents sand and gravel deposits in the valley of Plum and Elm Creeks. Although these deposits range up to 20 feet thick, they exist only as small knobs and terrace remnants along the valley walls making them more difficult to locate. Deposits in area "I" are mainly medium to coarse sand although a few holes penetrated gravel layers 5 feet thick or less.

The valley of Wolf Creek between Emery and Spencer has been labeled area "J" (fair). Many small gravel pits expose thin (10 feet or less) lenses of gravel along the valley.

Areas "K," "L," and "M" (fair) display thin gravel veneers along the upstream portions of Johnson and Pierre Creeks. Area "L" contains primarily valley bottom deposits averaging 5 feet thick with about 1 foot of overburden. Area "K" deposits also occupy the valley floor but average 9 feet in thickness with about 4 feet of overburden. Deposits in area "M" are quite sandy terraces 15 to 20 feet thick with thin overburden (less than 2 feet).

The areas designated as poor do contain sand and gravel deposits. However, because these deposits are widely scattered and generally small, efforts should first be concentrated in the "good" and "fair" areas.

### Quartzite

Quartzite outcrops occur along Enemy Creek, Johnson Creek, Pierre Creek, Plum Creek, Wolf Creek, and the James River. As displayed on the map, many of these outcrops cover large tracts of land. These areas have been mapped as possible quarry sites. Nearby survey tests suggest that quartzite exists under an additional several hundred acres of surrounding land at shallow (less than 10 feet) depths.

Some of the geologic factors to consider in selecting quarry sites include: overburden thickness, outcrop size, jointing of

the rock, rock quality, and local water level.

Outcrops in Hanson County display vertical joint patterns outlining blocks ranging from just under 1 foot to about 3 feet on each side. Rocks exposed are composed of extremely well-cemented, hard, fine-grained sand, which often fractures across individual grains. There are, however, some poorly-cemented and coarse-grained beds in section 9, Township 102 North, Range 59 West.

Most of the outcrops occur along the various drainageways but large volumes of rock exist well above stream levels and can probably be mined without major dewatering problems. Flowing test holes and natural springs in the outcrop area near Fulton suggest that the water is under some local artesian pressure in the fracture system of the quartzite. This could prove to be a problem to quarry operations at this particular site.

#### ECONOMIC CONSIDERATIONS

Further development of aggregate in Hanson County depends upon economic conditions in the future. Prospectors should carefully compare material specifications, development costs, transportation economics, and future markets for several aggregate sources before selecting a mining site.

TABLE 1. List of test holes in Hanson County, South Dakota,  
which contain sand or gravel in the upper 25 feet.

Lithologic descriptions, as listed, have been condensed from data contained in driller's 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 below land surface.

Test Hole 1

Location: SE SE NW SE sec. 29, T. 104 N., R. 59 W.

2- 5 Sand, medium to coarse, silty, pebbly

Test Hole 2

Location: SE SE SW SE sec. 20, T. 104 N., R. 59 W.

1- 6 Gravel, coarse, sandy, silty

Test Hole 3

Location: NW NW NE NW sec. 21, T. 104 N., R. 59 W.

4-10 Sand, brown, silty, pebbly

Test Hole 4

Location: NE NE NE NE sec. 16, T. 104 N., R. 59 W.

12-20 Gravel, red-brown, medium, very clayey, sandy

Test Hole 5

Location: SW SE SW SE sec. 10, T. 104 N., R. 59 W.

1- 4 Sand, dark-brown, medium to coarse, very silty

Test Hole 6

Location: SW NW SE SE sec. 10, T. 104 N., R. 59 W.

1- 5 Sand, fine, silty, clayey

Test Hole 7

Location: NE NW SE SE sec. 10, T. 104 N., R. 59 W.

1- 3 Gravel, brown, fine to coarse, sandy  
13-17 Sand, brown, fine, silty, well-sorted



Test Hole 8

Location: SE NE NE NE sec. 11, T. 104 N., R. 59 W.

- 0- 2 Sand, brown, fine to medium, pebbly
- 5- 7 Sand, yellow-brown, fine, silty

Test Hole 9

Location: NE NW NW NW sec. 12, T. 104 N., R. 59 W.

- 0- 5 Sand, brown, fine to medium, pebbly

Test Hole 10

Location: SW SE Sw SE sec. 12, T. 104 N., R. 59 W.

- 2- 4 Sand, yellow, fine, silty, pebbly

Test Hole 11

Location: NE SE NE SE sec. 13, T. 104 N., R. 59 W.

- 4- 6 Sand, brown, fine to medium, silty; moist

Test Hole 12

Location: Sw SE Sw SE sec. 24, T. 104 N., R. 59 W.

- 4- 9 Sand, brown, medium to very coarse

Test Hole 13

Location: NE SE NE NE sec. 35, T. 104 N., R. 59 W.

- 9-14 Sand, red-brown, fine, clayey

Test Hole 14

Location: SW NW Sw NW sec. 35, T. 104 N., R. 59 W.

- 1- 9 Sand, brown, pebbly, very clayey
- 9-13 Gravel, fine to medium, clayey; moist

Test Hole 15

Location: SW Sw Sw Sw sec. 34, T. 104 N., R. 59 W.

- 1-21 Gravel, fine to coarse

Test Hole 16

Location: SE SE Sw Sw sec. 34, T. 104 N., R. 59 W.

- 5- 7 Sand, brown, fine, silty; moist

Test Hole 16 -- continued.

11-13 Sand, brown, medium to coarse, silty

Test Hole 17

Location: SW NW SW NW sec. 8, T. 104 N., R. 58 W.

15-23 Sand, red-brown, medium, silty, pebbly;  
moist

Test Hole 18

Location: SW SE SE SW sec. 4, T. 104 N., R. 58 W.

3- 5 Sand, brown, fine to medium; dry

Test Hole 19

Location: SE SE NE SE sec. 4, T. 104 N., R. 58 W.

6-16 Sand, yellow, pebbly; moist

Test Hole 20

Location: SW SW SW NW sec. 2, T. 104 N., R. 58 W.

2- 5 Gravel, dark-brown, coarse, sandy

Test Hole 21

Location: NE NE NE NE sec. 2, T. 104 N., R. 58 W.

15-16 Sand, medium

16-18 Rock

18-27 Gravel, fine, and sand

Test Hole 22

Location: SE SE SW SE sec. 36, T. 105 N., R. 58 W.

0- 5 Sand, brown, clayey, pebbly; moist

5-11 Gravel, fine, clayey

Test Hole 23

Location: NW NE NW NE sec. 29, T. 104 N., R. 58 W.

2- 4 Sand, light-brown, silty, clayey; moist

Test Hole 24

Location: SE SE SE SE sec. 33, T. 104 N., R. 58 W.

17-25 Sand, fine, with gray clay

Test Hole 25

Location: SE SW SE SE sec. 27, T. 104 N., R. 58 W.

1- 5 Sand, light-brown, fine to medium, silty, clayey; moist

Test Hole 26

Location: SW SW SW NW sec. 25, T. 104 N., R. 58 W.

1- 6 Sand, red-brown, pebbly; dry

Test Hole 27

Location: NE SE SE SE sec. 31, T. 105 N., R. 57 W.

0- 7 Sand, red-brown, medium, pebbly

Test Hole 28

Location: NW NW NE NE sec. 6, T. 104 N., R. 57 W.

2-10 Sand, dark-brown, medium to coarse, clayey, pebbly

Test Hole 29

Location: NW NW NE NE sec. 5, T. 104 N., R. 57 W.

0- 1 Sand, medium to coarse, pebbly, silty; moist  
2- 5 Gravel, fine, very sandy, clayey

Test Hole 30

Location: SW NW SW NW sec. 8, T. 104 N., R. 57 W.

2-18 Sand, medium to coarse, silty; moist

Test Hole 31

Location: SW NW NW SW sec. 8, T. 104 N., R. 57 W.

0- 4 Sand, brown, fine to coarse

Test Hole 32

Location: NW NW NW NW sec. 17, T. 104 N., R. 57 W.

0-16 Sand and fine gravel, very silty

Test Hole 33

Location: NE NW NW NW sec. 17, T. 104 N., R. 57 W.

1- 5 Sand, brown, very pebbly; moist  
5-16 Gravel, fine, very clayey; moist

Test Hole 34

Location: SW SW SW NW sec. 10, T. 104 N., R. 57 W.

11-15 Sand, brown, pebbly, clayey; moist

Test Hole 35

Location: NW NW SW SW sec. 10, T. 104 N., R. 57 W.

17-20 Sand, red-brown, medium, a few pebbles

Test Hole 36

Location: NW NW SE SE sec. 14, T. 104 N., R. 57 W.

12-18 Sand, brown, fine

Test Hole 37

Location: NE NE NE NE sec. 25, T. 104 N., R. 57 W.

8-13 Sand, medium to coarse, some brown clay  
13-15 Gravel, fine to medium, sandy, clayey

Test Hole 38

Location: SE SE SE SE sec. 36, T. 104 N., R. 57 W.

2-10 Sand, fine to medium

Test Hole 39

Location: SW NW NW SW sec. 6, T. 103 N., R. 59 W.

1- 3 Sand, light-brown, medium, very clayey, pebbly

Test Hole 40

Location: SW NW NW NW sec. 3, T. 103 N., R. 59 W.

6- 9 Sand, medium to coarse, pebbly, clayey; wet

Test Hole 41

Location: SE SW SW SW sec. 4, T. 103 N., R. 59 W.

4- 6 Gravel, medium, sandy; dry

Test Hole 42

Location: NW NW NE NW sec. 17, T. 103 N., R. 59 W.

2- 8 Sand, brown, fine; moist

Test Hole 43

Location: SW SW SE SW sec. 7, T. 103 N., R. 59 W.

2- 5 Sand, very fine, pebbly, clayey; dry

Test Hole 44

Location: SW SE SE SE sec. 30, T. 103 N., R. 59 W.

1- 5 Sand, yellow, very fine, silty, pebbly; dry

5-11 Sand, brown, fine, silty, pebbly; dry

Test Hole 45

Location: SE NE SW SE sec. 31, T. 103 N., R. 59 W.

7-15 Sand, brown, medium, very clayey

Test Hole 46

Location: NW SW SW SW sec. 33, T. 103 N., R. 59 W.

0- 6 Sand, coarse, pebbly; dry

8-10 Gravel, medium to fine, some clay

Test Hole 47

Location: SW NW NW NW sec. 34, T. 103 N., R. 59 W.

9-14 Sand, brown, medium, gravelly, slighty clayey;  
moist

Test Hole 48

Location: NW NW NW NW sec. 34, T. 103 N., R. 59 W.

18-33 Sand, some brown clay

Test Hole 49

Location: SE NE SE SE sec. 35, T. 103 N., R. 59 W.

3- 9 Sand, brown, medium to coarse, pebbly; moist

Test Hole 50

Location: NE NE SE SE sec. 35, T. 103 N., R. 59 W.

3- 4 Sand, brown, medium to fine; moist  
9-11 Sand, brown, fine to medium, clayey

Test Hole 51

Location: SE SE SE SW sec. 25, T. 103 N., R. 59 W.

2- 4 Gravel, coarse, sandy

Test Hole 52

Location: SW SE SE SW sec. 25, T. 103 N., R. 59 W.

4-10 Sand, brown, clayey, pebbly

Test Hole 53

Location: SE SE SW SW sec. 25, T. 103 N., R. 59 W.

0- 6 Gravel, coarse, sandy; dry

Test Hole 54

Location: NE SE NE NE sec. 25, T. 103 N., R. 59 W.

0- 4 Gravel, light-brown, sandy; dry

Test Hole 55

Location: NE NW NW NE sec. 25, T. 103 N., R. 59 W.

6- 8 Gravel, coarse, sandy, very clayey

Test Hole 56

Location: NW NW SE SW sec. 13, T. 103 N., R. 59 W.

1-14 Gravel, coarse, clayey, well-sorted; moist

Test Hole 57

Location: NW NE NE NE sec. 6, T. 103 N., R. 58 W.

1- 2 Sand, brown, medium, pebbly, clayey; moist  
9-11 Sand, brown, fine, silty  
13-15 Gravel, light-brown, fine to medium, sandy; moist

Test Hole 58

Location: SW SW SW NW sec. 9, T. 103 N., R. 58 W.

2+ Quartzite

Test Hole 59

Location: NE NE SE SE sec. 8, T. 103 N., R. 58 W.

5+ Quartzite

Test Hole 60

Location: NE SW NE SW sec. 16, T. 103 N., R. 58 W.

0- 4 Sand, light-tan, medium, pebbly; dry  
4- 6 Gravel, coarse, sandy, silty

Test Hole 61

Location: NW NW NE NW sec. 20, T. 103 N., R. 58 W.

2-13 Sand, brown, medium to coarse, pebbly, clayey;  
moist

Test Hole 62

Location: SE SE SW SW sec. 19, T. 103 N., R. 58 W.

1- 4 Sand, brown, medium, pebbly, clayey; moist

Test Hole 63

Location: SE SW SW SW sec. 19, T. 103 N., R. 58 W.

5- 9 Sand, gray-brown, medium to fine; very clayey

Test Hole 64

Location: NW NW NW NW sec. 30, T. 103 N., R. 58 W.

1-14 Sand, light-brown, medium to coarse, very  
gravelly

Test Hole 65

Location: SW SW SW NW sec. 29, T. 103 N., R. 58 W.

0-16 Sand, brown, medium to coarse, pebbly; wet

Test Hole 66

Location: SE NE NW NE sec. 29, T. 103 N., R. 58 W.

3- 5 Gravel, brown, medium, sandy; dry

Test Hole 67

Location: NW NW NE NW sec. 36, T. 103 N., R. 58 W.

5+ Quartzite

Test Hole 68

Location: SE NE NE SE sec. 25, T. 103 N., R. 58 W.

2+ Quartzite

Test Hole 69

Location: SW SW SE SE sec. 24, T. 103 N., R. 58 W.

1- 4 Gravel, red-brown, coarse, sandy

4-11 Sand, tan, fine to coarse, pebbly; moist

Test Hole 70

Location: NW NW NW NW sec. 5, T. 103 N., R. 57 W.

6- 8 Gravel, brown, fine, sandy, silty; moist

8-22 Sand, brown, medium to very coarse; pebbly;  
moist

Test Hole 71

Location: NW NE NW NW sec. 8, T. 103 N., R. 57 W.

4- 5 Gravel, brown, fine; very moist

5- 8 Sand, red-brown, medium, well-sorted; very moist

Test Hole 72

Location: NW NW SW NW sec. 8, T. 103 N., R. 57 W.

4-15 Sand, brown, medium, pebbly; moist

Test Hole 73

Location: NW SW SW NW sec. 8, T. 103 N., R. 57 W.

2- 5 Sand, brown, medium to coarse, pebbly, silty



Test Hole 74

Location: NW NW NE NE sec. 18, T. 103 N., R. 57 W.

5- 9 Sand, brown, fine to very coarse, pebbly, silty;  
wet

Test Hole 75

Location: SE SE SW SW sec. 18, T. 103 N., R. 57 W.

2- 8 Gravel, brown, sandy, pebbly; moist

Test Hole 76

Location: NE NE NW NW sec. 30, T. 103 N., R. 57 W.

2+ Quartzite

Test Hole 77

Location: SE SE SE SE sec. 26, T. 103 N., R. 57 W.

9+ Quartzite

Test Hole 78

Location: SE SW SE SW sec. 25, T. 103 N., R. 57 W.

0- 2 Gravel, brown, sandy

Test Hole 79

Location: SW SW SW SE sec. 24, T. 103 N., R. 57 W.

6- 7 Gravel, brown, medium  
10-11+ Quartzite, pink, hard

Test Hole 80

Location: SE NW SE SE sec. 24, T. 103 N., R. 57 W.

6+ Quartzite

Test Hole 81

Location: SE SE SE SE sec. 12, T. 103 N., R. 57 W.

12-17 Gravel, fine, clayey

Test Hole 82

Location: SW SW SW SW sec. 18, T. 102 N., R. 59 W.

1- 6 Sand, medium

Test Hole 83

Location: NW SW SW NW sec. 16, T. 102 N., R. 59 W.

2- 6 Sand, tan, medium, very clayey; moist

Test Hole 84

Location: NW SE NE NE sec. 17, T. 102 N., R. 59 W.

0- 7 Sand, brown, fine to medium, very clayey; moist

Test Hole 85

Location: NW NW NW SW sec. 9, T. 102 N., R. 59 W.

0- 2 Sand, yellow, fine, very silty; dry

2- 7 Sand, brown, medium, pebbly, silty; moist

Test Hole 86

Location: NW NW SW NW sec. 9, T. 102 N., R. 59 W.

0-19 Sand, brown, medium to fine; moist

Test Hole 87

Location: SW SW NW SW sec. 4, T. 102 N., R. 59 W.

0- 4 Sand, light-brown, very pebbly

Test Hole 88

Location: SW NW SW SW sec. 3, T. 102 N., R. 59 W.

4-10 Sand, medium to fine, silty

15-23 Sand, light-brown, fine to coarse, clayey;  
moist; very gravelly from 20 to 23 feet

Test Hole 89

Location: NW SE NE SW sec. 10, T. 102 N., R. 59 W.

2- 5 Sand, brown, fine, clayey; moist

Test Hole 90

Location: NW NW SW NE sec. 10, T. 102 N., R. 59 W.

1-20 Gravel, fine to very coarse, sandy; poorly-sorted,  
moist

Test Hole 91

Location: NW NE NE SE sec. 10, T. 102 N., R. 59 W.

5-10 Sand, brown, medium to coarse, pebbly; moist

Test Hole 92

Location: SW NW SW NW sec. 11, T. 102 N., R. 59 W.

1- 4 Gravel, fine, sandy

Test Hole 93

Location: NE SW NE NW sec. 11, T. 102 N., R. 59 W.

1- 4 Sand, white, fine to medium, pebbly; moist

4- 8 Gravel, brown, medium, very sandy; moist

Test Hole 94

Location: SW NW NW NE sec. 11, T. 102 N., R. 59 W.

2- 6 Sand, brown, fine; moist

6-10 Gravel, tan, medium, sandy; moist

Test Hole 95

Location: SE SW NW NE sec. 11, T. 102 N., R. 59 W.

1- 3 Sand, light-brown, fine; moist

Test Hole 96

Location: SE SW SE SE sec. 2, T. 102 N., R. 59 W.

3- 7 Gravel, dark-brown, coarse, clayey, sandy; moist

Test Hole 97

Location: NW NW SW NW sec. 1, T. 102 N., R. 59 W.

1-10 Gravel, coarse to fine, sandy

Test Hole 98

Location: NW SE SW NW sec. 1, T. 102 N., R. 59 W.

11-15 Sand, medium to coarse, very clayey; wet

Test Hole 99

Location: NE SW SW NE sec. 1, T. 102 N., R. 59 W.

2- 9 Sand, brown, medium to very coarse, pebbly

Test Hole 100

Location: SE NE NE NE sec. 1, T. 102 N., R. 59 W.

0- 4 Sand, brown, coarse to medium, pebbly, silty  
4- 6 Gravel, brown, fine, clayey, sandy; moist

Test Hole 101

Location: NW NW SW SW sec. 11, T. 102 N., R. 59 W.

0- 5 Sand, light-brown, pebbly; moist

Test Hole 102

Location: NE NW SE SW sec. 11, T. 102 N., R. 59 W.

1-20 Sand, brown, fine; moist  
20-30 Sand, brown, medium, clayey, pebbly; moist

Test Hole 103

Location: NE NW NW NW sec. 14, T. 102 N., R. 59 W.

1- 2 Sand, gray-brown, medium, pebbly; moist  
2-13 Sand, tan, fine, pebbly; moist

Test Hole 104

Location: NE SE NE NE sec. 14, T. 102 N., R. 59 W.

11-13 Sand, yellow-brown, fine; moist

Test Hole 105

Location: SE NE SE NE sec. 14, T. 102 N., R. 59 W.

1- 2 Gravel, brown, medium, sandy; moist  
2-23 Sand, light-brown, fine; moist

Test Hole 106

Location: SW NE SW SW sec. 14, T. 102 N., R. 59 W.

0- 2 Sand, brown, fine, silty; dry  
2-12 Sand, light-brown, fine to medium, very pebbly,  
cobble layer at 4 to 5 feet

Test Hole 107

Location: NE NE NE NW sec. 23, T. 102 N., R. 59 W.

2-12 Gravel, medium, very poorly-sorted, sandy clayey

Test Hole 108

Location: SW NE NW NE sec. 23, T. 102 N., R. 59 W.

1- 8 Sand, tan, fine to very coarse, very pebbly  
14-20 Sand, brown, fine to very fine, silty; moist

Test Hole 109

Location: NW NW NW SW sec. 23, T. 102 N., R. 59 W.

0- 3 Sand, light-brown, fine, clayey; moist

Test Hole 110

Location: SE NW NE SE sec. 23, T. 102 N., R. 59 W.

1-19 Sand, brown, medium to fine; moist

Test Hole 111

Location: SE SE SE SE sec. 36, T. 102 N., R. 59 W.

20-26 Gravel, sandy, clayey

Test Hole 112

Location: NW NE NW NW sec. 6, T. 102 N., R. 58 W.

0- 2 Sand, light-brown, fine to coarse  
2- 3 Gravel, medium, slightly silty  
3- 5 Sand, brown, medium to very coarse, silty,  
pebbly; moist

Test Hole 113

Location: SW SW SW SW sec. 18, T. 102 N., R. 58 W.

16-22 Gravel, medium to coarse  
22-25 Sand, coarse, gravelly

Test Hole 114

Location: NW SW NE NW sec. 31, T. 102 N., R. 58 W.

0-15 Gravel, coarse, sandy  
15-38 Sand, yellow-brown, fine; moist

Test Hole 115

Location: SE NE SE SE sec. 33, T. 102 N., R. 58 W.

0- 4 Sand, light-brown, fine; moist

Test Hole 116

Location: SW NW NW NW sec. 33, T. 102 N., R. 58 W.

0- 6 Sand, brown, medium, silty; moist

Test Hole 117

Location: SW SW NW NW sec. 29, T. 102 N., R. 58 W.

10-12 Sand, brown, medium, clayey; moist

Test Hole 118

Location: SW SW NE NE sec. 30, T. 102 N., R. 58 W.

0-10+ Gravel, coarse, abandoned hole on boulder

Test Hole 119

Location: NW SE NE NE sec. 30, T. 102 N., R. 58 W.

0-10 Gravel, brown, coarse, sandy; moist

Test Hole 120

Location: SW SE NW NE sec. 30, T. 102 N., R. 58 W.

0-10 Gravel, brown, coarse, sandy; moist

Test Hole 121

Location: SE NE SE NE sec. 19, T. 102 N., R. 58 W.

0- 9 Sand, coarse to fine, pebbly; moist

Test Hole 122

Location: NE SE NE SE sec. 19, T. 102 N., R. 58 W.

0- 3 Sand, medium to coarse, very gravelly; moist

Test Hole 123

Location: SE SW SE SW sec. 20, T. 102 N., R. 58 W.

3- 5 Sand, brown, medium; moist

Test Hole 124

Location: SW SW SW NW sec. 21, T. 102 N., R. 58 W.

0- 1 Sand, brown, fine; moist

1- 6 Gravel, coarse, sandy

Test Hole 125

Location: SW SE SE SW sec. 16, T. 102 N., R. 58 W.

10-13 Sand, light-brown; moist

Test Hole 126

Location: NW NW SW NW sec. 22, T. 102 N., R. 58 W.

4- 6 Gravel, brown, fine, silty, sandy; dry

Test Hole 127

Location: SW NE NW NW sec. 22, T. 102 N., R. 58 W.

0- 4 Gravel, coarse, sandy, silty; dry

Test Hole 128

Location: NE NE NE SE sec. 15, T. 102 N., R. 58 W.

20-53 Sand, coarse; rocks at 51 to 52 feet

Test Hole 129

Location: NW SW NW NW sec. 14, T. 102 N., R. 58 W.

3- 6 Sand, brown, fine, silty; moist

Test Hole 130

Location: NW NE NW NW sec. 14, T. 102 N., R. 58 W.

0- 1 Gravel, brown, sandy, clayey

1- 3+ Sand, red-brown, fine, silty; moist; could not  
penetrate large rocks at 3 feet

Test Hole 131

Location: NE NW NE NW sec. 14, T. 102 N., R. 58 W.

10-12 Sand, brown, medium to coarse, pebbly

Test Hole 132

Location: SW NE SE SE sec. 10, T. 102 N., R. 58 W.

0- 6 Sand, light-brown, very fine to medium, silty

Test Hole 133

Location: NW NW NW NE sec. 2, T. 102 N., R. 58 W.

7-15 Sand, light-brown, fine, silty; moist

Test Hole 134

Location: SE NE SE NE sec. 9, T. 102 N., R. 57 W.

4- 6 Gravel, red-brown, medium, sandy, clayey

Test Hole 135

Location: NW NW NW SW sec. 19, T. 102 N., R. 57 W.

15-17 Sand, brown, very fine, silty

Test Hole 136

Location: SW SW SW SW sec. 31, T. 102 N., R. 56 W.

21-24 Sand, medium to coarse, and gravel, medium

Test Hole 137

Location: SW SW SW NW sec. 31, T. 102 N., R. 56 W.

0- 4 Sand, light-brown, medium, pebbly; moist

Test Hole 138

Location: SE Sw Sw SE sec. 23, T. 102 N., R. 57 W.

11-13 Sand, brown, medium; moist

Test Hole 139

Location: NW SW SW SW sec. 23, T. 102 N., R. 57 W.

8-10 Gravel, fine, clayey

Test Hole 140

Location: NE NE NE NE sec. 23, T. 102 N., R. 57 W.

0- 2 Sand, light-brown; moist

Test Hole 141

Location: NE NW Nw NW sec. 24, T. 102 N., R. 57 W.

19-23 Gravel, brown, medium, sandy; moist

Test Hole 142

Location: SW NW NW SW sec. 1, T. 102 N., R. 57 W.

1- 5 Gravel, coarse, sandy



Test Hole 143

Location: SW NW NE SE sec. 2, T. 102 N., R. 57 W.

4-10 Gravel, light-brown, coarse, sandy; dry

Test Hole 144

Location: NE NW NW NW sec. 1, T. 102 N., R. 57 W.

2- 5 Gravel, medium to coarse, sandy

Test Hole 145

Location: NE NE SE NE sec. 9, T. 101 N., R. 59 W.

15-17 Sand, brown, fine, pebbly; moist

Test Hole 146

Location: NW SW SW SW sec. 5, T. 101 N., R. 59 W.

3- 5 Sand, light-brown, fine to very fine; moist

5-11 Sand, medium, clayey below 9 feet

Test Hole 147

Location: NW NE NE NW sec. 8, T. 101 N., R. 59 W.

7- 9 Sand, brown, fine; moist

Test Hole 148

Location: NE NE NW NE sec. 7, T. 101 N., R. 59 W.

5-10 Sand, brown, fine, clayey; moist

Test Hole 149

Location: NW SW NW NW sec. 8, T. 101 N., R. 59 W.

6- 9 Sand, brown, medium, clayey, pebbly

Test Hole 150

Location: NE NE SE SE sec. 12, T. 101 N., R. 60 W.

3- 8 Gravel, yellow-brown, sandy, clayey; moist

Test Hole 151

Location: NW NW NE NW sec. 18, T. 101 N., R. 59 W.

3-15 Gravel, brown, medium, sandy; moist

Test Hole 152

Location: SW NW SW NW sec. 17, T. 101 N., R. 59 W.

3- 5 Sand, red-brown, medium, clayey

Test Hole 153

Location: NW NW NW NE sec. 17, T. 101 N., R. 59 W.

20-22 Gravel, brown, coarse, sandy; moist

Test Hole 154

Location: SW SW SW SW sec. 17, T. 101 N., R. 59 W.

3-18 Sand, red-brown, fine to medium, well-sorted;  
moist

Test Hole 155

Location: SW SW SW SE sec. 17, T. 101 N., R. 59 W.

4- 7 Sand, brown, medium to fine, clayey; moist

Test Hole 156

Location: NE NE NE NE sec. 21, T. 101 N., R. 59 W.

20-24 Gravel, medium to coarse; subangular

Test Hole 157

Location: NW NW SW SW sec. 30, T. 101 N., R. 59 W.

5- 6 Sand  
15-16 Sand

Test Hole 158

Location: SE SE SE SE sec. 36, T. 101 N., R. 60 W.

18-24 Sand, red-brown, medium; subround

Test Hole 159

Location: SE SW SE SE sec. 28, T. 101 N., R. 59 W.

7- 9 Gravel, brown, medium, sandy; moist

Test Hole 160

Location: SW SW SW SW sec. 34, T. 101 N., R. 59 W.

2-16 Gravel, fine to coarse, sandy

Test Hole 161

Location: NW NW NW NW sec. 7, T. 100 N., R. 59 W.

0- 7 Sand, light-brown, fine, pebbly  
7- 9 Gravel, brown, sandy; moist

Test Hole 162

Location: SE SE NE SE sec. 27, T. 101 N., R. 59 W.

1- 4 Sand, light-brown, fine; moist

Test Hole 163

Location: NW NE NW NE sec. 26, T. 101 N., R. 59 W.

0- 1 Sand, very fine; moist  
1-20 Gravel, brown, coarse, sandy; moist

Test Hole 164

Location: SE NW NE NW sec. 25, T. 101 N., R. 59 W.

0-14 Sand, medium, pebbly; moist

Test Hole 165

Location: SE NE NW SW sec. 6, T. 101 N., R. 58 W.

15-20 Sand, yellow-brown, fine; moist

Test Hole 166

Location: SE NE NW NE sec. 5, T. 101 N., R. 58 W.

0-15 Gravel, brown, very coarse; moist

Test Hole 167

Location: NE NE SE SE sec. 8, T. 101 N., R. 58 W.

0- 6 Sand, light-brown, fine; moist

Test Hole 168

Location: SW SW NW NW sec. 31, T. 101 N., R. 58 W.

0- 2 Sand, brown, fine, pebbly, clayey; moist

Test Hole 169

Location: NE NE SE SE sec. 29, T. 101 N., R. 58 W.

- 5- 7 Sand, light-brown, pebbly; moist
- 7-16 Gravel, brown, sandy; moist

Test Hole 170

Location: SE SW SE SE sec. 33, T. 101 N., R. 58 W.

- 15-17 Sand, brown, medium; moist

Test Hole 171

Location: SE SE SE SE sec. 35, T. 101 N., R. 58 W.

- 14-16 Sand, brown, very fine, clayey; moist

Test Hole 172

Location: SW SW SW SW sec. 25, T. 101 N., R. 58 W.

- 6- 9 Sand, brown, fine, clayey, pebbly; moist
- 9-15 Sand, red-brown, fine, silty; moist
- 18-26 Sand, brown, fine, clayey; saturated

Test Hole 173

Location: SE SW SE SE sec. 26, T. 101 N., R. 58 W.

- 0- 4 Sand, light-brown, very fine to coarse, pebbly;  
moist
- 9-17 Sand, light-brown, very fine to coarse, pebbly,  
clayey; moist

Test Hole 174

Location: NW NE NE NE sec. 26, T. 101 N., R. 58 W.

- 3- 5 Sand, brown, medium to coarse, clayey, pebbly;  
moist
- 8-13 Sand, brown, very fine to fine, silty; moist

Test Hole 175

Location: NW NE NW NW sec. 25, T. 101 N., R. 58 W.

- 6-10 Gravel, gray-brown, very fine, sandy; moist
- 17-19 Sand, brown, medium to fine, clayey; moist
- 19-21 Sand, brown, medium to coarse; clean, moist

Test Hole 176

Location: SW SE SE SE sec. 15, T. 101 N., R. 58 W.

1- 6 Gravel, coarse, sandy; moist

Test Hole 177

Location: NE SE SE SE sec. 15, T. 101 N., R. 58 W.

0- 9 Gravel, brown, medium, sandy; moist

Test Hole 178

Location: SW SW SW NW sec. 13, T. 101 N., R. 58 W.

2- 4 Sand, medium to coarse, silty, pebbly  
4-25? Sand, dark-brown, medium to very coarse,  
pebbly, clayey

Test Hole 179

Location: NE NW NE NE sec. 14, T. 101 N., R. 58 W.

3- 6 Sand, brown, medium, clayey; moist

Test Hole 180

Location: NW NW NE NE sec. 16, T. 101 N., R. 58 W.

0- 4 Gravel, brown, medium, clayey, sandy; moist

Test Hole 181

Location: NE SE NE SE sec. 9, T. 101 N., R. 58 W.

0- 5 Sand, light-brown, fine; moist  
5- 8 Gravel, brown, coarse, sandy; moist  
8-14 Sand, brown, fine; moist

Test Hole 182

Location: NE SE NE NE sec. 9, T. 101 N., R. 58 W.

0- 9 Sand, brown, fine; moist

Test Hole 183

Location: SE SW SE SW sec. 3, T. 101 N., R. 58 W.

5-10 Sand, light-brown, fine; moist

Test Hole 184

Location: SW SE SW SE sec. 3, T. 101 N., R. 58 W.

5- 7 Sand, brown, fine; moist

Test Hole 185

Location: NW NW NW SW sec. 5, T. 101 N., R. 57 W.

0- 3 Sand, brown, coarse, clayey; pebbly; moist

3- 7 Gravel, brown, very fine, clayey, sandy; wet

9-11 Gravel, brown, medium to coarse, clayey; wet

Test Hole 186

Location: NW NW NW NW sec. 16, T. 101 N., R. 57 W.

0- 5 Sand, light-brown, fine, silty; moist

Test Hole 187

Location: SE NE NE NE sec. 20, T. 101 N., R. 57 W.

5- 8 Gravel, red-brown, coarse, sandy; moist

Test Hole 188

Location: NW NE NW NE sec. 29, T. 101 N., R. 57 W.

1- 3 Sand, red-brown, medium to coarse; moist

4-11 Sand, light-brown, fine, clayey; moist

Test Hole 189

Location: SE SE NE SE sec. 29, T. 101 N., R. 57 W.

0- 5 Gravel, light-brown, coarse to medium, sandy,  
some clay; moist

Test Hole 190

Location: NW NE NE NE sec. 32, T. 101 N., R. 57 W.

0- 4 Sand, light-brown, medium, pebbly; moist

Test Hole 191

Location: NE NE SE NE sec. 32, T. 101 N., R. 57 W.

0- 4 Gravel, brown, fine, sandy, silty; wet

Test Hole 192

Location: NE NE NE SE sec. 31, T. 101 N., R. 57 W.

2- 4 Sand, brown, very fine; moist  
9-11 Sand, brown, very fine, clayey; moist

Test Hole 193

Location: NE NE NW NW sec. 34, T. 101 N., R. 57 W.

3- 5 Sand, red-brown, medium, clayey; moist

Test Hole 194

Location: NE NW NE NW sec. 34, T. 101 N., R. 57 W.

6- 7 Sand, medium to coarse, silty; very moist  
9-11 Sand, brown, medium to coarse; saturated

TABLE 2. List of sand and gravel pits in Hanson County, South Dakota, which are on file at the District Office, Division of Highways, Mitchell, SD.

Explanation:

Column description

- a. Landowner and address
- b. Location - given as 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: R. N. Graham
- b. Location: NW 1/4 sec. 32, T. 103 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 9.0
- e. Overburden thickness (ft): 2.0

Pit 2

- a. Landowner: Martin Bloomberg - Fulton
- b. Location: SE 1/4 NW 1/4 sec. 4, T. 103 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 4.7
- e. Overburden thickness (ft): 1.5

Pit 3

- a. Landowner: P. J. Schladweiler - Farmer
- b. Location: NW 1/4 sec. 8, T. 103 N., R. 57 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 7.0
- e. Overburden thickness (ft): 2.5

Pit 4

- a. Landowner: P. J. Schladweiler - Farmer
- b. Location: SE 1/4 NE 1/4 sec. 13, T. 103 N., R. 57 W.
- c. Aggregate Type: Sand
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 2.0



Pit 5

- a. Landowner: Spencer Quarries - Spencer
- b. Location: NE 1/4 sec. 24, T. 103 N., R. 57 W.
- c. Aggregate Type: Filler, sand, and quartzite
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 6

- a. Landowner: Homer Backlund - Mitchell
- b. Location: NW 1/4 sec. 8, T. 102 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 7.0
- e. Overburden thickness (ft): 2.5

Pit 7

- a. Landowner: Tony Metz - Mitchell
- b. Location: SW 1/4 sec. 4, T. 102 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft) ----

Pit 8

- a. Landowner: Jerome Kaufman - Mitchell
- b. Location: SE 1/4 sec. 10, T. 102 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 9.5
- e. Overburden thickness (ft): 2.5

Pit 9

- a. Landowner: Rosedale Colony - Alexandria
- b. Location: NW 1/4 SE 1/4 sec. 11, T. 102 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 15.0
- e. Overburden thickness (ft): 2.0

Pit 10

- a. Landowner: Hanson County
- b. Location: NW 1/4 sec. 14, T. 102 N., R. 59 W.
- c. Aggregate Type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 11

- a. Landowner: Rosedale Hutterian Brethren, Inc. - Mitchell
- b. Location: SW 1/4 sec. 23, T. 102 N., R. 59 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 8.0
- e. Overburden thickness (ft): 2.5

Pit 12

- a. Landowner: Rockport Colony - Alexandria
- b. Location: NE 1/4 NW 1/4 sec. 31, T. 102 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 13.0
- e. Overburden thickness (ft): 1.0

Pit 13

- a. Landowner: Tony Metz - Alexandria
- b. Location: NE 1/4 sec. 30, T. 102 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 14

- a. Landowner: Hill Brothers - Alexandria
- b. Location: SW 1/4 sec. 20, T. 102 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 6.8
- e. Overburden thickness (ft): 3.1

Pit 15

- a. Landowner: Matt Schroeder - Alexandria
- b. Location: SE 1/4 sec. 20, T. 102 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 7.0
- e. Overburden thickness (ft): 1.7

Pit 16

- a. Landowner: Walter Friedrichs - Alexandria
- b. Location: SW 1/4 NW 1/4 sec. 21, T. 102 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 17

- a. Landowner: ----
- b. Location: SW 1/4 sec. 22, T. 102 N., R. 58 W.
- c. Aggregate Type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 18

- a. Landowner: Hill Brothers - Alexandria
- b. Location: NW 1/4 sec. 22, T. 102 N., R. 58 W.
- c. Aggregate Type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 19

- a. Landowner: Tobin Quarries, Inc. - Alexandria
- b. Location: NW 1/4 sec. 14, T. 102 N., R. 58 W.
- c. Aggregate Type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 20

- a. Landowner: Hanson County
- b. Location: NE 1/4 sec. 9, T. 101 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 21

- a. Landowner: Huron College - Huron, SD
- b. Location: SE 1/4 NE 1/4 sec. 9, T. 101 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): 2.0

Pit 22





- a. Landowner: Mrs. Mary LaDue - Alexandria
- b. Location: SE 1/4 sec. 9, T. 101 N., R. 58 W.
- c. Aggregate Type: Gravel
- d. Deposit thickness (ft): 9.0
- e. Overburden thickness (ft): 2.5

Pit 23

- a. Landowner: ----
- b. Location: NE 1/4 sec. 20, T. 101 N., R. 58 W.
- c. Aggregate Type: Filler
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

Pit 24

- a. Landowner: ----
- b. Location: SE 1/4 sec. 32, T. 101 N., R. 58 W.
- c. Aggregate Type: Sand
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

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

Letters A through M designate areas described in the text.

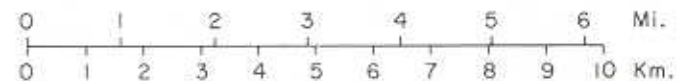
- 117 ● Test hole containing sand or gravel in upper 25 feet with 0-5 feet of overburden.
  - 118 ■ Test hole containing sand or gravel in upper 25 feet with 6-25 feet of overburden.
  - 79 ∅ Test hole containing quartzite in upper 10 feet.
  - Test hole containing no sand or gravel in upper 25 feet.
  - (7) ♂ Gravel pit or quarry; those with a number are listed in table 2.
  - - - Approximate boundary
- Number refers to table 1.*



Index map of South Dakota showing location of Hanson 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

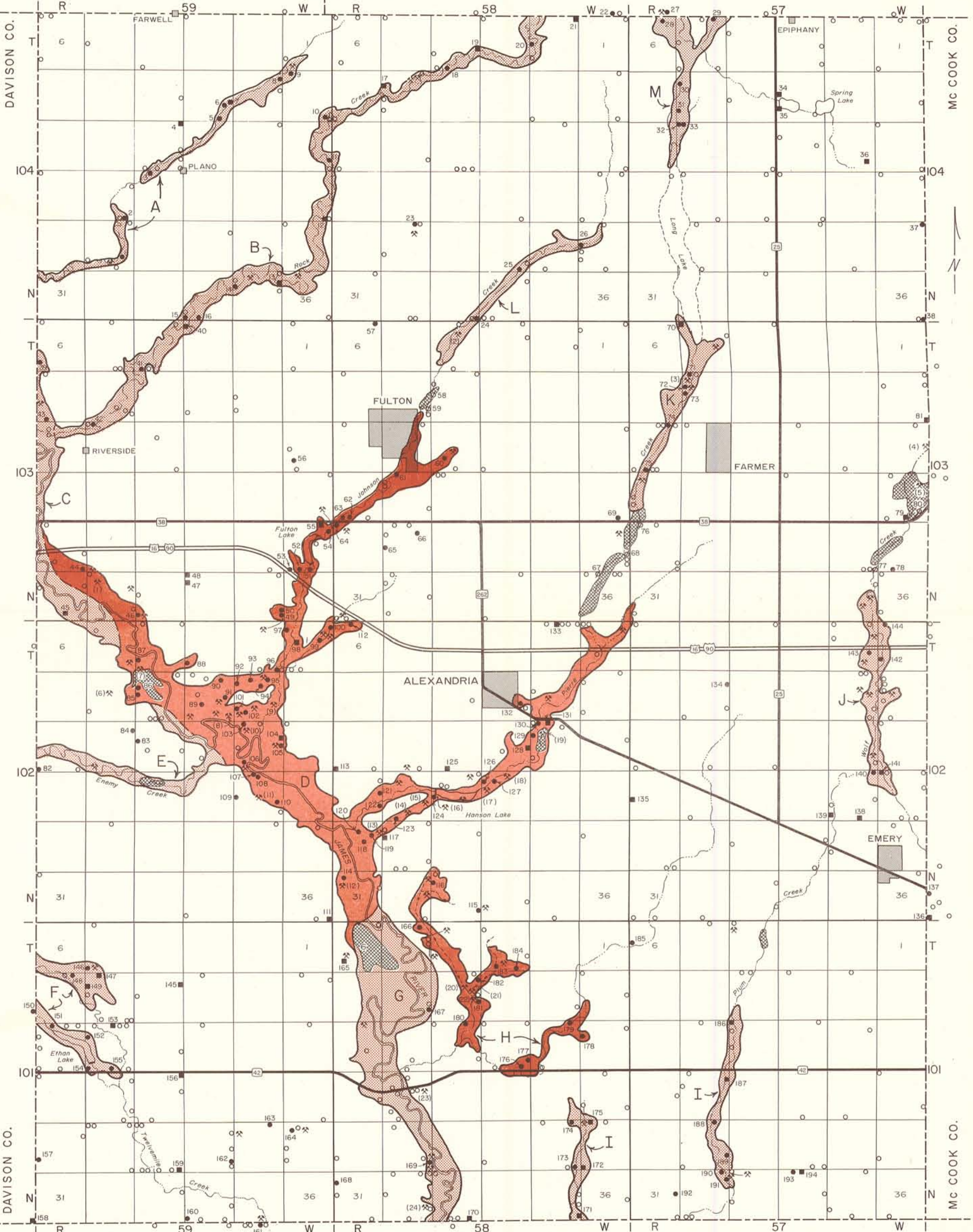
Sectionized township



Map showing sand, gravel, and quartzite deposits in Hanson County.



SANBORN CO. MINER CO.



HUTCHINSON CO.