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**Information Pamphlet No. 48**

**SAND AND GRAVEL RESOURCES IN  
SPINK COUNTY, SOUTH DAKOTA**

by

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**Prepared in cooperation with the  
United States Geological Survey,  
James River Water Development District,  
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## CONTENTS

	Page
<b>INTRODUCTION</b> .....	1
<b>GEOLOGIC OVERVIEW</b> .....	1
Till .....	1
End moraine .....	1
Outwash .....	2
Collapsed outwash .....	2
Disintegration ridge .....	2
Valley train .....	2
Terrace deposits .....	2
Outwash plain .....	3
Alluvium .....	3
Lacustrine deposits .....	3
<b>EXPLANATION OF APPENDICES</b> .....	3
<b>EXPLANATION OF THE ILLUSTRATION</b> .....	3
Sand and gravel .....	4
<b>ECONOMIC CONSIDERATIONS</b> .....	6

## APPENDICES

A. List of test holes in Spink County, South Dakota, which contain sand or gravel within 25 feet of the land surface .....	7
B. List of land tracts in Spink County, South Dakota, which have been bonded with the intent to mine sand and gravel .....	103

## ILLUSTRATION

### Plate

(Plate is in pocket)

1. Locations of test holes, sand and gravel pits, numbered land tracts, and sand and gravel deposits in Spink County, South Dakota

## INTRODUCTION

Spink County covers approximately 1,512 square miles in north-central South Dakota. Although Spink County covers a large area, the county has a limited supply of sand and gravel resources. This pamphlet is designed to aid in the exploration for sand and gravel deposits. Specific areas have been delineated by the use of test drilling, sand and gravel pit locations, soil-survey information, topographic-map and aerial-photograph interpretation, and field observations.

Other reports in this series which discuss the geology and hydrology of Spink County include:

- (a) *Major aquifers in Spink County, South Dakota*: South Dakota Geological Survey Information Pamphlet, Hamilton, L.J., and Howells, L.W., U.S. Geological Survey (in preparation)
- (b) *Water resources of Spink County, South Dakota*: U.S. Geological Survey Water Resources Investigations Report, Hamilton, L.J., and Howells, L.W., U.S. Geological Survey, (in preparation)
- (c) *Geology of Spink County, South Dakota*: South Dakota Geological Survey Bulletin, Tomhave, D.W. (in preparation)

Report (a) describes the yield, quality, and location of major aquifers (water-bearing deposits) in a short, nontechnical pamphlet. Report (b) presents a more technical and exhaustive discussion of the water resources of the county. Report (c) is a detailed description of the overall geology of Spink County. All basic data used to compile these publications are available at the offices of the South Dakota Geological Survey in Vermillion, South Dakota, and the U.S. Geological Survey in Huron, South Dakota.

## GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Spink County were deposited either directly or indirectly by glacial ice that covered the area thousands of years ago. Other deposits have resulted from stream deposition since the retreat of the glaciers. A short description of geologic terms used to describe glacial deposits in this text follows.

### Till

The glaciers were large masses of ice that carried with them debris that was picked up earlier in their routes. Some of this debris, a mixture of clay, silt, sand, gravel, and boulders, were deposited directly from the ice and not subjected to the action of running water. Till, the term used to describe this mixture, is locally called "blue clay" or "boulder clay." A large portion of Spink County is covered by till which 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 within till deposits.

### End Moraine

An actively flowing glacier brings debris to its terminus or lower margin. If the terminus remains stationary for a period of years, a distinct end moraine, or ridge of till, is piled up along the front

edge of the ice. These ridges are generally large and irregular in shape and may show some lineation. When the debris brought to the terminus is composed mainly of sand and gravel, these end moraines may be a source for coarse aggregate.

### Outwash

Outwash is the term used to describe any deposit of glacial debris that has been washed and sorted by flowing meltwater. The material type and grain size of these deposits depend on the velocity of the water that sorted them. 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 outwash is made up of an assortment of sand and gravel with minor amounts of silt, clay, and boulders. Outwash occurs in Spink County as several different landforms which include collapsed outwash, valley train, terrace deposits, an outwash plain, and disintegration ridges.

### Collapsed Outwash

Collapsed outwash is glacial debris that has been washed and sorted by meltwater and was originally deposited on a thin layer of ice. As the underlying ice melts, these deposits collapse or are let down into their positions.

### Disintegration Ridge

A disintegration ridge forms from glacial debris that has been washed into crevasses on and in glacial ice. This debris, or crevasse fill, is composed of a poorly sorted mixture of sand and gravel with minor amounts of clay and silt. When the surrounding ice melts, the debris collapses and forms a ridge.

### Valley Train

Valley-train deposits are long, narrow bodies of outwash confined within the valleys of meltwater streams beyond the margin of an active glacier.

### Terrace Deposits

Terrace deposits are flat-topped alluvial or outwash deposits that are remnants of former flood plains or valley-train deposits. The streams which originally deposited the material have since cut their channels deeper and developed new flood plains at lower levels.

## Outwash Plain

Outwash plains are composed of material that has been washed from a glacier. The material type is typically a mixture of silt, sand, and gravel that is deposited by meltwater beyond the margins of active ice. These deposits generally have a smooth, flat surface.

## Alluvium

Alluvium consists of a mixture of clay, silt, sand, and gravel that has been deposited by present-day streams since the retreat of the glaciers. The grain size of the material deposited is dependent on the same factors that govern the grain size in outwash deposits and may vary from place to place within the stream valley. Where these deposits consist primarily of sand and gravel, they may be mined for coarse aggregate.

## Lacustrine Deposits

Lacustrine deposits consist mainly of fine silt, clay, and sand that have been deposited in lake environments. The deposit is characterized by a relatively smooth, flat surface. A large portion of the surficial deposits in central Spink County is lacustrine. This area is known as the Ancient Lake Dakota plain and extends north into Brown County.

## EXPLANATION OF APPENDICES

Appendix A is a compilation of test holes which encountered sand or gravel within 25 feet of land surface. This appendix lists locations of the test holes and depths and descriptions of sand and gravel intervals. The test holes are numbered and correspond to the index map on plate 1. The complete set of drill logs is on file at the office of the South Dakota Geological Survey in Vermillion, South Dakota. The South Dakota Geological Survey, U.S. Geological Survey, South Dakota Water Rights Program, U.S. Bureau of Reclamation, and private drillers contributed to this list.

Appendix B is a compilation of land tracts that have been bonded with the intent to mine sand and gravel. This information is on file at the office of the Minerals and Mining Program, Department of Environment and Natural Resources in Pierre, South Dakota. The name and address of the operator(s) are listed along with the location of the land tract. Each land tract has been numbered and appears on plate 1.

## EXPLANATION OF THE ILLUSTRATION

Plate 1, found in the pocket at the end of this report, shows the locations of test holes listed in appendix A, numbered land tracts listed in appendix B, and sand and gravel pits. It also shows towns, major highways, major lakes, rivers, and creeks.

Test holes on plate 1 are represented by three different symbols. A filled circle (●) represents a location in which sand or gravel was encountered within 25 feet of land surface with overburden

thickness of 5 feet or less. A filled square (■) indicates a location at which sand or gravel was encountered within 25 feet of land surface, but the overburden thickness exceeds 5 feet. An unfilled circle (○) indicates a location where no sand or gravel was encountered within the upper 25 feet. The test holes representing filled circles and squares have been assigned a number which are listed in appendix A. An index map of Spink County has been provided and lists the test-hole numbers found within each township. The numbers on the index map correspond to the test-hole numbers found in appendix A. The unfilled circles do not have an assigned number and do not appear in the appendix.

Sand or gravel pits are designated by a crossed pick and shovel (⚒). Land tracts are designated by (▣), numbers refer to appendix B. Additional information is on file at the Department of Transportation and the office of the Minerals and Mining Program, Department of Environment and Natural Resources, both located at Pierre, South Dakota. No attempt has been made to differentiate the active pits from inactive pits.

To illustrate the areas of highest probability for locating sand and gravel, the map has been divided into three area types indicating a "good," "fair," or "poor" probability of locating sand and gravel. Areas with "good" and "fair" probability of finding sand and gravel have been assigned a letter on plate 1 and are described in the following section.

Sand and gravel deposits in areas labeled as "good" are generally thick with thin overburden. Areas designated as "fair" are comparatively thinner, have more overburden, or are laterally discontinuous. Some sand and gravel occurs in the area labeled as "poor" as indicated by the test-hole data and numbered land tracts on the map. Although some of these deposits may be present in mineable quantities, they are generally limited and difficult to locate.

### Sand and Gravel

The following is a brief discussion of the potential (designation of good or fair) for mining of sand and gravel in certain areas of Spink County. Refer to plate 1 for locations of specifically mentioned areas.

#### **Area A (designated good)**

Sand and gravel in this area occurs as collapsed outwash deposits. The area covers approximately 10 square miles with the majority of the mining activities located in sec. 3, T. 115 N., R. 64 W. The overburden is generally less than 5 feet thick, but is variable throughout. The thickness of the sand and gravel deposits is also variable and ranges from less than 10 feet to greater than 50 feet.

#### **Area B (designated good and fair)**

The deposits in area B consist of valley-train and alluvial deposits occupying the low areas between the topographically higher hills and knobs. The area south of Cottonwood Lake along Turtle Creek, Medicine Creek, and Wolf Creek has been designated as good. This area has an average overburden thickness of 3 feet. The average thickness is 17 feet and ranges from less than 5 feet to over 40 feet along the Spink and Beadle County line. The

remainder of area B has been designated as fair because the deposits here are relatively thin.

**Area C** (designated good and fair)

Deposits in area C consist of alluvial deposits and remnant terrace deposits of sand and gravel. Two portions of area C have been designated as good. One is located within the stream valley of Dove Creek and extends southeast from the Spink and Faulk County line. The other lies within the stream valley of the South Fork of Snake Creek and extends southeast from the Spink and Faulk County line. In both of these areas, the sand and gravel deposits occur as remnant terrace deposits along the valley walls. Numerous pits have been developed in these two areas. The remainder of area C has been designated as fair due to the discontinuous nature of these deposits.

**Area D** (designated good)

This area, located in the northwest corner of Spink County, consists of alluvial deposits and remnant terrace deposits of sand and gravel within the stream valley of Snake Creek. The terrace deposits are generally small in size but have thicknesses that exceed 30 feet. Four pits have been developed in this area.

**Area E** (designated fair)

Area E is a remnant of a collapsed feature known as a disintegration ridge. The ridge is narrow in width and extends from just west of Doland and trends northward toward Conde. Test-hole data reveal that much of the ridge is composed of till with small pockets of sand and gravel dispersed intermittently along the axis.

**Area F** (designated fair)

Deposits in this area consist of alluvium, outwash, and a few small terrace deposits of sand and gravel. The sand and gravel is generally located along the stream valleys of the numerous unnamed creeks that cross the area. The overburden thickness is generally greater than 10 feet with a total thickness that ranges from 4 feet to greater than 30 feet.

**Area G** (designated fair)

The sand and gravel that has been deposited in this area is part of an outwash plain that extends along Foster Creek in the north and then trends south into Beadle County toward Lake Byron. The east half of area G has some mining activity due to the thin overburden. The thickness of the sand and gravel is variable and ranges from less than 5 feet to around 20 feet.

**Area H** (designated fair)

Underlying much of south-central Spink County is a large outwash deposit. Area H generally represents the portion of this large deposit that is near land surface (within 25 feet). This area has been designated as fair due to the thickness of overburden which

generally exceeds 10 feet. Some pits have been developed in this area. One example is in sec. 14, T. 114 N., R. 62 W. These scattered pits are usually small in areal extent.

The remainder of Spink County has been designated as "poor" although isolated areas of sand and gravel deposits occur. Two areas in Spink County that have been designated as "poor" have many test holes that encountered sand and gravel within 25 feet of land surface and warrant a brief discussion. The first is located in northwestern Spink County in Tps. 119 and 120 N., R. 65 W. Test-hole data, a numbered land tract, and small pits indicate scattered sand and gravel deposits outside the boundary of area D. The deposits here represent small, isolated pockets of sand and gravel that are laterally discontinuous. The second area extends from Athol, generally south toward Redfield, and then southwest toward Cottonwood Lake. Again, the test-hole data and scattered pits indicate sand and gravel deposits. The material type in this area is generally fine, silty sand deposited as lacustrine sediments. Due to the random occurrence and unsuitable material type of such features, exploration efforts should be concentrated in areas designated as "good" and "fair."

### **ECONOMIC CONSIDERATIONS**

It should be emphasized that this study is quite general and should be used only as a guide for further exploration and development of the sand and gravel resources in Spink County. The development of a specific site will depend upon material specifications for the desired use, development costs, transportation costs, and future markets.



**APPENDIX A. List of test holes in Spink 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: 114N-60W-03ABBB

LEGAL LOCATION: NW NW NW NE sec. 03, T. 114 N., R. 60 W.

- 4 - 11 Sand, orange-brown, fine to medium, slightly silty; oxidized
- 11 - 14 Sand, dark-brown, fine to coarse, clayey, silty; oxidized
- 14 - 18 Sand, orange-brown, fine to medium, clayey, silty, pebbly; oxidized, wet

TEST HOLE NUMBER: 2

LOCATION: 114N-60W-03DADA

LEGAL LOCATION: NE SE NE SE sec. 03, T. 114 N., R. 60 W.

- 3 - 6 Sand and gravel, red-brown, fine sand, medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 3

LOCATION: 114N-60W-12BCBC

LEGAL LOCATION: SW NW SW NW sec. 12, T. 114 N., R. 60 W.

- 6 - 16 Sand and gravel, yellow-brown, medium to coarse sand, fine to medium gravel, clayey, silty; oxidized, saturated
- 16 - 20 Gravel, yellow-brown, medium to coarse, clayey, very sandy; oxidized, saturated
- 20 - 23 Gravel, yellow-brown, medium, clayey, silty, sandy, well-sorted, subrounded; oxidized, saturated

TEST HOLE NUMBER: 4

LOCATION: 114N-60W-25DCCC

LEGAL LOCATION: SW SW SW SE sec. 25, T. 114 N., R. 60 W.

- 8 - 11 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 5

LOCATION: 114N-60W-36DCDC

LEGAL LOCATION: SW SE SW SE sec. 36, T. 114 N., R. 60 W.

- 9 - 14 Sand, tan-brown, medium to coarse, rounded; oxidized, saturated, some silt, some gravel
- 14 - 23 Sand, tan-brown, fine to medium, silty; oxidized, some clay, some gravel
- 23 - 35 Sand and gravel, gray-brown, medium to coarse sand, fine to medium gravel, silty; saturated

TEST HOLE NUMBER: 6

LOCATION: 114N-61W-03DDDD

LEGAL LOCATION: SE SE SE SE sec. 03, T. 114 N., R. 61 W.

- 15 - 20 Sand, tan-brown, fine to medium, clayey, silty, gravelly; oxidized, saturated

TEST HOLE NUMBER: 7

LOCATION: 114N-61W-05BBBA

LEGAL LOCATION: NE NW NW NW sec. 05, T. 114 N., R. 61 W.

- 20 - 25 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey, silty, rounded; oxidized

25 - 30 Sand, brown, fine to coarse, clayey, very silty, well-rounded; oxidized, becoming subangular with depth

TEST HOLE NUMBER: 8  
LOCATION: 114N-61W-06AAAA  
LEGAL LOCATION: NE NE NE NE sec. 06, T. 114 N., R. 61 W.

20 - 30 Sand, fine to medium

TEST HOLE NUMBER: 9  
LOCATION: 114N-61W-12DCDC  
LEGAL LOCATION: SW SE SW SE sec. 12, T. 114 N., R. 61 W.

7 - 10 Sand, brown, fine from 7 to 8 feet, medium to coarse from 8 to 10 feet, clayey, silty, pebbly; oxidized, saturated at 8 feet

TEST HOLE NUMBER: 10  
LOCATION: 114N-61W-13CCCC  
LEGAL LOCATION: SW SW SW SW sec. 13, T. 114 N., R. 61 W.

5 - 9 Sand

TEST HOLE NUMBER: 11  
LOCATION: 114N-61W-16BBBB  
LEGAL LOCATION: NW NW NW NW sec. 16, T. 114 N., R. 61 W.

11 - 16 Sand, medium to coarse

TEST HOLE NUMBER: 12  
LOCATION: 114N-61W-17ADDD  
LEGAL LOCATION: SE SE SE NE sec. 17, T. 114 N., R. 61 W.

3 - 6 Sand, red-brown, fine, clayey, silty, pebbly; oxidized, moist  
6 - 10 Sand, yellow-brown, very clayey, silty; some pebbles; oxidized, moist

TEST HOLE NUMBER: 13  
LOCATION: 114N-61W-18CCCD  
LEGAL LOCATION: SE SW SW SW sec. 18, T. 114 N., R. 61 W.

10 - 11 Gravel; poor return  
14 - 19 Sand, dark-red-brown, fine to medium, clayey, gravelly; oxidized, moist  
20 - 23 Sand, light-yellow, very fine, clayey; some small pebbles, moist  
23 - 36 Sand, red-brown, coarse, clayey, silty, gravelly; moist, clay stringers at 28 and 34 feet

TEST HOLE NUMBER: 14  
LOCATION: 114N-61W-22AAAA  
LEGAL LOCATION: NE NE NE NE sec. 22, T. 114 N., R. 61 W.

23 - 30 Sand and gravel, medium to coarse; clean

TEST HOLE NUMBER: 15  
LOCATION: 114N-61W-22BCBB  
LEGAL LOCATION: NW NW SW NW sec. 22, T. 114 N., R. 61 W.

7 - 11 Sand, yellow-tan-brown, fine to coarse, clayey, silty; oxidized, saturated  
11 - 19 Sand, orange-tan-brown, fine to coarse, clayey, very silty; oxidized, saturated  
19 - 22 Sand, dark-brown, fine to coarse, silty, clayey; saturated

TEST HOLE NUMBER: 16  
LOCATION: 114N-61W-22DDDD  
LEGAL LOCATION: SE SE SE SE sec. 22, T. 114 N., R. 61 W.

- 5 - 14 Sand, gray-brown, medium to coarse, very clayey, silty; wet, becoming fine to medium grained from 12 to 14 feet, more clay content with depth
- 14 - 25 Sand, gray, fine to medium, coarse from 20 to 25 feet, very clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 17  
LOCATION: 114N-61W-24CBBC  
LEGAL LOCATION: SW NW NW SW sec. 24, T. 114 N., R. 61 W.

- 1 - 7 Gravel, brown, fine to medium, clayey, well-rounded; some coarse gravel
- 7 - 11 Sand, gray-brown, fine to coarse, very clayey, silty; saturated

TEST HOLE NUMBER: 18  
LOCATION: 114N-61W-24CDDD  
LEGAL LOCATION: SE SE SE SW sec. 24, T. 114 N., R. 61 W.

- 3 - 4 Gravel, coarse; little return
- 4 - 6 Sand, red-brown, medium, gravelly; oxidized, moist
- 6 - 11 Sand and gravel, dark-red-brown, medium sand, coarse gravel; oxidized

TEST HOLE NUMBER: 19  
LOCATION: 114N-61W-25BCBC  
LEGAL LOCATION: SW NW SW NW sec. 25, T. 114 N., R. 61 W.

- 0 - 2 Sand and gravel, orange-brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 20  
LOCATION: 114N-61W-25DDDD  
LEGAL LOCATION: SE SE SE SE sec. 25, T. 114 N., R. 61 W.

- 1 - 9 Sand, clayey
- 9 - 10 Sand, poorly sorted

TEST HOLE NUMBER: 21  
LOCATION: 114N-61W-31BBAB  
LEGAL LOCATION: NW NE NW NW sec. 31, T. 114 N., R. 61 W.

- 8 - 48 Sand, red-brown, fine to coarse, clayey, silty, pebbly; oxidized, saturated at 36 feet; bit sample shows a gray clay

TEST HOLE NUMBER: 22  
LOCATION: 114N-61W-34DADD  
LEGAL LOCATION: SE SE NE SE sec. 34, T. 114 N., R. 61 W.

- 1 - 4 Sand, brown, very fine, silty; oxidized
- 5 - 9 Sand, red-brown, medium to coarse, clayey, silty; oxidized, moist

TEST HOLE NUMBER: 23  
LOCATION: 114N-61W-35DADA  
LEGAL LOCATION: NE SE NE SE sec. 35, T. 114 N., R. 61 W.

- 4 - 18 Sand, gray-brown, fine to coarse, clayey, silty; saturated, some coal fragments

TEST HOLE NUMBER: 24  
LOCATION: 114N-61W-36DA 1

LEGAL LOCATION: NE SE sec. 36, T. 114 N., R. 61 W.

22 - 35 Sand and clay, blue clay

TEST HOLE NUMBER: 25

LOCATION: 114N-62W-02DDDD

LEGAL LOCATION: SE SE SE SE sec. 02, T. 114 N., R. 62 W.

26 - 62 Sand, medium to coarse; coal

TEST HOLE NUMBER: 26

LOCATION: 114N-62W-05BAAB

LEGAL LOCATION: NW NE NE NW sec. 05, T. 114 N., R. 62 W.

7 - 20 Sand, reddish-tan-brown, fine to medium, slightly silty; oxidized, saturated at 12 feet  
20 - 26 Sand, black-brown, fine to medium, slightly silty; organic(?), saturated, some clay  
26 - 45 Sand, olive-brown to olive-gray, fine, fine to coarse from 36 to 41 feet, clayey, silty; organic(?), saturated, many coal fragments and shale pebbles

TEST HOLE NUMBER: 27

LOCATION: 114N-62W-05BBBB

LEGAL LOCATION: NW NW NW NW sec. 05, T. 114 N., R. 62 W.

6 - 14 Sand, brown (10 YR 5/3); loose, clear  
14 - 16 Sand, brown (10 YR 5/3); loose, loamy, slightly moist to very moist

TEST HOLE NUMBER: 28

LOCATION: 114N-62W-07BBBB

LEGAL LOCATION: NW NW NW NW sec. 07, T. 114 N., R. 62 W.

4 - 64 Sand, fine to medium

TEST HOLE NUMBER: 29

LOCATION: 114N-62W-08BAAD

LEGAL LOCATION: SE NE NE NW sec. 08, T. 114 N., R. 62 W.

5 - 6 Sand, red-brown, fine, slightly clayey, silty; oxidized  
7 - 48 Sand, dark-brown to gray, very silty, very clayey; saturated at 8 feet, some coal fragments

TEST HOLE NUMBER: 30

LOCATION: 114N-62W-08BCCC

LEGAL LOCATION: SW SW SW NW sec. 08, T. 114 N., R. 62 W.

8 - 35 Sand, red-brown, fine, very clayey, silty; oxidized, saturated at 26 feet, coal fragments at 20 feet

TEST HOLE NUMBER: 31

LOCATION: 114N-62W-08DDCD

LEGAL LOCATION: SE SW SE SE sec. 08, T. 114 N., R. 62 W.

12 - 16 Sand, orange-tan-brown, fine to medium, very clayey; oxidized, saturated  
16 - 24 Sand, orange-tan-gray, fine, slightly clayey, silty; oxidized, saturated, some coal fragments  
24 - 34 Sand, olive-gray, fine to medium, silty; saturated, some clay stringers

TEST HOLE NUMBER: 32

LOCATION: 114N-62W-10BBBB

LEGAL LOCATION: NW NW NW NW sec. 10, T. 114 N., R. 62 W.

10 - 15 Sand, reddish-orange-brown, fine to medium, clayey, silty; oxidized, moist  
15 - 21 Sand, brown, fine to coarse, very clayey; oxidized, moist, some shale pebbles, some gravel

TEST HOLE NUMBER: 33  
LOCATION: 114N-62W-11BABA  
LEGAL LOCATION: NE NW NE NW sec. 11, T. 114 N., R. 62 W.

- 1 - 6 Sand, red-brown, fine to coarse, very silty; oxidized, moist
- 6 - 7 Sand, dark-brown, fine to medium, very silty; oxidized, moist
- 7 - 15 Sand, black, fine to medium, very silty; organic; gravel stringer from 8 to 9 feet; moist
- 15 - 48 Sand, dark-brown, fine to medium, very silty; some pebbles at 26 feet; saturated; becoming more coarse with depth

TEST HOLE NUMBER: 34  
LOCATION: 114N-62W-11CBBC  
LEGAL LOCATION: SW NW NW SW sec. 11, T. 114 N., R. 62 W.

- 7 - 9 Sand, orange-brown, fine to medium, clayey, silty; oxidized
- 9 - 15 Sand, dark-brown, fine to coarse, slightly clayey, slightly silty; oxidized, dry
- 15 - 21 Sand, orange-brown, fine to coarse, clayey, silty; oxidized, dry
- 21 - 29 Sand, dark-brown, fine to coarse, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 35  
LOCATION: 114N-62W-11CCC  
LEGAL LOCATION: SW SW SW sec. 11, T. 114 N., R. 62 W.

- 13 - 17 Sand, dark-brown, fine to medium, very clayey; oxidized, moist
- 17 - 21 Sand, dark-brown, fine to medium; some clay, oxidized, moist
- 21 - 23 Sand, brown, fine to medium; some clay, oxidized, saturated

TEST HOLE NUMBER: 36  
LOCATION: 114N-62W-13BABA  
LEGAL LOCATION: NE NW NE NW sec. 13, T. 114 N., R. 62 W.

- 20 - 30 Sand, dark-brown, medium, clayey; some gravel, oxidized, moist

TEST HOLE NUMBER: 37  
LOCATION: 114N-62W-14BABB  
LEGAL LOCATION: NW NW NE NW sec. 14, T. 114 N., R. 62 W.

- 10 - 17 Sand, dark-brown, fine to medium, very clayey, slightly silty; oxidized, moist; gravel stringer from 16 to 17 feet
- 20 - 30 Sand, dark-brown, fine to medium, slightly clayey, slightly silty; oxidized, moist

TEST HOLE NUMBER: 38  
LOCATION: 114N-62W-14BCC  
LEGAL LOCATION: SW SW NW sec. 14, T. 114 N., R. 62 W.

- 8 - 9 Gravel, brown, fine to coarse, clayey, sandy; dry to moist, oxidized
- 9 - 13 Gravel, brown, fine to medium, clayey, sandy; dry to moist, oxidized
- 13 - 15 Gravel, brown, fine to medium, very clayey, sandy; dry to moist, oxidized
- 15 - 17 Gravel, brown, fine to coarse, clayey, sandy; moist, oxidized
- 22 - 25 Sand, dark-brown to black, fine to medium, very clayey; unoxidized, quartzose
- 25 - 28 Sand, dark-brown to black, fine to medium, very clayey; saturated, unoxidized, quartzose

TEST HOLE NUMBER: 39  
LOCATION: 114N-62W-14BDA  
LEGAL LOCATION: NE SE NW sec. 14, T. 114 N., R. 62 W.

- 16 - 18 Sand, light-brown, fine, clayey; moist, oxidized
- 18 - 21 Sand, dark-brown, fine to medium, clayey; moist, oxidized
- 21 - 24 Sand, black, fine to medium, clayey; moist

24 - 33 Sand, dark-brown, fine to medium, clayey; oxidized, saturated at 30 feet

TEST HOLE NUMBER: 40

LOCATION: 114N-62W-14BDB

LEGAL LOCATION: NW SE NW sec. 14, T. 114 N., R. 62 W.

0 - 5 Sand, reddish-brown, fine to medium, some coarse sand; dry, highly quartzose and feldspatic  
5 - 18 Sand, brown, fine to coarse; saturated, highly quartzose (western derived?)  
18 - 55 Sand, gray, medium to coarse, coarse by 23 feet; saturated, unoxidized

TEST HOLE NUMBER: 41

LOCATION: 114N-62W-14CAD

LEGAL LOCATION: SE NE SW sec. 14, T. 114 N., R. 62 W.

7 - 10 Sand and gravel, coarse sand, fine to medium gravel, clayey to very clayey; dry, oxidized

TEST HOLE NUMBER: 42

LOCATION: 114N-62W-14CBA

LEGAL LOCATION: NE NW SW sec. 14, T. 114 N., R. 62 W.

7 - 11 Gravel, brown, fine to coarse, sandy, very clayey  
11 - 18 Gravel, brown, fine to medium, very clayey  
18 - 26 Sand, brown, fine to medium, clayey to almost 50 percent clay; dry to moist, oxidized

TEST HOLE NUMBER: 43

LOCATION: 114N-62W-14CCB

LEGAL LOCATION: NW SW SW sec. 14, T. 114 N., R. 62 W.

6 - 23 Gravel, dark-reddish-brown, medium to coarse, clayey, sandy, poorly sorted; dry, oxidized  
26 - 33 Sand, dark-reddish-brown, clayey; few pebbles, saturated, oxidized, quartzose

TEST HOLE NUMBER: 44

LOCATION: 114N-62W-14CDA

LEGAL LOCATION: NE SE SW sec. 14, T. 114 N., R. 62 W.

7 - 18 Sand and gravel, brown, coarse sand to coarse gravel, clayey to very clayey; becomes coarse gravel at 9 to 12 feet, abandoned hole at 18 feet, rocks too coarse to continue

TEST HOLE NUMBER: 45

LOCATION: 114N-62W-16CCCC

LEGAL LOCATION: SW SW SW SW sec. 16, T. 114 N., R. 62 W.

6 - 39 Sand, medium; clay layer from 28 to 30 feet

TEST HOLE NUMBER: 46

LOCATION: 114N-62W-16CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 16, T. 114 N., R. 62 W.

6 - 8 Sand, medium to coarse  
8 - 10 Sand  
10 - 28 Sand, fine to coarse  
28 - 33 Sand, silty

TEST HOLE NUMBER: 47

LOCATION: 114N-62W-16DCCD

LEGAL LOCATION: SE SW SW SE sec. 16, T. 114 N., R. 62 W.

19 - 20 Gravel, tan-brown, coarse; oxidized, moist  
22 - 30 Sand, dark-brown, fine to medium, very clayey, pebbly; moist

TEST HOLE NUMBER: 48  
LOCATION: 114N-62W-17CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 17, T. 114 N., R. 62 W.

7 - 28 Sand, fine to medium; some silt

TEST HOLE NUMBER: 49  
LOCATION: 114N-2W-18CCCC  
LEGAL LOCATION: SW SW SW SW sec. 18, T. 114 N., R. 62 W.

14 - 18 Sand, brown, fine, very clayey; oxidized, moist  
18 - 32 Sand, dark-brown, fine, clayey; oxidized, wet

TEST HOLE NUMBER: 50  
LOCATION: 114N-62W-18DDDD  
LEGAL LOCATION: SE SE SE SE sec. 18, T. 114 N., R. 62 W.

8 - 13 Sand, yellow-brown (10 YR 5/4); loose, slightly moist, hard to drill, loamy  
13 - 18 Sand, yellow-brown (10 YR 5/4); loose, slightly moist

TEST HOLE NUMBER: 51  
LOCATION: 114N-62W-19CCCC  
LEGAL LOCATION: SW SW SW SW sec. 19, T. 114 N., R. 62 W.

11 - 42 Sand, gray, medium to coarse; lots of coal fragments

TEST HOLE NUMBER: 52  
LOCATION: 114N-62W-20DCCC  
LEGAL LOCATION: SW SW SW SE sec. 20, T. 114 N., R. 62 W.

11 - 12 Sand, orange-brown, fine, silty; oxidized, moist  
17 - 18 Sand, gray-brown, fine, silty; oxidized, moist  
20 - 21 Sand, gray-brown, fine, silty; moist  
21 - 30 Sand, gray, fine, very clayey, very silty; saturated, less clay content from 26 to 30 feet, some coal fragments from 26 to 30 feet

TEST HOLE NUMBER: 53  
LOCATION: 114N-62W-21CBCB  
LEGAL LOCATION: NW SW NW SW sec. 21, T. 114 N., R. 62 W.

21 - 27 Sand, brown, medium, clayey; moist  
27 - 35 Sand, dark-brown, fine to medium, clayey; saturated

TEST HOLE NUMBER: 54  
LOCATION: 114N-62W-22AAAA  
LEGAL LOCATION: NE NE NE NE sec. 22, T. 114 N., R. 62 W.

8 - 73 Sand and gravel; clean coarse sand to a fine gravel, last 40 feet excellent material

TEST HOLE NUMBER: 55  
LOCATION: 114N-62W-22ABAA  
LEGAL LOCATION: NE NE NW NE sec. 22, T. 114 N., R. 62 W.

4 - 11 Gravel, brown, fine to medium, clayey, sandy; dry, unable to penetrate past 11 feet, abandoned hole

TEST HOLE NUMBER: 56  
LOCATION: 114N-62W-23BAAB  
LEGAL LOCATION: NW NE NE NW sec. 23, T. 114 N., R. 62 W.

- 5 - 8 Sand and gravel, dark-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized
- 8 - 17 Sand, yellow-olive-gray to dark-brown, very fine to coarse, clayey, silty; wet, partially oxidized
- 17 - 24 Sand, brown-black, fine to coarse, silty, clayey; some fine gravel, may be organic, moist
- 24 - 32 Sand and gravel, brown-black, fine to coarse sand, fine gravel, clayey, silty; organic(?)

TEST HOLE NUMBER: 57  
 LOCATION: 114N-62W-23BBC  
 LEGAL LOCATION: SW NW NW sec. 23, T. 114 N., R. 62 W.

- 3 - 10 Gravel, brown, fine to coarse, very clayey, sandy, poorly sorted; oxidized, dry, gravel became too coarse to continue, abandoned hole

TEST HOLE NUMBER: 58  
 LOCATION: 114N-62W-24BBBB  
 LEGAL LOCATION: NW NW NW NW sec. 24, T. 114 N., R. 62 W.

- 19 - 34 Gravel, brown, fine to coarse, clayey, silty, sandy, well-rounded; oxidized

TEST HOLE NUMBER: 59  
 LOCATION: 114N-62W-24CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 24, T. 114 N., R. 62 W.

- 2 - 9 Sand, red-brown, medium to coarse, slightly clayey; oxidized, dry
- 9 - 48 Sand, dark-brown, coarse, slightly clayey, pebbly; dry, moist at 27 feet, wet at 41 feet

TEST HOLE NUMBER: 60  
 LOCATION: 114N-62W-24DDDD  
 LEGAL LOCATION: SE SE SE SE sec. 24, T. 114 N., R. 62 W.

- 10 - 35 Gravel, medium to coarse

TEST HOLE NUMBER: 61  
 LOCATION: 114N-62W-29AC  
 LEGAL LOCATION: SW NE sec. 29, T. 114 N., R. 62 W.

- 25 - 80 Sand

TEST HOLE NUMBER: 62  
 LOCATION: 114N-62W-31BAAA  
 LEGAL LOCATION: NE NE NE NW sec. 31, T. 114 N., R. 62 W.

- 10 - 20 Sand, light-brown, fine, slightly clayey, very silty; oxidized, dry, drills very hard
- 20 - 32 Sand, light-brown, medium, slightly clayey; oxidized, moist

TEST HOLE NUMBER: 63  
 LOCATION: 114N-62W-31BACC  
 LEGAL LOCATION: SW SW NE NW sec. 31, T. 114 N., R. 62 W.

- 23 - 39 Sand, medium

TEST HOLE NUMBER: 64  
 LOCATION: 114N-62W-31BADA  
 LEGAL LOCATION: NE SE NE NW sec. 31, T. 114 N., R. 62 W.

- 21 - 46 Sand, medium

TEST HOLE NUMBER: 65  
 LOCATION: 114N-62W-31BB  
 LEGAL LOCATION: NW NW sec. 31, T. 114 N., R. 62 W.



25 - 36 Sand and gravel

TEST HOLE NUMBER: 66

LOCATION: 114N-62W-33ABBB

LEGAL LOCATION: NW NW NW NE sec. 33, T. 114 N., R. 62 W.

12 - 13 Sand, orange-brown, fine, silty; oxidized  
16 - 23 Sand, gray-brown, fine, clayey, silty; saturated at 19 feet  
23 - 26 Sand, brown, clayey, silty; oxidized, saturated, many coal fragments  
26 - 39 Sand, dark-brown, fine to medium, clayey, silty; saturated, many coal fragments

TEST HOLE NUMBER: 67

LOCATION: 114N-62W-33CCCC

LEGAL LOCATION: SW SW SW SW sec. 33, T. 114 N., R. 62 W.

22 - 60 Sand and gravel, coarse below 45 feet, with coal fragments

TEST HOLE NUMBER: 68

LOCATION: 114N-62W-34DDDD

LEGAL LOCATION: SE SE SE SE sec. 34, T. 114 N., R. 62 W.

2 - 33 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 69

LOCATION: 114N-62W-35BB

LEGAL LOCATION: NW NW sec. 35, T. 114 N., R. 62 W.

25 - 58 Sand and gravel; dirty

TEST HOLE NUMBER: 70

LOCATION: 114N-62W-35CCDC

LEGAL LOCATION: SW SE SW SW sec. 35, T. 114 N., R. 62 W.

10 - 19 Sand, dark-red-brown, fine, well-sorted, poorly to well-rounded; dry, streaks sandy, gravelly clay between 10 and 12 feet, sand, dark-brown and a little coarser, medium to fine below 15 feet

TEST HOLE NUMBER: 71

LOCATION: 114N-63W-01AAAA

LEGAL LOCATION: NE NE NE NE sec. 01, T. 114 N., R. 63 W.

11 - 13 Sand, orange-brown, fine, clayey, very silty; oxidized  
13 - 16 Sand, dark-brown, fine, clayey, very silty; many coal fragments  
16 - 34 Sand, brown, fine, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 72

LOCATION: 114N-63W-01BABB

LEGAL LOCATION: NW NW NE NW sec. 01, T. 114 N., R. 63 W.

14 - 17 Sand, orange-tan-brown to brown, fine to medium, slightly silty; oxidized, moist  
17 - 19 Sand, yellow-olive-gray, fine to medium, slightly silty; oxidized, moist  
19 - 25 Sand, orange-tan-brown, fine to medium, slightly silty; oxidized, saturated  
25 - 40 Sand, yellow-olive-gray, fine to coarse, slightly silty; much coal, saturated

TEST HOLE NUMBER: 73

LOCATION: 114N-63W-01CCCB

LEGAL LOCATION: NW SW SW SW sec. 01, T. 114 N., R. 63 W.

5 - 10 Gravel, dark-brown, fine to coarse, clayey, silty, sandy; oxidized, moist

20 - 48 Sand, brown to dark-red-brown, fine to medium, clayey, silty; oxidized, saturated at 25 feet, many coal fragments from 35 feet

TEST HOLE NUMBER: 74

LOCATION: 114N-63W-02BBBB

LEGAL LOCATION: NW NW NW NW sec. 02, T. 114 N., R. 63 W.

15 - 26 Sand, gray, fine to medium; some fine gravel with depth, unoxidized

TEST HOLE NUMBER: 75

LOCATION: 114N-63W-03CDDD

LEGAL LOCATION: SE SE SE SW sec. 03, T. 114 N., R. 63 W.

5 - 9 Sand, brown, fine, silty; oxidized, some clay  
9 - 12 Sand, tan-brown, fine; oxidized, moist, some silt  
12 - 18 Sand, brown, fine, silty; oxidized, saturated, little clay  
18 - 24 Sand, dark-brown, fine, silty; oxidized, saturated, little clay  
24 - 35 Sand, gray-brown, fine to medium, silty; partially oxidized, few pebbles

TEST HOLE NUMBER: 76

LOCATION: 114N-63W-05AAAA

LEGAL LOCATION: NE NE NE NE sec. 05, T. 114 N., R. 63 W.

10 - 45 Sand, brown, medium to coarse; grades to a fine then medium gravel by 35 feet, oxidized, dirty at first

TEST HOLE NUMBER: 77

LOCATION: 114N-63W-08ADDD

LEGAL LOCATION: SE SE SE NE sec. 08, T. 114 N., R. 63 W.

8 - 16 Sand, gray, fine, very clayey, very silty; saturated  
20 - 24 Sand, gray, fine, very clayey, very silty; unoxidized, saturated

TEST HOLE NUMBER: 78

LOCATION: 114N-63W-08BBCC

LEGAL LOCATION: SW SW NW NW sec. 08, T. 114 N., R. 63 W.

13 - 21 Sand, brown, fine to medium; oxidized

TEST HOLE NUMBER: 79

LOCATION: 114N-63W-08CCBB

LEGAL LOCATION: NW NW SW SW sec. 08, T. 114 N., R. 63 W.

0 - 2 Sand, orange-brown, fine, very clayey, silty; oxidized

TEST HOLE NUMBER: 80

LOCATION: 114N-63W-10DCDD

LEGAL LOCATION: SE SE SW SE sec. 10, T. 114 N., R. 63 W.

1 - 2 Sand, yellow-brown, fine to medium, clayey, silty; oxidized  
16 - 18 Sand, yellow-brown, fine, silty; oxidized, moist, some clay  
18 - 48 Sand, gray-brown, fine, clayey, silty; saturated at 20 feet, many shale pebbles, clay content decreased with depth

TEST HOLE NUMBER: 81

LOCATION: 114N-63W-13BAAB

LEGAL LOCATION: NW NE NE NW sec. 13, T. 114 N., R. 63 W.

14 - 16 Sand, brown, fine, silty; oxidized, little clay

19 - 28 Sand, dark-brown, fine, clayey, silty; saturated  
28 - 36 Sand, brown, fine, silty; little clay, saturated

TEST HOLE NUMBER: 82  
LOCATION: 114N-63W-13CCCC  
LEGAL LOCATION: SW SW SW SW sec. 13, T. 114 N., R. 63 W.

10 - 29 Sand

TEST HOLE NUMBER: 83  
LOCATION: 114N-63W-13DDDD  
LEGAL LOCATION: SE SE SE SE sec. 13, T. 114 N., R. 63 W.

5 - 8 Sand, coarse  
8 - 10 Sand and silt  
10 - 18 Sand, coarse  
18 - 27 Sand, fine; some silt

TEST HOLE NUMBER: 84  
LOCATION: 114N-63W-14CCCC 1  
LEGAL LOCATION: SW SW SW SW sec.14, T. 114 N., R. 63 W.

18 - 33 Sand

TEST HOLE NUMBER: 85  
LOCATION: 114N-63W-14DCCC 1  
LEGAL LOCATION: SW SW SW SE sec.14, T. 114 N., R. 63 W.

21 - 60 Sand, fine and very fine; with small amounts of silt, water-laid, permeable, depth of oxidation probably around 40 feet, wash sampled

TEST HOLE NUMBER: 86  
LOCATION: 114N-63W-14DCCC 3  
LEGAL LOCATION: SW SW SW SE sec.14, T. 114 N., R. 63 W.

23 - 35 Sand, fine; some silt, oxidized, moderately permeable, water laid, wash sampled

TEST HOLE NUMBER: 87  
LOCATION: 114N-63W-14DCCC 4  
LEGAL LOCATION: SW SW SW SE sec.14, T. 114 N., R. 63 W.

12 - 15 Sand, fine; with silt, water-laid, slightly permeable, oxidized  
20 - 35 Sand; fine to medium; moderately permeable, oxidized, wash sample

TEST HOLE NUMBER: 88  
LOCATION: 114N-63W-14DCCC 5  
LEGAL LOCATION: SW SW SW SE sec.14, T. 114 N., R. 63 W.

20 - 40 Sand, fine to medium, silty; water-laid, slightly to moderately permeable, carbonaceous zone from 28 to 29 feet, gray below 35 feet

TEST HOLE NUMBER: 89  
LOCATION: 114N-63W-14DCCC 6  
LEGAL LOCATION: SW SW SW SE sec. 14, T. 114 N., R. 63 W.

25 - 45 Sand, fine to medium, silty especially from 30 to 35 feet; slightly carbonaceous from 30 to 30.5 feet, oxidized, moderately permeable

TEST HOLE NUMBER: 90  
LOCATION: 114N-63W-14DCCC 7  
LEGAL LOCATION: SW SW SW SE sec. 14, T. 114 N., R. 63 W.

19 - 35 Sand, fine to medium; some silt, a little coarse sand, slightly carbonaceous at 19.5 feet, slightly to moderately permeable, oxidized, water-laid

TEST HOLE NUMBER: 91  
LOCATION: 114N-63W-14DCCC 8  
LEGAL LOCATION: SW SW SW SE sec. 14, T. 114 N., R. 63 W.

20 - 22 Sand, fine to medium, silty; moderately permeable, water-laid  
22 - 28 Sand, fine, silty; oxidized, water-laid, slightly permeable  
28 - 33 Sand, fine to medium, some coarse; oxidized, moderately permeable, water-laid

TEST HOLE NUMBER: 92  
LOCATION: 114N-63W-14DCCC 9  
LEGAL LOCATION: SW SW SW SE sec. 14, T. 114 N., R. 63 W.

18 - 35 Sand, fine, silty; oxidized, slightly to moderately permeable

TEST HOLE NUMBER: 93  
LOCATION: 114N-63W-14DCCC10  
LEGAL LOCATION: SW SW SW SE sec. 14, T. 114 N., R. 63 W.

21 - 36 Sand, brown, fine; loose

TEST HOLE NUMBER: 94  
LOCATION: 114N-63W-15AAAA  
LEGAL LOCATION: NE NE NE NE sec. 15, T. 114 N., R. 63 W.

9 - 25 Sand, brown, medium to coarse; some silt, some coal fragments  
25 - 70 Sand, gray, medium to coarse; with coal fragments and grains of shale

TEST HOLE NUMBER: 95  
LOCATION: 114N-63W-15CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 15, T. 114 N., R. 63 W.

20 - 38 Sand, silty

TEST HOLE NUMBER: 96  
LOCATION: 114N-63W-16CDDD  
LEGAL LOCATION: SE SE SE SW sec. 16, T. 114 N., R. 63 W.

0 - 2 Sand  
10 - 13 Sand, fine; oxidized  
20 - 23 Sand; oxidized  
23 - 32 Sand, fine; unoxidized

TEST HOLE NUMBER: 97  
LOCATION: 114N-63W-16CDDD 2  
LEGAL LOCATION: SE SE SE SW sec. 16, T. 114 N., R. 63 W.

0 - 3 Sand, very fine, very silty; with some clay, humic, water-laid, slightly permeable  
8 - 9 Sand, very fine; with large amounts of clay and silt, humic from 7.5 to 7.9 feet, highly oxidized from 7.9 to 8.6 feet, water-laid, impermeable

TEST HOLE NUMBER: 98  
LOCATION: 114N-63W-17CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 17, T. 114 N., R. 63 W.

0 - 5 Sand, fine  
27 - 38 Sand, fine

TEST HOLE NUMBER: 99

LOCATION: 114N-63W-18CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 18, T. 114 N., R. 63 W.

1 - 15 Sand  
18 - 28 Sand, silty

TEST HOLE NUMBER: 100

LOCATION: 114N-63W-18CCCC 2

LEGAL LOCATION: SW SW SW SW sec. 18, T. 114 N., R. 63 W.

0 - 18 Sand, fine, slightly silty; probably permeable except in upper 5 feet where there is considerable clay in samples, upper 2 feet humic zone

TEST HOLE NUMBER: 101

LOCATION: 114N-63W-18CCDD 1

LEGAL LOCATION: SE SE SW SW sec. 18, T. 114 N., R. 63 W.

17 - 23 Gravel and sand

TEST HOLE NUMBER: 102

LOCATION: 114N-63W-19DBCD

LEGAL LOCATION: SE SW NW SE sec. 19, T. 114 N., R. 63 W.

15 - 50 Sand, fine

TEST HOLE NUMBER: 103

LOCATION: 114N-63W-19DDCC

LEGAL LOCATION: SW SW SE SE sec. 19, T. 114 N., R. 63 W.

16 - 62 Sand, fine

TEST HOLE NUMBER: 104

LOCATION: 114N-63W-21DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 21, T. 114 N., R. 63 W.

1 - 3 Sand, brown, very fine to medium

TEST HOLE NUMBER: 105

LOCATION: 114N-63W-21DDDD 2

LEGAL LOCATION: SE SE SE SE sec. 21, T. 114 N., R. 63 W.

1 - 3 Sand, brown, very fine to medium  
28 - 67 Sand, gray, medium to coarse; with lots of coal fragments

TEST HOLE NUMBER: 106

LOCATION: 114N-63W-22DDDD

LEGAL LOCATION: SE SE SE SE sec. 22, T. 114 N., R. 63 W.

24 - 48 Sand, gray-brown, fine, silty; saturated, many coal fragments

TEST HOLE NUMBER: 107

LOCATION: 114N-63W-23AAAA

LEGAL LOCATION: NE NE NE NE sec. 23, T. 114 N., R. 63 W.

4 - 67 Sand, fine

TEST HOLE NUMBER: 108

LOCATION: 114N-63W-23AAAA 1

LEGAL LOCATION: NE NE NE NE sec. 23, T. 114 N., R. 63 W.

3 - 10 Sand, brown, fine-grained  
13 - 27 Sand, gray, fine-grained

TEST HOLE NUMBER: 109

LOCATION: 114N-63W-23DDBB

LEGAL LOCATION: NW NW SE SE sec. 23, T. 114 N., R. 63 W.

17 - 30 Sand, fine

TEST HOLE NUMBER: 110

LOCATION: 114N-63W-25AABB

LEGAL LOCATION: NW NW NE NE sec. 25, T. 114 N., R. 63 W.

12 - 17 Sand, brown to dark-brown, fine, clayey, silty; oxidized, saturated at 13 feet  
17 - 19 Sand, gray-brown, fine to medium, clayey, silty; saturated  
19 - 40 Sand, gray-brown, fine, very silty; saturated, some clay, many coal fragments

TEST HOLE NUMBER: 111

LOCATION: 114N-63W-25CCCC

LEGAL LOCATION: SW SW SW SW sec. 25, T. 114 N., R. 63 W.

19 - 31 Sand, brown, fine to medium; moist, some clay

TEST HOLE NUMBER: 112

LOCATION: 114N-63W-29BABA

LEGAL LOCATION: NE NW NE NW sec. 29, T. 114 N., R. 63 W.

5 - 15 Sand, yellow-brown, fine, silty; moist, little clay  
15 - 20 Sand, gray-brown, fine; saturated, some clay, some silt  
20 - 24 Sand, brown, fine; saturated, some clay, some silt, some pebbles

TEST HOLE NUMBER: 113

LOCATION: 114N-63W-31ABBB

LEGAL LOCATION: NW NW NW NE sec. 31, T. 114 N., R. 63 W.

0 - 4 Sand, gray-brown, fine, silty; little clay

TEST HOLE NUMBER: 114

LOCATION: 114N-63W-31CDDC

LEGAL LOCATION: SW SE SE SW sec. 31, T. 114 N., R. 63 W.

0 - 8 Sand; terrace

TEST HOLE NUMBER: 115

LOCATION: 114N-63W-32DDDD

LEGAL LOCATION: SE SE SE SE sec. 32, T. 114 N., R. 63 W.

14 - 18 Sand, brown, fine to medium, very clayey; contains scattered coarse sand grains  
18 - 35 Sand, brown, coarse to medium; fairly clean, some fine sand, contains a few thin gravel layers

TEST HOLE NUMBER: 116

LOCATION: 114N-63W-34DDAA

LEGAL LOCATION: NE NE SE SE sec. 34, T. 114 N., R. 63 W.

- 15 - 19 Sand, brown, fine, silty; oxidized, moist
- 21 - 33 Sand, dark-brown, medium, clayey; moist

TEST HOLE NUMBER: 117

LOCATION: 114N-63W-36DDDD

LEGAL LOCATION: SE SE SE SE sec. 36, T. 114 N., R. 63 W.

- 12 - 16 Sand, yellow-brown, fine, silty; moist, some clay
- 16 - 20 Sand, gray, fine, clayey, very silty; moist
- 20 - 26 Sand, gray-brown, fine to medium, clayey, very silty; moist
- 26 - 29 Sand, gray, fine to medium, clayey, very silty; saturated

TEST HOLE NUMBER: 118

LOCATION: 114N-64W-02BA

LEGAL LOCATION: NE NW sec. 02, T. 114 N., R. 64 W.

- 2 - 40 Sand, fine

TEST HOLE NUMBER: 119

LOCATION: 114N-64W-02BBBB

LEGAL LOCATION: NW NW NW NW sec. 02, T. 114 N., R. 64 W.

- 0 - 15 Sand, brown, fine to medium, well sorted
- 15 - 24 Sand, gray, medium to coarse; trace of very fine gravel between 20 and 24 feet

TEST HOLE NUMBER: 120

LOCATION: 114N-64W-02BBDD

LEGAL LOCATION: SE SE NW NW sec. 02, T. 114 N., R. 64 W.

- 2 - 6 Sand and gravel
- 28 - 31 Gravel

TEST HOLE NUMBER: 121

LOCATION: 114N-64W-02CB

LEGAL LOCATION: NW SW sec. 02, T. 114 N., R. 64 W.

- 0 - 15 Sand, red
- 22 - 59 Sand

TEST HOLE NUMBER: 122

LOCATION: 114N-64W-02CBBC

LEGAL LOCATION: SW NW NW SW sec. 02, T. 114 N., R. 64 W.

- 22 - 24 Sand, fine; with lignite, loose
- 24 - 60 Sand, coarse; with some lignite and gravel, loose

TEST HOLE NUMBER: 123

LOCATION: 114N-64W-04CBDD 1

LEGAL LOCATION: SE SE NW SW sec. 04, T. 114 N., R. 64 W.

- 0 - 2 Sand, fine; with silt and clay, humified

TEST HOLE NUMBER: 124

LOCATION: 114N-64W-04CD

LEGAL LOCATION: SE SW sec. 04, T. 114 N., R. 64 W.

- 0 - 3 Sand, medium-brown, fine, silty; with small amounts of clay, humified in upper 1 foot, moderately permeable, water-laid

- 4 - 5 Sand, dark-brown, fine and very fine; dirty, somewhat organic, oxidized, moderately permeable, water-laid
- 8 - 9 Sand, fine, gravelly, poorly sorted; very dirty, oxidized, moderately permeable, water-laid; oxidized, lean, clay from 8.8 to 9.1 feet (till)

TEST HOLE NUMBER: 125  
 LOCATION: 114N-64W-04CDAA 1  
 LEGAL LOCATION: NE NE SE SW sec. 04, T. 114 N., R. 64 W.

- 0 - 3 Sand, fine; with silt and clay, humified
- 3 - 8 Sand, fine to medium; some silt and clay, permeable, water-laid

TEST HOLE NUMBER: 126  
 LOCATION: 114N-64W-04CDCC  
 LEGAL LOCATION: SW SW SE SW sec. 04, T. 114 N., R. 64 W.

- 0 - 3 Sand, very fine to fine, with some medium fine; and a small amount of silt, humified in upper 2 inches, oxidized, water-laid
- 10 - 12 Sand, fine to very fine in upper half, fine to medium coarse in lower half; some silt and clay irregularly distributed, small amount of gravel, oxidized, permeable, water-laid

TEST HOLE NUMBER: 127  
 LOCATION: 114N-64W-04CDCC  
 LEGAL LOCATION: SE SW SE SW sec. 04, T. 114 N., R. 64 W.

- 0 - 3 Sand and silt; some clay (topsoil)
- 3 - 15 Sand, fine to medium; some silt, oxidized, permeable

TEST HOLE NUMBER: 128  
 LOCATION: 114N-64W-06ACAD  
 LEGAL LOCATION: SE NE SW NE sec. 06, T. 114 N., R. 64 W.

- 2 - 9 Sand and gravel

TEST HOLE NUMBER: 129  
 LOCATION: 114N-64W-06ADDD  
 LEGAL LOCATION: SE SE SE NE sec. 06, T. 114 N., R. 64 W.

- 4 - 7 Sand, tan-brown, fine, silty; some gravel; oxidized

TEST HOLE NUMBER: 130  
 LOCATION: 114N-64W-06BBBC  
 LEGAL LOCATION: SW NW NW NW sec. 06, T. 114 N., R. 64 W.

- 2 - 10 Sand and gravel

TEST HOLE NUMBER: 131  
 LOCATION: 114N-64W-09CADD  
 LEGAL LOCATION: SE SE NE SW sec. 09, T. 114 N., R. 64 W.

- 2 - 10 Sand and silt, poorly sorted sand; some clay, gravelly from 8 to 10 feet
- 25 - 27 Sand; water-laid; much silt and clay, unoxidized

TEST HOLE NUMBER: 132  
 LOCATION: 114N-64W-09DB 1  
 LEGAL LOCATION: NW SE sec. 09, T. 114 N., R. 64 W.

- 0 - 1 Sand; some silt and clay, humified
- 1 - 5 Sand



6 - 11 Sand

TEST HOLE NUMBER: 133  
LOCATION: 114N-64W-09DBCC 2  
LEGAL LOCATION: SW SW NW SE sec. 09, T. 114 N., R. 64 W.

0 - 3 Sand; some silt and clay, humified  
3 - 13 Sand, fine to medium; some silt, permeable, water-laid

TEST HOLE NUMBER: 134  
LOCATION: 114N-64W-11BBBB  
LEGAL LOCATION: NW NW NW NW sec. 11, T. 114 N., R. 64 W.

0 - 10 Sand, medium; with fine sand, silt, and gravel (alluvium)  
25 - 30 Gravel; lost core sample

TEST HOLE NUMBER: 135  
LOCATION: 114N-64W-11DDDC  
LEGAL LOCATION: SW SE SE SE sec. 11, T. 114 N., R. 64 W.

0 - 10 Sand, brown, fine, silty; oxidized, dry  
27 - 30 Gravel, gray, fine, clayey, sandy; some shale pebbles

TEST HOLE NUMBER: 136  
LOCATION: 114N-64W-12AAAD  
LEGAL LOCATION: SE NE NE NE sec. 12, T. 114 N., R. 64 W.

4 - 15 Sand, yellow-brown-gray, fine, clayey, silty; oxidized, saturated  
15 - 44 Sand, gray, fine, sandy, silty; unoxidized, saturated, gravel stringers at 30 and 35 feet

TEST HOLE NUMBER: 137  
LOCATION: 114N-64W-13CDCC 1  
LEGAL LOCATION: SW SW SE SW sec. 13, T. 114 N., R. 64 W.

0 - 2 Sand  
8 - 13 Sand, medium to fine  
15 - 22 Sand, fine; unoxidized

TEST HOLE NUMBER: 138  
LOCATION: 114N-64W-13DCCC 1  
LEGAL LOCATION: SW SW SW SE sec. 13, T. 114 N., R. 64 W.

0 - 14 Sand, fine; oxidized

TEST HOLE NUMBER: 139  
LOCATION: 114N-64W-13DDDC 1  
LEGAL LOCATION: SW SE SE SE sec. 13, T. 114 N., R. 64 W.

0 - 2 Sand, fine  
2 - 4 Sand, fine; oxidized  
17 - 18 Sand, fine; oxidized

TEST HOLE NUMBER: 140  
LOCATION: 114N-64W-14CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 14, T. 114 N., R. 64 W.

4 - 13 Sand  
20 - 26 Sand, medium

TEST HOLE NUMBER: 141  
LOCATION: 114N-64W-14CCDC 1  
LEGAL LOCATION: SW SE SW SW sec. 14, T. 114 N., R. 64 W.

0 - 2 Sand  
2 - 9 Sand, fine

TEST HOLE NUMBER: 142  
LOCATION: 114N-64W-14DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 114 N., R. 64 W.

28 - 47 Sand and gravel, gray, fine sand, medium gravel; many clay stringers throughout, many coal fragments

TEST HOLE NUMBER: 143  
LOCATION: 114N-64W-14DDDD 2  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 114 N., R. 64 W.

26 - 27 Gravel

TEST HOLE NUMBER: 144  
LOCATION: 114N-64W-15AAAA  
LEGAL LOCATION: NE NE NE NE sec. 15, T. 114 N., R. 64 W.

1 - 12 Sand, brown, medium to coarse

TEST HOLE NUMBER: 145  
LOCATION: 114N-64W-15CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 15, T. 114 N., R. 64 W.

2 - 4 Sand, fine

TEST HOLE NUMBER: 146  
LOCATION: 114N-64W-15DCDD 1  
LEGAL LOCATION: SE SE SW SE sec. 15, T. 114 N., R. 64 W.

4 - 8 Sand, fine; oxidized  
17 - 19 Sand, fine; oxidized  
20 - 29 Gravel and sand, fine gravel, coarse sand

TEST HOLE NUMBER: 147  
LOCATION: 114N-64W-16BBBB  
LEGAL LOCATION: NW NW NW NW sec. 16, T. 114 N., R. 64 W.

0 - 4 Sand, brown, very fine, silty  
4 - 8 Sand, brown, fine to coarse

TEST HOLE NUMBER: 148  
LOCATION: 114N-64W-17CDDD 1  
LEGAL LOCATION: SE SE SE SW sec. 17, T. 114 N., R. 64 W.

0 - 3 Sand, fine; some silt and clay, humic zone  
3 - 9 Sand, fine; some silt and clay, oxidized, permeable, water-laid

TEST HOLE NUMBER: 149  
LOCATION: 114N-64W-18CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 18, T. 114 N., R. 64 W.

4 - 16 Sand and silt; water-laid

TEST HOLE NUMBER: 150  
LOCATION: 114N-64W-18DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 18, T. 114 N., R. 64 W.

4 - 9 Sand, coarse

TEST HOLE NUMBER: 151  
LOCATION: 114N-64W-24DDCD  
LEGAL LOCATION: SE SW SE SE sec. 24, T. 114 N., R. 64 W.

0 - 4 Sand, brown, silty, fine; oxidized  
9 - 21 Sand, yellow-brown, fine, medium-grained from 11 to 21 feet, very clayey, very silty; oxidized, saturated

TEST HOLE NUMBER: 152  
LOCATION: 114N-64W-25BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 114 N., R. 64 W.

0 - 5 Sand

TEST HOLE NUMBER: 153  
LOCATION: 114N-64W-25BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 114 N., R. 64 W.

1 - 6 Sand, brown, fine, clayey, silty, moderately sorted; dry, oxidized

TEST HOLE NUMBER: 154  
LOCATION: 114N-64W-25BBBB 3  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 114 N., R. 64 W.

1 - 6 Sand, brown, fine, clayey, silty, moderately sorted; dry, oxidized

TEST HOLE NUMBER: 155  
LOCATION: 114N-64W-25BBBB 4  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 114 N., R. 64 W.

1 - 6 Sand, brown, fine, clayey, silty, moderately sorted; dry, oxidized

TEST HOLE NUMBER: 156  
LOCATION: 114N-64W-26ADAA  
LEGAL LOCATION: NE NE SE NE sec. 26, T. 114 N., R. 64 W.

0 - 2 Sand, tan-brown, fine, silty; oxidized  
2 - 5 Sand and gravel, tan-brown, fine sand, find gravel, silty; oxidized  
5 - 8 Sand and gravel, gray-brown, fine to medium sand, medium to coarse gravel, clayey, silty; moist

TEST HOLE NUMBER: 157  
LOCATION: 114N-64W-27AAAA  
LEGAL LOCATION: NE NE NE NE sec. 27, T. 114 N., R. 64 W.

0 - 3 Sand, dark-brown, silty  
3 - 6 Sand, yellow-brown, silty  
20 - 30 Gravel, medium to coarse, sandy; some fine gravel, clean, rock at 29 feet

TEST HOLE NUMBER: 158  
LOCATION: 114N-64W-27AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 27, T. 114 N., R. 64 W.

26 - 40 Gravel; with blue clay

TEST HOLE NUMBER: 159  
LOCATION: 114N-64W-32AAAA  
LEGAL LOCATION: NE NE NE NE sec. 32, T. 114 N., R. 64 W.

- 6 - 7 Sand, yellow-tan-brown, fine to coarse, silty; oxidized
- 7 - 11 Sand, orange-tan-brown, fine to coarse; some silt, some clay and gravel; oxidized, wet
- 11 - 14 Sand, tan-brown, fine to coarse, clayey, silty; some fine gravel; oxidized, saturated
- 19 - 25 Gravel, fine to medium, sandy; some clay

TEST HOLE NUMBER: 160  
LOCATION: 114N-64W-32DDDD  
LEGAL LOCATION: SE SE SE SE sec. 32, T. 114 N., R. 64 W.

- 2 - 11 Sand, yellow-brown, fine to medium

TEST HOLE NUMBER: 161  
LOCATION: 114N-64W-34DDDC  
LEGAL LOCATION: SW SE SE SE sec. 34, T. 114 N., R. 64 W.

- 0 - 8 Sand, brown, coarse to very coarse; trace of gravel
- 21 - 27 Sand, fine to coarse

TEST HOLE NUMBER: 162  
LOCATION: 114N-64W-34DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 34, T. 114 N., R. 64 W.

- 0 - 3 Sand, dark-brownish-black (road fill)
- 3 - 14 Sand, yellow to tan, very fine, clayey
- 20 - 35 Sand, light-brownish-gray, fine to medium, very clayey; contains scattered coarse sand and fine to medium gravel and black shale fragments, rock at 34 feet

TEST HOLE NUMBER: 163  
LOCATION: 114N-64W-34DDDD 2  
LEGAL LOCATION: SE SE SE SE sec. 34, T. 114 N., R. 64 W.

- 0 - 2 Sand, dark-brown, very fine to fine
- 28 - 37 Sand and gravel; streaks of sandy clay, boulders from 35 to 37 feet

TEST HOLE NUMBER: 164  
LOCATION: 114N-64W-34DDDD 3  
LEGAL LOCATION: SE SE SE SE sec. 34, T. 114 N., R. 64 W.

- 0 - 10 Sand, brown, coarse to very coarse; with a trace of very fine gravel
- 21 - 27 Sand, fine to coarse

TEST HOLE NUMBER: 165  
LOCATION: 114N-64W-35BAAB  
LEGAL LOCATION: NW NE NE NW sec. 35, T. 114 N., R. 64 W.

- 0 - 4 Sand, tan-brown, fine, silty; little clay, clean
- 20 - 27 Sand, brown, medium to coarse, clayey, silty, pebbly; oxidized, saturated, hit rock at 27 feet, abandoned hole

TEST HOLE NUMBER: 166  
LOCATION: 114N-64W-35DDDD  
LEGAL LOCATION: SE SE SE SE sec. 35, T. 114 N., R. 64 W.

- 0 - 5 Sand, brown, fine, silty

TEST HOLE NUMBER: 167  
LOCATION: 114N-64W-36CCCC  
LEGAL LOCATION: SW SW SW SW sec. 36, T. 114 N., R. 64 W.

2 - 14 Sand, brown, fine to medium, clayey to very clayey, silty in part; contains scattered grains of fine and coarse gravel, thin layer of gravel at base

TEST HOLE NUMBER: 168  
LOCATION: 114N-65W-03BBB  
LEGAL LOCATION: NW NW NW sec. 03, T. 114 N., R. 65 W.

5 - 8 Sand  
12 - 15 Sand, clayey

TEST HOLE NUMBER: 169  
LOCATION: 114N-65W-04DDDA  
LEGAL LOCATION: NE SE SE SE sec. 04, T. 114 N., R. 65 W.

0 - 6 Gravel, tan-brown, fine to coarse, very silty; oxidized, dry  
6 - 12 Gravel, orange-tan-brown, very silty, sandy; oxidized  
12 - 15 Sand, gray, fine, clayey, silty; saturated  
15 - 19 Sand, gray-tan-brown, fine to coarse, clayey, silty; saturated, rock at 19 feet

TEST HOLE NUMBER: 170  
LOCATION: 114N-65W-05AAAA  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 114 N., R. 65 W.

2 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 171  
LOCATION: 114N-65W-07DADA  
LEGAL LOCATION: NE SE NE SE sec. 07, T. 114 N., R. 65 W.

7 - 11 Sand, orange-brown, fine, silty; moist  
17 - 22 Gravel, gray, medium to coarse, clayey, silty, sandy; saturated

TEST HOLE NUMBER: 172  
LOCATION: 114N-65W-08DDDD  
LEGAL LOCATION: SE SE SE SE sec. 08, T. 114 N., R. 65 W.

0 - 14 Sand and gravel, fine to medium

TEST HOLE NUMBER: 173  
LOCATION: 114N-65W-08DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 08, T. 114 N., R. 65 W.

2 - 7 Gravel, brown, medium, clayey, silty, sandy; less clay with depth  
7 - 13 Sand and gravel, fine to medium sand, fine to medium gravel; moist  
13 - 20 Sand, tan-brown, coarse; some gravel, little silt, saturated  
20 - 24 Sand, gray, coarse, silty; some fine gravel, some clay; saturated

TEST HOLE NUMBER: 174  
LOCATION: 114N-65W-11DDDD  
LEGAL LOCATION: SE SE SE SE sec. 11, T. 114 N., R. 65 W.

5 - 7 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, very clayey, silty; oxidized, dry  
9 - 11 Gravel, orange-tan-brown, fine to medium, very clayey, sandy; oxidized  
11 - 15 Gravel, tan-brown, medium to coarse; poor return, saturated at 14 feet

TEST HOLE NUMBER: 175  
LOCATION: 114N-65W-13AAAA  
LEGAL LOCATION: NE NE NE NE sec. 13, T. 114 N., R. 65 W.

17 - 23 Sand and gravel

TEST HOLE NUMBER: 176  
LOCATION: 114N-65W-16AABB  
LEGAL LOCATION: NW NW NE NE sec. 16, T. 114 N., R. 65 W.

3 - 6 Sand and gravel, yellow-brown, fine to medium sand, fine gravel  
6 - 9 Sand, orange-brown, very fine-grained  
9 - 14 Sand, gray-brown, very fine, slightly silty; wet  
18 - 48 Sand, gray, very fine-grained, clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 177  
LOCATION: 114N-65W-16ADAD  
LEGAL LOCATION: SE NE SE NE sec. 16, T. 114 N., R. 65 W.

1 - 2 Gravel, tan-brown, coarse, silty, sandy  
2 - 6 Gravel, tan-brown, medium to coarse, silty, very sandy; interbedded layers of coarse gravel  
6 - 20 Sand and gravel, coarse sand, fine gravel; some silt, saturated at 10 feet, more coarse gravel with depth  
20 - 24 Gravel, brown, coarse, clayey, silty, sandy  
24 - 30 Sand, gray, coarse, clayey, very silty; unoxidized, saturated

TEST HOLE NUMBER: 178  
LOCATION: 114N-65W-16CCDD 1  
LEGAL LOCATION: SE SE SW SW sec. 16, T. 114 N., R. 65 W.

5 - 13 Sand, fine; oxidized  
13 - 18 Sand, fine; unoxidized

TEST HOLE NUMBER: 179  
LOCATION: 114N-65W-16CDDD  
LEGAL LOCATION: SE SE SE SW sec. 16, T. 114 N., R. 65 W.

13 - 30 Sand; unoxidized

TEST HOLE NUMBER: 180  
LOCATION: 114N-65W-16DCDD  
LEGAL LOCATION: SE SE SW SE sec. 16, T. 114 N., R. 65 W.

8 - 13 Sand, fine; oxidized  
15 - 21 Sand, fine; unoxidized  
27 - 29 Sand, fine to medium

TEST HOLE NUMBER: 181  
LOCATION: 114N-65W-17CDDD  
LEGAL LOCATION: SE SE SE SW sec. 17, T. 114 N., R. 65 W.

2 - 5 Sand; oxidized

TEST HOLE NUMBER: 182  
LOCATION: 114N-65W-18BBCC  
LEGAL LOCATION: SW SW NW NW sec. 18, T. 114 N., R. 65 W.

5 - 8 Sand, tan-brown, very fine-grained; no pebbles (alluvium)  
8 - 11 Sand and gravel, brown, fine sand, medium gravel, very silty; oxidized

- 11 - 16 Sand and gravel, black, fine to medium sand, medium gravel, clayey; much coal, organic(?), saturated
- 16 - 36 Sand and gravel, grayish-brown, medium to coarse sand, medium gravel, very clayey, silty; becoming cleaner with depth

TEST HOLE NUMBER: 183  
 LOCATION: 114N-65W-18CDDD  
 LEGAL LOCATION: SE SE SE SW sec. 18, T. 114 N., R. 65 W.

- 0 - 8 Sand, fine; oxidized

TEST HOLE NUMBER: 184  
 LOCATION: 114N-65W-21BBBB  
 LEGAL LOCATION: NW NW NW NW sec. 21, T. 114 N., R. 65 W.

- 2 - 13 Sand, yellow-brown, very fine-grained, silty; oxidized, wet (alluvium)
- 13 - 17 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, clayey, very silty
- 26 - 30 Sand and gravel, gray, fine to coarse sand, fine to medium gravel, clayey, very silty; saturated

TEST HOLE NUMBER: 185  
 LOCATION: 114N-65W-21DCDD  
 LEGAL LOCATION: SE SE SW SE sec. 21, T. 114 N., R. 65 W.

- 6 - 9 Sand, brown, clayey, silty; oxidized, saturated
- 9 - 23 Sand, brown to dark-brown, fine, clay, silty; oxidized, saturated

TEST HOLE NUMBER: 186  
 LOCATION: 114N-65W-23AAAA  
 LEGAL LOCATION: NE NE NE NE sec. 23, T. 114 N., R. 65 W.

- 17 - 27 Gravel, orange-brown, pea-size, very clayey; oxidized, saturated
- 27 - 39 Gravel, gray, fine, clayey, silty, sandy; unoxidized, saturated

TEST HOLE NUMBER: 187  
 LOCATION: 114N-65W-28BBBB  
 LEGAL LOCATION: NW NW NW NW sec. 28, T. 114 N., R. 65 W.

- 1 - 4 Gravel, tan-brown, fine to coarse, silty; some sand; oxidized, dry
- 6 - 18 Sand, tan-brown, fine, silty; very few pebbles; oxidized, saturated at 13 feet
- 18 - 23 Sand, dark-tan-brown, fine, silty; some pebbles, oxidized, saturated
- 23 - 29 Sand, brown, medium, pebbly; some silt and clay; oxidized, saturated

TEST HOLE NUMBER: 188  
 LOCATION: 114N-65W-33CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 33, T. 114 N., R. 65 W.

- 8 - 15 Sand, light-brown, very fine to medium, silty
- 15 - 23 Sand, medium-brown, fine to medium; wet, increasingly clayey with depth
- 23 - 35 Sand, gray, fine to medium; with 3-inch zone of gravel at about 35 feet

TEST HOLE NUMBER: 189  
 LOCATION: 114N-65W-33DDDD  
 LEGAL LOCATION: SE SE SE SE sec. 33, T. 114 N., R. 65 W.

- 5 - 6 Gravel, coarse
- 6 - 11 Sand and gravel, brown, fine to coarse sand, medium to coarse gravel, clayey, silty
- 11 - 41 Gravel, brown, coarse to cobbles, well-sorted; some clay and silt

TEST HOLE NUMBER: 190  
LOCATION: 114N-65W-35CCCC  
LEGAL LOCATION: SW SW SW SW sec. 35, T. 114 N., R. 65 W.

0 - 9 Sand, brown, gravelly, very silty, slightly clayey  
25 - 37 Sand, light- to medium-gray, very fine to fine, clayey; rock at 31 feet

TEST HOLE NUMBER: 191  
LOCATION: 115N-60W-19BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 19, T. 115 N., R. 60 W.

10 - 16 Gravel

TEST HOLE NUMBER: 192  
LOCATION: 115N-60W-20BBBB  
LEGAL LOCATION: NW NW NW NW sec. 20, T. 115 N., R. 60 W.

16 - 25 Sand and gravel, orange-brown, fine sand, medium gravel, very clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 193  
LOCATION: 115N-60W-25BBBA  
LEGAL LOCATION: NE NW NW NW sec. 25, T. 115 N., R. 60 W.

16 - 21 Sand, gray, medium to coarse, very clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 194  
LOCATION: 115N-60W-27CBBC  
LEGAL LOCATION: SW NW NW SW sec. 27, T. 115 N., R. 60 W.

9 - 13 Sand, dark-red-brown, clayey; oxidized  
13 - 18 Sand, olive-brown, clayey, silty; oxidized, saturated, some fine gravel  
18 - 21 Sand, light-gray, clayey, silty; saturated, some fine gravel

TEST HOLE NUMBER: 195  
LOCATION: 115N-60W-31ADAA  
LEGAL LOCATION: NE NE SE NE sec. 31, T. 115 N., R. 60 W.

23 - 35 Sand, gray, medium to coarse, very clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 196  
LOCATION: 115N-61W-05CCAD  
LEGAL LOCATION: SE NE SW SW sec. 05, T. 115 N., R. 61 W.

8 - 23 Sand and gravel  
23 - 62 Sand

TEST HOLE NUMBER: 197  
LOCATION: 115N-61W-06ADDD  
LEGAL LOCATION: SE SE SE NE sec. 06, T. 115 N., R. 61 W.

5 - 25 Sand, brown, medium to coarse

TEST HOLE NUMBER: 198  
LOCATION: 115N-61W-06CDBB  
LEGAL LOCATION: NW NW SE SW sec. 06, T. 115 N., R. 61 W.

15 - 28 Sand, yellow  
28 - 85 Sand, gravel and coal



TEST HOLE NUMBER: 199  
LOCATION: 115N-61W-07ABBB  
LEGAL LOCATION: NW NW NW NE sec. 07, T. 115 N., R. 61 W.

6 - 14 Sand, tan-brown, fine to medium, clayey, silty; oxidized  
14 - 20 Sand, dark-brown, fine to medium, clayey, silty; oxidized  
22 - 34 Sand, tan-brown, fine to medium, slightly clayey, silty; oxidized, wet, becomes coarser with depth, saturated at 27 feet

TEST HOLE NUMBER: 200  
LOCATION: 115N-61W-07CCCC  
LEGAL LOCATION: SW SW SW SW sec. 07, T. 115 N., R. 61 W.

6 - 99 Sand, brown, medium to coarse; grades to a medium gravel with depth

TEST HOLE NUMBER: 201  
LOCATION: 115N-61W-12BBBA  
LEGAL LOCATION: NE NW NW NW sec. 12, T. 115 N., R. 61 W.

4 - 5 Sand, red-brown, medium to coarse, clayey, very silty; oxidized  
5 - 10 Sand, dark-brown, medium to coarse, clayey, very silty, gravelly; rocks at 10 feet

TEST HOLE NUMBER: 202  
LOCATION: 115N-61W-16AAAD  
LEGAL LOCATION: SE NE NE NE sec. 16, T. 115 N., R. 61 W.

16 - 23 Sand, light-brown, fine to medium, silty; oxidized, saturated, some clay, some pebbles  
23 - 33 Sand, orange-brown, fine to medium, silty; oxidized, saturated, some clay, some pebbles, more clay content with depth

TEST HOLE NUMBER: 203  
LOCATION: 115N-61W-21DAAD  
LEGAL LOCATION: SE NE NE SE sec. 21, T. 115 N., R. 61 W.

10 - 29 Sand, dark-brown, fine to coarse, clayey, silty; some fine to medium gravel with depth; oxidized

TEST HOLE NUMBER: 204  
LOCATION: 115N-61W-21DDDD  
LEGAL LOCATION: SE SE SE SE sec. 21, T. 115 N., R. 61 W.

2 - 8 Gravel  
10 - 128 Sand, fine

TEST HOLE NUMBER: 205  
LOCATION: 115N-61W-26BBBB  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 115 N., R. 61 W.

11 - 16 Sand

TEST HOLE NUMBER: 206  
LOCATION: 115N-61W-28BBBB  
LEGAL LOCATION: NW NW NW NW sec. 28, T. 115 N., R. 61 W.

20 - 50 Sand, coarse; fine gravel

TEST HOLE NUMBER: 207  
LOCATION: 115N-61W-30ABB  
LEGAL LOCATION: NW NW NE sec. 30, T. 115 N., R. 61 W.

17 - 22 Gravel

TEST HOLE NUMBER: 208  
LOCATION: 115N-61W-30ABCC  
LEGAL LOCATION: SW SW NW NE sec. 30, T. 115 N., R. 61 W.

21 - 85 Sand and gravel

TEST HOLE NUMBER: 209  
LOCATION: 115N-61W-30ACCC  
LEGAL LOCATION: SW SW SW NE sec. 30, T. 115 N., R. 61 W.

16 - 32 Sand

TEST HOLE NUMBER: 210  
LOCATION: 115N-61W-30ACCC 1  
LEGAL LOCATION: SW SW SW NE sec. 30, T. 115 N., R. 61 W.

21 - 45 Gravel, fine to coarse

TEST HOLE NUMBER: 211  
LOCATION: 115N-61W-32AA  
LEGAL LOCATION: NE NE sec. 32, T. 115 N., R. 61 W.

16 - 18 Sand, red  
18 - 23 Sand, medium  
25 - 82 Sand, medium

TEST HOLE NUMBER: 212  
LOCATION: 115N-61W-32AAAA  
LEGAL LOCATION: NE NE NE NE sec. 32, T. 115 N., R. 61 W.

20 - 89 Sand

TEST HOLE NUMBER: 213  
LOCATION: 115N-61W-32AABA  
LEGAL LOCATION: NE NW NE NE sec. 32, T. 115 N., R. 61 W.

16 - 23 Sand, fine  
23 - 80 Sand, gravel and lignite

TEST HOLE NUMBER: 214  
LOCATION: 115N-61W-32AAC  
LEGAL LOCATION: SW NE NE sec. 32, T. 115 N., R. 61 W.

20 - 50 Sand

TEST HOLE NUMBER: 215  
LOCATION: 115N-62W-04BBBB  
LEGAL LOCATION: NW NW NW NW sec. 04, T. 115 N., R. 62 W.

2 - 14 Sand and gravel  
17 - 35 Sand, coarse; with coal fragments, good clean sand to coarse gravel at the base of this interval

TEST HOLE NUMBER: 216  
LOCATION: 115N-62W-04BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 04, T. 115 N., R. 62 W.

0 - 14 Sand and gravel, brown, coarse to very coarse sand, very fine gravel; some medium sand

- 14 - 20 Sand and gravel, gray, coarse to very coarse sand, very fine to medium gravel
- 20 - 32 Sand, gray, very fine to coarse; some very coarse sand

TEST HOLE NUMBER: 217  
LOCATION: 115N-62W-07DDDD  
LEGAL LOCATION: SE SE SE SE sec. 07, T. 115 N., R. 62 W.

- 5 - 9 Sand and gravel, reddish-brown; heavy concentration of salt at 9 feet

TEST HOLE NUMBER: 218  
LOCATION: 115N-62W-08DDDB  
LEGAL LOCATION: NW SE SE SE sec. 08, T. 115 N., R. 62 W.

- 16 - 18 Sand, dark-brown, coarse, well-sorted, well-rounded; some clay, some gravel

TEST HOLE NUMBER: 219  
LOCATION: 115N-62W-12ABBB  
LEGAL LOCATION: NW NW NW NE sec. 12, T. 115 N., R. 62 W.

- 4 - 8 Sand, orange-brown, fine, silty; moist
- 8 - 29 Sand, gray-brown, fine, clayey, very silty; saturated at 22 feet

TEST HOLE NUMBER: 220  
LOCATION: 115N-62W-14DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 115 N., R. 62 W.

- 14 - 21 Sand, gray, fine to medium-grained, very clayey, silty; wet

TEST HOLE NUMBER: 221  
LOCATION: 115N-62W-14DDDD 3  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 115 N., R. 62 W.

- 12 - 14 Gravel, brown, coarse-grained; clean

TEST HOLE NUMBER: 222  
LOCATION: 115N-62W-16CCCC  
LEGAL LOCATION: SW SW SW SW sec. 16, T. 115 N., R. 62 W.

- 1 - 4 Gravel

TEST HOLE NUMBER: 223  
LOCATION: 115N-62W-17AAAB  
LEGAL LOCATION: NW NE NE NE sec. 17, T. 115 N., R. 62 W.

- 24 - 29 Sand, gray

TEST HOLE NUMBER: 224  
LOCATION: 115N-62W-17BCCB  
LEGAL LOCATION: NW SW SW NW sec. 17, T. 115 N., R. 62 W.

- 18 - 30 Sand, dark-gray-brown, fine to coarse, clayey, silty; partly oxidized, saturated, finer grained and more clay content with depth

TEST HOLE NUMBER: 225  
LOCATION: 115N-62W-21CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 21, T. 115 N., R. 62 W.

- 8 - 11 Sand and pebbles, poorly sorted; some clay, lost sample, probably water-laid, oxidized, permeable

21 - 29 Sand, fine to coarse; some silt and clay, core loss at 23 feet, probably sandy, may be permeable, oxidized, water-laid

TEST HOLE NUMBER: 226  
LOCATION: 115N-62W-23DADA  
LEGAL LOCATION: NE SE NE SE sec. 23, T. 115 N., R. 62 W.

14 - 19 Sand, brown, medium to coarse, clayey, gravelly; oxidized, dry  
24 - 32 Sand, brown, medium to coarse, clayey, gravelly; oxidized, wet

TEST HOLE NUMBER: 227  
LOCATION: 115N-62W-29CCCC  
LEGAL LOCATION: SW SW SW SW sec. 29, T. 115 N., R. 62 W.

15 - 32 Sand, brown, medium to coarse; oxidized, grades to grayish-brown by 25 feet

TEST HOLE NUMBER: 228  
LOCATION: 115N-62W-30BBBB  
LEGAL LOCATION: NW NW NW NW sec. 30, T. 115 N., R. 62 W.

12 - 47 Sand, brown-gray, coarse; clean, abundant coal, many shale pebbles

TEST HOLE NUMBER: 229  
LOCATION: 115N-62W-30BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 30, T. 115 N., R. 62 W.

12 - 27 Sand, brown-gray, coarse; clean, abundant coal, many shale pebbles

TEST HOLE NUMBER: 230  
LOCATION: 115N-62W-31AAAB  
LEGAL LOCATION: NW NE NE NE sec. 31, T. 115 N., R. 62 W.

15 - 25 Sand, light-red-brown, fine to medium, very clayey, silty; oxidized, saturated  
25 - 36 Sand, dark-brown, fine to medium, clayey, silty; some gravel, many coal and shale fragments; saturated

TEST HOLE NUMBER: 231  
LOCATION: 115N-62W-34CCCC  
LEGAL LOCATION: SW SW SW SW sec. 34, T. 115 N., R. 62 W.

22 - 28 Sand, coarse  
28 - 50 Sand, coarse, clayey; oxidized

TEST HOLE NUMBER: 232  
LOCATION: 115N-62W-36CDDD  
LEGAL LOCATION: SE SE SE SW sec. 36, T. 115 N., R. 62 W.

7 - 10 Sand, red-orange-brown, fine to coarse, slightly silty; oxidized  
10 - 12 Gravel, brown, fine to coarse; poor return

TEST HOLE NUMBER: 233  
LOCATION: 115N-63W-01DDDD  
LEGAL LOCATION: SE SE SE SE sec. 01, T. 115 N., R. 63 W.

26 - 33 Sand, medium

TEST HOLE NUMBER: 234  
LOCATION: 115N-63W-02CCCC  
LEGAL LOCATION: SW SW SW SW sec. 02, T. 115 N., R. 63 W.

25 - 37 Sand, brown-gray, fine to medium; clean, abundant coal

TEST HOLE NUMBER: 235  
LOCATION: 115N-63W-02DDDD  
LEGAL LOCATION: SE SE SE SE sec. 02, T. 115 N., R. 63 W.

19 - 30 Sand, reddish-brown to brown-gray, fine to coarse, silty; oxidized, saturated at 19 feet

TEST HOLE NUMBER: 236  
LOCATION: 115N-63W-03BBBB  
LEGAL LOCATION: NW NW NW NW sec. 03, T. 115 N., R. 63 W.

15 - 20 Sand; silt, clay, pebbles  
20 - 34 Sand, medium to fine

TEST HOLE NUMBER: 237  
LOCATION: 115N-63W-05AAAA  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 115 N., R. 63 W.

3 - 6 Sand and silt, orange-brown, fine sand, clayey; oxidized, moist (lacustrine?)

TEST HOLE NUMBER: 238  
LOCATION: 115N-63W-05CDBA  
LEGAL LOCATION: NE NW SE SW sec. 05, T. 115 N., R. 63 W.

25 - 95 Sand and gravel

TEST HOLE NUMBER: 239  
LOCATION: 115N-63W-06CCCC  
LEGAL LOCATION: SW SW SW SW sec. 06, T. 115 N., R. 63 W.

2 - 5 Sand, yellow, fine; oxidized

TEST HOLE NUMBER: 240  
LOCATION: 115N-63W-06DCDD  
LEGAL LOCATION: SE SE SW SE sec. 06, T. 115 N., R. 63 W.

25 - 40 Sand, gray, fine to medium, very clayey, very silty; unoxidized, saturated

TEST HOLE NUMBER: 241  
LOCATION: 115N-63W-08DAAD  
LEGAL LOCATION: SE NE NE SE sec. 08, T. 115 N., R. 63 W.

11 - 20 Sand, dark-brown to brown, medium, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 242  
LOCATION: 115N-63W-10BBAB  
LEGAL LOCATION: NW NE NW NW sec. 10, T. 115 N., R. 63 W.

19 - 26 Sand

TEST HOLE NUMBER: 243  
LOCATION: 115N-63W-11DDDD  
LEGAL LOCATION: SE SE SE SE sec. 11, T. 115 N., R. 63 W.

8 - 16 Sand, brown, medium to coarse  
22 - 32 Gravel, brown, medium to coarse

TEST HOLE NUMBER: 244  
LOCATION: 115N-63W-12CCCC  
LEGAL LOCATION: SW SW SW SW sec. 12, T. 115 N., R. 63 W.  
8 - 20 Sand, gray; with coal  
20 - 32 Sand and gravel, coarse; good

TEST HOLE NUMBER: 245  
LOCATION: 115N-63W-14BBBC  
LEGAL LOCATION: SW NW NW NW sec. 14, T. 115 N., R. 63 W.  
13 - 42 Sand and gravel, dark-brown then gray

TEST HOLE NUMBER: 246  
LOCATION: 115N-63W-15CACD  
LEGAL LOCATION: SE SW NE SW sec. 15, T. 115 N., R. 63 W.  
12 - 24 Sand

TEST HOLE NUMBER: 247  
LOCATION: 115N-63W-16CCCC  
LEGAL LOCATION: SW SW SW SW sec. 16, T. 115 N., R. 63 W.  
12 - 15 Sand, light-brown, fine to coarse  
15 - 40 Sand, gray, fine to coarse

TEST HOLE NUMBER: 248  
LOCATION: 115N-63W-16CCDC  
LEGAL LOCATION: SW SE SW SW sec. 16, T. 115 N., R. 63 W.  
20 - 34 Sand, tan-brown, fine, clayey, silty; oxidized (lacustrine?)

TEST HOLE NUMBER: 249  
LOCATION: 115N-63W-20AAAA  
LEGAL LOCATION: NE NE NE NE sec. 20, T. 115 N., R. 63 W.  
15 - 54 Sand, brown, then gray, medium; some coarse gravel

TEST HOLE NUMBER: 250  
LOCATION: 115N-63W-20CCCC  
LEGAL LOCATION: SW SW SW SW sec. 20, T. 115 N., R. 63 W.  
20 - 30 Sand, gray-brown; loamy, loose

TEST HOLE NUMBER: 251  
LOCATION: 115N-63W-20CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 20, T. 115 N., R. 63 W.  
14 - 20 Sand and silt, fine sand; some clay, slightly permeable, oxidized  
20 - 26 Sand, fine to medium; some coarse sand, moderately permeable, oxidized  
26 - 30 Sand, medium; some coarse sand, permeable, oxidized

TEST HOLE NUMBER: 252  
LOCATION: 115N-63W-21BBBB  
LEGAL LOCATION: NW NW NW NW sec. 21, T. 115 N., R. 63 W.  
15 - 55 Sand, medium; with coal fragments

TEST HOLE NUMBER: 253  
LOCATION: 115N-63W-21DDDD

LEGAL LOCATION: SE SE SE SE sec. 21, T. 115 N., R. 63 W.

9 - 18 Sand, brown; friable, loamy  
18 - 35 Sand, brown; loose

TEST HOLE NUMBER: 254

LOCATION: 115N-63W-21DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 21, T. 115 N., R. 63 W.

9 - 39 Sand, fine to 18 feet, medium-fine to medium from 18 to 35 feet, well-graded; with some fine sand medium gravel from 35 to 39 feet, large content of fusain carbonaceous material at about 31 to 35 feet, water-laid, permeable

TEST HOLE NUMBER: 255

LOCATION: 115N-63W-23AAAA

LEGAL LOCATION: NE NE NE NE sec. 23, T. 115 N., R. 63 W.

13 - 34 Sand, gray, medium to coarse; unoxidized

TEST HOLE NUMBER: 256

LOCATION: 115N-63W-23BCCB

LEGAL LOCATION: NW SW SW NW sec. 23, T. 115 N., R. 63 W.

15 - 26 Sand, orange-tan-brown to brown, silty; some clay, more clay content between 20 and 26 feet; oxidized  
26 - 40 Sand, black, fine to medium, clayey, silty; moist

TEST HOLE NUMBER: 257

LOCATION: 115N-63W-23CCCC

LEGAL LOCATION: SW SW SW SW sec. 23, T. 115 N., R. 63 W.

1 - 15 Sand, fine; water-laid, permeable, wash sample  
15 - 30 Sand, fine to coarse, well-graded; with some fine gravel, water-laid, oxidized, permeable, wash sample

TEST HOLE NUMBER: 258

LOCATION: 115N-63W-23CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 23, T. 115 N., R. 63 W.

0 - 36 Sand, brown, fine to medium; clean, some coal

TEST HOLE NUMBER: 259

LOCATION: 115N-63W-23CCCC 2

LEGAL LOCATION: SW SW SW SW sec. 23, T. 115 N., R. 63 W.

0 - 6 Sand, brown, fine-grained; some gravel, some silt  
7 - 22 Sand, brown, fine to medium; clean, some coal  
22 - 27 Sand, dark-brown-black, fine to medium; clean, some shale pebbles, some coal

TEST HOLE NUMBER: 260

LOCATION: 115N-63W-24BCCB

LEGAL LOCATION: NW SW NW NW sec. 24, T. 115 N., R. 63 W.

11 - 19 Sand, orange-tan-brown, fine, silty; some clay; oxidized, dry  
19 - 25 Sand, brown, fine to medium, clayey, silty; oxidized, saturated at 23 feet  
25 - 43 Sand, dark-brown-black, fine to coarse, clayey, silty; saturated, some fine gravel from 35 to 43 feet

TEST HOLE NUMBER: 261  
LOCATION: 115N-63W-24DDDD  
LEGAL LOCATION: SE SE SE SE sec. 24, T. 115 N., R. 63 W.

10 - 15 Sand, orange-brown to black, fine to medium, slightly clayey, silty  
15 - 23 Sand, orange-brown, fine to medium; fairly clean; some clay  
23 - 27 Sand, brown-black, fine to coarse, silty; some fine gravel, organic(?), wet  
27 - 43 Sand, red-brown, fine to medium, clayey, silty; saturated at 27 feet, some fine gravel from 35 to 43 feet, many shale chips

TEST HOLE NUMBER: 262  
LOCATION: 115N-63W-25BBBB  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 115 N., R. 63 W.

14 - 46 Sand, coarse; grading to gravel from 39 to 46 feet

TEST HOLE NUMBER: 263  
LOCATION: 115N-63W-25BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 115 N., R. 63 W.

14 - 45 Sand, brown, medium to coarse; turns to a fine gravel after 37 feet, oxidized

TEST HOLE NUMBER: 264  
LOCATION: 115N-63W-25BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 115 N., R. 63 W.

18 - 34 Sand, brown; loose, loamy

TEST HOLE NUMBER: 265  
LOCATION: 115N-63W-27DBBB  
LEGAL LOCATION: NW NW NW SE sec. 27, T. 115 N., R. 63 W.

15 - 20 Sand, light-ash-gray; friable, loamy  
20 - 25 Sand, light-brown; loose  
25 - 26 Sand; with black, organic material  
26 - 35 Sand, light-gray to gray-brown; loose

TEST HOLE NUMBER: 266  
LOCATION: 115N-63W-29AAAB  
LEGAL LOCATION: NW NE NE NE sec. 29, T. 115 N., R. 63 W.

23 - 48 Sand, gray, fine to medium, very clayey, silty; many shale pebbles present; unoxidized, saturated

TEST HOLE NUMBER: 267  
LOCATION: 115N-63W-30BAAA  
LEGAL LOCATION: NE NE NE NW sec. 30, T. 115 N., R. 63 W.

18 - 35 Sand, yellow-brown; loamy, loose

TEST HOLE NUMBER: 268  
LOCATION: 115N-63W-30BAAA 1  
LEGAL LOCATION: NE NE NE NW sec. 30, T. 115 N., R. 63 W.

18 - 25 Sand and silt, fine sand; water-laid sand, slightly permeable, wash sampled  
25 - 40 Sand, fine to medium; little silt, permeable, carbonaceous from 35 to 40 feet, wash sampled

TEST HOLE NUMBER: 269  
LOCATION: 115N-63W-31CBBB  
LEGAL LOCATION: NW NW NW SW sec. 31, T. 115 N., R. 63 W.



4 - 18 Sand, tan-brown, fine, clayey, silty; oxidized, some gravel, more clay content with depth

TEST HOLE NUMBER: 270

LOCATION: 115N-63W-33BCCB

LEGAL LOCATION: NW SW SW NW sec. 33, T. 115 N., R. 63 W.

14 - 38 Sand, dark-brown, fine, clayey, silty; oxidized, some pebbles, saturated at 18 feet, less clay content with depth

TEST HOLE NUMBER: 271

LOCATION: 115N-63W-33DCDD

LEGAL LOCATION: SE SE SW SE sec. 33, T. 115 N., R. 63 W.

14 - 42 Sand, medium; clean

TEST HOLE NUMBER: 272

LOCATION: 115N-63W-33DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 33, T. 115 N., R. 63 W.

5 - 14 Sand, brown, medium, well sorted

14 - 51 Sand, gray, medium to very coarse; many quartz grains with 40 to 50 percent shale grains, some coal fragments

TEST HOLE NUMBER: 273

LOCATION: 115N-63W-33DDDD 2

LEGAL LOCATION: SE SE SE SE sec. 33, T. 115 N., R. 63 W.

5 - 14 Sand, brown, medium, well sorted

14 - 49 Sand, gray, medium to very coarse; many quartz grains with 40 to 50 percent shale grains, some coal fragments

TEST HOLE NUMBER: 274

LOCATION: 115N-63W-35CCDD

LEGAL LOCATION: SE SE SW SW sec. 35, T. 115 N., R. 63 W.

14 - 15 Sand, black, clayey, silty; organic(?)

15 - 25 Sand, brown, fine to medium, slightly clayey, slightly silty; oxidized, saturated

25 - 48 Sand, gray-brown, fine to medium, slightly clayey, slightly silty; clean, saturated, coal fragments found at 31 feet

TEST HOLE NUMBER: 275

LOCATION: 115N-63W-35DDDD

LEGAL LOCATION: SE SE SE SE sec. 35, T. 115 N., R. 63 W.

10 - 25 Sand, brown, medium to coarse; oxidized

25 - 51 Sand, gray, medium to coarse; grades to a fine gravel, much coal

TEST HOLE NUMBER: 276

LOCATION: 115N-64W-01CCCC

LEGAL LOCATION: SW SW SW SW sec. 01, T. 115 N., R. 64 W.

24 - 35 Sand, medium; saturated, dirty, large pebbles, very coarse

TEST HOLE NUMBER: 277

LOCATION: 115N-64W-01CCCD

LEGAL LOCATION: SE SW SW SW sec. 01, T. 115 N., R. 64 W.

25 - 44 Sand, medium; dirty, saturated

TEST HOLE NUMBER: 278  
LOCATION: 115N-64W-02BBAB  
LEGAL LOCATION: NW NE NW NW sec. 02, T. 115 N., R. 64 W.

6 - 8 Gravel, red-brown, medium to very coarse, subrounded  
8 - 20 Sand, gray, coarse, subrounded  
20 - 30 Gravel to cobbles; estimate 2 to 3 inches in diameter

TEST HOLE NUMBER: 279  
LOCATION: 115N-64W-02BBAB 1  
LEGAL LOCATION: NW NE NW NW sec. 02, T. 115 N., R. 64 W.

2 - 4 Sand, red-brown, fine, rounded

TEST HOLE NUMBER: 280  
LOCATION: 115N-64W-02BBBD  
LEGAL LOCATION: SE NW NW NW sec. 02, T. 115 N., R. 64 W.

3 - 9 Gravel, red-brown, medium to coarse, sandy, subangular to subrounded  
12 - 14 Gravel stringer, medium, subangular  
14 - 26 Sand, gray, medium, rounded  
26 - 32 Sand, gray, fine to silty, clayey

TEST HOLE NUMBER: 281  
LOCATION: 115N-64W-02BBCA  
LEGAL LOCATION: NE SW NW NW sec. 02, T. 115 N., R. 64 W.

14 - 55 Sand, gray, very fine, very silty; saturated

TEST HOLE NUMBER: 282  
LOCATION: 115N-64W-02BBCB  
LEGAL LOCATION: NW SW NW NW sec. 02, T. 115 N., R. 64 W.

9 - 30 Sand, brown, very fine to fine; saturated

TEST HOLE NUMBER: 283  
LOCATION: 115N-64W-02BCBA  
LEGAL LOCATION: NE NW SW NW sec. 02, T. 115 N., R. 64 W.

2 - 7 Gravel, medium to coarse, subrounded; clean  
7 - 19 Sand, light-gray, medium to coarse, rounded  
24 - 30 Sand, gray, fine to medium, rounded

TEST HOLE NUMBER: 284  
LOCATION: 115N-64W-02BCCB  
LEGAL LOCATION: NW SW SW NW sec. 02, T. 115 N., R. 64 W.

12 - 52 Sand, gray, very fine to fine; saturated

TEST HOLE NUMBER: 285  
LOCATION: 115N-64W-02BCCD  
LEGAL LOCATION: SE SW SW NW sec. 02, T. 115 N., R. 64 W.

16 - 38 Sand, very fine to fine, silty, pebbly; saturated

TEST HOLE NUMBER: 286  
LOCATION: 115N-64W-02BCDB  
LEGAL LOCATION: NW SE SW NW sec. 02, T. 115 N., R. 64 W.

13 - 60 Sand, gray, very fine, silty; saturated

TEST HOLE NUMBER: 287

LOCATION: 115N-64W-02BCDC

LEGAL LOCATION: SW SE SW NW sec. 02, T. 115 N., R. 64 W.

3 - 8 Sand, brown, medium; saturated

8 - 55 Sand, brown, fine to medium, silty, saturated

TEST HOLE NUMBER: 288

LOCATION: 115N-64W-02BCDD

LEGAL LOCATION: SE SE SW NW sec. 02, T. 115 N., R. 64 W.

3 - 9 Gravel, red, medium, silty

TEST HOLE NUMBER: 289

LOCATION: 115N-64W-02CBAA

LEGAL LOCATION: NE NE NW SW sec. 02, T. 115 N., R. 64 W.

16 - 51 Sand, gray, very fine to fine, silty; saturated

TEST HOLE NUMBER: 290

LOCATION: 115N-64W-02CCCD

LEGAL LOCATION: SE SW SW SW sec. 02, T. 115 N., R. 64 W.

2 - 8 Gravel, coarse; dry

8 - 14 Sand, medium-brown, very coarse, gravelly; very dirty

14 - 25 Sand, dark-brown, very coarse; very dirty, saturated

TEST HOLE NUMBER: 291

LOCATION: 115N-64W-03AAAB

LEGAL LOCATION: NW NE NE NE sec. 03, T. 115 N., R. 64 W.

7 - 29 Sand, brown, medium, pebbly, rounded; saturated

TEST HOLE NUMBER: 292

LOCATION: 115N-64W-03AABA

LEGAL LOCATION: NE NW NE NE sec. 03, T. 115 N., R. 64 W.

3 - 25 Sand, fine to medium; saturated

25 - 41 Gravel, medium, sandy; saturated

TEST HOLE NUMBER: 293

LOCATION: 115N-64W-03AABA 1

LEGAL LOCATION: NE NW NE NE sec. 03, T. 115 N., R. 64 W.

6 - 10 Sand, red-brown, medium to coarse, subrounded

10 - 21 Gravel, medium, subrounded

21 - 48 Gravel, medium to coarse, subrounded

TEST HOLE NUMBER: 294

LOCATION: 115N-64W-03AABC

LEGAL LOCATION: SW NW NE NE sec. 03, T. 115 N., R. 64 W.

4 - 15 Sand, brown, silty; dry

15 - 49 Sand, brown, medium; saturated

TEST HOLE NUMBER: 295

LOCATION: 115N-64W-03AABD

LEGAL LOCATION: SE NW NE NE sec. 03, T. 115 N., R. 64 W.

4 - 32 Sand, brown, medium, pebbly; saturated

TEST HOLE NUMBER: 296

LOCATION: 115N-64W-03AABD 1

LEGAL LOCATION: SE NW NE NE sec. 03, T. 115 N., R. 64 W.

2 - 20 Sand, red-brown, coarse, subrounded

22 - 44 Sand, gray, medium to coarse

TEST HOLE NUMBER: 297

LOCATION: 115N-64W-03ABAB

LEGAL LOCATION: NW NE NW NE sec. 03, T. 115 N., R. 64 W.

0 - 12 Gravel, medium, subangular to subrounded

TEST HOLE NUMBER: 298

LOCATION: 115N-64W-03ABAB 1

LEGAL LOCATION: NW NE NW NE sec. 03, T. 115 N., R. 64 W.

1 - 14 Sand, reddish-brown, medium, pebbly; dry, oxidized

14 - 85 Sand, brown, medium grading to fine, silty; saturated

TEST HOLE NUMBER: 299

LOCATION: 115N-64W-03ADAD

LEGAL LOCATION: SE NE SE NE sec. 03, T. 115 N., R. 64 W.

4 - 14 Sand, brown, medium; saturated

14 - 51 Sand, gray, very fine, silty; saturated

TEST HOLE NUMBER: 300

LOCATION: 115N-64W-03ADBA

LEGAL LOCATION: NE NW SE NE sec. 03, T. 115 N., R. 64 W.

22 - 58 Sand, gray, very fine, silty; saturated

TEST HOLE NUMBER: 301

LOCATION: 115N-64W-03ADDC

LEGAL LOCATION: SW SE SE NE sec. 03, T. 115 N., R. 64 W.

0 - 3 Sand, brown, very silty and clayey

3 - 8 Gravel, very coarse, clayey

28 - 35 Sand, brown, very fine, silty

TEST HOLE NUMBER: 302

LOCATION: 115N-64W-03CBCC

LEGAL LOCATION: SW SW NW SW sec. 03, T. 115 N., R. 64 W.

1 - 5 Gravel, tan-brown, coarse, clayey, silty; oxidized, dry

5 - 14 Sand and gravel, orange-tan-brown, fine to medium sand, fine to medium gravel, silty; some clay; oxidized, dry

TEST HOLE NUMBER: 303

LOCATION: 115N-64W-03CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 03, T. 115 N., R. 64 W.

0 - 2 Sand, light-brown, fine, silty

2 - 5 Gravel, pea-sized, subangular to rounded

- 5 - 12 Sand, brownish-red, fine to medium; some pebbles  
12 - 15 Gravel; coarse to very coarse, rounded; intermixed sand and silt

TEST HOLE NUMBER: 304  
LOCATION: 115N-64W-03CDDD  
LEGAL LOCATION: SE SE SE SW sec. 03, T. 115 N., R. 64 W.

- 18 - 36 Sand, tan-brown, fine to medium, clayey, silty; some gravel; oxidized, saturated at 32 feet

TEST HOLE NUMBER: 305  
LOCATION: 115N-64W-03DADA  
LEGAL LOCATION: NE SE NE SE sec. 03, T. 115 N., R. 64 W.

- 4 - 5 Gravel, orange-tan-brown, fine to coarse, very silty, sandy; oxidized  
5 - 11 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, slightly clayey, silty; oxidized  
15 - 17 Sand, orange-tan-brown, fine to medium, slightly clayey; some organics(?)  
20 - 32 Sand, tan-brown to brown, fine, clayey, silty; oxidized, wet, saturated at 25 feet

TEST HOLE NUMBER: 306  
LOCATION: 115N-64W-04CCCB  
LEGAL LOCATION: NW SW SW SW sec. 04, T. 115 N., R. 64 W.

- 2 - 22 Sand, brown, fine to medium, subangular; some silt

TEST HOLE NUMBER: 307  
LOCATION: 115N-64W-05ABBB  
LEGAL LOCATION: NW NW NW NE sec. 05, T. 115 N., R. 64 W.

- 11 - 19 Sand, fine to medium, clayey, subrounded; some coal

TEST HOLE NUMBER: 308  
LOCATION: 115N-64W-06BBBB  
LEGAL LOCATION: NW NW NW NW sec. 06, T. 115 N., R. 64 W.

- 0 - 6 Sand, medium

TEST HOLE NUMBER: 309  
LOCATION: 115N-64W-07BC  
LEGAL LOCATION: SW NW sec. 07, T. 115 N., R. 64 W.

- 27 - 40 Sand

TEST HOLE NUMBER: 310  
LOCATION: 115N-64W-08ABAA  
LEGAL LOCATION: NE NE NW NE sec. 08, T. 115 N., R. 64 W.

- 2 - 15 Sand, dark-brown, fine, subrounded

TEST HOLE NUMBER: 311  
LOCATION: 115N-64W-08CCDD  
LEGAL LOCATION: SE SE SW SW sec. 08, T. 115 N., R. 64 W.

- 10 - 27 Sand, gray, very fine to fine, silty; saturated

TEST HOLE NUMBER: 312  
LOCATION: 115N-64W-10DCCD  
LEGAL LOCATION: SE SW SW SE sec. 10, T. 115 N., R. 64 W.

- 2 - 25 Sand, brown, medium, very clayey; dry
- 25 - 35 Sand, brown, medium, subangular to rounded; saturated

TEST HOLE NUMBER: 313  
LOCATION: 115N-64W-11ABBA  
LEGAL LOCATION: NE NW NW NE sec. 11, T. 115 N., R. 64 W.

- 17 - 45 Sand, gray, fine to medium; saturated, fairly clean

TEST HOLE NUMBER: 314  
LOCATION: 115N-64W-11BBAB  
LEGAL LOCATION: NW NE NW NW sec. 11, T. 115 N., R. 64 W.

- 2 - 7 Gravel, yellow-gray, fine to coarse, silty, sandy
- 7 - 10 Sand, orange-tan-brown, fine to coarse, silty; oxidized, some fine gravel
- 10 - 16 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, slightly clayey, silty; oxidized

TEST HOLE NUMBER: 315  
LOCATION: 115N-64W-11CCCC  
LEGAL LOCATION: SW SW SW SW sec. 11, T. 115 N., R. 64 W.

- 2 - 12 Sand, medium-brown, very fine, clayey
- 19 - 30 Sand, brownish-red, fine to medium; dry

TEST HOLE NUMBER: 316  
LOCATION: 115N-64W-11CDDD  
LEGAL LOCATION: SE SE SE SW sec. 11, T. 115 N., R. 64 W.

- 2 - 12 Sand and gravel, fine to coarse sand, fine to coarse gravel, slightly clayey, silty; oxidized
- 12 - 18 Sand, brown, fine to coarse sand, very clayey; oxidized, some pebbles

TEST HOLE NUMBER: 317  
LOCATION: 115N-64W-12BBAB  
LEGAL LOCATION: NW NE NW NW sec. 12, T. 115 N., R. 64 W.

- 2 - 6 Sand and gravel, tan-brown, fine sand, medium gravel, silty
- 6 - 11 Sand, orange-brown, medium to coarse, clayey, silty, pebbly; oxidized, more clay with depth

TEST HOLE NUMBER: 318  
LOCATION: 115N-64W-12BBBB  
LEGAL LOCATION: NW NW NW NW sec. 12, T. 115 N., R. 64 W.

- 22 - 35 Sand, gray, medium to coarse

TEST HOLE NUMBER: 319  
LOCATION: 115N-64W-13BBCB  
LEGAL LOCATION: NW SW NW NW sec. 13, T. 115 N., R. 64 W.

- 2 - 6 Sand, brown, fine; saturated
- 6 - 31 Sand, gray, fine; saturated

TEST HOLE NUMBER: 320  
LOCATION: 115N-64W-13CCCC  
LEGAL LOCATION: SW SW SW SW sec. 13, T. 115 N., R. 64 W.

- 2 - 8 Sand, red, medium; dry, oxidized
- 18 - 29 Sand, brown, medium, silty; saturated

TEST HOLE NUMBER: 321  
LOCATION: 115N-64W-14CBCB  
LEGAL LOCATION: NW SW NW SW sec. 14, T. 115 N., R. 64 W.

1 - 8 Sand, tan-brown, fine to medium, silty, pebbly; oxidized  
8 - 12 Sand, gray-brown, medium, well-sorted, silty; moist  
12 - 38 Sand, tan-brown, fine to medium, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 322  
LOCATION: 115N-64W-14CCCB  
LEGAL LOCATION: NW SW SW SW sec. 14, T. 115 N., R. 64 W.

8 - 14 Sand, fine to medium

TEST HOLE NUMBER: 323  
LOCATION: 115N-64W-14DADD  
LEGAL LOCATION: SE SE NE SE sec. 14, T. 115 N., R. 64 W.

2 - 16 Sand, orange-brown to brown, fine to coarse, clayey, silty, gravelly; oxidized, more clay with depth

TEST HOLE NUMBER: 324  
LOCATION: 115N-64W-17AAAA  
LEGAL LOCATION: NE NE NE NE sec. 17, T. 115 N., R. 64 W.

0 - 7 Sand, red, silty, very pebbly; oxidized, dry

TEST HOLE NUMBER: 325  
LOCATION: 115N-64W-17AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 17, T. 115 N., R. 64 W.

0 - 7 Sand, red, silty, pebbly; oxidized, dry

TEST HOLE NUMBER: 326  
LOCATION: 115N-64W-17AADA  
LEGAL LOCATION: NE SE NE NE sec. 17, T. 115 N., R. 64 W.

0 - 4 Sand, orange-tan-brown, very silty; some clay, some fine gravel; oxidized, dry

TEST HOLE NUMBER: 327  
LOCATION: 115N-64W-17DDDD  
LEGAL LOCATION: SE SE SE SE sec. 17, T. 115 N., R. 64 W.

5 - 26 Sand and gravel, brown, fine to medium sand, fine gravel; cobbles at 10 feet, dirty, layer of black alluvial clay from 18 to 22 feet

TEST HOLE NUMBER: 328  
LOCATION: 115N-64W-19DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 19, T. 115 N., R. 64 W.

25 - 35 Sand, fine to medium, silty; carbonaceous at 28 feet, slightly to moderately oxidized, small amount of silt till at 29 to 30 feet, unoxidized 30 to 35 feet

TEST HOLE NUMBER: 329  
LOCATION: 115N-64W-21BBCC  
LEGAL LOCATION: SW SW NW NW sec. 21, T. 115 N., R. 64 W.

17 - 81 Sand, gray, fine, very silty, grades to medium; clean

TEST HOLE NUMBER: 330  
LOCATION: 115N-64W-22BBBB  
LEGAL LOCATION: NW NW NW NW sec. 22, T. 115 N., R. 64 W.

0 - 12 Sand, reddish-brown, medium, subangular to rounded; clean, dry  
12 - 45 Sand, brown, medium, slightly clayey; saturated

TEST HOLE NUMBER: 331  
LOCATION: 115N-64W-23BBBB  
LEGAL LOCATION: NW NW NW NW sec. 23, T. 115 N., R. 64 W.

2 - 14 Sand, brownish-red, medium, subangular to rounded; clean  
14 - 22 Sand, medium-brown, medium, silty, clayey  
22 - 24 Sand, gray, silty

TEST HOLE NUMBER: 332  
LOCATION: 115N-64W-23DDDD  
LEGAL LOCATION: SE SE SE SE sec. 23, T. 115 N., R. 64 W.

0 - 10 Sand, fine to medium; with much silt and clay; small pebbles, humic 0 to 1 foot and 5 to 6 feet,  
water-laid in part (till)  
12 - 20 Sand, well-graded; grades coarser and cleaner downward, permeable

TEST HOLE NUMBER: 333  
LOCATION: 115N-64W-24DDDC  
LEGAL LOCATION: SW SE SE SE sec. 24, T. 115 N., R. 64 W.

1 - 2 Sand, orange-brown, fine, silty; oxidized  
8 - 13 Sand, orange-brown, fine, silty, pebbly; oxidized  
13 - 20 Sand, gray-brown, fine, clayey, silty; moist, more clay content with depth

TEST HOLE NUMBER: 334  
LOCATION: 115N-64W-25CCBC  
LEGAL LOCATION: SW NW SW SW sec. 25, T. 115 N., R. 64 W.

4 - 6 Sand, brown, fine to medium, slightly clayey, very silty; oxidized  
6 - 11 Sand, reddish-orange-brown, fine to medium, slightly clayey, very silty; oxidized

TEST HOLE NUMBER: 335  
LOCATION: 115N-64W-26ABBA  
LEGAL LOCATION: NE NW NW NE sec. 26, T. 115 N., R. 64 W.

25 - 34 Sand, yellow-gray-brown; loose, loamy

TEST HOLE NUMBER: 336  
LOCATION: 115N-64W-26BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 115 N., R. 64 W.

2 - 5 Sand, fine, silty; oxidized, slightly to moderately permeable  
5 - 20 Sand, fine, silty; partly oxidized, slightly to moderately oxidized  
20 - 25 Sand, fine, silty; unoxidized, slightly to moderately permeable  
25 - 30 Sand, well-graded; pebbles, silt, clay binder, very poor recovery, probably mostly water-laid, not  
very permeable, unoxidized

TEST HOLE NUMBER: 337  
LOCATION: 115N-64W-26BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 115 N., R. 64 W.

5 - 15 Sand, light-brown, fine; loose



15 - 25 Sand, light-gray, fine; loose

TEST HOLE NUMBER: 338  
LOCATION: 115N-64W-27DD 1  
LEGAL LOCATION: SE SE sec. 27, T. 115 N., R. 64 W.

19 - 35 Sand, fine to medium; loose

TEST HOLE NUMBER: 339  
LOCATION: 115N-64W-27DD 2  
LEGAL LOCATION: SE SE sec. 27, T. 115 N., R. 64 W.

12 - 26 Sand, fine; loose

TEST HOLE NUMBER: 340  
LOCATION: 115N-64W-28BBBC 2  
LEGAL LOCATION: SW NW NW NW sec. 28, T. 115 N., R. 64 W.

2 - 9 Sand, yellow-brown; with clay

TEST HOLE NUMBER: 341  
LOCATION: 115N-64W-28CB  
LEGAL LOCATION: NW SW sec. 28, T. 115 N., R. 64 W.

10 - 20 Sand

TEST HOLE NUMBER: 342  
LOCATION: 115N-64W-28CCCC  
LEGAL LOCATION: SW SW SW SW sec. 28, T. 115 N., R. 64 W.

24 - 35 Sand, coarse; with clay layers

TEST HOLE NUMBER: 343  
LOCATION: 115N-64W-30AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 115 N., R. 64 W.

20 - 25 Sand and silt, fine sand; water-laid, very poor recovery, probably moderately permeable  
25 - 55 Sand, poorly sorted; some silt and clay, slightly to moderately permeable, till from 36 to 37 feet and 49 to 50 feet; silty and clayey from 43 to 44 feet, 47 to 49 feet and 53 to 55 feet; carbonaceous from 33 to 35 feet, 53 to 55 feet, 50 to 51 feet

TEST HOLE NUMBER: 344  
LOCATION: 115N-64W-30AAAA 2  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 115 N., R. 64 W.

0 - 2 Sand, silty; probably water deposited, oxidized  
26 - 44 Sand, poorly sorted; with silt and some clay lenses, moderately permeable, partly oxidized, appears to be till in part

TEST HOLE NUMBER: 345  
LOCATION: 115N-64W-30AAAA 3  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 115 N., R. 64 W.

0 - 5 Sand and silt; water-laid sand; some clay, humic to 2 feet  
27 - 32 Sand, poorly sorted; some silt, probably slightly to moderately permeable

TEST HOLE NUMBER: 346  
LOCATION: 115N-64W-30AAAA 4  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 115 N., R. 64 W.

19 - 35 Sand; very little clay

TEST HOLE NUMBER: 347  
LOCATION: 115N-64W-30AAAA 8  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 115 N., R. 64 W.

24 - 30 Sand, poorly sorted; some silt, probably slightly to moderately permeable

TEST HOLE NUMBER: 348  
LOCATION: 115N-64W-30AAAD 1  
LEGAL LOCATION: SE NE NE NE sec. 30, T. 115 N., R. 64 W.

23 - 44 Sand, medium to fine; some silt and clay, water-laid, very poor recovery, slightly to moderately permeable, few large rocks of 2.5 inches

TEST HOLE NUMBER: 349  
LOCATION: 115N-64W-30CCAA  
LEGAL LOCATION: NE NE SW SW sec. 30, T. 115 N., R. 64 W.

25 - 29 Sand

TEST HOLE NUMBER: 350  
LOCATION: 115N-64W-30CDDA  
LEGAL LOCATION: NE SE SE SW sec. 30, T. 115 N., R. 64 W.

2 - 8 Sand

TEST HOLE NUMBER: 351  
LOCATION: 115N-64W-30DCAA  
LEGAL LOCATION: NE NE SW SE sec. 30, T. 115 N., R. 64 W.

2 - 9 Sand and gravel

TEST HOLE NUMBER: 352  
LOCATION: 115N-64W-31CCAA  
LEGAL LOCATION: NE NE SW SW sec. 31, T. 115 N., R. 64 W.

19 - 26 Sand

TEST HOLE NUMBER: 353  
LOCATION: 115N-64W-31DDDD  
LEGAL LOCATION: SE SE SE SE sec. 31, T. 115 N., R. 64 W.

0 - 6 Sand, brown, fine

TEST HOLE NUMBER: 354  
LOCATION: 115N-64W-33CCCC  
LEGAL LOCATION: SW SW SW SW sec. 33, T. 115 N., R. 64 W.

0 - 11 Sand, brown, medium; minor amount of very fine sand

TEST HOLE NUMBER: 355  
LOCATION: 115N-65W-01CCDD  
LEGAL LOCATION: SE SE SW SW sec. 01, T. 115 N., R. 65 W.

8 - 11 Sand, brown, medium, very silty, very clayey; oxidized, moist

TEST HOLE NUMBER: 356  
LOCATION: 115N-65W-05AABB

LEGAL LOCATION: NW NW NE NE sec. 05, T. 115 N., R. 65 W.

5 - 42 Sand, brown, fine to medium; oxidized, grades to a gray unoxidized sand, gravelly from 32 to 42 feet

TEST HOLE NUMBER: 357

LOCATION: 115N-65W-09ACCC

LEGAL LOCATION: SW SW SW NE sec. 09, T. 115 N., R. 65 W.

0 - 3 Sand, yellow-tan-brown, fine, very silty; some clay  
3 - 6 Sand, orange-tan-brown, medium to coarse, very silty; some fine gravel; oxidized  
10 - 13 Sand, dark-brown, fine to medium, very clayey; oxidized, wet

TEST HOLE NUMBER: 358

LOCATION: 115N-65W-09CCCC

LEGAL LOCATION: SW SW SW SW sec. 09, T. 115 N., R. 65 W.

0 - 7 Sand and gravel, brown, coarse  
23 - 38 Sand, gray, medium; with gravel

TEST HOLE NUMBER: 359

LOCATION: 115N-65W-15BBBB

LEGAL LOCATION: NW NW NW NW sec. 15, T. 115 N., R. 65 W.

7 - 23 Sand, brown, fine-grained, slightly silty; wet at 19 feet  
23 - 28 Sand, gray, fine-grained, slightly silty; saturated

TEST HOLE NUMBER: 360

LOCATION: 115N-65W-16CCCD

LEGAL LOCATION: SE SW SW SW sec. 16, T. 115 N., R. 65 W.

5 - 10 Sand, yellow-brown, fine, silty; some clay; oxidized, dry, more clay content with depth

TEST HOLE NUMBER: 361

LOCATION: 115N-65W-16DADD

LEGAL LOCATION: SE SE NE SE sec. 16, T. 115 N., R. 65 W.

10 - 15 Sand, orange-brown, very fine-grained, very silty; some clay; oxidized  
25 - 34 Sand, tan-brown, fine, silty, clayey; oxidized, saturated; more silt content with depth

TEST HOLE NUMBER: 362

LOCATION: 115N-65W-18ABDA

LEGAL LOCATION: NE SE NW NE sec. 18, T. 115 N., R. 65 W.

0 - 3 Sand, tan, fine, silty  
20 - 23 Sand, brown, medium to coarse, very clayey, silty; saturated at 21 feet  
27 - 29 Sand, gray-brown, medium to coarse, very clayey, very silty; saturated

TEST HOLE NUMBER: 363

LOCATION: 115N-65W-18DDCD

LEGAL LOCATION: SE SW SE SE sec. 18, T. 115 N., R. 65 W.

0 - 1 Sand, orange-brown, fine to coarse, silty; some fine gravel; oxidized  
6 - 25 Sand, gray, coarse, very clayey, silty; some fine gravel; saturated

TEST HOLE NUMBER: 364

LOCATION: 115N-65W-19BBBC

LEGAL LOCATION: SW NW NW NW sec. 19, T. 115 N., R. 65 W.

- 6 - 9 Sand, orange-tan-brown, very fine to medium, silty; oxidized
- 9 - 12 Sand, tan-brown, fine to coarse, clayey, slightly silty, pebbly; oxidized
- 12 - 16 Gravel, brown, fine to medium, silty, sandy, clayey; oxidized
- 16 - 26 Sand, olive-gray, fine to coarse, clayey, silty; some shale pebbles, unoxidized, saturated at 16 feet
- 26 - 28 Gravel(?); no return, driller reports drills like gravel
- 28 - 31 Sand, olive-gray, fine to medium, very clayey, very silty; some pebbles, unoxidized, saturated

TEST HOLE NUMBER: 365

LOCATION: 115N-65W-19BBBC 2

LEGAL LOCATION: SW NW NW NW sec. 19, T. 115 N., R. 65 W.

- 1 - 10 Sand, light-brown, fine, clayey, silty, moderately sorted; dry, oxidized

TEST HOLE NUMBER: 366

LOCATION: 115N-65W-19DDDD

LEGAL LOCATION: SE SE SE SE sec. 19, T. 115 N., R. 65 W.

- 25 - 30 Sand and silt, fine to very fine sand; probably slightly permeable, oxidized, water-laid

TEST HOLE NUMBER: 367

LOCATION: 115N-65W-20CBBC

LEGAL LOCATION: SW NW NW SW sec. 20, T. 115 N., R. 65 W.

- 11 - 17 Sand, orange-tan-brown, fine, silty; some clay; oxidized
- 17 - 21 Sand, dark-brown, fine, silty; some clay, few pebbles; oxidized
- 21 - 26 Sand and gravel, dark-brown, fine to coarse sand, medium gravel, very clayey, very silty; oxidized, saturated

TEST HOLE NUMBER: 368

LOCATION: 115N-65W-20DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 20, T. 115 N., R. 65 W.

- 25 - 30 Sand, yellow-brown; loamy, friable

TEST HOLE NUMBER: 369

LOCATION: 115N-65W-22CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 15 - 18 Sand, medium, well-sorted; permeable, oxidized
- 18 - 22 Sand, poorly sorted; permeable, oxidized
- 22 - 25 Sand, coarse; fine gravel, permeable

TEST HOLE NUMBER: 370

LOCATION: 115N-65W-22CCCC 2

LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 15 - 18 Sand, medium, well-sorted; permeable, oxidized
- 18 - 22 Sand, poorly sorted; permeable, oxidized
- 22 - 25 Sand, coarse; fine gravel, permeable, oxidized

TEST HOLE NUMBER: 371

LOCATION: 115N-65W-22CCCC 5

LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 10 - 20 Sand, yellow-brown; slightly cemented, loamy
- 23 - 25 Sand, gray; loamy, slightly compact

TEST HOLE NUMBER: 372  
LOCATION: 115N-65W-22CCCC 6  
LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 15 - 18 Sand, yellow-gray-brown, fine to medium; loose
- 18 - 25 Sand and gravel, coarse

TEST HOLE NUMBER: 373  
LOCATION: 115N-65W-22CCCC 8  
LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 5 - 7 Sand, yellow-brown; loose

TEST HOLE NUMBER: 374  
LOCATION: 115N-65W-22CCCC10  
LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 4 - 11 Gravel, yellow-brown, sandy; loose
- 23 - 27 Sand, gray; friable, loamy

TEST HOLE NUMBER: 375  
LOCATION: 115N-65W-22CCCC11  
LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 5 - 10 Sand and gravel, brown, coarse sand; loose, iron stained
- 10 - 15 Sand and gravel, dark-yellow-brown; loose
- 20 - 25 Sand, gray, fine; loamy, slightly compact
- 25 - 26 Sand and gravel, dark-yellow-brown; loose, loamy, pseudo end depth

TEST HOLE NUMBER: 376  
LOCATION: 115N-65W-22CCCC12  
LEGAL LOCATION: SW SW SW SW sec. 22, T. 115 N., R. 65 W.

- 3 - 6 Gravel, yellow-brown, silty; loamy, slightly cemented

TEST HOLE NUMBER: 377  
LOCATION: 115N-65W-23BBAB  
LEGAL LOCATION: NW NE NW NW sec. 23, T. 115 N., R. 65 W.

- 3 - 10 Sand, orange-brown, fine to medium, silty, clayey; oxidized; some fine gravel
- 10 - 20 Sand, dark-brown, fine to medium, clayey, silty; some fine gravel; mostly oxidized, saturated
- 20 - 28 Sand, gray, fine to medium, very clayey, silty; unoxidized, saturated, some fine gravel

TEST HOLE NUMBER: 378  
LOCATION: 115N-65W-23BCCC  
LEGAL LOCATION: SW SW SW NW sec. 23, T. 115 N., R. 65 W.

- 0 - 4 Sand and gravel, tan-brown, fine sand, fine to coarse gravel, very silty
- 4 - 5 Sand, tan-brown, medium, slightly silty, slightly clayey; oxidized

TEST HOLE NUMBER: 379  
LOCATION: 115N-65W-23CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 23, T. 115 N., R. 65 W.

- 3 - 5 Sand, medium to coarse; silt and some clay binder, roughly stratified, not very permeable, oxidized
- 5 - 15 Sand, medium to coarse; very permeable

TEST HOLE NUMBER: 380  
LOCATION: 115N-65W-24CCCC  
LEGAL LOCATION: SW SW SW SW sec. 24, T. 115 N., R. 65 W.

10 - 15 Sand, light-brown; loose

TEST HOLE NUMBER: 381  
LOCATION: 115N-65W-24CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 24, T. 115 N., R. 65 W.

5 - 10 Sand, fine; some silt, moderately permeable, oxidized  
10 - 15 Sand, medium, well-sorted; some coarse sand, permeable, oxidized  
15 - 18 Sand, medium to fine; some silt, moderately permeable, oxidized

TEST HOLE NUMBER: 382  
LOCATION: 115N-65W-26BBBB  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 115 N., R. 65 W.

0 - 16 Sand and gravel, brown, medium

TEST HOLE NUMBER: 383  
LOCATION: 115N-65W-26BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 115 N., R. 65 W.

4 - 6 Sand, tan, fine, silty, clayey, poorly sorted; dry, oxidized  
6 - 8 Sand, brown, fine, silty, clayey, poorly sorted; dry, oxidized  
8 - 13 Gravel, brown, coarse, very clayey, sandy, poorly sorted; moist, oxidized, saturated at 10 feet  
13 - 31 Gravel, brown, fine, sandy, poorly sorted; saturated, oxidized

TEST HOLE NUMBER: 384  
LOCATION: 115N-65W-27ABBB  
LEGAL LOCATION: NW NW NW NE sec. 27, T. 115 N., R. 65 W.

3 - 9 Sand, orange-brown, fine to medium, silty; some fine gravel; oxidized, dry  
9 - 15 Sand, gray-tan-brown, fine to medium, clayey, silty; some fine to medium gravel; oxidized, saturated  
15 - 22 Sand, gray, medium to coarse, clayey; some fine gravel; unoxidized, saturated  
22 - 24 Gravel, very coarse; poor return; could not penetrate past 24 feet, abandoned hole

TEST HOLE NUMBER: 385  
LOCATION: 115N-65W-27ABCD  
LEGAL LOCATION: SE SW NW NE sec. 27, T. 115 N., R. 65 W.

2 - 9 Sand

TEST HOLE NUMBER: 386  
LOCATION: 115N-65W-27ABCD 1  
LEGAL LOCATION: SE SW NW NE sec. 27, T. 115 N., R. 65 W.

2 - 9 Sand

TEST HOLE NUMBER: 387  
LOCATION: 115N-65W-27CBBB 1  
LEGAL LOCATION: NW NW NW SW sec. 27, T. 115 N., R. 65 W.

1 - 14 Sand and gravel; permeable, water-laid  
14 - 15 Sand, fine; some silt, water-laid, permeable  
15 - 20 Sand and gravel; no core recovery

TEST HOLE NUMBER: 388  
LOCATION: 115N-65W-27CBBC  
LEGAL LOCATION: SW NW NW SW sec. 27, T. 115 N., R. 65 W.

0 - 8 Sand, poorly sorted; some silt, permeable, humified 0 to 1 feet  
8 - 25 Sand, fine to medium, silty; permeable  
25 - 30 Sand, fine; some silt, permeable

TEST HOLE NUMBER: 389  
LOCATION: 115N-65W-28AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

0 - 10 Sand, silty; humic 0 to 2.5 feet, concentration of carbonates at 4 feet, oxidized

TEST HOLE NUMBER: 390  
LOCATION: 115N-65W-28AAAA 4  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

0 - 10 Sand, silty; humic to 4 feet, some clay, slightly permeable, oxidized  
25 - 33 Sand, silty; water-laid, slightly permeable, unoxidized, poor recovery

TEST HOLE NUMBER: 391  
LOCATION: 115N-65W-28AAAA 6  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

5 - 10 Sand, fine to medium; water-laid, moderately permeable, oxidized  
10 - 16 Sand, coarse, silty 15 to 16 feet; small gravel, wash sample, permeable  
21 - 24 Sand, fine to medium; some silt and clay, water-laid, slightly permeable, unoxidized

TEST HOLE NUMBER: 392  
LOCATION: 115N-65W-28AAAA 7  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

5 - 8 Sand, poorly sorted; small pebbles, some silt, probably water-laid, slightly to moderately permeable, oxidized

TEST HOLE NUMBER: 393  
LOCATION: 115N-65W-28AAAA 8  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

2 - 11 Sand, poorly sorted; small pebbles, probably water-laid, moderately permeable, oxidized  
27 - 32 Sand, poorly sorted; some silt and clay, wash sample, slightly permeable

TEST HOLE NUMBER: 394  
LOCATION: 115N-65W-28AAAA12  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

11 - 15 Sand, very fine to fine; some silt, oxidized

TEST HOLE NUMBER: 395  
LOCATION: 115N-65W-28AAAA17  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

15 - 16 Sand, gray

TEST HOLE NUMBER: 396  
LOCATION: 115N-65W-28AAAA19  
LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

13 - 20 Sand, silty; some clay, laminated, probably slightly permeable, oxidized

TEST HOLE NUMBER: 397

LOCATION: 115N-65W-28AAAA26

LEGAL LOCATION: NE NE NE NE sec. 28, T. 115 N., R. 65 W.

15 - 22 Sand, light-brown; loose  
22 - 25 Sand and gravel, light-gray-brown; loose

TEST HOLE NUMBER: 398

LOCATION: 115N-65W-28ABAB 1

LEGAL LOCATION: NW NE NW NE sec. 28, T. 115 N., R. 65 W.

2 - 5 Sand, fine to coarse, silty; oxidized, may be water-laid, moderately permeable  
15 - 19 Sand, very fine, silty; oxidized, water-laid, silt bed at 18 to 18.5 feet

TEST HOLE NUMBER: 399

LOCATION: 115N-65W-28BCCC

LEGAL LOCATION: SW SW SW NW sec. 28, T. 115 N., R. 65 W.

2 - 24 Gravel; dry

TEST HOLE NUMBER: 400

LOCATION: 115N-65W-29AAAA 1

LEGAL LOCATION: NE NE NE NE sec. 29, T. 115 N., R. 65 W.

0 - 14 Sand and gravel, brown, coarse

TEST HOLE NUMBER: 401

LOCATION: 115N-65W-29AAAA 2

LEGAL LOCATION: NE NE NE NE sec. 29, T. 115 N., R. 65 W.

1 - 12 Sand, light-brown, medium, very clayey, moderately sorted; moist, oxidized, becomes very silty at 10 feet

TEST HOLE NUMBER: 402

LOCATION: 115N-65W-29DDAD

LEGAL LOCATION: SE NE SE SE sec. 29, T. 115 N., R. 65 W.

1 - 6 Gravel, tan-brown, fine to very coarse, silty; oxidized, dry  
6 - 8 Sand, orange-tan-brown, fine to coarse, very silty; oxidized  
8 - 12 Gravel and sand, orange-tan-brown, fine to medium gravel, fine to coarse sand, silty; oxidized, dry

TEST HOLE NUMBER: 403

LOCATION: 115N-65W-33CBBB

LEGAL LOCATION: NW NW NW SW sec. 33, T. 115 N., R. 65 W.

1 - 10 Sand, dark-orange-brown, fine to medium, silty; some gravel; oxidized  
10 - 12 Sand, orange-tan-brown, fine to medium, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 404

LOCATION: 115N-65W-33DDDA

LEGAL LOCATION: NE SE SE SE sec. 33, T. 115 N., R. 65 W.

0 - 4 Sand, tan-brown, fine  
4 - 7 Sand and gravel, orange-brown, fine sand, fine gravel; oxidized



TEST HOLE NUMBER: 405  
LOCATION: 115N-65W-35ABAB  
LEGAL LOCATION: NW NE NW NE sec. 35, T. 115 N., R. 65 W.

22 - 36 Sand, fine; with some coal layers

TEST HOLE NUMBER: 406  
LOCATION: 115N-65W-35CBBB  
LEGAL LOCATION: NW NW NW SW sec. 35, T. 115 N., R. 65 W.

2 - 6 Sand and gravel

TEST HOLE NUMBER: 407  
LOCATION: 115N-65W-35CBBB 1  
LEGAL LOCATION: NW NW NW SW sec. 35, T. 115 N., R. 65 W.

2 - 6 Sand and gravel

TEST HOLE NUMBER: 408  
LOCATION: 115N-65W-36CBBC  
LEGAL LOCATION: SW NW NW SW sec. 36, T. 115 N., R. 65 W.

1 - 3 Sand and gravel, tan-brown, fine sand, fine to medium gravel, very silty; some clay; oxidized  
3 - 7 Sand and gravel, tan-brown, fine sand, medium to coarse gravel, very silty, very clayey; sand decreases in grain size with depth, higher clay content with depth

TEST HOLE NUMBER: 409  
LOCATION: 115N-65W-36DDDD  
LEGAL LOCATION: SE SE SE SE sec. 36, T. 115 N., R. 65 W.

13 - 27 Sand, medium, silty; with coal fragments

TEST HOLE NUMBER: 410  
LOCATION: 116N-60W-20AABB  
LEGAL LOCATION: NW NW NE NE sec. 20, T. 116 N., R. 60 W.

7 - 19 Sand, brown, fine to medium, very clayey, silty; oxidized, moist

TEST HOLE NUMBER: 411  
LOCATION: 116N-60W-26AAAA  
LEGAL LOCATION: NE NE NE NE sec. 26, T. 116 N., R. 60 W.

15 - 24 Sand, light-brown, fine-grained, clayey, silty; wet  
24 - 38 Sand, brown, medium to coarse, very clayey, silty, gravelly; saturated, hard layer at 35 feet, becoming coarse-grained with depth

TEST HOLE NUMBER: 412  
LOCATION: 116N-60W-35CCDC  
LEGAL LOCATION: SW SE SW SW sec. 35, T. 116 N., R. 60 W.

19 - 22 Gravel, brown, fine to medium, silty, sandy  
22 - 24 Sand, brown, fine to medium, clayey, very silty, pebbly; saturated  
24 - 26 Sand, olive-green, fine to medium, clayey, very silty, pebbly

TEST HOLE NUMBER: 413  
LOCATION: 116N-61W-04BBBB  
LEGAL LOCATION: NW NW NW NW sec. 04, T. 116 N., R. 61 W.

14 - 92 Sand and gravel, medium to coarse; with coal

TEST HOLE NUMBER: 414

LOCATION: 116N-61W-07BBBA

LEGAL LOCATION: NE NW NW NW sec. 07, T. 116 N., R. 61 W.

0 - 4 Sand, orange-brown, fine to medium, slightly silty, gravelly  
4 - 9 Sand, brown, medium to coarse, slightly clayey, very silty, gravelly; oxidized  
9 - 14 Sand, gray-brown, fine-grained, slightly clayey, very silty, gravelly; partly oxidized, moist

TEST HOLE NUMBER: 415

LOCATION: 116N-61W-08DDAA

LEGAL LOCATION: NE NE SE SE sec. 08, T. 116 N., R. 61 W.

13 - 22 Sand and gravel, medium gravel  
22 - 77 Sand, fine to medium

TEST HOLE NUMBER: 416

LOCATION: 116N-61W-08DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 08, T. 116 N., R. 61 W.

20 - 24 Sand, medium-grained, silty; water-laid  
24 - 26 Sand, very silty, clayey, poorly sorted  
26 - 29 Sand, medium to fine

TEST HOLE NUMBER: 417

LOCATION: 116N-61W-09BCCB

LEGAL LOCATION: NW SW SW NW sec. 09, T. 116 N., R. 61 W.

9 - 27 Sand, dark-red-brown, fine to coarse, silty, gravelly; some shale fragments, clay stringers  
between 15 and 19 feet; oxidized, moist  
27 - 32 Sand, olive-brown, coarse, clayey; some shale pebbles, oxidized, saturated

TEST HOLE NUMBER: 418

LOCATION: 116N-61W-10AACC

LEGAL LOCATION: SW SW NE NE sec. 10, T. 116 N., R. 61 W.

14 - 40 Sand; dry to 21 feet

TEST HOLE NUMBER: 419

LOCATION: 116N-61W-16AACC

LEGAL LOCATION: SW SW NE NE sec. 16, T. 116 N., R. 61 W.

18 - 71 Sand and gravel

TEST HOLE NUMBER: 420

LOCATION: 116N-61W-16DCDD

LEGAL LOCATION: SE SE SW SE sec. 16, T. 116 N., R. 61 W.

14 - 21 Sand and gravel, dark-brown, coarse sand, fine to medium gravel, rounded; some clay  
21 - 25 Sand and gravel, black, coarse sand, fine gravel, rounded; some clay, some silt, wet  
25 - 36 Sand, dark-brown, coarse, pebbly, rounded; some clay, saturated at 31 feet, many coal  
fragments

TEST HOLE NUMBER: 421

LOCATION: 116N-61W-17CBCC

LEGAL LOCATION: SW SW NW SW sec. 17, T. 116 N., R. 61 W.

22 - 28 Gravel

TEST HOLE NUMBER: 422  
LOCATION: 116N-61W-18ADAD  
LEGAL LOCATION: SE NE SE NE sec. 18, T. 116 N., R. 61 W.

7 - 36 Sand, red-orange-brown, fine to coarse, slightly silty; some clay, oxidized

TEST HOLE NUMBER: 423  
LOCATION: 116N-61W-19AADD  
LEGAL LOCATION: SE SE NE NE sec. 19, T. 116 N., R. 61 W.

14 - 23 Sand, yellow  
23 - 71 Sand and gravel and lignite

TEST HOLE NUMBER: 424  
LOCATION: 116N-61W-19DDBB  
LEGAL LOCATION: NW NW SE SE sec. 19, T. 116 N., R. 61 W.

16 - 17 Sand  
19 - 24 Sand  
25 - 50 Sand; with lignite

TEST HOLE NUMBER: 425  
LOCATION: 116N-61W-20DDDD  
LEGAL LOCATION: SE SE SE SE sec. 20, T. 116 N., R. 61 W.

8 - 82 Sand and gravel, medium to coarse; abundant coal

TEST HOLE NUMBER: 426  
LOCATION: 116N-61W-21CDCC 1  
LEGAL LOCATION: SW SW SE SW sec. 21, T. 116 N., R. 61 W.

6 - 17 Sand  
17 - 18 Sand; saturated (quicksand)

TEST HOLE NUMBER: 427  
LOCATION: 116N-61W-32AAAA  
LEGAL LOCATION: NE NE NE NE sec. 32, T. 116 N., R. 61 W.

24 - 25 Sand, olive-gray, fine, clayey, silty; unoxidized, saturated; this interval is an approximate depth  
25 - 38 Sand, red-brown, fine to medium, silty, pebbly; oxidized, saturated; this interval is an approximate depth; total drill hole depth is 38 feet

TEST HOLE NUMBER: 428  
LOCATION: 116N-61W-32CBCB  
LEGAL LOCATION: NW SW NW SW sec. 32, T. 116 N., R. 61 W.

3 - 6 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, very clayey, silty; oxidized, moist  
21 - 40 Sand, olive-gray, very fine to fine, slightly clayey, silty; clay layer at 26 feet, saturated at 21 feet

TEST HOLE NUMBER: 429  
LOCATION: 116N-61W-33ABBB 1  
LEGAL LOCATION: NW NW NW NE sec. 33, T. 116 N., R. 61 W.

6 - 18 Sand  
18 - 26 Sand; saturated

TEST HOLE NUMBER: 430  
LOCATION: 116N-61W-33CCCC

LEGAL LOCATION: SW SW SW SW sec. 33, T. 116 N., R. 61 W.

11 - 21 Sand, yellow-tan-brown, fine to very coarse, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 431

LOCATION: 116N-62W-08AD 1

LEGAL LOCATION: SE NE sec. 08, T. 116 N., R. 62 W.

22 - 42 Sand and gravel

TEST HOLE NUMBER: 432

LOCATION: 116N-62W-09BCCC

LEGAL LOCATION: SW SW SW NW sec. 09, T. 116 N., R. 62 W.

24 - 35 Sand and gravel

TEST HOLE NUMBER: 433

LOCATION: 116N-62W-10ABBB

LEGAL LOCATION: NW NW NW NE sec. 10, T. 116 N., R. 62 W.

22 - 30 Sand and gravel; rocks at 30 feet

TEST HOLE NUMBER: 434

LOCATION: 116N-62W-10CCAA

LEGAL LOCATION: NE NE SW SW sec. 10, T. 116 N., R. 62 W.

24 - 26 Gravel

TEST HOLE NUMBER: 435

LOCATION: 116N-62W-11BBBB

LEGAL LOCATION: NW NW NW NW sec. 11, T. 116 N., R. 62 W.

6 - 9 Sand and gravel

TEST HOLE NUMBER: 436

LOCATION: 116N-62W-13BAAA 1

LEGAL LOCATION: NE NE NE NW sec. 13, T. 116 N., R. 62 W.

10 - 13 Sand, yellow, coarse; dirty

13 - 34 Sand, medium; clean

TEST HOLE NUMBER: 437

LOCATION: 116N-62W-13BAAA 2

LEGAL LOCATION: NE NE NE NW sec. 13, T. 116 N., R. 62 W.

6 - 51 Sand and gravel, coarse

TEST HOLE NUMBER: 438

LOCATION: 116N-62W-14BBBB

LEGAL LOCATION: NW NW NW NW sec. 14, T. 116 N., R. 62 W.

18 - 57 Sand and gravel

TEST HOLE NUMBER: 439

LOCATION: 116N-62W-15CCCC

LEGAL LOCATION: SW SW SW SW sec. 15, T. 116 N., R. 62 W.

9 - 21 Sand, tan-brown, medium to coarse, clayey, gravelly; oxidized, wet, less clay content with depth

21 - 30 Sand, brown, fine to medium, slightly clayey, silty; oxidized, wet, few pebbles

TEST HOLE NUMBER: 440  
LOCATION: 116N-62W-17CDDC  
LEGAL LOCATION: SW SE SE SW sec. 17, T. 116 N., R. 62 W.

0 - 40 Sand and gravel, dark-brown, coarse to very coarse sand, very fine to medium gravel; much shale fragments

TEST HOLE NUMBER: 441  
LOCATION: 116N-62W-19DDCC  
LEGAL LOCATION: SW SW SE SE sec. 19, T. 116 N., R. 62 W.

18 - 35 Sand, fine

TEST HOLE NUMBER: 442  
LOCATION: 116N-62W-22BBBB  
LEGAL LOCATION: NW NW NW NW sec. 22, T. 116 N., R. 62 W.

19 - 30 Sand, fine

TEST HOLE NUMBER: 443  
LOCATION: 116N-62W-22BCBB  
LEGAL LOCATION: NW NW SW NW sec. 22, T. 116 N., R. 62 W.

17 - 41 Sand, fine

TEST HOLE NUMBER: 444  
LOCATION: 116N-62W-22BCCC  
LEGAL LOCATION: SW SW SW NW sec. 22, T. 116 N., R. 62 W.

16 - 53 Sand and gravel

TEST HOLE NUMBER: 445  
LOCATION: 116N-62W-23AAAB 1  
LEGAL LOCATION: NW NE NE NE sec. 23, T. 116 N., R. 62 W.

20 - 27 Sand, gray, coarse; some fine gravel, unoxidized

TEST HOLE NUMBER: 446  
LOCATION: 116N-62W-23BBBB  
LEGAL LOCATION: NW NW NW NW sec. 23, T. 116 N., R. 62 W.

7 - 13 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 447  
LOCATION: 116N-62W-25AAAA  
LEGAL LOCATION: NE NE NE NE sec. 25, T. 116 N., R. 62 W.

15 - 30 Sand, medium to coarse; with coal

TEST HOLE NUMBER: 448  
LOCATION: 116N-62W-25BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 116 N., R. 62 W.

22 - 27 Sand, fine to medium, silty, well-sorted  
27 - 31 Sand, silty, poorly sorted; contains small pebbles

TEST HOLE NUMBER: 449  
LOCATION: 116N-62W-25DAAA

LEGAL LOCATION: NE NE NE SE sec. 25, T. 116 N., R. 62 W.

15 - 19 Sand, brownish-gray, silty, poorly sorted; calcareous (glacial outwash)

TEST HOLE NUMBER: 450

LOCATION: 116N-62W-25DAAA 1

LEGAL LOCATION: NE NE NE SE sec. 25, T. 116 N., R. 62 W.

15 - 19 Sand, brownish-gray, silty, poorly sorted; calcareous (glacial outwash)

TEST HOLE NUMBER: 451

LOCATION: 116N-62W-26ABBB

LEGAL LOCATION: NW NW NW NE sec. 26, T. 116 N., R. 62 W.

13 - 39 Sand, brown, medium to coarse, slightly clayey, gravelly; moist

TEST HOLE NUMBER: 452

LOCATION: 116N-62W-29ABBA

LEGAL LOCATION: NE NW NW NE sec. 29, T. 116 N., R. 62 W.

12 - 17 Sand, fine, very silty, clayey, and pebbly from 16 to 17 feet

TEST HOLE NUMBER: 453

LOCATION: 116N-62W-29ABBA 1

LEGAL LOCATION: NE NW NW NE sec. 29, T. 116 N., R. 62 W.

12 - 17 Sand, fine, clayey, very silty, pebbly from 16 to 17 feet; water-laid

TEST HOLE NUMBER: 454

LOCATION: 116N-62W-29ABBA 2

LEGAL LOCATION: NE NW NW NE sec. 29, T. 116 N., R. 62 W.

12 - 17 Sand, fine; water-laid, with much silt and some clay, some pebbles at 16 to 17 feet, oxidized, slightly permeable

TEST HOLE NUMBER: 455

LOCATION: 116N-62W-30BBBB 1

LEGAL LOCATION: NW NW NW NW sec. 30, T. 116 N., R. 62 W.

7 - 10 Sand, fine; with silt

TEST HOLE NUMBER: 456

LOCATION: 116N-62W-30BBBB 2

LEGAL LOCATION: NW NW NW NW sec. 30, T. 116 N., R. 62 W.

7 - 10 Sand and silt, fine sand

TEST HOLE NUMBER: 457

LOCATION: 116N-62W-31AAAB

LEGAL LOCATION: NW NE NE NE sec. 31, T. 116 N., R. 62 W.

0 - 1 Sand, tan-brown, fine, silty

1 - 5 Sand and gravel, tan, fine sand, fine to medium gravel

TEST HOLE NUMBER: 458

LOCATION: 116N-62W-31BBBA

LEGAL LOCATION: NE NW NW NW sec. 31, T. 116 N., R. 62 W.

3 - 5 Gravel, medium; poor return

17 - 40 Sand, gray, fine to medium, very clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 459

LOCATION: 116N-62W-33CCCC

LEGAL LOCATION: SW SW SW SW sec. 33, T. 116 N., R. 62 W.

3 - 14 Sand, orange-brown, fine-grained, slightly clayey, very silty; hard at 12 feet

TEST HOLE NUMBER: 460

LOCATION: 116N-62W-34BBCC

LEGAL LOCATION: SW SW NW NW sec. 34, T. 116 N., R. 62 W.

6 - 23 Sand, dark-brown, medium, clayey, silty; some pebbles, moist

23 - 38 Sand, red-brown, medium, clayey, silty; some pebbles

TEST HOLE NUMBER: 461

LOCATION: 116N-62W-34CBBB

LEGAL LOCATION: NW NW NW SW sec. 34, T. 116 N., R. 62 W.

14 - 24 Sand, gray, fine to medium; with gray sandy clay layers, grades to a fine gravel with much shale

TEST HOLE NUMBER: 462

LOCATION: 116N-63W-02BABA

LEGAL LOCATION: NE NW NE NW sec. 02, T. 116 N., R. 63 W.

17 - 32 Sand, coarse; a few small pebbles, permeable, oxidized, water-laid, wash sample

TEST HOLE NUMBER: 463

LOCATION: 116N-63W-02BABA 1

LEGAL LOCATION: NE NW NE NW sec. 02, T. 116 N., R. 63 W.

17 - 32 Sand, coarse; with a few small pebbles

TEST HOLE NUMBER: 464

LOCATION: 116N-63W-02BABA 2

LEGAL LOCATION: NE NW NE NW sec. 02, T. 116 N., R. 63 W.

14 - 15 Sand

18 - 67 Sand, medium to coarse

TEST HOLE NUMBER: 465

LOCATION: 116N-63W-02BBAB

LEGAL LOCATION: NW NE NW NW sec. 02, T. 116 N., R. 63 W.

25 - 30 Sand, fine to medium; with silty gravel (till?)

TEST HOLE NUMBER: 466

LOCATION: 116N-63W-02BBAB 2

LEGAL LOCATION: NW NE NW NW sec. 02, T. 116 N., R. 63 W.

25 - 30 Sand and gravel, fine to medium sand; some silt, permeable, oxidized (till?)

TEST HOLE NUMBER: 467

LOCATION: 116N-63W-03DCCC 2

LEGAL LOCATION: SW SW SW SE sec. 03, T. 116 N., R. 63 W.

21 - 26 Sand, light-brown; moderately compact, loamy

26 - 28 Sand, reddish-brown; moderately compact, loamy

TEST HOLE NUMBER: 468  
LOCATION: 116N-63W-13ABBB 1  
LEGAL LOCATION: NW NW NW NE sec. 13, T. 116 N., R. 63 W.

9 - 12 Sand, medium; clay, yellowish-brown

TEST HOLE NUMBER: 469  
LOCATION: 116N-63W-13ABBB 2  
LEGAL LOCATION: NW NW NW NE sec. 13, T. 116 N., R. 63 W.

9 - 14 Sand, medium

TEST HOLE NUMBER: 470  
LOCATION: 116N-63W-13ABBB 3  
LEGAL LOCATION: NW NW NW NE sec. 13, T. 116 N., R. 63 W.

8 - 11 Sand, medium  
11 - 14 Sand, medium; some clay

TEST HOLE NUMBER: 471  
LOCATION: 116N-63W-13BCBD 1  
LEGAL LOCATION: SE NW SW NW sec. 13, T. 116 N., R. 63 W.

15 - 18 Sand, medium; silt  
18 - 21 Sand, medium; clay, gray  
27 - 28 Sand, medium; clay, pebbly

TEST HOLE NUMBER: 472  
LOCATION: 116N-63W-13BCBD 2  
LEGAL LOCATION: SE NW SW NW sec. 13, T. 116 N., R. 63 W.

18 - 21 Sand, yellowish-brown; silt

TEST HOLE NUMBER: 473  
LOCATION: 116N-63W-13BCBD 3  
LEGAL LOCATION: SE NW SW NW sec. 13, T. 116 N., R. 63 W.

26 - 29 Sand; clay, gray to orange, wet

TEST HOLE NUMBER: 474  
LOCATION: 116N-63W-15BBBB  
LEGAL LOCATION: NW NW NW NW sec. 15, T. 116 N., R. 63 W.

7 - 10 Sand, yellow-brown, fine, very silty, very clayey, pebbly; oxidized, saturated

TEST HOLE NUMBER: 475  
LOCATION: 116N-63W-15BCDC  
LEGAL LOCATION: SW SE SW NW sec. 15, T. 116 N., R. 63 W.

22 - 25 Sand

TEST HOLE NUMBER: 476  
LOCATION: 116N-63W-18ADDA  
LEGAL LOCATION: NE SE SE NE sec. 18, T. 116 N., R. 63 W.

6 - 10 Sand, brown, fine to medium, clayey, silty, well-sorted; oxidized, saturated at 9 feet; more clay content with depth



TEST HOLE NUMBER: 477  
LOCATION: 116N-63W-18BABA  
LEGAL LOCATION: NE NW NE NW sec. 18, T. 116 N., R. 63 W.

17 - 30 Sand, brown, fine to medium clayey, silty; oxidized, saturated, more clay with depth

TEST HOLE NUMBER: 478  
LOCATION: 116N-63W-19BBDD  
LEGAL LOCATION: SE SE NW NW sec. 19, T. 116 N., R. 63 W.

21 - 35 Sand, medium

TEST HOLE NUMBER: 479  
LOCATION: 116N-63W-19BCAA  
LEGAL LOCATION: NE NE SW NW sec. 19, T. 116 N., R. 63 W.

22 - 37 Sand and gravel

TEST HOLE NUMBER: 480  
LOCATION: 116N-63W-19BCDD  
LEGAL LOCATION: SE SE SW NW sec. 19, T. 116 N., R. 63 W.

25 - 33 Sand and gravel

TEST HOLE NUMBER: 481  
LOCATION: 116N-63W-19BDAA  
LEGAL LOCATION: NE NE SE NW sec. 19, T. 116 N., R. 63 W.

18 - 33 Sand and gravel

TEST HOLE NUMBER: 482  
LOCATION: 116N-63W-19BDAB  
LEGAL LOCATION: NW NE SE NW sec. 19, T. 116 N., R. 63 W.

25 - 35 Sand and gravel

TEST HOLE NUMBER: 483  
LOCATION: 116N-63W-19BDDBA  
LEGAL LOCATION: NE NW SE NW sec. 19, T. 116 N., R. 63 W.

22 - 42 Sand and gravel

TEST HOLE NUMBER: 484  
LOCATION: 116N-63W-19BDBB 1  
LEGAL LOCATION: NW NW SE NW sec. 19, T. 116 N., R. 63 W.

26 - 33 Sand and gravel

TEST HOLE NUMBER: 485  
LOCATION: 116N-63W-19BDBB 2  
LEGAL LOCATION: NW NW SE NW sec. 19, T. 116 N., R. 63 W.

22 - 35 Sand

TEST HOLE NUMBER: 486  
LOCATION: 116N-63W-19BDCB  
LEGAL LOCATION: NW SW SE NW sec. 19, T. 116 N., R. 63 W.

22 - 42 Sand and gravel and lignite

TEST HOLE NUMBER: 487  
LOCATION: 116N-63W-19BDCC 1  
LEGAL LOCATION: SW SW SE NW sec. 19, T. 116 N., R. 63 W.

22 - 42 Sand and gravel and lignite

TEST HOLE NUMBER: 488  
LOCATION: 116N-63W-19BDCC  
LEGAL LOCATION: SE SW SE NW sec. 19, T. 116 N., R. 63 W.

25 - 44 Sand and gravel

TEST HOLE NUMBER: 489  
LOCATION: 116N-63W-19CBBC  
LEGAL LOCATION: SW NW NW SW sec. 19, T. 116 N., R. 63 W.

12 - 17 Sand, tan-brown, very fine to medium, clayey, silty; oxidized, saturated  
17 - 25 Sand, gray, medium, clayey, silty, pebbly; unoxidized  
25 - 30 Sand, gray, medium, clayey, silty, well-sorted; unoxidized

TEST HOLE NUMBER: 490  
LOCATION: 116N-63W-23AAAA  
LEGAL LOCATION: NE NE NE NE sec. 23, T. 116 N., R. 63 W.

2 - 5 Sand, brown, fine to medium

TEST HOLE NUMBER: 491  
LOCATION: 116N-63W-24BBBA  
LEGAL LOCATION: NE NW NW NW sec. 24, T. 116 N., R. 63 W.

16 - 20 Gravel, gray, fine to medium, clayey, silty, sandy  
22 - 30 Sand, gray, fine, very silty, clayey; saturated

TEST HOLE NUMBER: 492  
LOCATION: 116N-63W-24CBBB  
LEGAL LOCATION: NW NW NW SW sec. 24, T. 116 N., R. 63 W.

3 - 6 Sand, orange-tan-brown, fine to coarse, very silty, gravelly; oxidized

TEST HOLE NUMBER: 493  
LOCATION: 116N-63W-25BBBB  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 116 N., R. 63 W.

22 - 27 Sand, light-brown; loose  
27 - 34 Sand and gravel, brown; loose

TEST HOLE NUMBER: 494  
LOCATION: 116N-63W-25BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 116 N., R. 63 W.

22 - 27 Sand, fine to medium, silty, well sorted  
27 - 31 Sand, silty, poorly sorted; contains small pebbles

TEST HOLE NUMBER: 495  
LOCATION: 116N-63W-25BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 25, T. 116 N., R. 63 W.

22 - 27 Sand, fine to medium-grained, silty, well-sorted  
27 - 31 Sand, silty, poorly sorted; contains small pebbles

TEST HOLE NUMBER: 496  
LOCATION: 116N-63W-26BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 116 N., R. 63 W.

5 - 10 Sand, fine to medium, silty; some coarse sand  
15 - 18 Gravel, fine to medium, silty, clayey

TEST HOLE NUMBER: 497  
LOCATION: 116N-63W-26BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 116 N., R. 63 W.

5 - 10 Sand, fine to medium, some coarse, silty  
15 - 18 Gravel, small to medium, silty and clayey

TEST HOLE NUMBER: 498  
LOCATION: 116N-63W-27AADA  
LEGAL LOCATION: NE SE NE NE sec. 27, T. 116 N., R. 63 W.

24 - 25 Sand, gray, fine  
28 - 29 Sand, gray, fine

TEST HOLE NUMBER: 499  
LOCATION: 116N-63W-28AAAB  
LEGAL LOCATION: NW NE NE NE sec. 28, T. 116 N., R. 63 W.

20 - 25 Sand, fine to medium; contains much charcoal(?), 6-inch till lens at 24.5 feet  
25 - 30 Gravel, fine to medium; with fine to medium sand

TEST HOLE NUMBER: 500  
LOCATION: 116N-63W-28AAAB 1  
LEGAL LOCATION: NW NE NE NE sec. 28, T. 116 N., R. 63 W.

21 - 24 Sand, fine to medium; with much charcoal  
25 - 35 Sand, fine to coarse; some silt, permeable, oxidized

TEST HOLE NUMBER: 501  
LOCATION: 116N-63W-29AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 29, T. 116 N., R. 63 W.

23 - 28 Sand and gravel, silty, clayey, poorly sorted (till?)

TEST HOLE NUMBER: 502  
LOCATION: 116N-63W-29AAAA 2  
LEGAL LOCATION: NE NE NE NE sec. 29, T. 116 N., R. 63 W.

23 - 28 Sand and gravel, silty and clayey, poorly sorted (till?)

TEST HOLE NUMBER: 503  
LOCATION: 116N-63W-31BCCC  
LEGAL LOCATION: SW SW SW NW sec. 31, T. 116 N., R. 63 W.

0 - 5 Sand, brown, fine to medium, silty, pebbly; some clay; oxidized  
5 - 19 Sand, tan-brown to brown, fine, silty; few pebbles, more pebbles with depth, oxidized, saturated at 11 feet (lacustrine?)  
19 - 24 Sand, gray, fine, silty, very clayey; few pebbles; unoxidized, saturated (lacustrine?)

TEST HOLE NUMBER: 504  
LOCATION: 116N-63W-31CCCC  
LEGAL LOCATION: SW SW SW SW sec. 31, T. 116 N., R. 63 W.

2 - 8 Sand, fine, silty

TEST HOLE NUMBER: 505

LOCATION: 116N-63W-34BAAA

LEGAL LOCATION: NE NE NE NW sec. 34, T. 116 N., R. 63 W.

19 - 39 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey, silty; oxidized, saturated; more gravel content with depth

TEST HOLE NUMBER: 506

LOCATION: 116N-63W-34DDDC

LEGAL LOCATION: SW SE SE SE sec. 34, T. 116 N., R. 63 W.

23 - 38 Sand, brown, fine to medium, clayey, silty; oxidized, saturated; some interbedded clay; becomes more clean with depth

TEST HOLE NUMBER: 507

LOCATION: 116N-63W-35BCBB

LEGAL LOCATION: NW NW SW NW sec. 35, T. 116 N., R. 63 W.

2 - 5 Sand, orange-tan-brown, fine to medium, clayey, silty; oxidized  
20 - 27 Sand, dark-gray-brown, fine to medium, very clayey, silty; partly oxidized, saturated

TEST HOLE NUMBER: 508

LOCATION: 116N-63W-36CBBB

LEGAL LOCATION: NW NW NW SW sec. 36, T. 116 N., R. 63 W.

4 - 7 Sand, orange-brown, fine, silty, clayey; oxidized, gravel stringer at 6 feet  
18 - 19 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, very clayey; saturated

TEST HOLE NUMBER: 509

LOCATION: 116N-63W-36DDDD

LEGAL LOCATION: SE SE SE SE sec. 36, T. 116 N., R. 63 W.

0 - 1 Sand, brown, very fine  
1 - 13 Sand, yellow-grayish-brown, very fine  
16 - 17 Sand, reddish-brown  
17 - 24 Sand, reddish-brown, fine

TEST HOLE NUMBER: 510

LOCATION: 116N-63W-36DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 36, T. 116 N., R. 63 W.

5 - 13 Sand, yellow-gray-brown, very fine, loamy  
17 - 24 Sand, reddish-brown, fine; loamy

TEST HOLE NUMBER: 511

LOCATION: 116N-63W-36DDDD 2

LEGAL LOCATION: SE SE SE SE sec. 36, T. 116 N., R. 63 W.

0 - 1 Sand, brown, very fine  
1 - 13 Sand, yellow-grayish-brown, very fine  
16 - 17 Sand, reddish-brown  
17 - 24 Sand, reddish-brown, fine

TEST HOLE NUMBER: 512

LOCATION: 116N-63W-36DDDD 3

LEGAL LOCATION: SE SE SE SE sec. 36, T. 116 N., R. 63 W.

21 - 40 Sand and gravel, medium

TEST HOLE NUMBER: 513  
LOCATION: 116N-64W-01CCCC  
LEGAL LOCATION: SW SW SW SW sec. 01, T. 116 N., R. 64 W.

4 - 29 Sand, brown, fine to medium, clayey, silty; oxidized, moist, saturated at 13 feet

TEST HOLE NUMBER: 514  
LOCATION: 116N-64W-02BBBB  
LEGAL LOCATION: NW NW NW NW sec. 02, T. 116 N., R. 64 W.

19 - 23 Gravel, coarse, 1 to 2-inch diameter  
23 - 29 Gravel, fine to coarse, subrounded

TEST HOLE NUMBER: 515  
LOCATION: 116N-64W-04AD  
LEGAL LOCATION: SE NE sec. 04, T. 116 N., R. 64 W.

6 - 15 Sand and gravel

TEST HOLE NUMBER: 516  
LOCATION: 116N-64W-04AD 1  
LEGAL LOCATION: SE NE sec. 04, T. 116 N., R. 64 W.

6 - 15 Sand and gravel

TEST HOLE NUMBER: 517  
LOCATION: 116N-64W-04DA  
LEGAL LOCATION: NE SE sec. 04, T. 116 N., R. 64 W.

0 - 15 Sand, buff; dry  
15 - 20 Gravel, fine to coarse; many limonite concretions

TEST HOLE NUMBER: 518  
LOCATION: 116N-64W-05AA  
LEGAL LOCATION: NE NE sec. 05, T. 116 N., R. 64 W.

17 - 28 Gravel and sand, pea to nut-size gravel

TEST HOLE NUMBER: 519  
LOCATION: 116N-64W-05AAAA  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 116 N., R. 64 W.

20 - 48 Sand, gray, very fine to medium, very clayey; saturated

TEST HOLE NUMBER: 520  
LOCATION: 116N-64W-05ADDD  
LEGAL LOCATION: SE SE SE NE sec. 05, T. 116 N., R. 64 W.

18 - 24 Sand, yellow-brown, very fine to medium, very clayey; saturated

TEST HOLE NUMBER: 521  
LOCATION: 116N-64W-06AD  
LEGAL LOCATION: SE NE sec. 06, T. 116 N., R. 64 W.

17 - 22 Sand, coarse

TEST HOLE NUMBER: 522  
LOCATION: 116N-64W-09CD  
LEGAL LOCATION: SE SW sec. 09, T. 116 N., R. 64 W.

0 - 8 Sand, buff, fine

TEST HOLE NUMBER: 523  
LOCATION: 116N-64W-10CC  
LEGAL LOCATION: SW SW sec. 10, T. 116 N., R. 64 W.

6 - 21 Sand, fine, becoming granular

TEST HOLE NUMBER: 524  
LOCATION: 116N-64W-10DB  
LEGAL LOCATION: NW SE sec. 10, T. 116 N., R. 64 W.

24 - 39 Sand, brown, fine- to medium-grained, clayey; water at 29 feet

TEST HOLE NUMBER: 525  
LOCATION: 116N-64W-11BC  
LEGAL LOCATION: SW NW sec. 11, T. 116 N., R. 64 W.

0 - 9 Sand and silt, fine sand  
24 - 69 Sand, blue-gray, fine-grained, well-rounded; hard layer at 58 and 69 feet

TEST HOLE NUMBER: 526  
LOCATION: 116N-64W-11DCC  
LEGAL LOCATION: SW SW SE sec. 11, T. 116 N., R. 64 W.

0 - 10 Sand

TEST HOLE NUMBER: 527  
LOCATION: 116N-64W-11DD  
LEGAL LOCATION: SE SE sec. 11, T. 116 N., R. 64 W.

0 - 54 Sand, coarse to very coarse; water table at 35 feet

TEST HOLE NUMBER: 528  
LOCATION: 116N-64W-12BB 1  
LEGAL LOCATION: NW NW sec. 12, T. 116 N., R. 64 W.

0 - 15 Sand, coarse; no water, some clay at 3 feet  
15 - 30 Sand, coarse; water bearing

TEST HOLE NUMBER: 529  
LOCATION: 116N-64W-12BCBB  
LEGAL LOCATION: NW NW SW NW sec. 12, T. 116 N., R. 64 W.

0 - 6 Sand, orange-tan-brown, fine to coarse, clayey, silty; oxidized

TEST HOLE NUMBER: 530  
LOCATION: 116N-64W-14BB  
LEGAL LOCATION: NW NW sec. 14, T. 116 N., R. 64 W.

7 - 29 Sand, medium-grained; saturated at 10 feet; clay

TEST HOLE NUMBER: 531  
LOCATION: 116N-64W-14CD 1  
LEGAL LOCATION: SE SW sec. 14, T. 116 N., R. 64 W.

22 - 32 Sand, fine, silty, clayey

TEST HOLE NUMBER: 532  
LOCATION: 116N-64W-14CD 2  
LEGAL LOCATION: SE SW sec. 14, T. 116 N., R. 64 W.

5 - 8 Sand, fine- to medium-grained, clayey

TEST HOLE NUMBER: 533  
LOCATION: 116N-64W-14DDDC  
LEGAL LOCATION: SW SE SE SE sec. 14, T. 116 N., R. 64 W.

2 - 23 Sand, reddish-brown, fine to coarse; some fine to medium gravel with depth, oxidized

TEST HOLE NUMBER: 534  
LOCATION: 116N-64W-16CD  
LEGAL LOCATION: SE SW sec. 16, T. 116 N., R. 64 W.

5 - 10 Sand, medium-grained; water at 10 feet  
10 - 27 Sand, medium-grained; saturated

TEST HOLE NUMBER: 535  
LOCATION: 116N-64W-16DADB  
LEGAL LOCATION: NW SE NE SE sec. 16, T. 116 N., R. 64 W.

0 - 19 Sand, coarse; composed of quartz and feldspar, some gravel stringers, some limonite  
19 - 23 Sand, gray, fine, very clayey  
23 - 35 Sand, medium to coarse; composed mostly of shale fragments

TEST HOLE NUMBER: 536  
LOCATION: 116N-64W-17DC  
LEGAL LOCATION: SW SE sec. 17, T. 116 N., R. 64 W.

6 - 11 Sand, fine to medium  
15 - 22 Sand, clayey

TEST HOLE NUMBER: 537  
LOCATION: 116N-64W-17DDDC  
LEGAL LOCATION: SW SE SE SE sec. 17, T. 116 N., R. 64 W.

4 - 6 Sand, brown

TEST HOLE NUMBER: 538  
LOCATION: 116N-64W-19DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 19, T. 116 N., R. 64 W.

17 - 20 Sand, clayey, silty, poorly sorted

TEST HOLE NUMBER: 539  
LOCATION: 116N-64W-19DDDD 2  
LEGAL LOCATION: SE SE SE SE sec. 19, T. 116 N., R. 64 W.

17 - 20 Sand, silty, clayey, poorly sorted

TEST HOLE NUMBER: 540  
LOCATION: 116N-64W-19DDDD 4  
LEGAL LOCATION: SE SE SE SE sec. 19, T. 116 N., R. 64 W.

4 - 14 Sand and clay, brown clay, fine sand; saturated

TEST HOLE NUMBER: 541  
LOCATION: 116N-64W-21AAAB  
LEGAL LOCATION: NW NE NE NE sec. 21, T. 116 N., R. 64 W.

- 1 - 4 Sand, tan-brown, fine, clayey, very silty; oxidized
- 4 - 10 Sand, orange-tan-brown to dark-tan-brown, fine, clayey, silty; oxidized, moist

TEST HOLE NUMBER: 542  
LOCATION: 116N-64W-21DBCC  
LEGAL LOCATION: SW SW NW SE sec. 21, T. 116 N., R. 64 W.

- 5 - 20 Sand and clay

TEST HOLE NUMBER: 543  
LOCATION: 116N-64W-22CA  
LEGAL LOCATION: NE SW sec. 22, T. 116 N., R. 64 W.

- 6 - 7 Sand, dark, fine; containing some clay
- 7 - 15 Sand, light-colored, medium-grained
- 15 - 19 Sand, fine to medium; saturated
- 19 - 23 Sand, clayey

TEST HOLE NUMBER: 544  
LOCATION: 116N-64W-23ABBA  
LEGAL LOCATION: NE NW NW NE sec. 23, T. 116 N., R. 64 W.

- 0 - 3 Sand, brown to tan-brown, fine, silty
- 3 - 4 Sand, gray-brown, fine, very clayey, silty; moist

TEST HOLE NUMBER: 545  
LOCATION: 116N-64W-23AD  
LEGAL LOCATION: SE NE sec. 23, T. 116 N., R. 64 W.

- 0 - 4 Sand, light-brown, clayey; 8 inches of topsoil

TEST HOLE NUMBER: 546  
LOCATION: 116N-64W-23CC  
LEGAL LOCATION: SW SW sec. 23, T. 116 N., R. 64 W.

- 0 - 5 Sand, medium to coarse
- 22 - 30 Sand, medium to coarse

TEST HOLE NUMBER: 547  
LOCATION: 116N-64W-23CCBB  
LEGAL LOCATION: NW NW SW SW sec. 23, T. 116 N., R. 64 W.

- 4 - 10 Sand, brown, fine to medium, slightly clayey, silty, gravelly; oxidized
- 10 - 13 Sand, gray-brown, fine, silty; some gravel

TEST HOLE NUMBER: 548  
LOCATION: 116N-64W-24AACC  
LEGAL LOCATION: SW SW NE NE sec. 24, T. 116 N., R. 64 W.

- 21 - 32 Sand

TEST HOLE NUMBER: 549  
LOCATION: 116N-64W-25BCCC  
LEGAL LOCATION: SW SW SW NW sec. 25, T. 116 N., R. 64 W.



3 - 15 Sand, brown, clayey

TEST HOLE NUMBER: 550

LOCATION: 116N-64W-25CBCC

LEGAL LOCATION: SW SW NW SW sec. 25, T. 116 N., R. 64 W.

24 - 46 Sand, very fine to fine, silty, pebbly; saturated

TEST HOLE NUMBER: 551

LOCATION: 116N-64W-25CCCB

LEGAL LOCATION: NW SW SW SW sec. 25, T. 116 N., R. 64 W.

3 - 11 Sand, reddish-brown, very silty; oxidized

11 - 20 Sand, medium, silty; saturated

20 - 44 Gravel, gray, medium, silty

TEST HOLE NUMBER: 552

LOCATION: 116N-64W-25CCDD

LEGAL LOCATION: SE SE SW SW sec. 25, T. 116 N., R. 64 W.

16 - 26 Sand, fine, very silty

27 - 33 Sand, brown, medium, silty

TEST HOLE NUMBER: 553

LOCATION: 116N-64W-26BBCC

LEGAL LOCATION: SW SW NW NW sec. 26, T. 116 N., R. 64 W.

2 - 7 Sand, coarse, gravelly; dry

7 - 28 Sand, red, medium, pebbly, silty; oxidized, dry, saturated at 16 feet

28 - 36 Sand, gray, fine to medium; saturated

TEST HOLE NUMBER: 554

LOCATION: 116N-64W-26CC

LEGAL LOCATION: SW SW sec. 26, T. 116 N., R. 64 W.

5 - 10 Gravel, pea-size; dry

24 - 29 Sand, coarse; to pea-size gravel

TEST HOLE NUMBER: 555

LOCATION: 116N-64W-27BAAA

LEGAL LOCATION: NE NE NE NW sec. 27, T. 116 N., R. 64 W.

14 - 17 Gravel, very coarse; boulders

TEST HOLE NUMBER: 556

LOCATION: 116N-64W-27DDBC

LEGAL LOCATION: SW NW SE SE sec. 27, T. 116 N., R. 64 W.

20 - 38 Sand, gray, very fine, very silty; saturated

TEST HOLE NUMBER: 557

LOCATION: 116N-64W-28AA

LEGAL LOCATION: NE NE sec. 28, T. 116 N., R. 64 W.

0 - 10 Sand, very fine, clayey

23 - 54 Sand, medium to coarse

TEST HOLE NUMBER: 558

LOCATION: 116N-64W-29ABBB

LEGAL LOCATION: NW NW NW NE sec. 29, T. 116 N., R. 64 W.

3 - 8 Sand and gravel, reddish-brown, fine sand, medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 559

LOCATION: 116N-64W-31BB

LEGAL LOCATION: NW NW sec. 31, T. 116 N., R. 64 W.

25 - 46 Sand

TEST HOLE NUMBER: 560

LOCATION: 116N-64W-32BABA

LEGAL LOCATION: NE NW NE NW sec. 32, T. 116 N., R. 64 W.

3 - 5 Sand, orange-tan-brown, very clayey, silty; oxidized, moist  
5 - 7 Sand, dark-brown, fine, very clayey, silty; saturated  
11 - 30 Sand, gray, fine, clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 561

LOCATION: 116N-64W-32DDDD

LEGAL LOCATION: SE SE SE SE sec. 32, T. 116 N., R. 64 W.

14 - 43 Sand, light-brown, medium to coarse, slightly clayey, subangular; dirty

TEST HOLE NUMBER: 562

LOCATION: 116N-64W-33BB

LEGAL LOCATION: NW NW sec. 33, T. 116 N., R. 64 W.

20 - 25 Gravel, pea- to nut-size

TEST HOLE NUMBER: 563

LOCATION: 116N-64W-33BCCC

LEGAL LOCATION: SW SW SW NW sec. 33, T. 116 N., R. 64 W.

2 - 15 Sand, fine, very silty, subrounded to rounded  
15 - 25 Sand, dark-brown, very silty, subrounded; some clay  
25 - 27 Gravel stringer, size unknown  
27 - 31 Sand, fine, silty, subrounded

TEST HOLE NUMBER: 564

LOCATION: 116N-64W-33CDDD

LEGAL LOCATION: SE SE SE SW sec. 33, T. 116 N., R. 64 W.

20 - 21 Gravel stringer, fine subangular  
24 - 25 Gravel stringer, fine, subangular  
25 - 31 Sand, light-gray, medium to coarse, subrounded to subangular

TEST HOLE NUMBER: 565

LOCATION: 116N-64W-34AA

LEGAL LOCATION: NE NE sec. 34, T. 116 N., R. 64 W.

5 - 18 Sand and gravel, yellow

TEST HOLE NUMBER: 566

LOCATION: 116N-64W-34CBCB

LEGAL LOCATION: NW SW NW SW sec. 34, T. 116 N., R. 64 W.

8 - 20 Sand, red, very clayey; dry  
20 - 25 Sand, medium-brown, very clayey; moist

25 - 41 Sand, medium-brown; saturated

TEST HOLE NUMBER: 567

LOCATION: 116N-64W-34DACC 1

LEGAL LOCATION: SW SW NE SE sec. 34, T. 116 N., R. 64 W.

3 - 77 Sand, gray, very fine to fine, silty, pebbly

TEST HOLE NUMBER: 568

LOCATION: 116N-64W-34DACC 2

LEGAL LOCATION: SW SW NE SE sec. 34, T. 116 N., R. 64 W.

2 - 26 Sand, gray, very fine to fine; unoxidized

26 - 30 Sand, gray, medium, subrounded

TEST HOLE NUMBER: 569

LOCATION: 116N-64W-34DADC 1

LEGAL LOCATION: SW SE NE SE sec. 34, T. 116 N., R. 64 W.

5 - 12 Gravel, light-brown, very silty; saturated

TEST HOLE NUMBER: 570

LOCATION: 116N-64W-34DADC 2

LEGAL LOCATION: SW SE NE SE sec. 34, T. 116 N., R. 64 W.

1 - 3 Sand, medium to very coarse, subangular to subrounded

3 - 21 Gravel, blackish-brown, medium to coarse, subangular to subrounded

21 - 26 Sand, gray, fine to medium, clayey

TEST HOLE NUMBER: 571

LOCATION: 116N-64W-34DBDB

LEGAL LOCATION: NW SE NW SE sec. 34, T. 116 N., R. 64 W.

9 - 25 Gravel, fine, clayey, subrounded

TEST HOLE NUMBER: 572

LOCATION: 116N-64W-34DBDD

LEGAL LOCATION: SE SE NW SE sec. 34, T. 116 N., R. 64 W.

9 - 19 Sand, gray, fine, silty, rounded

19 - 35 Sand, gray, fine to medium, rounded

TEST HOLE NUMBER: 573

LOCATION: 116N-64W-34DCAC

LEGAL LOCATION: SW NE SW SE sec. 34, T. 116 N., R. 64 W.

9 - 16 Gravel, fine to very coarse, subangular to subrounded, unsorted

26 - 39 Sand, gray, fine, rounded

TEST HOLE NUMBER: 574

LOCATION: 116N-64W-34DCDC

LEGAL LOCATION: SW SE SW SE sec. 34, T. 116 N., R. 64 W.

2 - 11 Sand, medium, very pebbly; dry

17 - 34 Sand, brown, medium to coarse, very clayey, silty; saturated

TEST HOLE NUMBER: 575

LOCATION: 116N-64W-34DDAD

LEGAL LOCATION: SE NE SE SE sec. 34, T. 116 N., R. 64 W.

- 1 - 5 Sand, medium, silty, subrounded to subangular
- 5 - 18 Gravel, fine, subrounded; clean
- 24 - 40 Sand, fine to coarse, slightly silty, interbedded, subrounded to rounded

TEST HOLE NUMBER: 576

LOCATION: 116N-64W-34DDBC

LEGAL LOCATION: SW NW SE SE sec. 34, T. 116 N., R. 64 W.

- 2 - 9 Sand, dark-brown, fine to very coarse, subangular to subrounded, unsorted
- 9 - 19 Gravel, fine to medium, subrounded
- 22 - 50 Gravel, fine to medium, subangular

TEST HOLE NUMBER: 577

LOCATION: 116N-64W-34DDBD

LEGAL LOCATION: SE NW SE SE sec. 34, T. 116 N., R. 64 W.

- 3 - 10 Sand, medium to very coarse, subangular to subrounded; some fine gravel
- 21 - 32 Sand, gray, very fine, silty and clayey, rounded; silt

TEST HOLE NUMBER: 578

LOCATION: 116N-64W-34DDCD

LEGAL LOCATION: SE SW SE SE sec. 34, T. 116 N., R. 64 W.

- 1 - 4 Sand, medium to coarse, subrounded; clean
- 4 - 19 Gravel, fine, subrounded; clean
- 19 - 30 Gravel, medium to coarse, subrounded; clean

TEST HOLE NUMBER: 579

LOCATION: 116N-64W-34DDDC

LEGAL LOCATION: SW SE SE SE sec. 34, T. 116 N., R. 64 W.

- 0 - 21 Gravel, fine to medium, subrounded to subangular
- 21 - 24 Sand, gray, fine, rounded

TEST HOLE NUMBER: 580

LOCATION: 116N-64W-35BCCB

LEGAL LOCATION: NW SW SW NW sec. 35, T. 116 N., R. 64 W.

- 0 - 10 Sand, reddish-brown, medium, pebbly; oxidized
- 10 - 26 Sand, red, clayey, pebbly
- 26 - 63 Sand, medium, pebbly; saturated

TEST HOLE NUMBER: 581

LOCATION: 116N-64W-35CBBB

LEGAL LOCATION: NW NW NW SW sec. 35, T. 116 N., R. 64 W.

- 2 - 10 Gravel, very coarse, 1- to 1½-inch diameter; red-brown cobbles

TEST HOLE NUMBER: 582

LOCATION: 116N-64W-35CBCC 1

LEGAL LOCATION: SW SW NW SW sec. 35, T. 116 N., R. 64 W.

- 2 - 4 Sand, yellow-brown, fine, silty, rounded
- 4 - 14 Sand, coarse to very coarse, subrounded to rounded; clean
- 14 - 24 Gravel, coarse; intermittent layers of light-brown clay

TEST HOLE NUMBER: 583

LOCATION: 116N-64W-35CBCC 2

LEGAL LOCATION: SW SW NW SW sec. 35, T. 116 N., R. 64 W.

- 1 - 4 Sand, very coarse, subangular to subrounded; clean
- 4 - 14 Gravel, medium, subrounded; clean
- 20 - 38 Gravel, medium, shaley, subrounded; weathered, intermittent layers of clays and compact silts, gray to black, some traces of lignite

TEST HOLE NUMBER: 584  
 LOCATION: 116N-64W-35CCAB  
 LEGAL LOCATION: NW NE SW SW sec. 35, T. 116 N., R. 64 W.

- 19 - 30 Gravel, fine to medium, subrounded to subangular

TEST HOLE NUMBER: 585  
 LOCATION: 116N-64W-35CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 35, T. 116 N., R. 64 W.

- 9 - 25 Sand, brown, fine to medium, silty
- 25 - 54 Gravel, medium, silty, angular to highly angular

TEST HOLE NUMBER: 586  
 LOCATION: 116N-64W-35CCCC 2  
 LEGAL LOCATION: SW SW SW SW sec. 35, T. 116 N., R. 64 W.

- 3 - 7 Gravel, fine; rounded
- 7 - 17 Sand, coarse; rounded
- 17 - 52 Gravel, medium to coarse, subangular to subrounded; much lignite, some gravel up to 4 inches in diameter

TEST HOLE NUMBER: 587  
 LOCATION: 116N-64W-35CCCD  
 LEGAL LOCATION: SE SW SW SW sec. 35, T. 116 N., R. 64 W.

- 5 - 7 Sand, fine to medium, clayey, subrounded
- 21 - 34 Sand, fine to medium, very silty, subrounded; with shale pebbles

TEST HOLE NUMBER: 588  
 LOCATION: 116N-64W-36AAAB  
 LEGAL LOCATION: NW NE NE NE sec. 36, T. 116 N., R. 64 W.

- 3 - 13 Sand, brown, fine to medium, very clayey

TEST HOLE NUMBER: 589  
 LOCATION: 116N-64W-36BAAB  
 LEGAL LOCATION: NW NE NE NW sec. 36, T. 116 N., R. 64 W.

- 16 - 21 Sand, medium, very silty; saturated

TEST HOLE NUMBER: 590  
 LOCATION: 116N-64W-36BBCC  
 LEGAL LOCATION: SW SW NW NW sec. 36, T. 116 N., R. 64 W.

- 23 - 30 Sand, light-tan-brown, very clayey, very silty; oxidized, saturated

TEST HOLE NUMBER: 591  
 LOCATION: 116N-65W-01BB  
 LEGAL LOCATION: NW NW sec. 01, T. 116 N., R. 65 W.

- 23 - 50 Sand and gravel, very coarse sand, pea-size gravel

TEST HOLE NUMBER: 592  
LOCATION: 116N-65W-04AAAD  
LEGAL LOCATION: SE NE NE NE sec. 04, T. 116 N., R. 65 W.

4 - 10 Sand, orange-brown, fine to medium, clayey, silty; oxidized

TEST HOLE NUMBER: 593  
LOCATION: 116N-65W-04BCCB  
LEGAL LOCATION: NW SW SW NW sec. 04, T. 116 N., R. 65 W.

1 - 6 Sand, brown-gray, medium, silty, gravelly; oxidized, dry  
6 - 16 Sand, brown, gravelly; oxidized, saturated at 11 feet  
16 - 20 Sand, gray-brown, clayey, silty, gravelly, pebbly; partly oxidized, saturated

TEST HOLE NUMBER: 594  
LOCATION: 116N-65W-05BAAA  
LEGAL LOCATION: NE NE NE NW sec. 05, T. 116 N., R. 65 W.

10 - 27 Sand and gravel, gray, medium to coarse sand, fine gravel

TEST HOLE NUMBER: 595  
LOCATION: 116N-65W-06DD  
LEGAL LOCATION: SE SE sec. 06, T. 116 N., R. 65 W.

15 - 48 Sand

TEST HOLE NUMBER: 596  
LOCATION: 116N-65W-08BAAA  
LEGAL LOCATION: NE NE NE NW sec. 08, T. 116 N., R. 65 W.

15 - 20 Sand, brown, fine to medium, clayey, very silty; oxidized, saturated

TEST HOLE NUMBER: 597  
LOCATION: 116N-65W-09DDDA  
LEGAL LOCATION: NE SE SE SE sec. 09, T. 116 N., R. 65 W.

1 - 4 Sand, tan-brown, fine, silty  
4 - 6 Sand, brown, fine to medium, silty, pebbly

TEST HOLE NUMBER: 598  
LOCATION: 116N-65W-10BAAA  
LEGAL LOCATION: NE NE NE NW sec. 10, T. 116 N., R. 65 W.

14 - 23 Sand, brown, fine; some clay, some pebbles

TEST HOLE NUMBER: 599  
LOCATION: 116N-65W-14DDDD  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 116 N., R. 65 W.

2 - 7 Sand, brown, medium; oxidized

TEST HOLE NUMBER: 600  
LOCATION: 116N-65W-17BCBB  
LEGAL LOCATION: NW NW SW NW sec. 17, T. 116 N., R. 65 W.

1 - 2 Sand and gravel, tan-brown, fine to medium sand, fine gravel, silty  
15 - 30 Sand, gray-brown, fine, very silty, clayey; oxidized, moist, saturated at 20 feet

TEST HOLE NUMBER: 601  
LOCATION: 116N-65W-17DCDC  
LEGAL LOCATION: SW SE SW SE sec. 17, T. 116 N., R. 65 W.

10 - 28 Sand and gravel, brown, fine to medium; large cobble at 17 feet

TEST HOLE NUMBER: 602  
LOCATION: 116N-65W-20ABAA  
LEGAL LOCATION: NE NE NW NE sec. 20, T. 116 N., R. 65 W.

10 - 12 Sand, yellow-tan-brown, fine to medium, very silty, clayey; oxidized, wet  
12 - 20 Sand, olive-gray, fine to medium, very silty, clayey; some pebbles, unoxidized  
20 - 23 Sand, olive-gray, fine to coarse, very clayey, silty; unoxidized, hit rock at 23 feet, abandoned hole

TEST HOLE NUMBER: 603  
LOCATION: 116N-65W-22DDAA  
LEGAL LOCATION: NE NE SE SE sec. 22, T. 116 N., R. 65 W.

1 - 8 Sand and gravel, gray-brown, fine sand, fine to coarse gravel; some clay

TEST HOLE NUMBER: 604  
LOCATION: 116N-65W-24ADAD  
LEGAL LOCATION: SE NE SE NE sec. 24, T. 116 N., R. 65 W.

0 - 2 Sand, tan-brown, fine, silty; oxidized

TEST HOLE NUMBER: 605  
LOCATION: 116N-65W-25AAAA  
LEGAL LOCATION: NE NE NE NE sec. 25, T. 116 N., R. 65 W.

0 - 10 Sand, brown, medium  
23 - 34 Sand and gravel, medium to coarse sand, fine to medium gravel

TEST HOLE NUMBER: 606  
LOCATION: 116N-65W-26AAAA  
LEGAL LOCATION: NE NE NE NE sec. 26, T. 116 N., R. 65 W.

0 - 6 Sand, brown, medium to coarse; oxidized

TEST HOLE NUMBER: 607  
LOCATION: 116N-65W-30CCCC  
LEGAL LOCATION: SW SW SW SW sec. 30, T. 116 N., R. 65 W.

20 - 25 Sand, gray-brown, medium to coarse, silty, clayey; saturated  
25 - 35 Sand and gravel, gray-brown, medium to coarse sand, fine to medium gravel, very clayey, silty; saturated

TEST HOLE NUMBER: 608  
LOCATION: 116N-65W-32AABA  
LEGAL LOCATION: NE NW NE NE sec. 32, T. 116 N., R. 65 W.

0 - 4 Sand, yellow-brown, fine, slightly clayey, very silty  
4 - 6 Sand and gravel, orange-brown, fine to medium sand, coarse to very coarse gravel  
6 - 10 Sand, brown, fine to medium, very clayey, silty; some pebbles, moist

TEST HOLE NUMBER: 609  
LOCATION: 116N-65W-32DCDD  
LEGAL LOCATION: SE SE SW SE sec. 32, T. 116 N., R. 65 W.

- 16 - 20 Sand, orange-tan-brown, fine to medium, clayey, very silty; oxidized; saturated at 17 feet
- 20 - 27 Sand, gray-brown, very fine to fine, very clayey, silty; some pebbles; unoxidized(?); gravel stringer from 25 to 27 feet

TEST HOLE NUMBER: 610  
 LOCATION: 116N-65W-34CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 34, T. 116 N., R. 65 W.

- 11 - 22 Sand, yellow-tan-brown, fine to medium, clayey, silty; oxidized, saturated at 11 feet
- 22 - 26 Sand, olive-gray, fine to coarse, clayey, silty; unoxidized

TEST HOLE NUMBER: 611  
 LOCATION: 117N-60W-01CBBB  
 LEGAL LOCATION: NW NW NW SW sec. 01, T. 117 N., R. 60 W.

- 10 - 15 Sand, brown, fine
- 15 - 29 Sand, gray, medium to coarse

TEST HOLE NUMBER: 612  
 LOCATION: 117N-60W-02CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 02, T. 117 N., R. 60 W.

- 9 - 13 Sand and gravel, yellow-red, coarse

TEST HOLE NUMBER: 613  
 LOCATION: 117N-60W-04AAAB  
 LEGAL LOCATION: NW NE NE NE sec. 04, T. 117 N., R. 60 W.

- 5 - 9 Sand, brown, medium to coarse, very silty, very pebbly; oxidized, moist
- 9 - 48 Sand, gray-brown, fine to medium, very clayey, very silty, slightly pebbly; mostly unoxidized, saturated

TEST HOLE NUMBER: 614  
 LOCATION: 117N-60W-09DADD  
 LEGAL LOCATION: SE SE NE SE sec. 09, T. 117 N., R. 60 W.

- 4 - 24 Sand, brown, fine to medium, very silty, pebbly; oxidized, moist
- 24 - 31 Gravel, brown, very silty, very sandy; oxidized, moist, saturated at 30 feet

TEST HOLE NUMBER: 615  
 LOCATION: 117N-60W-12BBBA  
 LEGAL LOCATION: NE NW NW NW sec. 12, T. 117 N., R. 60 W.

- 15 - 18 Sand, gray, fine
- 18 - 39 Sand, coarse; some lignite, gravel

TEST HOLE NUMBER: 616  
 LOCATION: 117N-60W-12BBBB 2  
 LEGAL LOCATION: NW NW NW NW sec. 12, T. 117 N., R. 60 W.

- 10 - 40 Sand and gravel, coarse

TEST HOLE NUMBER: 617  
 LOCATION: 117N-60W-12DDCC  
 LEGAL LOCATION: SW SW SE SE sec. 12, T. 117 N., R. 60 W.

- 18 - 25 Sand, brown, fine to medium
- 25 - 30 Sand, gray, coarse



TEST HOLE NUMBER: 618  
LOCATION: 117N-60W-14DDDD  
LEGAL LOCATION: SE SE SE SE sec. 14, T. 117 N., R. 60 W.

5 - 13 Gravel, medium to coarse; some coarse sand, much shale, highly oxidized

TEST HOLE NUMBER: 619  
LOCATION: 117N-60W-16AD  
LEGAL LOCATION: SE NE sec. 16, T. 117 N., R. 60 W.

12 - 37 Sand, medium

TEST HOLE NUMBER: 620  
LOCATION: 117N-60W-28BBBB  
LEGAL LOCATION: NW NW NW NW sec. 28, T. 117 N., R. 60 W.

4 - 24 Sand, brown, fine to medium, very silty, slightly pebbly; oxidized, dry, saturated at 20 feet

TEST HOLE NUMBER: 621  
LOCATION: 117N-60W-35DDDD  
LEGAL LOCATION: SE SE SE SE sec. 35, T. 117 N., R. 60 W.

13 - 31 Sand, brown, fine to medium; oxidized

TEST HOLE NUMBER: 622  
LOCATION: 117N-61W-01BBBB  
LEGAL LOCATION: NW NW NW NW sec. 01, T. 117 N., R. 61 W.

9 - 12 Sand

TEST HOLE NUMBER: 623  
LOCATION: 117N-61W-06CBBB 1  
LEGAL LOCATION: NW NW NW SW sec. 06, T. 117 N., R. 61 W.

21 - 24 Sand, medium-yellowish-brown and medium-gray; lignitic, calcareous, oxidized to 24 feet  
24 - 85 Sand, medium-yellowish-brown and medium-gray; lignitic, calcareous, partly oxidized 24 to 85 feet, clay layers from 34 to 34.5 and 38 feet, lignitic 37.5 to 38, 47 to 48, 54 to 54.4, 58 to 62 feet, coarse sand 61 to 63, 65 to 68, 70 to 85 feet

TEST HOLE NUMBER: 624  
LOCATION: 117N-61W-08BBCB  
LEGAL LOCATION: NW SW NW NW sec. 08, T. 117 N., R. 61 W.

19 - 21 Sand, coarse  
21 - 63 Sand, coarse; gravel, some coal

TEST HOLE NUMBER: 625  
LOCATION: 117N-61W-08DAA  
LEGAL LOCATION: NE NE SE sec. 08, T. 117 N., R. 61 W.

23 - 62 Gravel

TEST HOLE NUMBER: 626  
LOCATION: 117N-61W-16CCCC  
LEGAL LOCATION: SW SW SW SW sec. 16, T. 117 N., R. 61 W.

20 - 30 Sand, medium

TEST HOLE NUMBER: 627  
LOCATION: 117N-61W-16CCCC 2  
LEGAL LOCATION: SW SW SW SW sec. 16, T. 117 N., R. 61 W.

21 - 100 Sand and gravel, coarse sand grading to a medium to coarse gravel

TEST HOLE NUMBER: 628  
LOCATION: 117N-61W-19BBBB  
LEGAL LOCATION: NW NW NW NW sec. 19, T. 117 N., R. 61 W.

20 - 78 Sand and gravel, brown then gray at 24 feet; with coal

TEST HOLE NUMBER: 629  
LOCATION: 117N-61W-19CDDD  
LEGAL LOCATION: SE SE SE SW sec. 19, T. 117 N., R. 61 W.

7 - 15 Sand, brown, medium to coarse, slightly clayey, gravelly; oxidized, moist; silt layer between 9 and 10 feet  
15 - 48 Sand, black-brown, medium to coarse, gravelly; moist, saturated at 20 feet

TEST HOLE NUMBER: 630  
LOCATION: 117N-61W-19DDDD  
LEGAL LOCATION: SE SE SE SE sec. 19, T. 117 N., R. 61 W.

16 - 60 Sand; very porous

TEST HOLE NUMBER: 631  
LOCATION: 117N-61W-29DDBB  
LEGAL LOCATION: NW NW SE SE sec. 29, T. 117 N., R. 61 W.

15 - 28 Sand, yellow  
28 - 89 Sand and gravel; some lignite

TEST HOLE NUMBER: 632  
LOCATION: 117N-61W-29DDDD  
LEGAL LOCATION: SE SE SE SE sec. 29, T. 117 N., R. 61 W.

7 - 15 Sand, fine

TEST HOLE NUMBER: 633  
LOCATION: 117N-61W-31AAAB  
LEGAL LOCATION: NW NE NE NE sec. 31, T. 117 N., R. 61 W.

3 - 40 Sand, coarse

TEST HOLE NUMBER: 634  
LOCATION: 117N-61W-32BCAA  
LEGAL LOCATION: NE NE SW NW sec. 32, T. 117 N., R. 61 W.

13 - 22 Sand, fine  
22 - 73 Gravel; some lignite

TEST HOLE NUMBER: 635  
LOCATION: 117N-61W-33BCA  
LEGAL LOCATION: NE SW NW sec. 33, T. 117 N., R. 61 W.

17 - 73 Sand and gravel

TEST HOLE NUMBER: 636  
LOCATION: 117N-61W-33BCAD  
LEGAL LOCATION: SE NE SW NW sec. 33, T. 117 N., R. 61 W.

17 - 73 Sand and gravel

TEST HOLE NUMBER: 637  
LOCATION: 117N-61W-33CCAA  
LEGAL LOCATION: NE NE SW SW sec. 33, T. 117 N., R. 61 W.

10 - 11 Sand  
17 - 110 Sand; gravel and lignite

TEST HOLE NUMBER: 638  
LOCATION: 117N-61W-35DDDD  
LEGAL LOCATION: SE SE SE SE sec. 35, T. 117 N., R. 61 W.

2 - 10 Sand, brown; with coarse gravel sized shale pebbles, oxidized

TEST HOLE NUMBER: 639  
LOCATION: 117N-61W-36DDCA  
LEGAL LOCATION: NE SW SE SE sec. 36, T. 117 N., R. 61 W.

14 - 18 Gravel, fine to medium, very clayey, very silty, very sandy; oxidized, saturated

TEST HOLE NUMBER: 640  
LOCATION: 117N-62W-01BBBB  
LEGAL LOCATION: NW NW NW NW sec. 01, T. 117 N., R. 62 W.

19 - 55 Sand and gravel, brown, medium to coarse sand, fine gravel; oxidized, some coarse gravel

TEST HOLE NUMBER: 641  
LOCATION: 117N-62W-02CCCC  
LEGAL LOCATION: SW SW SW SW sec. 02, T. 117 N., R. 62 W.

19 - 28 Sand, dark-brown, very clayey, very silty

TEST HOLE NUMBER: 642  
LOCATION: 117N-62W-13BABA 1  
LEGAL LOCATION: NE NW NE NW sec. 13, T. 117 N., R. 62 W.

15 - 16 Sand, medium to coarse, clayey; very lignitic  
16 - 30 Sand, silty, clayey, bouldery, poorly sorted

TEST HOLE NUMBER: 643  
LOCATION: 117N-62W-13BADA  
LEGAL LOCATION: NE SE NE NW sec. 13, T. 117 N., R. 62 W.

15 - 16 Sand, medium to coarse; much organic material, some clay  
16 - 30 Sand, poorly sorted; some silt and clay, much silt and clay at 24.5 to 25 feet, moderately permeable, rocks

TEST HOLE NUMBER: 644  
LOCATION: 117N-62W-13BBBB  
LEGAL LOCATION: NW NW NW NW sec. 13, T. 117 N., R. 62 W.

15 - 18 Sand, brown to dark-brown (10 YR 4/3), mottled, coarse; loamy, loose, wet; structure: type=single grain, grade=very weak

18 - 41 Sand and gravel, dark-brown (10 YR 3/3), mottled, coarse sand and fine gravel; loamy, loose, very wet, black stains between 24 and 25 feet; structure: type=single grain, grade=very weak

TEST HOLE NUMBER: 645  
LOCATION: 117N-62W-21BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 21, T. 117 N., R. 62 W.

15 - 19 Sand, coarse; oxidized, some fine gravel

TEST HOLE NUMBER: 646  
LOCATION: 117N-62W-22AAAA  
LEGAL LOCATION: NE NE NE NE sec. 22, T. 117 N., R. 62 W.

11 - 24 Sand, brown  
24 - 38 Sand, gray; with coal

TEST HOLE NUMBER: 647  
LOCATION: 117N-62W-31DDDA 1  
LEGAL LOCATION: NE SE SE SE sec. 31, T. 117 N., R. 62 W.

11 - 14 Sand, pale-yellowish-brown, very fine, slightly clayey, silty, thinly laminated (lake deposit)  
16 - 17 Sand, medium-yellowish-brown, fine, silty, slightly pebbly (glacial outwash)

TEST HOLE NUMBER: 648  
LOCATION: 117N-62W-33DCCC  
LEGAL LOCATION: SW SW SW SE sec. 33, T. 117 N., R. 62 W.

15 - 25 Sand, medium-yellowish-brown, clayey, silty; calcareous, oxidized (glacial outwash)

TEST HOLE NUMBER: 649  
LOCATION: 117N-62W-35CCCC  
LEGAL LOCATION: SW SW SW SW sec. 35, T. 117 N., R. 62 W.

10 - 45 Sand and gravel, medium to coarse; clean, with coal

TEST HOLE NUMBER: 650  
LOCATION: 117N-62W-35DDDD  
LEGAL LOCATION: SE SE SE SE sec. 35, T. 117 N., R. 62 W.

9 - 24 Sand, brown, medium to coarse; oxidized  
24 - 47 Sand and gravel, gray, coarse sand, fine to medium gravel grading to a coarse gravel; much coal

TEST HOLE NUMBER: 651  
LOCATION: 117N-62W-36DDDD  
LEGAL LOCATION: SE SE SE SE sec. 36, T. 117 N., R. 62 W.

7 - 11 Sand and gravel, brown

TEST HOLE NUMBER: 652  
LOCATION: 117N-63W-15DDDD  
LEGAL LOCATION: SE SE SE SE sec. 15, T. 117 N., R. 63 W.

24 - 33 Sand, light-brown, medium-grained, clayey, silty; saturated

TEST HOLE NUMBER: 653  
LOCATION: 117N-63W-19BCBC  
LEGAL LOCATION: SW NW SW NW sec. 19, T. 117 N., R. 63 W.

0 - 5 Sand, red-brown, clayey, very silty, gravelly; oxidized

TEST HOLE NUMBER: 654  
LOCATION: 117N-63W-21BBBB  
LEGAL LOCATION: NW NW NW NW sec. 21, T. 117 N., R. 63 W.

8 - 12 Gravel, medium to coarse

TEST HOLE NUMBER: 655  
LOCATION: 117N-63W-30CCCC  
LEGAL LOCATION: SW SW SW SW sec. 30, T. 117 N., R. 63 W.

9 - 15 Sand, light-brown, fine to medium, clayey, silty; oxidized, dry  
27 - 29 Sand, orange-brown, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 656  
LOCATION: 117N-63W-30DDBB  
LEGAL LOCATION: NW NW SE SE sec. 30, T. 117 N., R. 63 W.

14 - 19 Sand  
22 - 45 Sand

TEST HOLE NUMBER: 657  
LOCATION: 117N-63W-36DDDD  
LEGAL LOCATION: SE SE SE SE sec. 36, T. 117 N., R. 63 W.

17 - 95 Sand and gravel, brown, coarse sand, fine to medium gravel grading to a very coarse gravel

TEST HOLE NUMBER: 658  
LOCATION: 117N-64W-04CBDD 1  
LEGAL LOCATION: SE SE NW SW sec. 04, T. 117 N., R. 64 W.

5 - 15 Sand, fine to medium; some silt, 3-inch bed of clay and silt at 11 to 11.3 feet, 1-inch bed at 13 feet, probably slightly permeable  
19 - 21 Sand, fine, silty; slightly permeable

TEST HOLE NUMBER: 659  
LOCATION: 117N-64W-06BAAB  
LEGAL LOCATION: NW NE NE NW sec. 06, T. 117 N., R. 64 W.

3 - 19 Sand, brown, fine to medium, clayey, silty; saturated at 9 feet

TEST HOLE NUMBER: 660  
LOCATION: 117N-64W-08CDDC  
LEGAL LOCATION: SW SE SE SW sec. 08, T. 117 N., R. 64 W.

6 - 9 Sand; loose, slightly moist

TEST HOLE NUMBER: 661  
LOCATION: 117N-64W-09ACDC  
LEGAL LOCATION: SW SE SW NE sec. 09, T. 117 N., R. 64 W.

22 - 35 Sand

TEST HOLE NUMBER: 662  
LOCATION: 117N-64W-09BDDC  
LEGAL LOCATION: SW SE SE NW sec. 09, T. 117 N., R. 64 W.

20 - 33 Sand

TEST HOLE NUMBER: 663  
LOCATION: 117N-64W-09BDDC 2  
LEGAL LOCATION: SW SE SE NW sec. 09, T. 117 N., R. 64 W.

21 - 34 Sand

TEST HOLE NUMBER: 664  
LOCATION: 117N-64W-09CCCC  
LEGAL LOCATION: SW SW SW SW sec. 09, T. 117 N., R. 64 W.

5 - 9 Sand and gravel, medium to coarse  
25 - 28 Sand and gravel

TEST HOLE NUMBER: 665  
LOCATION: 117N-64W-16CCCD  
LEGAL LOCATION: SE SW SW SW sec. 16, T. 117 N., R. 64 W.

4 - 7 Sand, light-brown, very fine; loamy, loose  
11 - 15 Sand, gray, coarse; loamy, wet

TEST HOLE NUMBER: 666  
LOCATION: 117N-64W-20BBBB  
LEGAL LOCATION: NW NW NW NW sec. 20, T. 117 N., R. 64 W.

13 - 26 Sand, fine

TEST HOLE NUMBER: 667  
LOCATION: 117N-64W-20DDCD  
LEGAL LOCATION: SE SW SE SE sec. 20, T. 117 N., R. 64 W.

3 - 14 Sand, brown, fine to medium, clayey, very silty; oxidized, moist  
20 - 29 Sand, brown, fine-grained, clayey, silty; saturated

TEST HOLE NUMBER: 668  
LOCATION: 117N-64W-25BBAB  
LEGAL LOCATION: NW NE NW NW sec. 25, T. 117 N., R. 64 W.

4 - 9 Sand, brown, fine to medium, clayey, silty, pebbly; oxidized

TEST HOLE NUMBER: 669  
LOCATION: 117N-64W-26ABBB 2  
LEGAL LOCATION: NW NW NW NE sec. 26, T. 117 N., R. 64 W.

3 - 5 Sand, yellowish-brown (10 YR 5/4); loose, dry; structure: type=single grain  
6 - 7 Sand, yellowish-brown (10 YR 5/4); loose, damp; structure: type=single grain

TEST HOLE NUMBER: 670  
LOCATION: 117N-64W-26BBBB  
LEGAL LOCATION: NW NW NW NW sec. 26, T. 117 N., R. 64 W.

5 - 6 Sand, coarse  
25 - 28 Sand, medium, well-sorted

TEST HOLE NUMBER: 671  
LOCATION: 117N-64W-27AAAB  
LEGAL LOCATION: NW NE NE NE sec. 27, T. 117 N., R. 64 W.

6 - 10 Sand, yellow, very fine, silty (loess)  
20 - 25 Sand, dark-yellow, medium to coarse

28 - 30 Sand, brown, clayey

TEST HOLE NUMBER: 672

LOCATION: 117N-64W-27AABA 1

LEGAL LOCATION: NE NW NE NE sec. 27, T. 117 N., R. 64 W.

6 - 10 Sand, very fine, silty; calcareous (loess)  
20 - 25 Sand, medium to coarse; calcareous  
28 - 30 Sand, brown, clayey; calcareous

TEST HOLE NUMBER: 673

LOCATION: 117N-64W-32DDDD

LEGAL LOCATION: SE SE SE SE sec. 32, T. 117 N., R. 64 W.

5 - 15 Sand, silty; oxidized (till)

TEST HOLE NUMBER: 674

LOCATION: 117N-64W-32DDDD 1

LEGAL LOCATION: SE SE SE SE sec. 32, T. 117 N., R. 64 W.

5 - 15 Sand, silty (till)

TEST HOLE NUMBER: 675

LOCATION: 117N-64W-33BDC

LEGAL LOCATION: SW SE NW sec. 33, T. 117 N., R. 64 W.

7 - 12 Sand  
12 - 16 Sand, clayey  
16 - 20 Sand

TEST HOLE NUMBER: 676

LOCATION: 117N-64W-34BB

LEGAL LOCATION: NW NW sec. 34, T. 117 N., R. 64 W.

4 - 14 Sand, fine, clayey

TEST HOLE NUMBER: 677

LOCATION: 117N-64W-34DCC

LEGAL LOCATION: SW SW SE sec. 34, T. 117 N., R. 64 W.

20 - 26 Sand, fine

TEST HOLE NUMBER: 678

LOCATION: 117N-64W-35AD

LEGAL LOCATION: SE NE sec. 35, T. 117 N., R. 64 W.

6 - 13 Sand, clayey  
13 - 15 Sand  
15 - 19 Sand, poorly graded

TEST HOLE NUMBER: 679

LOCATION: 117N-64W-35DCDC

LEGAL LOCATION: SW SE SW SE sec. 35, T. 117 N., R. 64 W.

2 - 9 Sand, brown, fine to medium, clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 680

LOCATION: 117N-64W-35DDDD

LEGAL LOCATION: SE SE SE SE sec. 35, T. 117 N., R. 64 W.

7 - 17 Sand; oxidized, with some silt (till)

TEST HOLE NUMBER: 681  
LOCATION: 117N-64W-35DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 35, T. 117 N., R. 64 W.

7 - 17 Sand, silty (till)

TEST HOLE NUMBER: 682  
LOCATION: 117N-64W-36CCCC  
LEGAL LOCATION: SW SW SW SW sec. 36, T. 117 N., R. 64 W.

7 - 17 Sand, silty

TEST HOLE NUMBER: 683  
LOCATION: 117N-65W-01DCCC  
LEGAL LOCATION: SW SW SW SE sec. 01, T. 117 N., R. 65 W.

15 - 22 Sand, brown, fine to medium, clayey, silty; oxidized

TEST HOLE NUMBER: 684  
LOCATION: 117N-65W-02AB  
LEGAL LOCATION: NW NE sec. 02, T. 117 N., R. 65 W.

0 - 4 Sand, silty  
10 - 14 Sand

TEST HOLE NUMBER: 685  
LOCATION: 117N-65W-05AAAA  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 117 N., R. 65 W.

9 - 28 Sand, brown, fine, silty; some clay  
28 - 33 Sand, gray, medium to coarse; with coal

TEST HOLE NUMBER: 686  
LOCATION: 117N-65W-05AAAA 1  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 117 N., R. 65 W.

10 - 30 Sand, brown, fine to medium, very silty; saturated at 14 feet

TEST HOLE NUMBER: 687  
LOCATION: 117N-65W-05AAAA 2  
LEGAL LOCATION: NE NE NE NE sec. 05, T. 117 N., R. 65 W.

9 - 28 Sand, brown, fine, silty; some clay  
28 - 33 Sand, gray, medium to coarse; with coal

TEST HOLE NUMBER: 688  
LOCATION: 117N-65W-05CCCD  
LEGAL LOCATION: SE SW SW SW sec. 05, T. 117 N., R. 65 W.

3 - 11 Sand, brown, fine-grained; oxidized

TEST HOLE NUMBER: 689  
LOCATION: 117N-65W-09ACCC  
LEGAL LOCATION: SW SW SW NE sec. 09, T. 117 N., R. 65 W.

20 - 27 Sand



TEST HOLE NUMBER: 690  
LOCATION: 117N-65W-11ADDD  
LEGAL LOCATION: SE SE SE NE sec. 11, T. 117 N., R. 65 W.

8 - 15 Sand; loose, 1- to 3-inch stratified layer of loam

TEST HOLE NUMBER: 691  
LOCATION: 117N-65W-12DD  
LEGAL LOCATION: SE SE sec. 12, T. 117 N., R. 65 W.

10 - 13 Sand

TEST HOLE NUMBER: 692  
LOCATION: 117N-65W-14DCCD  
LEGAL LOCATION: SE SW SW SE sec. 14, T. 117 N., R. 65 W.

9 - 23 Sand, brown, fine to medium, clayey, silty, gravelly; saturated at 20 feet

TEST HOLE NUMBER: 693  
LOCATION: 117N-65W-15BADD  
LEGAL LOCATION: SE SE NE NW sec. 15, T. 117 N., R. 65 W.

10 - 43 Sand, fine

TEST HOLE NUMBER: 694  
LOCATION: 117N-65W-16BBBB  
LEGAL LOCATION: NW NW NW NW sec. 16, T. 117 N., R. 65 W.

6 - 20 Sand, light-brown, very silty

TEST HOLE NUMBER: 695  
LOCATION: 117N-65W-17DDDD  
LEGAL LOCATION: SE SE SE SE sec. 17, T. 117 N., R. 65 W.

10 - 20 Sand, brown, medium to coarse; some fine gravel

TEST HOLE NUMBER: 696  
LOCATION: 117N-65W-19BBCB  
LEGAL LOCATION: NW SW NW NW sec. 19, T. 117 N., R. 65 W.

9 - 20 Sand, brown, fine-grained, silty, gravelly; oxidized, saturated; some clay at 16 feet  
20 - 24 Sand, brown-gray, fine-grained, clayey, silty; partly oxidized, saturated  
24 - 48 Gravel, gray, very silty, sandy; unoxidized, saturated

TEST HOLE NUMBER: 697  
LOCATION: 117N-65W-21CDDC  
LEGAL LOCATION: SW SE SE SW sec. 21, T. 117 N., R. 65 W.

4 - 22 Sand, yellow, fine-grained  
22 - 36 Sand, dark-brown, fine-grained; saturated at 25 feet, some clay from 30 to 36 feet

TEST HOLE NUMBER: 698  
LOCATION: 117N-65W-27DCCC  
LEGAL LOCATION: SW SW SW SE sec. 27, T. 117 N., R. 65 W.

2 - 15 Sand, brown, fine to medium, clayey, very silty; oxidized, saturated; some coal fragments  
15 - 27 Sand, gray, fine to medium, clayey, very silty; unoxidized, saturated; some coal fragments; hit rocks at 27 feet, could not penetrate, abandoned hole

TEST HOLE NUMBER: 699  
LOCATION: 117N-65W-28CDDC  
LEGAL LOCATION: SW SE SE SW sec. 28, T. 117 N., R. 65 W.

20 - 24 Sand, orange-brown, clayey, very silty, pebbly; oxidized, moist

TEST HOLE NUMBER: 700  
LOCATION: 117N-65W-30AAAA  
LEGAL LOCATION: NE NE NE NE sec. 30, T. 117 N., R. 65 W.

9 - 16 Sand, brown, very fine-grained, silty; oxidized, dry; some pebbles

TEST HOLE NUMBER: 701  
LOCATION: 117N-65W-30DDDC  
LEGAL LOCATION: SW SE SE SE sec. 30, T. 117 N., R. 65 W.

1 - 7 Sand, brown, fine to medium, slightly silty; dry, clean, some moisture at 6 feet

TEST HOLE NUMBER: 702  
LOCATION: 117N-65W-32DDDA  
LEGAL LOCATION: NE SE SE SE sec. 32, T. 117 N., R. 65 W.

9 - 15 Gravel, brown, clayey, silty; oxidized, saturated  
15 - 20 Sand, brown, clayey, silty; oxidized, saturated

TEST HOLE NUMBER: 703  
LOCATION: 118N-60W-02AAAA  
LEGAL LOCATION: NE NE NE NE sec. 02, T. 118 N., R. 60 W.

12 - 35 Sand, green to gray-black, fine to medium, well-sorted; much quartz, some shale pebbles, uses water

TEST HOLE NUMBER: 704  
LOCATION: 118N-60W-29BBBA  
LEGAL LOCATION: NE NW NW NW sec. 29, T. 118 N., R. 60 W.

6 - 14 Sand, dark-brown, fine to medium, very silty, slightly clayey, very gravelly; oxidized, moist, saturated at 10 feet  
14 - 20 Gravel, dark-brown, medium to coarse, well-rounded, very clayey, sandy; oxidized, saturated  
20 - 24 Sand and gravel, gray, fine to medium sand, medium to coarse gravel, very clayey; unoxidized, saturated

TEST HOLE NUMBER: 705  
LOCATION: 118N-60W-33BBBB  
LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 60 W.

6 - 13 Sand, tan-brown, fine to medium; some silt, very clean, oxidized, dry  
13 - 18 Sand, red-brown, fine to medium; some silt, oxidized, moist  
18 - 32 Sand, brown, fine to medium, slightly clayey; some silt, oxidized, moist, saturated between 20 and 22 feet

TEST HOLE NUMBER: 706  
LOCATION: 118N-60W-35AAAA  
LEGAL LOCATION: NE NE NE NE sec. 35, T. 118 N., R. 60 W.

10 - 20 Sand, brown, fine-grained, clayey, silty; saturated  
20 - 26 Sand, brown-gray, fine-grained, silty, gravelly

TEST HOLE NUMBER: 707  
LOCATION: 118N-60W-36CCCC  
LEGAL LOCATION: SW SW SW SW sec. 36, T. 118 N., R. 60 W.

8 - 22 Sand and gravel, brown, coarse sand, fine to medium gravel; oxidized

TEST HOLE NUMBER: 708  
LOCATION: 118N-61W-02DCCC  
LEGAL LOCATION: SW SW SW SE sec. 02, T. 118 N., R. 61 W.

2 - 7 Sand, brown, fine to medium, slightly clayey, very silty, very pebbly; oxidized, dry  
9 - 30 Sand, brown, fine to medium, very clayey, very silty; oxidized, moist at 11 feet, saturated at 14 feet

TEST HOLE NUMBER: 709  
LOCATION: 118N-61W-14DCDD  
LEGAL LOCATION: SE SE SW SE sec. 14, T. 118 N., R. 61 W.

6 - 7 Sand, brown, fine to medium, slightly silty; oxidized, moist, some pebbles  
16 - 24 Sand, brown, fine, very silty; oxidized, saturated, some pebbles  
24 - 27 Sand, olive-green-brown, fine to medium, very silty; mostly oxidized, some pebbles; could not penetrate past 27 feet, abandoned hole

TEST HOLE NUMBER: 710  
LOCATION: 118N-61W-23CDBD  
LEGAL LOCATION: SE NW SE SW sec. 23, T. 118 N., R. 61 W.

8 - 25 Sand, red

TEST HOLE NUMBER: 711  
LOCATION: 118N-61W-24BBBB  
LEGAL LOCATION: NW NW NW NW sec. 24, T. 118 N., R. 61 W.

2 - 12 Sand, brown, fine to medium, silty, clayey; oxidized  
15 - 24 Sand and gravel, brown, coarse sand, fine gravel

TEST HOLE NUMBER: 712  
LOCATION: 118N-61W-34DDDD  
LEGAL LOCATION: SE SE SE SE sec. 34, T. 118 N., R. 61 W.

1 - 4 Sand, coarse

TEST HOLE NUMBER: 713  
LOCATION: 118N-62W-16CDCC  
LEGAL LOCATION: SW SW SE SW sec. 16, T. 118 N., R. 62 W.

3 - 6 Sand, dark-brown, fine to medium, clayey, very silty, pebbly; moist  
6 - 15 Sand, light-brown, fine to medium, slightly silty, pebbly; oxidized, moist  
15 - 34 Sand, light-brown, fine to medium, slightly clayey, very silty; some pebbles, becoming slightly more coarse with depth

TEST HOLE NUMBER: 714  
LOCATION: 118N-62W-17DDDD  
LEGAL LOCATION: SE SE SE SE sec. 17, T. 118 N., R. 62 W.

8 - 10 Gravel, brown  
16 - 43 Sand, fine; with clay and coal

TEST HOLE NUMBER: 715  
LOCATION: 118N-62W-17DDDD 2  
LEGAL LOCATION: SE SE SE SE sec. 17, T. 118 N., R. 62 W.

8 - 10 Gravel, medium; highly oxidized  
24 - 44 Sand, gray, fine to medium; unoxidized, becomes more clayey with depth

TEST HOLE NUMBER: 716  
LOCATION: 118N-62W-32DDDD  
LEGAL LOCATION: SE SE SE SE sec. 32, T. 118 N., R. 62 W.

17 - 20 Gravel, fine, sandy; highly oxidized  
28 - 39 Sand and gravel; coarse sand grading to a coarse gravel, much quartz

TEST HOLE NUMBER: 717  
LOCATION: 118N-62W-34DDDD  
LEGAL LOCATION: SE SE SE SE sec. 34, T. 118 N., R. 62 W.

20 - 75 Sand and gravel, medium to coarse; with coal, excellent material

TEST HOLE NUMBER: 718  
LOCATION: 118N-64W-12DDDD  
LEGAL LOCATION: SE SE SE SE sec. 12, T. 118 N., R. 64 W.

0 - 7 Sand, fine; oxidized, some silt, water-laid (lake deposit)

TEST HOLE NUMBER: 719  
LOCATION: 118N-64W-21BCCC  
LEGAL LOCATION: SW SW SW NW sec. 21, T. 118 N., R. 64 W.

3 - 10 Sand, brown, medium; oxidized

TEST HOLE NUMBER: 720  
LOCATION: 118N-64W-21DB  
LEGAL LOCATION: NW SE sec. 21, T. 118 N., R. 64 W.

23 - 39 Sand and gravel

TEST HOLE NUMBER: 721  
LOCATION: 118N-64W-22CC 1  
LEGAL LOCATION: SW SW sec. 22, T. 118 N., R. 64 W.

11 - 27 Sand, brown, fine  
28 - 39 Sand, blue, fine (silt)

TEST HOLE NUMBER: 722  
LOCATION: 118N-64W-22CC 2  
LEGAL LOCATION: SW SW sec. 22, T. 118 N., R. 64 W.

11 - 27 Sand, brown, very fine, silty

TEST HOLE NUMBER: 723  
LOCATION: 118N-64W-32DDDD  
LEGAL LOCATION: SE SE SE SE sec. 32, T. 118 N., R. 64 W.

0 - 10 Sand, yellowish-brown, fine, silty  
25 - 37 Sand, gray, fine; unoxidized

TEST HOLE NUMBER: 724  
LOCATION: 118N-64W-33DDCC  
LEGAL LOCATION: SW SW SE SE sec. 33, T. 118 N., R. 64 W.

0 - 2 Sand, brown, clayey, very silty; some pebbles

TEST HOLE NUMBER: 725  
LOCATION: 118N-65W-07CCBB  
LEGAL LOCATION: NW NW SW SW sec. 07, T. 118 N., R. 65 W.

15 - 30 Sand, brown, fine to medium, slightly clayey, very silty; oxidized, saturated, becoming gravelly with depth, rocks at 24 feet

TEST HOLE NUMBER: 726  
LOCATION: 118N-65W-07DDDA  
LEGAL LOCATION: NE SE SE SE sec. 07, T. 118 N., R. 65 W.

0 - 10 Sand, fine to medium; oxidized, some silt and clay, water-laid, slightly permeable in part  
10 - 15 Sand, poorly sorted; oxidized, interbedded with sandy and clayey silt, permeable in part  
16 - 20 Sand, poorly sorted; unoxidized, some fine gravel and silt, moderately permeable, water-laid  
20 - 25 Sand, fine, silty, clayey; unoxidized, water-laid, peaty in part, not very permeable  
25 - 26 Sand, poorly sorted, silty, clayey; unoxidized, some fine gravel, slightly permeable  
26 - 32 Sand and silt, fine sand, clayey; unoxidized, slightly permeable

TEST HOLE NUMBER: 727  
LOCATION: 118N-65W-10ABBA  
LEGAL LOCATION: NE NW NW NE sec. 10, T. 118 N., R. 65 W.

15 - 18 Sand, brown, fine-grained, slightly clayey, very silty; oxidized, moist  
24 - 28 Sand, brown, fine-grained, clayey, very silty; oxidized, saturated, unable to continue drilling due to machine trouble

TEST HOLE NUMBER: 728  
LOCATION: 118N-65W-10CCCC  
LEGAL LOCATION: SW SW SW SW sec. 10, T. 118 N., R. 65 W.

10 - 14 Sand, silty; oxidized, some clay, water-laid, slightly permeable(?)  
14 - 25 Sand and silt, clayey silt; oxidized; water-laid sand and silt at 21.5 to 22.5 feet, oxidized (till)  
28 - 30 Sand, poorly sorted and angular pebbles; some silt and clay, probably permeable

TEST HOLE NUMBER: 729  
LOCATION: 118N-65W-10CCCC 2  
LEGAL LOCATION: SW SW SW SW sec. 10, T. 118 N., R. 65 W.

0 - 14 Sand, silty  
14 - 25 Sand, clayey

TEST HOLE NUMBER: 730  
LOCATION: 118N-65W-11BAAA  
LEGAL LOCATION: NE NE NE NW sec. 11, T. 118 N., R. 65 W.

5 - 8 Sand, brown, fine to medium, silty, pebbly; oxidized, dry  
8 - 11 Sand, orange-brown, fine to medium, slightly silty; oxidized, dry  
11 - 16 Sand, dark-brown, fine to medium, slightly silty, gravelly, pebbly; dry  
16 - 37 Sand, brown, fine-grained, very silty; some clay content with depth, saturated at 28 feet

TEST HOLE NUMBER: 731  
LOCATION: 118N-65W-19ADDA  
LEGAL LOCATION: NE SE SE NE sec. 19, T. 118 N., R. 65 W.

- 6 - 11 Sand, orange-brown, fine to medium, slightly silty; oxidized, dry
- 11 - 14 Sand and gravel, brown, fine to medium sand, fine to medium gravel, slightly silty; oxidized, moist
- 14 - 25 Sand, brown, medium to coarse, clayey, silty, very pebbly; oxidized, saturated

TEST HOLE NUMBER: 732  
 LOCATION: 118N-65W-20ABAA  
 LEGAL LOCATION: NE NE NW NE sec. 20, T. 118 N., R. 65 W.

- 8 - 11 Sand, brown, clayey, silty; oxidized, saturated
- 20 - 31 Sand, olive-gray, fine to medium, slightly clayey, very silty; unoxidized, saturated

TEST HOLE NUMBER: 733  
 LOCATION: 118N-65W-21CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 21, T. 118 N., R. 65 W.

- 6 - 10 Sand, brown, fine to medium, slightly silty; oxidized, moist, saturated at 9 feet

TEST HOLE NUMBER: 734  
 LOCATION: 118N-65W-25ADBD  
 LEGAL LOCATION: SE NW SE NE sec. 25, T. 118 N., R. 65 W.

- 6 - 14 Sand, brown, fine to medium, slightly silty, slightly pebbly; oxidized, saturated at 12 feet
- 14 - 15 Sand, olive-green, fine to medium, very silty, slightly pebbly; unoxidized(?)

TEST HOLE NUMBER: 735  
 LOCATION: 118N-65W-27DCCC  
 LEGAL LOCATION: SW SW SW SE sec. 27, T. 118 N., R. 65 W.

- 0 - 14 Sand, brown, fine to medium, silty; oxidized, wet at 9 feet
- 14 - 35 Sand, olive-brown, fine to medium, clayey, silty; saturated; some coal fragments

TEST HOLE NUMBER: 736  
 LOCATION: 118N-65W-28DDCC  
 LEGAL LOCATION: SW SW SE SE sec. 28, T. 118 N., R. 65 W.

- 3 - 10 Sand, brown, fine to medium, clayey, very silty, pebbly; oxidized, dry
- 10 - 19 Sand, brown, fine to medium, clayey, slightly silty; some pebbles, oxidized, moist, saturated at 14 feet

TEST HOLE NUMBER: 737  
 LOCATION: 118N-65W-34CCCC  
 LEGAL LOCATION: SW SW SW SW sec. 34, T. 118 N., R. 65 W.

- 0 - 3 Sand, brown, medium, very silty; organic, some pebbles (topsoil)

TEST HOLE NUMBER: 738  
 LOCATION: 118N-65W-34DADD  
 LEGAL LOCATION: SE SE NE SE sec. 34, T. 118 N., R. 65 W.

- 4 - 19 Sand, brown, fine-grained, very silty; oxidized, moist, some gravel
- 19 - 30 Sand, orange-brown, fine to medium; oxidized, dry; some silt, some gravel, more gravel content with depth

TEST HOLE NUMBER: 739  
 LOCATION: 119N-60W-06DC  
 LEGAL LOCATION: SW SE sec. 06, T. 119 N., R. 60 W.

- 1 - 15 Sand

TEST HOLE NUMBER: 740  
LOCATION: 119N-60W-23AAAA  
LEGAL LOCATION: NE NE NE NE sec. 23, T. 119 N., R. 60 W.

10 - 14 Sand and gravel, coarse sand, coarse gravel; highly oxidized, cobbles from 13 to 14 feet

TEST HOLE NUMBER: 741  
LOCATION: 119N-60W-23AAAA 2  
LEGAL LOCATION: NE NE NE NE sec. 23, T. 119 N., R. 60 W.

6 - 7 Sand, orange-brown, slightly clayey, very silty, slightly pebbly; oxidized, dry

TEST HOLE NUMBER: 742  
LOCATION: 119N-60W-24CCCC  
LEGAL LOCATION: SW SW SW SW sec. 24, T. 119 N., R. 60 W.

8 - 20 Sand, medium

TEST HOLE NUMBER: 743  
LOCATION: 119N-61W-02AAAA  
LEGAL LOCATION: NE NE NE NE sec. 02, T. 119 N., R. 61 W.

0 - 12 Sand, yellow-brown, fine, silty, clayey; oxidized  
12 - 18 Sand and gravel, coarse sand, fine gravel; oxidized

TEST HOLE NUMBER: 744  
LOCATION: 119N-61W-23BBBA  
LEGAL LOCATION: NE NW NW NW sec. 23, T. 119 N., R. 61 W.

4 - 6 Gravel, medium; poor return

TEST HOLE NUMBER: 745  
LOCATION: 119N-61W-25CDCD  
LEGAL LOCATION: SE SW SE SW sec. 25, T. 119 N., R. 61 W.

5 - 16 Sand, orange-brown, fine to medium, very clayey, very silty; oxidized, moist, some pebbles

TEST HOLE NUMBER: 746  
LOCATION: 119N-61W-26BBAB  
LEGAL LOCATION: NW NE NW NW sec. 26, T. 119 N., R. 61 W.

2 - 10 Sand, light-brown, fine to medium, very clayey, very silty, pebbly; oxidized, moist

TEST HOLE NUMBER: 747  
LOCATION: 119N-61W-26CDCC  
LEGAL LOCATION: SW SW SE SW sec. 26, T. 119 N., R. 61 W.

1 - 6 Gravel, brown, medium to coarse, silty  
11 - 36 Sand, brown, fine to medium, very clayey, very silty; oxidized, moist, saturated at 26 feet

TEST HOLE NUMBER: 748  
LOCATION: 119N-62W-31CCCC  
LEGAL LOCATION: SW SW SW SW sec. 31, T. 119 N., R. 62 W.

23 - 30 Sand and gravel, brown, coarse sand, fine gravel; oxidized

TEST HOLE NUMBER: 749  
LOCATION: 119N-62W-33CCCC  
LEGAL LOCATION: SW SW SW SW sec. 33, T. 119 N., R. 62 W.

20 - 23 Sand and gravel, coarse sand, fine to coarse gravel; cobble at 22 feet

TEST HOLE NUMBER: 750  
LOCATION: 119N-63W-03ABBC  
LEGAL LOCATION: SW NW NW NE sec. 03, T. 119 N., R. 63 W.

4 - 8 Sand, brown, fine-grained, slightly clayey, very silty; oxidized, dry

TEST HOLE NUMBER: 751  
LOCATION: 119N-63W-21DADD  
LEGAL LOCATION: SE SE NE SE sec. 21, T. 119 N., R. 63 W.

16 - 19 Sand, light-brown, fine-grained, very clayey, very silty; oxidized, dry  
21 - 24 Sand, light-brown, clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 752  
LOCATION: 119N-64W-17AAAA  
LEGAL LOCATION: NE NE NE NE sec. 17, T. 119 N., R. 64 W.

10 - 26 Sand, brown, fine to medium, slightly clayey, very silty; oxidized, saturated at 14 feet

TEST HOLE NUMBER: 753  
LOCATION: 119N-64W-30ABBB  
LEGAL LOCATION: NW NW NW NE sec. 30, T. 119 N., R. 64 W.

16 - 30 Sand, brown, fine-grained, very silty; oxidized, saturated at 20 feet

TEST HOLE NUMBER: 754  
LOCATION: 119N-65W-02BBBB  
LEGAL LOCATION: NW NW NW NW sec. 02, T. 119 N., R. 65 W.

14 - 28 Sand, gray, medium to coarse; some fine gravel

TEST HOLE NUMBER: 755  
LOCATION: 119N-65W-03BBBB  
LEGAL LOCATION: NW NW NW NW sec. 03, T. 119 N., R. 65 W.

7 - 28 Sand, brown, coarse; some fine gravel, grades to a coarse gravel, much shale and coal, oxidized

TEST HOLE NUMBER: 756  
LOCATION: 119N-65W-04BBBA  
LEGAL LOCATION: NE NW NW NW sec. 04, T. 119 N., R. 65 W.

10 - 21 Sand, gray, coarse, gravelly  
26 - 36 Sand, brown and gray, fine, clayey; drilled very fast

TEST HOLE NUMBER: 757  
LOCATION: 119N-65W-04CAAD  
LEGAL LOCATION: SE NE NE SW sec. 04, T. 119 N., R. 65 W.

10 - 12 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; silty; oxidized, moist  
12 - 14 Sand, gray-brown, fine to medium, clayey, silty, pebbly; dry  
14 - 16 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, silty, clayey; oxidized, moist  
16 - 27 Sand, brown, fine to medium, silty, clayey, gravelly; oxidized, saturated at 17 feet  
27 - 48 Sand, gray-brown, very silty, clayey; some gravel, some coal, saturated



TEST HOLE NUMBER: 758  
LOCATION: 119N-65W-04CBDA  
LEGAL LOCATION: NE SE NW SW sec. 04, T. 119 N., R. 65 W.

- 3 - 11 Sand, brown, fine to medium; some silt, some clay; oxidized, dry
- 14 - 16 Sand, brown, fine to medium, very silty, very pebbly; some clay, oxidized, moist

TEST HOLE NUMBER: 759  
LOCATION: 119N-65W-04CDDD  
LEGAL LOCATION: SE SE SE SW sec. 04, T. 119 N., R. 65 W.

- 11 - 16 Sand, brown, fine to medium, silty, gravelly; oxidized, dry
- 17 - 36 Sand, brown, fine to medium, very silty; oxidized, dry; more clay with depth

TEST HOLE NUMBER: 760  
LOCATION: 119N-65W-05DAAD  
LEGAL LOCATION: SE NE NE SE sec. 05, T. 119 N., R. 65 W.

- 4 - 36 Sand, brown, fine to coarse, silty, slightly clayey, very pebbly; oxidized, saturated at 26 feet

TEST HOLE NUMBER: 761  
LOCATION: 119N-65W-06CDCC  
LEGAL LOCATION: SW SW SE SW sec. 06, T. 119 N., R. 65 W.

- 19 - 26 Sand, brown, fine to medium, slightly silty; oxidized, dry
- 26 - 30 Sand, dark-brown, slightly clayey, very silty, very pebbly; oxidized, moist

TEST HOLE NUMBER: 762  
LOCATION: 119N-65W-08CDCC  
LEGAL LOCATION: SW SW SE SW sec. 08, T. 119 N., R. 65 W.

- 6 - 11 Sand, brown, fine to medium, slightly silty; some pebbles, oxidized, dry
- 16 - 20 Sand, brown, fine to medium, slightly clayey, very silty; oxidized, dry
- 27 - 28 Sand, dark-brown, fine to medium, very clayey, very silty; moist

TEST HOLE NUMBER: 763  
LOCATION: 119N-65W-09DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 09, T. 119 N., R. 65 W.

- 2 - 29 Sand, brown, fine to medium, slightly silty; oxidized, moist, saturated at 16 feet

TEST HOLE NUMBER: 764  
LOCATION: 119N-65W-12BABB  
LEGAL LOCATION: NW NW NE NW sec. 12, T. 119 N., R. 65 W.

- 11 - 15 Sand, brown, fine to medium, very silty; some pebbles; oxidized, saturated
- 15 - 21 Sand, gray, fine to medium, very silty; some pebbles, unoxidized

TEST HOLE NUMBER: 765  
LOCATION: 119N-65W-15BBBB  
LEGAL LOCATION: NW NW NW NW sec. 15, T. 119 N., R. 65 W.

- 8 - 25 Sand, fine

TEST HOLE NUMBER: 766  
LOCATION: 119N-65W-17DC  
LEGAL LOCATION: SW SE sec. 17, T. 119 N., R. 65 W.

- 2 - 5 Sand

5 - 11 Sand, clayey  
11 - 12 Sand

TEST HOLE NUMBER: 767  
LOCATION: 119N-65W-18ABAA  
LEGAL LOCATION: NE NE NW NE sec. 18, T. 119 N., R. 65 W.

7 - 10 Sand, brown, fine-grained, clayey, very silty; oxidized, dry

TEST HOLE NUMBER: 768  
LOCATION: 119N-65W-21BBBB  
LEGAL LOCATION: NW NW NW NW sec. 21, T. 119 N., R. 65 W.

23 - 31 Sand, gray, fine to coarse; unoxidized

TEST HOLE NUMBER: 769  
LOCATION: 119N-65W-22ADAA  
LEGAL LOCATION: NE NE SE NE sec. 22, T. 119 N., R. 65 W.

24 - 45 Sand, brown, fine to medium, very silty; oxidized, moist, saturated at 36 feet

TEST HOLE NUMBER: 770  
LOCATION: 119N-65W-24BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 24, T. 119 N., R. 65 W.

7 - 9 Sand, brown, very silty, slightly pebbly; saturated

TEST HOLE NUMBER: 771  
LOCATION: 119N-65W-24BBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 24, T. 119 N., R. 65 W.

4 - 10 Sand, brown, very clayey, very silty, slightly pebbly; oxidized, saturated

TEST HOLE NUMBER: 772  
LOCATION: 119N-65W-29DAAA  
LEGAL LOCATION: NE NE NE SE sec. 29, T. 119 N., R. 65 W.

15 - 26 Sand, brown, fine to medium, clayey, very silty; oxidized, moist, saturated at 19 feet  
26 - 39 Sand, gray-brown, fine-grained, clayey, very silty; saturated

TEST HOLE NUMBER: 773  
LOCATION: 119N-65W-31CCBB  
LEGAL LOCATION: NW NW SW SW sec. 31, T. 119 N., R. 65 W.

14 - 16 Sand, brown, fine to medium, silty; some pebbles, oxidized, dry  
18 - 22 Sand, brown, fine to medium, silty; some pebbles, oxidized, dry

TEST HOLE NUMBER: 774  
LOCATION: 119N-65W-34BA  
LEGAL LOCATION: NE NW sec. 34, T. 119 N., R. 65 W.

4 - 5 Sand, clayey  
11 - 13 Sand

TEST HOLE NUMBER: 775  
LOCATION: 119N-65W-34DDCD  
LEGAL LOCATION: SE SW SE SE sec. 34, T. 119 N., R. 65 W.

10 - 15 Sand, brown, fine to medium, slightly silty; some pebbles, oxidized, moist

25 - 33 Sand, brown, fine-grained, very silty; oxidized, moist, saturated at 26 feet

TEST HOLE NUMBER: 776

LOCATION: 119N-65W-35DDDD

LEGAL LOCATION: SE SE SE SE sec. 35, T. 119 N., R. 65 W.

8 - 13 Sand and gravel, brown, coarse sand, fine to medium gravel; highly oxidized  
22 - 26 Sand, brown, fine to medium

TEST HOLE NUMBER: 777

LOCATION: 119N-65W-36BBAA

LEGAL LOCATION: NE NE NW NW sec. 36, T. 119 N., R. 65 W.

5 - 22 Sand, orange-brown, fine-grained, clayey, very silty; oxidized, dry  
22 - 28 Sand, brown, fine-grained, clayey, silty; oxidized, moist

TEST HOLE NUMBER: 778

LOCATION: 119N-65W-36CDCD

LEGAL LOCATION: SE SW SE SW sec. 36, T. 119 N., R. 65 W.

6 - 14 Sand, brown, fine to medium, silty; some pebbles, dry  
21 - 48 Sand, brown, fine to medium, silty; some pebbles, oxidized, dry, saturated at 41 feet

TEST HOLE NUMBER: 779

LOCATION: 120N-60W-04BBBB

LEGAL LOCATION: NW NW NW NW sec. 04, T. 120 N., R. 60 W.

14 - 20 Sand, brown, fine to medium, very clayey, very silty; oxidized, saturated  
20 - 27 Sand, brown, fine to medium, slightly silty; oxidized, saturated  
27 - 48 Sand, gray, slightly silty; unoxidized, saturated

TEST HOLE NUMBER: 780

LOCATION: 120N-60W-14DAAA

LEGAL LOCATION: NE NE NE SE sec. 14, T. 120 N., R. 60 W.

1 - 2 Sand, red-brown, fine to medium, clayey, very silty, slightly gravelly; oxidized, dry  
2 - 10 Sand, brown, fine to medium, clayey, very silty, very pebbly, gravelly; oxidized, dry

TEST HOLE NUMBER: 781

LOCATION: 120N-60W-26BAAB

LEGAL LOCATION: NW NE NE NW sec. 26, T. 120 N., R. 60 W.

7 - 9 Sand, brown, medium to coarse, very silty; oxidized, saturated

TEST HOLE NUMBER: 782

LOCATION: 120N-61W-01AAAA

LEGAL LOCATION: NE NE NE NE sec. 01, T. 120 N., R. 61 W.

5 - 23 Sand, brown, fine to medium, slightly clayey, very silty; oxidized, saturated at 7 feet

TEST HOLE NUMBER: 783

LOCATION: 120N-61W-30BBBC

LEGAL LOCATION: SW NW NW NW sec. 30, T. 120 N., R. 61 W.

6 - 10 Sand, brown, fine-grained, very silty; oxidized, dry  
10 - 14 Sand, green-brown, slightly clayey, very silty; saturated

TEST HOLE NUMBER: 784

LOCATION: 120N-62W-01AADA

LEGAL LOCATION: NE SE NE NE sec. 01, T. 120 N., R. 62 W.

1 - 5 Sand, brown, fine-grained, clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 785

LOCATION: 120N-62W-08AADA

LEGAL LOCATION: NE SE NE NE sec. 08, T. 120 N., R. 62 W.

6 - 16 Sand, brown, fine to medium, very silty; oxidized, saturated at 8 feet

TEST HOLE NUMBER: 786

LOCATION: 120N-62W-16BBBC

LEGAL LOCATION: SW NW NW NW sec. 16, T. 120 N., R. 62 W.

6 - 12 Sand, brown, fine-grained, very clayey, very silty; oxidized, dry

TEST HOLE NUMBER: 787

LOCATION: 120N-63W-06BBBB

LEGAL LOCATION: NW NW NW NW sec. 06, T. 120 N., R. 63 W.

2 - 9 Sand, yellowish-gray-brown

11 - 23 Sand, yellowish-gray-brown, very fine to fine

TEST HOLE NUMBER: 788

LOCATION: 120N-63W-22ABB 2

LEGAL LOCATION: NW NW NE sec. 22, T. 120 N., R. 63 W.

10 - 20 Sand, very fine, silty

TEST HOLE NUMBER: 789

LOCATION: 120N-63W-22ABBB

LEGAL LOCATION: NW NW NW NE sec. 22, T. 120 N., R. 63 W.

11 - 21 Sand, yellow, fine; unoxidized and blue below 18 feet

TEST HOLE NUMBER: 790

LOCATION: 120N-63W-26ACAB

LEGAL LOCATION: NW NE SW NE sec. 26, T. 120 N., R. 63 W.

0 - 11 Sand, dark-brown, fine-grained, slightly clayey, very silty; oxidized, moist, more clay content with depth

TEST HOLE NUMBER: 791

LOCATION: 120N-63W-27DADA

LEGAL LOCATION: NE SE NE SE sec. 27, T. 120 N., R. 63 W.

6 - 10 Sand, brown, fine-grained, very silty; oxidized, dry

TEST HOLE NUMBER: 792

LOCATION: 120N-63W-31CCDD

LEGAL LOCATION: SE SE SW SW sec. 31, T. 120 N., R. 63 W.

1 - 7 Sand, yellowish-gray-brown, silty (till)

7 - 17 Sand, yellowish-gray-brown, very fine (till)

17 - 24 Sand, yellowish-gray-brown, silty (till)

TEST HOLE NUMBER: 793

LOCATION: 120N-63W-33DDDA

LEGAL LOCATION: NE SE SE SE sec. 33, T. 120 N., R. 63 W.

18 - 22 Sand, medium to coarse

TEST HOLE NUMBER: 794  
LOCATION: 120N-64W-16DDDD  
LEGAL LOCATION: SE SE SE SE sec. 16, T. 120 N., R. 64 W.

5 - 15 Sand, yellowish-gray-brown, slightly mottled, very fine, silty (till)

TEST HOLE NUMBER: 795  
LOCATION: 120N-64W-24AAAD 1  
LEGAL LOCATION: SE NE NE NE sec. 24, T. 120 N., R. 64 W.

6 - 23 Sand, slightly mottled yellowish-gray-brown, very fine to fine (till)

TEST HOLE NUMBER: 796  
LOCATION: 120N-65W-02AB  
LEGAL LOCATION: NW NE sec. 02, T. 120 N., R. 65 W.

7 - 9 Sand  
9 - 13 Sand, clayey  
13 - 20 Sand, poorly graded

TEST HOLE NUMBER: 797  
LOCATION: 120N-65W-02BBBB  
LEGAL LOCATION: NW NW NW NW sec. 02, T. 120 N., R. 65 W.

5 - 15 Sand, brown, very silty, gravelly; oxidized, dry, hit rocks at 15 feet, could not penetrate, abandoned hole

TEST HOLE NUMBER: 798  
LOCATION: 120N-65W-02CCCC  
LEGAL LOCATION: SW SW SW SW sec. 02, T. 120 N., R. 65 W.

24 - 40 Sand, green-brown, fine-grained, very clayey, very silty; saturated at 25 feet

TEST HOLE NUMBER: 799  
LOCATION: 120N-65W-03BBBB  
LEGAL LOCATION: NW NW NW NW sec. 03, T. 120 N., R. 65 W.

15 - 35 Sand, yellow, fine, silty; bedded, loess in part

TEST HOLE NUMBER: 800  
LOCATION: 120N-65W-06DDDD  
LEGAL LOCATION: SE SE SE SE sec. 06, T. 120 N., R. 65 W.

3 - 34 Sand, gray-brown, fine-grained, clayey, very silty, gravelly; saturated at 17 feet

TEST HOLE NUMBER: 801  
LOCATION: 120N-65W-08CCBC  
LEGAL LOCATION: SW NW SW SW sec. 08, T. 120 N., R. 65 W.

0 - 5 Gravel, brown, medium to coarse, very silty, very sandy; oxidized, dry  
5 - 21 Sand and gravel, brown, fine to medium sand, coarse gravel, very silty; dry  
21 - 36 Sand, olive-brown, medium to coarse, slightly clayey, very silty, gravelly; saturated

TEST HOLE NUMBER: 802  
LOCATION: 120N-65W-10CCCC  
LEGAL LOCATION: SW SW SW SW sec. 10, T. 120 N., R. 65 W.

23 - 27 Sand, coarse; fine gravel

TEST HOLE NUMBER: 803

LOCATION: 120N-65W-14CCCC

LEGAL LOCATION: SW SW SW SW sec. 14, T. 120 N., R. 65 W.

14 - 20 Sand, light-brown, fine-grained, clayey, very silty; some coal, saturated

20 - 43 Sand, olive-gray, fine-grained, slightly clayey, very silty; some coal, more clay content with depth

TEST HOLE NUMBER: 804

LOCATION: 120N-65W-16ADC

LEGAL LOCATION: SW SE NE sec. 16, T. 120 N., R. 65 W.

4 - 20 Sand, yellow

20 - 30 Sand

TEST HOLE NUMBER: 805

LOCATION: 120N-65W-16BBBC

LEGAL LOCATION: SW NW NW NW sec. 16, T. 120 N., R. 65 W.

10 - 21 Sand, brown, fine to medium, slightly silty; few pebbles, oxidized, dry

21 - 24 Sand, dark-brown, fine to medium, slightly silty; few pebbles, some small clay layers interbedded

TEST HOLE NUMBER: 806

LOCATION: 120N-65W-17CDDC

LEGAL LOCATION: SW SE SE SW sec. 17, T. 120 N., R. 65 W.

2 - 3 Gravel, brown, fine to medium, silty, slightly sandy; some clay; oxidized, dry

3 - 10 Sand and gravel, brown, fine to medium sand, medium to coarse gravel, very silty, slightly clayey; oxidized, dry

TEST HOLE NUMBER: 807

LOCATION: 120N-65W-17DDAD

LEGAL LOCATION: SE NE SE SE sec. 17, T. 120 N., R. 65 W.

14 - 16 Sand, brown, medium to coarse, very clayey, very silty, gravelly; oxidized, moist

23 - 46 Gravel, green-brown, coarse, slightly clayey, very silty; rocks from 39 to 41 feet, saturated, some sand

TEST HOLE NUMBER: 808

LOCATION: 120N-65W-19CCDC

LEGAL LOCATION: SW SE SW SW sec. 19, T. 120 N., R. 65 W.

12 - 14 Sand, brown, fine to medium, very silty, slightly pebbly; oxidized, dry

14 - 17 Gravel, brown, fine to medium, very silty, sandy; oxidized, dry

19 - 29 Sand, brown, fine to medium, slightly silty, pebbly; oxidized, moist

TEST HOLE NUMBER: 809

LOCATION: 120N-65W-20DDCD

LEGAL LOCATION: SE SW SE SE sec. 20, T. 120 N., R. 65 W.

15 - 21 Sand, brown, fine to medium, slightly clayey, slightly silty, gravelly; oxidized, moist

21 - 26 Gravel, brown, fine to medium, slightly clayey; oxidized, moist, more clay content with depth

TEST HOLE NUMBER: 810

LOCATION: 120N-65W-21DDDC

LEGAL LOCATION: SW SE SE SE sec. 21, T. 120 N., R. 65 W.

12 - 16 Sand, dark-brown, medium to coarse, slightly clayey, very silty; oxidized, saturated at 13 feet

21 - 24 Sand, green-brown, very silty, very pebbly; saturated

TEST HOLE NUMBER: 811

LOCATION: 120N-65W-22ABBA

LEGAL LOCATION: NE NW NW NE sec. 22, T. 120 N., R. 65 W.

14 - 56 Gravel, brown, medium to coarse, very clayey, very sandy; saturated

TEST HOLE NUMBER: 812

LOCATION: 120N-65W-23CCDC

LEGAL LOCATION: SW SE SW SW sec. 23, T. 120 N., R. 65 W.

17 - 20 Sand, dark, fine

TEST HOLE NUMBER: 813

LOCATION: 120N-65W-26BBBB

LEGAL LOCATION: NW NW NW NW sec. 26, T. 120 N., R. 65 W.

1 - 11 Sand, yellowish-gray-brown, silty, clayey (till)  
13 - 24 Sand, reddish-brown and gray (till)

TEST HOLE NUMBER: 814

LOCATION: 120N-65W-26CCCC

LEGAL LOCATION: SW SW SW SW sec. 26, T. 120 N., R. 65 W.

8 - 9 Sand, silty, poorly sorted  
9 - 16 Sand, fine to medium, well-sorted  
16 - 18 Sand and gravel, fine gravel, poorly sorted  
18 - 30 Sand, fine to medium, well-sorted; oxidized to 25 feet

TEST HOLE NUMBER: 815

LOCATION: 120N-65W-29CCCC

LEGAL LOCATION: SW SW SW SW sec. 29, T. 120 N., R. 65 W.

17 - 20 Sand, fine, silty; water-laid  
20 - 25 Sand, silty, clayey, poorly sorted; water-laid in part

TEST HOLE NUMBER: 816

LOCATION: 120N-65W-31CBBC

LEGAL LOCATION: SW NW NW SW sec. 31, T. 120 N., R. 65 W.

7 - 25 Sand, brown, fine-grained, slightly clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 817

LOCATION: 120N-65W-32CCCC

LEGAL LOCATION: SW SW SW SW sec. 32, T. 120 N., R. 65 W.

0 - 4 Sand, clayey  
16 - 19 Sand, poorly graded

TEST HOLE NUMBER: 818

LOCATION: 120N-65W-33ABAA

LEGAL LOCATION: NE NE NW NE sec. 33, T. 120 N., R. 65 W.

4 - 15 Sand, brown, fine to medium, slightly clayey, slightly silty, very pebbly; oxidized, dry

TEST HOLE NUMBER: 819

LOCATION: 120N-65W-35BBBB

LEGAL LOCATION: NW NW NW NW sec. 35, T. 120 N., R. 65 W.

8 - 27 Sand, medium, well-sorted

TEST HOLE NUMBER: 820

LOCATION: 120N-65W-36CCCC

LEGAL LOCATION: SW SW SW SW sec. 36, T. 120 N., R. 65 W.

16 - 20 Sand, grayish-black, coarse, silty; some shale pebbles and fine gravel

26 - 32 Sand and gravel, medium

TEST HOLE NUMBER: 821

LOCATION: 120N-65W-36DDDD

LEGAL LOCATION: SE SE SE SE sec. 36, T. 120 N., R. 65 W.

3 - 5 Sand, mottled light-brown, silty, clayey (till)

5 - 15 Sand, mottled reddish-brown, very fine, silty (till)

17 - 24 Sand, dark-brown to 23 feet and slate-gray from 23 to 24 feet, very fine (till)



**APPENDIX B:** List of land tracts in Spink County, South Dakota, which have been bonded with the intent to mine sand and gravel.

This information is on file at the office of the Minerals and Mining Program, Department of Environment and Natural Resources in Pierre, South Dakota.

**EXPLANATION:**

Column Description:

- a. Operator(s) name and address
- b. Location - given in half and quarter sections, section number, township, and range

**Land Tract 1**

- a. Operator(s): Dan L. Meyers – Huron
- b. Location: NE¼ sec. 25, T. 114 N., R. 61 W.

**Land Tract 2**

- a. Operator(s): Iky W. Wipf – Carpenter
- b. Location: SE¼ sec. 36, T. 114 N., R. 61 W.

**Land Tract 3**

- a. Operator(s): Iky W. Wipf – Carpenter
- b. Location: SW¼ sec. 14, T. 114 N., R. 62 W.

**Land Tract 4**

- a. Operator(s): Darrell's Rock, Sand & Gravel – Wessington Springs
- b. Location: SE¼ sec. 14, T. 114 N., R. 62 W.

**Land Tract 5**

- a. Operator(s): Carr Towing & Construction – Clark  
Clausen Construction, Inc. – Clark
- b. Location: West 53⅔ acres NE¼ sec. 03, T. 115 N., R. 64 W.

**Land Tract 6**

- a. Operator(s): Bower Construction Co. – Redfield  
Spink County Highway Department – Redfield
- b. Location: SE¼ sec. 03, T. 115 N., R. 64 W.

**Land Tract 7**

- a. Operator(s): Department of Transportation – Pierre
- b. Location: E½ SW¼ sec. 11, T. 115 N., R. 64 W.

**Land Tract 8**

- a. Operator(s): Department of Transportation – Pierre
- b. Location: NW¼ sec. 21, T. 115 N., R. 65 W.

**Land Tract 9**

- a. Operator(s): Department of Transportation – Pierre
- b. Location: SW¼ sec. 22, T. 115 N., R. 65 W.

**Land Tract 10**

- a. Operator(s): Bower Construction Co. – Redfield
- b. Location: NW¼ sec. 23, T. 115 N., R. 65 W.

**Land Tract 11**

- a. Operator(s): Department of Transportation – Pierre
- b. Location: NW¼ sec. 27, T. 115 N., R. 65 W.

**Land Tract 12**

- a. Operator(s): Iky W. Wipf – Carpenter  
Spink County Highway Department – Redfield  
Department of Transportation – Pierre
- b. Location: SW¼ sec. 28, T. 115 N., R. 65 W.

**Land Tract 13**

- a. Operator(s): Spink County Highway Department – Redfield
- b. Location: NW¼ sec. 19, T. 117 N., R. 65 W.

**Land Tract 14**

- a. Operator(s): Bower Construction Co. – Redfield
- b. Location: SW¼ sec. 19, T. 117 N., R. 65 W.

**Land Tract 15**

- a. Operator(s): Bower Construction Co. – Redfield
- b. Location: SE¼ sec. 30, T. 117 N., R. 65 W.

**Land Tract 16**

- a. Operator(s): Bower Construction Co. – Redfield
- b. Location: NE¼ sec. 19, T. 119 N., R. 65 W.

**Land Tract 17**

- a. Operator(s): H.F. Jacobs & Son Construction, Inc. – Aberdeen
- b. Location: SW¼ sec. 08, T. 120 N., R. 65 W.