Sand and Gravel Resources in Codington County, South Dakota

by

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Prepared in cooperation with the
United States Geological Survey,
South Dakota Department of Transportation,
East Dakota Water Development District,
and Codington County

Science Center
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ILLUSTRATION

Plate (Plate is in pocket)

1. Test holes, sand and gravel pits, numbered land tracts and sand and gravel deposits in Codington County, SD
INTRODUCTION

Codington County has a vast resource of sand and gravel and this pamphlet is designed to aid in the exploration for sources of these deposits. Specific areas have been delineated by the use of test drilling, sand and gravel pit locations, soil-survey information, topographic maps, aerial-photo interpretation, and field observations.

The quality of the material was not analyzed. This would require prior knowledge of the material specifications for each intended use, and more extensive sampling. This report is written to accompany the illustration at the end of this report which presents the main results of this survey.

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


Report (a.) describes the yield, quality and location of major aquifers (water-bearing deposits) in a short, nontechnical pamphlet. Report (b.) is a more technical and more exhaustive investigation of the water resources of the counties. Report (c.) is a detailed description of the overall geology of Codington and Grant Counties.

GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Codington 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 was 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." The majority of Codington 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 few 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. A terminal moraine is an end moraine marking the farthest advance of a glacier. When the debris brought to the terminus is composed mainly of sand and gravel, these end moraines or terminal moraines may be a source for coarse aggregate.

Glacial Outwash

Glacial outwash is the term used to describe any deposit of glacial debris that has been washed and sorted by flowing glacial 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 stream beds composed entirely of boulders. Most glacial outwash is made up of an assortment of sand and gravel, with minor amounts of silts, clays, and boulders. Two important types of glacial outwash found in Codington County are collapsed outwash and valley-train deposits.

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

Valley-train deposits are long, narrow bodies of outwash, deposited by meltwater streams far beyond the terminal moraine or the margin of an active glacier. These deposits are confined within the walls of a valley below the limit of the glacier.

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 glacial-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 as a coarse-aggregate source.

Terrace Deposits

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

Appendices A and B are a compilation of test holes which encountered sand or gravel in the upper 25 feet. These appendices list: (a) location of the test hole, (b) depth, and (c) description of sand and gravel intervals. Locations in appendix B are followed by an "R" which indicates they lie within the boundary of the Lake Traverse Indian Reservation. The complete set of drill logs is on file at the office of the South Dakota Geological Survey in Vermillion. The South Dakota Geological Survey, U.S. Geological Survey, South Dakota Division of Water Rights, U.S. Bureau of Reclamation, and private drillers contributed to this list.

Appendix C is a compilation of land tracts that have been tested for sand and gravel by the Department of Transportation or have been bonded with the intent to mine sand and gravel at the Office of Minerals and Mining, Department of Environment and Natural Resources. Both of these departments are located in Pierre, South Dakota. The owner, material type, and where possible, thickness of overburden and aggregate being mined, have been included. The actual thickness of a deposit may be greater than that mined, because of the depth to the water table, changing material characteristics, or the limitations of mining methods.

EXPLANATION OF THE ILLUSTRATION

Plate 1 shows the location of test holes and sand and gravel pits plus numbered land tracts, as listed in appendix C. It also shows towns, major highways, major lakes, rivers, and creeks.

Test holes are represented by three different symbols. A closed circle ($) represents a location in which sand or gravel was encountered in the upper 25 feet with overburden of 5 feet or less. A square (■) indicates a location at which sand or gravel was encountered in the upper 25 feet, but the overburden exceeds 5 feet. The accompanying map on the illustration is an index of where to find the pertinent information for the symbols described above. Each set of numbers refer to corresponding numbers in appendices A and B which are listed by location. An unfilled circle ($) indicates a location where no sand or gravel was encountered in the upper 25 feet. These are not numbered as they are not listed in the appendices.

Gravel pits are designated by (∗). Land tracts listed in appendix C are designated by (∗·) and are numbered. Additional information is on file at the Department of Transportation and the Office of Minerals and Mining, 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 the map and are described in the following section.

Sand and gravel deposits in areas labeled as "good" are generally thick, with thin overburden, and cover a broad area. 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 productive, they are generally limited and difficult to locate.

**Sand and Gravel**

The areas marked with the letter A are valley train outwash deposits which are found in the valleys of creeks draining into the Big Sioux River from the east. Associated with these valley-train deposits are high- and low-level terraces. Deposits in area A have been subdivided into two separate units (A¹ - A²) based on the probability of locating sand and gravel deposits.

A¹ (designated fair): Individual drainage areas in this unit contain deposits of sand and gravel but are limited in areal extent, have high average overburden thicknesses, or are discontinuous in nature giving the overall probability of A¹ as fair.

A² (designated good): This unit displays high probabilities for locating sand and gravel. The area can be further divided into three separate areas based on their geographic locations. These are Willow Creek, Mud Creek, and Soo Creek.

Valley-train deposits and high- and low-level terraces cover approximately 6 square miles along Willow Creek with an average overburden of 3 feet. The average thickness of the deposit is 16.5 feet as calculated from test-hole data, but varies depending on location. Water-table levels range from 9 feet below land surface on the valley floor to 19 feet on the terraces where the majority of present pits are located.

Deposits along Mud Creek cover approximately 5 square miles with thicknesses of 20 feet common. A maximum of over 40 feet of sand and gravel was encountered in test hole 473. The average overburden is under 3 feet, but high water-table conditions may inhibit pit development.

Sand and gravel deposits along the valley of Soo Creek and its tributary are discontinuous, but have an overburden of 2 feet and a average thickness of 23 feet. Test holes 678 and 679 show a small terrace of very coarse gravel along the main creek and pits have been developed in other terraces throughout the valley.

Area B (designated good): Deposits found in this area make up the largest body of outwash found in Codington County covering approximately 85 square miles. This large valley-train deposit with its associated terraces and outwash plains has a low overburden thickness of under 5 feet. The thickness of the deposit varies depending on location, but thicknesses of over 40 feet are common in the test-hole data. The average water-table depth was calculated from the South Dakota Division of Water Rights observation wells and was found to be 10 feet according to the latest data. The water-table level will fluctuate with wet and dry year cycles. The deposit is found mainly in the valley of the Big Sioux River with a large outwash plain located along Mud Creek to the east of the main valley. Many smaller outwash plains occur in the lower reaches of tributaries draining into the main river from the east.
Area C (designated good): Sand and gravel located in this area are collapsed-outwash deposits that can be characterized topographically by numerous small closed depressions. The nature of the deposit is variable, but substantial amounts of sand and gravel occur in these two deposits. Area C has been divided into two separate units (C1 and C2) which are described below.

In area C1 the overburden thickness is inconsistent and ranges from 0 to 8 feet. The thickness of the deposit is also variable with a range from 2 feet to over 43 feet in test hole 120. Only one test hole has water-table information. It was found to be 16 feet in test hole 120.

Area C2 represents a collapsed-outwash plain with an average overburden of 4 feet. The thickness of the deposit averages 26 feet with many test holes showing thicknesses of over 40 feet. The deposit is fairly continuous and many pits have been developed in area C2.

Area D (designated fair): Sand and gravel in this area is found in a series of long discontinuous ridges which are part of the Bemis end moraine. The overburden ranges from 1 to 12 feet, depending on location and the thickness ranges from 0.5 to 34 feet. Many pits have been developed in this area.

Area E (designated good): Sand and gravel in this area occurs as collapsed-outwash deposits. A large gravel terrace lies west of Highway 20 and to the northeast of Horseshoe Lake where land tracts 85 through 90, 95, and 96 are located. The average overburden thickness for the entire area is 3 feet and the thickness of the deposit is variable ranging from 1 foot to over 70 feet. Thicknesses of over 30 feet are common with water-table levels generally below 11 feet, but these may vary depending on location.

Area F (designated fair): This area is a narrow ridge of sand and gravel separating Long Lake from an unnamed lake to the southwest. The test-hole data shows overburden of 2 feet or less and reveals a maximum thickness of 36 feet in test hole 456.

Area G (designated good): This area represents a small portion of an outwash plain situated in Antelope valley. The entire deposit trends northwest to southeast and parallels a ridge known as the Altamont moraine. The portion of outwash occurring in Codington County has an average overburden of 2 feet and an average thickness of 25 feet.

Area H (designated fair): Sand and gravel deposit in this area are discontinuous bodies of glacial outwash with a highly variable nature. Test-hole data shows conflicting reports between several tests drilled only a few feet apart. The average overburden was calculated to be 5 feet over the entire area, but here again the values vary greatly. Thicknesses range from just 1 foot to over 30 feet. Most of the pits developed here are located in terrace deposits.

Area I (designated good): This deposit is a collapsed-outwash feature known as a disintegration ridge. There is less than 1 foot of overburden on average and the thickness ranges a maximum of over 40 feet in test hole 644.

Area J (designated fair): Sand and gravel deposits located in this area are associated with a ridge known as the Dakota moraine. The deposits are encompassed within the ridge and are a combination of clay, silt, sand, gravel, and large boulders. The overburden is generally less than 5 feet with
thicknesses being quite variable. Accurate test drilling was difficult in this area due to the ruggedness of the terrain and the nature of the deposit.

The remainder of Codington County has been mapped as "poor," although isolated areas of sand and gravel deposits occur. One such example is located 4 miles west of Goose Lake along State Highway 22 where test-hole data and a number of small pits indicate scattered sand and gravel deposits. Due to the random occurrence 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 to further exploration and development of the sand and gravel resources in Codington 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 inCodington County, South Dakota, which encountered 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, 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: 116N-51W-01DA
LEGAL LOCATION: NE SE sec. 01, T. 116 N., R. 51 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 30 Gravel

TEST HOLE NUMBER:  2
LOCATION: 116N-51W-07DDDD
LEGAL LOCATION: SE SE SE sec. 67, T. 116 N., R. 51 W.

3 - 4 Gravel, fine to coarse, clayey, sandy
9 - 33 Sand, brown, medium to coarse, very clayey; oxidized, saturated at 12 feet; abandoned hole at 33 feet due to rig problems

TEST HOLE NUMBER:  3
LOCATION: 116N-51W-12BBBC
LEGAL LOCATION: SW NW NW sec. 12, T. 116 N., R. 51 W.

2 - 4 Gravel, brown, medium to coarse, clayey, sandy; oxidized, moist
4 - 26 Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, slightly clayey; oxidized, dry; saturated at 7 feet

TEST HOLE NUMBER:  4
LOCATION: 116N-51W-1FCCBB
LEGAL LOCATION: SW SW SW sec. 13, T. 116 N., R. 51 W.

8 - 12 Sand, brown, medium, clayey; oxidized, moist; some fine gravel
12 - 71 Sand and gravel, tan-brown, medium to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER:  5
LOCATION: 116N-51W-17BACB
LEGAL LOCATION: NW SW NE NW sec. 17, T. 116 N., R. 51 W.

0 - 3 Gravel, coarse, cobbly, very clayey; oxidized, dry
3 - 10 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized

TEST HOLE NUMBER:  6
LOCATION: 116N-51W-17BIDA 2
LEGAL LOCATION: NE SE NW NW sec. 17, T. 116 N., R. 51 W.

0 - 8 Sand and gravel, light-brown; some clay, dry
8 - 13 Gravel, fine to medium, very clayey; some sand, oxidized, dry
TEST HOLE NUMBER: 7
LOCATION: 116N-5SW-23CCBC
LEGAL LOCATION: SW NW SW SW sec. 23, T. 116 N., R. 51 W.
5 - 18 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey, silty oxidized, dry
10 - 12 Sand, brown, fine to medium, very clayey; oxidized, moist; some fine gravel

TEST HOLE NUMBER: 8
LOCATION: 116N-5SW-23DADD
LEGAL LOCATION: SE SE NE NE sec. 23, T. 116 N., R. 51 W.
1 - 4 Sand and gravel, tan, fine to medium sand, fine to coarse gravel, slightly clayey; oxidized, dry
4 - 6 Sand, tan-brown to brown, fine to medium, slightly clayey; oxidized, moist; some gravel
6 - 14 Sand and gravel, fine to coarse sand, fine to coarse gravel, slightly clayey; oxidized, saturated
14 - 24 Gravel, coarse, slightly clayey; saturated

TEST HOLE NUMBER: 9
LOCATION: 116N-5SW-24DADA
LEGAL LOCATION: NE SE NE NE sec. 24, T. 116 N., R. 31 W.
4 - 5 Sand and gravel; abandoned hole at 5 feet, could not penetrate boulders.

TEST HOLE NUMBER: 10
LOCATION: 116N-5SW-35CCCB
LEGAL LOCATION: NW SW NW SW sec. 35, T. 116 N., R. 51 W.
10 - 15 Sand, brown, fine to coarse, very clayey, gravely; oxidized, moist
15 - 16 Gravel, brown, fine to medium, slightly clayey, sandy; oxidized, saturated
16 - 22 Sand, brown to gray-brown, fine to coarse, very clayey; saturated; some fine to coarse gravel

TEST HOLE NUMBER: 11
LOCATION: 116N-5SW-36DADA
LEGAL LOCATION: NE SE NE SE sec. 36, T. 116 N., R. 51 W.
16 - 26 Gravel; with clay, muddy
20 - 33 Gravel, coarse; rocks and boulders

TEST HOLE NUMBER: 12
LOCATION: 116N-5SW-03BAB
LEGAL LOCATION: NW NE NW sec. 03, T. 116 N., R. 52 W.
10 - 32 Gravel

TEST HOLE NUMBER: 13
LOCATION: 116N-5SW-03BBB
LEGAL LOCATION: NW NW NW NW sec. 03, T. 116 N., R. 52 W.
PRELIMINARY LOG - SUBJECT TO CHANGE
1 - 5 Sand, yellow-brown, medium
5 - 19 Gravel, coarse
10 - 30 Sand and gravel, medium to coarse
TEST HOLE NUMBER: 14
LOCATION: 116N-52W-04AAB
LEGAL LOCATION: NE NW NE sec. 04, T. 116 N., R. 52 W.
6 - 19 Sand and gravel, poorly sorted

TEST HOLE NUMBER: 15
LOCATION: 116N-52W-04BBA
LEGAL LOCATION: NE NW NW sec. 04, T. 116 N., R. 52 W.
25 - 52 Gravel; some blue clay

TEST HOLE NUMBER: 16
LOCATION: 116N-52W-04BC
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

7.5 - 16.5 Sand and gravel, poorly sorted; brown clay at 16 feet

TEST HOLE NUMBER: 17
LOCATION: 116N-52W-04BC 1
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 20 Sand and gravel, poorly sorted; clay at 20 feet

TEST HOLE NUMBER: 18
LOCATION: 116N-52W-04BC 2
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 16 Sand, brown, fine, poorly sorted; to gravel, yellow clay at 16 feet

TEST HOLE NUMBER: 19
LOCATION: 116N-52W-04BC 3
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 20 Sand and gravel, brown, poorly sorted; clay at 20 feet

TEST HOLE NUMBER: 20
LOCATION: 116N-52W-04CCCC
LEGAL LOCATION: SW SW SW SW sec. 04, T. 116 N., R. 52 W.
14 - 29 Gravel; clean

9
TEST HOLE NUMBER: 21
LOCATION: 16N-52W-04CDAB
LEGAL LOCATION: NW NE SE SW sec. 04, T. 116 N., R. 52 W.
10 - 24 Gravel

TEST HOLE NUMBER: 22
LOCATION: 16N-52W-04DCD
LEGAL LOCATION: SE SW SE SW sec. 04, T. 116 N., R. 52 W.
0 - 20 Sand; gravel; clay
20 - 29 Sand; gravel

TEST HOLE NUMBER: 23
LOCATION: 16N-52W-04DD
LEGAL LOCATION: SE SE sec. 04, T. 116 N., R. 52 W.
**THIS LOG CONTAINS UNVERIFIED INFORMATION**

4 - 8 Sand, fine
9 - 24 Sand

TEST HOLE NUMBER: 24
LOCATION: 16N-52W-05AADD
LEGAL LOCATION: SE SE NE NE sec. 05, T. 116 N., R. 52 W.
2 - 19 Sand, medium to coarse

TEST HOLE NUMBER: 25
LOCATION: 16N-52W-05AADD 1
LEGAL LOCATION: SE SE NE NE sec. 05, T. 116 N., R. 52 W.
0 - 5 Sand, brown, fine, silty; dry, oxidized
5 - 9 Sand and gravel, brown, fine to coarse sand; fine to coarse gravel, silty; oxidized, dry
9 - 13 Sand, gray, medium, poorly sorted; some fine gravel, moist to saturated, contamination with fuel oil evident

TEST HOLE NUMBER: 26
LOCATION: 16N-52W-05ABA 1
LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.
5 - 35 Gravel

TEST HOLE NUMBER: 27
LOCATION: 16N-52W-05ABA 2
LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.
10 - 38 Sand and rock

TEST HOLE NUMBER: 28
LOCATION: 16N-52W-05ABA 3
LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.

10 - 38 Sand and rock

TEST HOLE NUMBER: 29
LOCATION: 116N-52W-05AD
LEGAL LOCATION: SE NE sec. 05, T. 116 N., R. 52 W.

**THIS LOG CONTAINS UNVERIFIED INFORMATION**

3 - 15 Sand and gravel, brown, poorly sorted; blue-green clay at 15 feet

TEST HOLE NUMBER: 30
LOCATION: 116N-52W-05BAA
LEGAL LOCATION: NE NE NW sec. 05, T. 116 N., R. 52 W.

3 - 16 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 31
LOCATION: 116N-52W-05BADD 1
LEGAL LOCATION: SE SE NE NW sec. 05, T. 116 N., R. 52 W.

10 - 17 Gravel, gray, coarse
17 - 18 Gravel, red, with clay
18 - 20 Gravel, red
20 - 22 Gravel, red and gray, coarse
22 - 24 Gravel, gray, coarse; with fine sand
24 - 26 Sand, gray; with stones

TEST HOLE NUMBER: 32
LOCATION: 116N-52W-05BADD 2
LEGAL LOCATION: SE SE NE NW sec. 05, T. 116 N., R. 52 W.

10 - 17 Gravel, gray, coarse
17 - 18 Gravel, red, with clay

TEST HOLE NUMBER: 33
LOCATION: 116N-52W-05BBB
LEGAL LOCATION: NW NW NW sec. 05, T. 116 N., R. 52 W.

4 - 29 Sand, dark, coarse; clay, gravel; poorly sorted

TEST HOLE NUMBER: 34
LOCATION: 116N-52W-05CCB
LEGAL LOCATION: NW SW SW sec. 05, T. 116 N., R. 52 W.

0 - 9 Sand, silty, poorly sorted

TEST HOLE NUMBER: 35
LOCATION: 116N-52W-05DADD 1
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<td>PRELIMINARY LOG – SUBJECT TO CHANGE</td>
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12
LEGAL LOCATION: NE NE NE NE sec. 06, T. 116 N., R. 52 W.

8 - 45 Sand and silt, black silt

TEST HOLE NUMBER: 42
LOCATION: 116N-52W-06ABB
LEGAL LOCATION: NW NW NE sec. 06, T. 116 N., R. 52 W.

5 - 15 Sand and gravel, fine to coarse
17 - 23 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 43
LOCATION: 116N-52W-06ABBB
LEGAL LOCATION: NW NW NW NE sec. 06, T. 116 N., R. 52 W.

5 - 25 Gravel, pea-sized
25 - 45 Sand, coarse; water

TEST HOLE NUMBER: 44
LOCATION: 116N-52W-06BEB
LEGAL LOCATION: NW NW NW NW sec. 06, T. 116 N., R. 52 W.
PRELIMINARY LOG — SUBJECT TO CHANGE

2 - 24 Sand and gravel, gray, medium sand to medium gravel; some clay/silt layers

TEST HOLE NUMBER: 45
LOCATION: 116N-52W-06BDD
LEGAL LOCATION: SE SE NW sec. 06, T. 116 N., R. 52 W.

3 - 35 Sand and gravel, fine to very coarse; boulders

TEST HOLE NUMBER: 46
LOCATION: 116N-52W-06BDDD
LEGAL LOCATION: SE SE SE NW sec. 06, T. 116 N., R. 52 W.

2 - 4 Gravel
4 - 42 Sand, coarse

TEST HOLE NUMBER: 47
LOCATION: 116N-52W-06CAB
LEGAL LOCATION: NW NE SW sec. 06, T. 116 N., R. 52 W.

0 - 24 Gravel, fine
24 - 84 Gravel; sand; high clay content

TEST HOLE NUMBER: 48
LOCATION: 116N-52W-06DCCC
LEGAL LOCATION: SW SW SW SE sec. 06, T. 116 N., R. 52 W.

2 - 10 Sand, brown; coarse; coarse gravel

13
TEST HOLE NUMBER: 49
LOCATION: 116N-52W-07BBB
LEGAL LOCATION: NW NW NW sec. 07, T. 116 N., R. 52 W.
2 - 25 Sand, brown, medium to coarse, clayey; dry, oxidized, saturated at 18 feet

TEST HOLE NUMBER: 50
LOCATION: 116N-52W-07BCBB
LEGAL LOCATION: NW NW SW NW sec. 07, T. 116 N., R. 52 W.
1 - 4 Sand, light-brown, coarse, silty, poorly sorted; dry, oxidized
4 - 30 Sand, reddish-brown, fine, well sorted; moist, oxidized, saturated at 14 feet

TEST HOLE NUMBER: 51
LOCATION: 116N-52W-07BBB 1
LEGAL LOCATION: NW SW NW NW sec. 07, T. 116 N., R. 52 W.
6 - 11 Sand, brown, medium, clayey, poorly sorted; moist, oxidized

TEST HOLE NUMBER: 52
LOCATION: 116N-52W-07BCBB 2
LEGAL LOCATION: NW SW SW NW sec. 07, T. 116 N., R. 52 W.
3 - 7 Sand, brown, coarse, moderately sorted; dry, oxidized
7 - 11 Gravel, brown, very coarse, cobby; dry, oxidized

TEST HOLE NUMBER: 53
LOCATION: 116N-52W-08AAAA
LEGAL LOCATION: NE NE NE NE sec. 08, T. 116 N., R. 52 W.
5 - 8 Sand, yellow
9 - 13 Sand, yellow, coarse
13 - 16 Gravel, gray, coarse

TEST HOLE NUMBER: 54
LOCATION: 116N-52W-08AABA
LEGAL LOCATION: NE NW NE NE sec. 08, T. 116 N., R. 52 W.
2 - 8 Gravel, coarse
8 - 9 Gravel, coarse; with clay
9 - 12 Gravel, rusty-red
12 - 14 Sand, coarse; dirty
14 - 16 Sand, finer than 12 to 14 foot interval; dirty
16 - 17 Gravel, gray, coarse

TEST HOLE NUMBER: 55
LOCATION: 116N-52W-08AACD
LEGAL LOCATION: SE SW NE NE sec. 09, T. 116 N., R. 52 W.
2 - 13 Gravel, yellow, coarse
13 - 14 Gravel, rusty-red
14 - 16 Gravel, gray, coarse
### Test Hole Number: 56
**Location:** 116N-52W-08AADA 1  
**Legal Location:** NE SE NE NE sec. 08, T. 116 N., R. 52 W.
- **5** - 9 Gravel, yellow
- **7** - 11 Sand, yellow
- **11** - 15 Sand, yellow; with stones
- **15** - 16 Sand, gray, coarse
- **18** - 19 Sand, gray; fine; with stones
- **19** - 22 Gravel and rock, coarse

### Test Hole Number: 57
**Location:** 116N-52W-08AADA 2  
**Legal Location:** NE SE NE NE sec. 08, T. 116 N., R. 52 W.
- **2** - 9 Gravel, yellow
- **9** - 11 Sand, yellow
- **11** - 15 Sand, yellow; with stones
- **15** - 16 Sand, gray, coarse

### Test Hole Number: 58
**Location:** 116N-52W-08ADD  
**Legal Location:** SE SE NE NE sec. 08, T. 116 N., R. 52 W.
- **10** - 16 Gravel, coarse

### Test Hole Number: 59
**Location:** 116N-52W-08ABAB  
**Legal Location:** NW NE NW NE sec. 08, T. 116 N., R. 52 W.
- **5** - 8 Gravel; with clay
- **8** - 13 Gravel, yellow, coarse
- **14** - 15 Gravel, coarse; with clay
- **15** - 17 Gravel, coarse

### Test Hole Number: 60
**Location:** 116N-52W-06ABDD  
**Legal Location:** SE SE NW NE sec. 08, T. 116 N., R. 52 W.
- **1** - 14 Gravel, yellow, coarse
- **14** - 15 Gravel; with clay lenses
- **15** - 17 Gravel, yellow, coarse
- **17** - 18 Gravel, gray, coarse
- **18** - 19 Gravel, gray; with blue clay

### Test Hole Number: 61
**Location:** 116N-52W-08A2FD  
**Legal Location:** SE SE SE NE sec. 08, T. 116 N., R. 52 W.
- **8** - 14 Gravel, coarse; with clay
- **14** - 21 Gravel, yellow, coarse
- **21** - 25 Gravel, gray, coarse

15
<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 62</th>
<th>LOCATION: 16N-52W-09AEP D 2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SE SE NE sec. 08, T. 116 N., R. 52 W.</td>
</tr>
<tr>
<td></td>
<td>8 - 14 Gravel, coarse; with clay</td>
</tr>
<tr>
<td></td>
<td>14 - 17 Gravel, yellow, coarse</td>
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<tr>
<th>TEST HOLE NUMBER: 63</th>
<th>LOCATION: 116N-52W-09AEC</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SW SW NW sec. 09, T. 116 N., R. 52 W.</td>
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<tr>
<td></td>
<td>19 - 24 Gravel, fine, sily</td>
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<tr>
<th>TEST HOLE NUMBER: 64</th>
<th>LOCATION: 116N-52W-09DAD</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SE NE SE sec. 09, T. 116 N., R. 52 W.</td>
</tr>
<tr>
<td></td>
<td>4 - 10 Gravel, poorly sorted; some clay</td>
</tr>
<tr>
<td></td>
<td>10 - 49 Gravel, fine, coarser than interval from 4 to 10 feet</td>
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<tr>
<th>TEST HOLE NUMBER: 65</th>
<th>LOCATION: 116N-57W-10C8BC</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SW NW NW SW sec. 10, T. 116 N., R. 52 W.</td>
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<tr>
<td></td>
<td>5 - 30 Gravel, coarse; cobbles, coarse sand</td>
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<tr>
<th>TEST HOLE NUMBER: 66</th>
<th>LOCATION: 116N-52W-12DDAA</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: NE NE SE SE sec. 12, T. 116 N., R. 52 W.</td>
</tr>
<tr>
<td></td>
<td>0 - 6 Gravel, light-brown, sily; some sand, oxidized, dry</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>TEST HOLE NUMBER: 67</th>
<th>LOCATION: 116N-52W-14CCD</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SE SW SW SW sec. 14, T. 116 N., R. 52 W.</td>
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<tr>
<td></td>
<td>4 - 21 sand and gravel; medium to coarse</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 68</th>
<th>LOCATION: 116N-52W-14DAAD</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SE NE SE NE sec. 14, T. 116 N., R. 52 W.</td>
</tr>
<tr>
<td></td>
<td>0 - 5 Sand into gravel, brown, fine to coarse sand, fine gravel, slightly clayey; dry, oxidized</td>
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<th>TEST HOLE NUMBER: 69</th>
<th>LOCATION: 116N-52W-14DA8B</th>
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<tbody>
<tr>
<td></td>
<td>LEGAL LOCATION: SE NW NE SE sec. 14, T. 116 N., R. 52 W.</td>
</tr>
<tr>
<td></td>
<td>10 - 20 Sand and gravel, gray, fine to coarse sand, fine to medium gravel, clayey, oxidized, saturated at 14 feet</td>
</tr>
<tr>
<td>Test Hole Number</td>
<td>Location</td>
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<tr>
<td>70</td>
<td>116N-52W-15ABC</td>
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<td>71</td>
<td>116N-52W-15BCBA</td>
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<td>72</td>
<td>116N-52W-15DAAA</td>
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<td>73</td>
<td>116N-52W-15DCC</td>
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<td>74</td>
<td>116N-52W-15DDD</td>
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<td>75</td>
<td>116N-52W-15ECCC</td>
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<tr>
<td>76</td>
<td>116N-52W-22AABB</td>
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</table>
8 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to rounded; majority is carbonates with some igneous rocks.

TEST HOLE NUMBER: 78
LOCATION: 116N-52W-22AB
LEGAL LOCATION: NE NW NE sec. 22, T. 116 N., R. 52 W.

6 - 14 Sand, brown, poorly sorted
14 - 19 Gravel, pea-sized
19 - 44 Sand, gravel, pea-sized

TEST HOLE NUMBER: 79
LOCATION: 116N-52W-22ADD
LEGAL LOCATION: NE SE NE NE sec. 23, T. 116 N., R. 52 W.

10 - 12 Sand, brown, medium to coarse; composed mainly of carbonates with some igneous rocks.

TEST HOLE NUMBER: 80
LOCATION: 116N-52W-22ADD
LEGAL LOCATION: NW SE NE sec. 22, T. 116 N., R. 52 W.

7 - 15 Sand, gray, very silty, clayey; sand composed of carbonates

TEST HOLE NUMBER: 81
LOCATION: 116N-52W-22BAA
LEGAL LOCATION: NE NE NW sec. 22, T. 116 N., R. 52 W.

4 - 14 Sand, brown to gray; pea gravel, some clay
14 - 20 Sand and gravel
24 - 39 Sand, fine, clayey

TEST HOLE NUMBER: 82
LOCATION: 116N-52W-22BAD
LEGAL LOCATION: NE SE NE NE sec. 22, T. 116 N., R. 52 W.

0 - 24 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to round; majority of gravel is carbonates with some igneous rock, more sand than gravel; water table is at 10 feet and the color changes to gray

TEST HOLE NUMBER: 83
LOCATION: 116N-52W-22BAD
LEGAL LOCATION: NE SE NW sec. 22, T. 116 N., R. 52 W.

0 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to round; majority sand; water level at 9 feet, sand turns gray at this depth

TEST HOLE NUMBER: 84
LOCATION: 116N-52W-22BDD
LEGAL LOCATION: SE SW SE NW sec. 22, T. 116 N., R. 52 W.

5 - 18 Sand and gravel
TEST HOLE NUMBER:  85
LOCATION:  116N-52W-22BDCD 1
LEGAL LOCATION:  SE SW SE NW sec. 22, T. 116 N., R. 52 W.,

  0 - 17  Sand, brown, fine to coarse; with some brown, fine to medium gravel, water level is at 9 feet

TEST HOLE NUMBER:  86
LOCATION:  116N-52W-22DDDD
LEGAL LOCATION:  SE SE SE NW sec. 22, T. 116 N., R. 52 W.,

  0 - 12  Sand, brown, fine to coarse; with some brown, fine to medium gravel, water level is at 9 feet

TEST HOLE NUMBER:  87
LOCATION:  116N-52W-22CAAA
LEGAL LOCATION:  NE NE NE SW sec. 22, T. 116 N., R. 52 W.,

  3 - 18  Sand and gravel

TEST HOLE NUMBER:  88
LOCATION:  116N-52W-22CBCC
LEGAL LOCATION:  SW SW SW SW sec. 22, T. 116 N., R. 52 W.,

  6 - 29  Sand and gravel

TEST HOLE NUMBER:  89
LOCATION:  116N-52W-22DBDD
LEGAL LOCATION:  SE SE NW SE sec. 22, T. 116 N., R. 52 W.,

  2 - 18  Sand and gravel

TEST HOLE NUMBER:  90
LOCATION:  116N-52W-22DDDC
LEGAL LOCATION:  SW SE SE SE sec. 22, T. 116 N., R. 52 W.,

  5 - 18  Sand and gravel; some clay in it

TEST HOLE NUMBER:  91
LOCATION:  116N-52W-25CDDC
LEGAL LOCATION:  SW SE SE SW sec. 25, T. 116 N., R. 52 W.,

  3 - 11  Sand and gravel, light-brown, clayey, oxidized, moist

TEST HOLE NUMBER:  92
LOCATION:  116N-52W-25DDDA
LEGAL LOCATION:  NE SE SE SE sec. 25, T. 116 N., R. 52 W.,

  5 -  9  Sand and gravel, tan-brown, clayey, silty; dry, oxidized

TEST HOLE NUMBER:  93
LOCATION:  116N-52W-27AAAB

9
LEGAL LOCATION: NW NE NE NE sec. 27, T. 11b N., R. 52 W.

5 - 17 Sand and gravel

TEST HOLE NUMBER: 94
LOCATION: 116N-52W-27AABB
LEGAL LOCATION: NW NW NE NE sec. 27, T. 116 N., R. 52 W.

4 - 10 Sand and gravel
10 - 44 Sand, gray to brown; gravel, medium

TEST HOLE NUMBER: 95
LOCATION: 116N-52W-27ABAA
LEGAL LOCATION: NE NE NW NE sec. 27, T. 116 N., R. 52 W.

2 - 24 Sand and gravel

TEST HOLE NUMBER: 96
LOCATION: 116N-52W-27ABBB
LEGAL LOCATION: NW NW NW NE sec. 27, T. 116 N., R. 52 W.

5 - 22 Sand and gravel

TEST HOLE NUMBER: 97
LOCATION: 116N-52W-27ABCA
LEGAL LOCATION: NE SW NW NE sec. 27, T. 116 N., R. 52 W.

4 - 18 Sand and gravel

TEST HOLE NUMBER: 98
LOCATION: 116N-52W-27ABDA
LEGAL LOCATION: NE NE NW NE sec. 27, T. 116 N., R. 52 W.

6 - 18 Sand and gravel

TEST HOLE NUMBER: 99
LOCATION: 116N-52W-27BAAA
LEGAL LOCATION: NE NE NW sec. 27, T. 116 N., R. 52 W.

19 - 84 Sand, coarse; water flowed at about 50 feet

TEST HOLE NUMBER: 100
LOCATION: 116N-52W-27BABA
LEGAL LOCATION: NW NE NE NW sec. 27, T. 116 N., R. 52 W.

2 - 18 Sand and gravel

TEST HOLE NUMBER: 101
LOCATION: 116N-52W-27BBAA
LEGAL LOCATION: NE NW NW sec. 27, T. 116 N., R. 52 W.

4 - 34 Sand, brown coarse; poorly sorted

20
TEST HOLE NUMBER: 102  
LOCATION: 116N-52W-27BBAA  
LEGAL LOCATION: NE NE NW NW sec. 27, T. 116 N., R. 52 W.

3 - 15 Sand and gravel

TEST HOLE NUMBER: 103  
LOCATION: 116N-52W-27BBBB 1  
LEGAL LOCATION: NW NW NW NW sec. 27, T. 116 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 104  
LOCATION: 116N-52W-27BBBBB 2  
LEGAL LOCATION: NW NW NW NW sec. 27, T. 116 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 105  
LOCATION: 116N-52W-27CCCB  
LEGAL LOCATION: NW SW SW NW sec. 27, T. 116 N., R. 52 W.

4 - 25 Sand and gravel

TEST HOLE NUMBER: 106  
LOCATION: 116N-52W-27DDDD  
LEGAL LOCATION: SE SE SE NW sec. 27, T. 116 N., R. 52 W.

7 - 17 Sand and gravel

TEST HOLE NUMBER: 107  
LOCATION: 116N-52W-27AAAD  
LEGAL LOCATION: SE NE NE SW sec. 27, T. 116 N., R. 52 W.

4 - 30 Sand and gravel

TEST HOLE NUMBER: 108  
LOCATION: 116N-52W-27CACCA 1  
LEGAL LOCATION: NE SW NE SW sec. 27, T. 116 N., R. 52 W.

8 - 15 Gravel

TEST HOLE NUMBER: 109  
LOCATION: 116N-52W-27CACCA 2  
LEGAL LOCATION: NE SW NE SW sec. 27, T. 116 N., R. 52 W.

6 - 30 Sand and gravel

TEST HOLE NUMBER: 110  
LOCATION: 116N-52W-27CACC
LEGAL LOCATION: SW SW NE SW sec. 27, T. 116 N., R. 52 W.

5 - 15 Sand and gravel

TEST HOLE NUMBER: 111
LOCATION: 116N-52W-27CCC
LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

1 - 5 Sand, brown, fine to coarse, clayey; some gravel, dry, oxidized
5 - 7.5 Sand, brown, fine to coarse; some gravel, moist to saturated, oxidized

TEST HOLE NUMBER: 112
LOCATION: 116N-52W-27CCCC 1
LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

3 - 17 Sand and gravel

TEST HOLE NUMBER: 113
LOCATION: 116N-52W-27CCCC 2
LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

4 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 114
LOCATION: 116N-52W-27CCCC 3
LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.
PRELIMINARY LOG — SUBJECT TO CHANGE

2 - 17 Sand and gravel, medium to coarse; clean

TEST HOLE NUMBER: 115
LOCATION: 116N-52W-27CDDA
LEGAL LOCATION: NE SW SE SW sec. 27, T. 116 N., R. 52 W.

6 - 25 Sand and gravel

TEST HOLE NUMBER: 116
LOCATION: 116N-52W-27DCCD
LEGAL LOCATION: SE SE SW SE sec. 27, T. 116 N., R. 52 W.

2 - 17 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 117
LOCATION: 116N-52W-28AAAA
LEGAL LOCATION: NE NE NE NE sec. 28, T. 116 N., R. 52 W.

5 - 30 Sand and gravel

TEST HOLE NUMBER: 118
LOCATION: 116N-52W-28AAAA 1

22
LEGAL LOCATION: NE NE NE NE sec. 28, T. 116 N., R. 52 W.

6 - 10 Gravel, coarse
10 - 58 Sand, medium

TEST HOLE NUMBER: 119
LOCATION: 116N-52W-26ADD
LEGAL LOCATION: NW SE SE NE sec. 28, T. 116 N., R. 52 W.
4 - 27 Sand and gravel

TEST HOLE NUMBER: 120
LOCATION: 116N-52W-31BBAB
LEGAL LOCATION: NW NE NW NW sec. 31, T. 116 N., R. 52 W.
0 - 16 Sand and gravel, red-brown, fine to coarse sand, fine to medium gravel, clayey, oxidized, moist
16 - 45 Sand, brown, fine to medium, clayey, oxidized, saturated

TEST HOLE NUMBER: 121
LOCATION: 116N-52W-31CCCC
LEGAL LOCATION: SW SW SW SW sec. 31, T. 116 N., R. 52 W.
8 - 10 Sand

TEST HOLE NUMBER: 122
LOCATION: 116N-52W-31CDDD
LEGAL LOCATION: SE SE SE SW sec. 31, T. 116 N., R. 52 W.
2 - 6 Gravel
6 - 12 Sand and clay

TEST HOLE NUMBER: 123
LOCATION: 116N-52W-31DADD
LEGAL LOCATION: SE SE NE sec. 31, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

7 - 11 Gravel
19 - 21 Sand

TEST HOLE NUMBER: 124
LOCATION: 116N-52W-31DDDD
LEGAL LOCATION: SE SE SE sec. 31, T. 116 N., R. 52 W.
18 - 20 Sand, medium
20 - 35 Gravel and clay

TEST HOLE NUMBER: 125
LOCATION: 116N-52W-33AAAA

23
LEGAL LOCATION: NE NE NE SE sec. 33, T. 116 N., R. 52 W.

13 - 20 Sand, coarse; silt, brown; water
20 - 40 Gravel and silt, fine gravel, brown silt

TEST HOLE NUMBER: 126
LOCATION: 116N-52W-34AA
LEGAL LOCATION: NE NE sec. 34, T. 116 N., R. 52 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *

13 - 48 Gravel

TEST HOLE NUMBER: 127
LOCATION: 116N-52W-34CCCC
LEGAL LOCATION: SW SW SW SW sec. 34, T. 116 N., R. 52 W.

12 - 34 Sand, brown, clayey, pebbly; oxidized, wet

TEST HOLE NUMBER: 128
LOCATION: 116N-52W-34DDDD
LEGAL LOCATION: SE SE SE SW sec. 34, T. 116 N., R. 52 W.

10 - 20 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, slightly clayey; saturated

TEST HOLE NUMBER: 129
LOCATION: 116N-52W-34DADA
LEGAL LOCATION: NE SE NE SE sec. 34, T. 116 N., R. 52 W.

11 - 37 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 130
LOCATION: 116N-53W-01BCA
LEGAL LOCATION: NE SW NW sec. 01, T. 116 N., R. 53 W.

9 - 14 Sand; some clay

TEST HOLE NUMBER: 131
LOCATION: 116N-53W-01CCCD
LEGAL LOCATION: SE SW SW SE sec. 01, T. 116 N., R. 53 W.

11 - 36 Sand, grayish-brown, medium, clayey; saturated, slightly oxidized

TEST HOLE NUMBER: 132
LOCATION: 114N-53W-01DDBD
LEGAL LOCATION: SE KW SE SE sec. 01, T. 116 N., R. 53 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *

21 - 55 Gravel
TEST HOLE NUMBER: 133
LOCATION: 116N-3SW-02AAAb
LEGAL LOCATION: NW NE NE NE sec. 02, T. 116 N., R. 53 W.
  2 -  9  Sand and gravel
  9 - 27  Sand, brown, very fine

TEST HOLE NUMBER: 134
LOCATION: 116N-3SW-02AADD
LEGAL LOCATION: SE SE NE NE sec. 02, T. 116 N., R. 53 W.
  1 -  33  Sand, brown, fine

TEST HOLE NUMBER: 135
LOCATION: 116N-3SW-02BBBC
LEGAL LOCATION: SW NW NW NW sec. 02, T. 116 N., R. 53 W.
  3 -  14  Sand, medium to coarse

TEST HOLE NUMBER: 136
LOCATION: 116N-3SW-02CB
LEGAL LOCATION: NW SW sec. 02, T. 116 N., R. 53 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *
  1 -  10  Sand, yellow
  11 -  16  Sand, yellow
  16 - 33.5  Sand, yellow and gray, coarse

TEST HOLE NUMBER: 137
LOCATION: 116N-3SW-03AACA
LEGAL LOCATION: NE SW NE NE sec. 03, T. 116 N., R. 53 W.
  2 -  20  Sand, fine
 20 -  42  Sand, medium

TEST HOLE NUMBER: 138
LOCATION: 116N-3SW-03BCC
LEGAL LOCATION: SW SW NW NW sec. 03, T. 116 N., R. 53 W.
  2 -   5  Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty, clayey, cemented, dry
 10 -  24  Sand, light-brown, fine, very clayey, pebbly, little silt, dry

TEST HOLE NUMBER: 139
LOCATION: 116N-3SW-03DBAB
LEGAL LOCATION: NW NE NW NE sec. 03, T. 116 N., R. 53 W.
  4 -  33  Sand and gravel

TEST HOLE NUMBER: 140
LOCATION: 116N-3SW-04BCBB
LEGAL LOCATION: NW NW SW NW sec. 04, T. 116 N., R. 53 W.

1 - 2 Sand and gravel, brown, fine to coarse sand, fine to medium gravels, very silty, clayey; oxidized, dry

2 - 12 Sand, brown, fine to coarse, very silty, clayey; some fine pebbles, oxidized, dry

12 - 14 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, silty, clayey; oxidized, dry

14 - 22 Sand and gravel, brown, fine to coarse sand, fine with some medium gravel, very sily, very clayey; oxidized, slightly moist

TEST HOLE NUMBER: 141
LOCATION: 116N-53W-04DDDA
LEGAL LOCATION: NE SE SE sec. 04, T. 116 N., R. 53 W.

0 - 14 Sand and gravel, poorly sorted, clean

14 - 29 Sand, fine; clean

TEST HOLE NUMBER: 142
LOCATION: 116N-53W-04DDDD
LEGAL LOCATION: SE SE SE SE sec. 04, T. 116 N., R. 53 W.

1 - 10 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 143
LOCATION: 116N-53W-05BBBCB
LEGAL LOCATION: NW SW NW NW sec. 05, T. 116 N., R. 53 W.

18 - 55 Gravel

TEST HOLE NUMBER: 144
LOCATION: 116N-53W-05DDDD
LEGAL LOCATION: SE SE SE SE sec. 05, T. 116 N., R. 53 W.

5 - 23 Sand, medium to coarse; some clay mixed

TEST HOLE NUMBER: 145
LOCATION: 116N-53W-06DDCC
LEGAL LOCATION: SW SW SE SE sec. 06, T. 116 N., R. 53 W.

1 - 10 Sand, reddish-brown, fine to medium; oxidized, moist

13 - 34 Sand, reddish-brown, medium to coarse, slight pebbly; oxidized, moist

TEST HOLE NUMBER: 146
LOCATION: 116N-53W-08DDBB
LEGAL LOCATION: NW NW NW NW sec. 08, T. 116 N., R. 53 W.

25 - 35 Sand, medium to coarse; with clay and some coarse gravel

TEST HOLE NUMBER: 147
LOCATION: 116N-53W-09CBCB
LEGAL LOCATION: NW SW NW SW sec. 08, T. 116 N., R. 53 W.

1 - 6 Sand, reddish-brown, clayey, gravelly; oxidized, moist

26
TEST HOLE NUMBER: 148
LOCATION: 116N-53W-06DDDB
LEGAL LOCATION: NW NW SE SE sec. 06, T. 116 N., R. 53 W.

2 - 6   Sand and gravel, tan-brown, silty, cobbly; dry, oxidized
6 - 11  Sand, gray-brown, coarse, poorly sorted; some medium gravel, moist, oxidized
11 - 15 Sand, gray, medium to coarse, slightly clayey; some fine gravel, saturated, partially oxidized
15 - 19 Sand, gray, fine to medium, slightly clayey, slightly silty, fairly well-sorted; saturated, unoxidized
19 - 40 Gravel, gray, coarse, slightly clayey, silty, sandy, poorly sorted; saturated, unoxidized

TEST HOLE NUMBER: 149
LOCATION: 116N-53W-09BCCD
LEGAL LOCATION: SE 3W SW NW sec. 09, T. 116 N., R. 53 W.

4 - 12 Sand and gravel, reddish-brown, fine to medium sand, fine to coarse gravel, clayey; moist, oxidized
12 - 18 Sand and gravel, reddish-brown, fine to coarse sand, fine gravel, slightly clayey; moist, oxidized
18 - 35 Sand, reddish-brown, fine to medium sand, very slightly clayey; moist, oxidized

TEST HOLE NUMBER: 150
LOCATION: 116N-53W-10DD
LEGAL LOCATION: SE SE sec. 10, T. 116 N., R. 53 W.

3 - 27 Gravel; dry

TEST HOLE NUMBER: 151
LOCATION: 116N-53W-11DD
LEGAL LOCATION: SE SE sec. 11, T. 116 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

19.5 - 20.5 Sand
24 - 26 Sand

TEST HOLE NUMBER: 152
LOCATION: 116N-53W-12AAA
LEGAL LOCATION: NE NE NE sec. 12, T. 116 N., R. 53 W.

0 - 39 Sand, medium; clay increases with depth

TEST HOLE NUMBER: 153
LOCATION: 116N-53W-12AABB
LEGAL LOCATION: NW NE NE NE sec. 12, T. 116 N., R. 53 W.

3 - 7 Sand; dry
7 - 26 Sand, fine; water

TEST HOLE NUMBER: 154
LOCATION: 116N-53W-12AABA
LEGAL LOCATION: NE NW NE NE sec. 12, T. 116 N., R. 53 W.

5 - 33 Sand, fine; water

27
TEST HOLE NUMBER: 155
LOCATION: 166N-53W-12ADD
LEGAL LOCATION: SW SW NW sec. 12, T. 116 N., R. 53 W.

  2 - 12 Sand, medium to coarse; some clay mixed

TEST HOLE NUMBER: 156
LOCATION: 166N-53W-12BDB
LEGAL LOCATION: NW NW SE NW sec. 12, T. 116 N., R. 53 W.

  0 - 3 Sand, brown, medium, silty; moist, oxidized
  15 - 35 Sand, brown, medium to coarse; poorly sorted; saturated, oxidized

TEST HOLE NUMBER: 157
LOCATION: 166N-53W-12BBB
LEGAL LOCATION: NW NW NW SW sec. 12, T. 116 N., R. 53 W.

  8 - 12 Gravel, fine; sand, coarse; silt
  12 - 25 Sand, coarse; silt; water

TEST HOLE NUMBER: 158
LOCATION: 166N-53W-12DCCB
LEGAL LOCATION: NW SW SW SE sec. 12, T. 116 N., R. 53 W.

  8 - 14 Sand

TEST HOLE NUMBER: 159
LOCATION: 166N-53W-13CBC
LEGAL LOCATION: SW SW NW SW sec. 13, T. 116 N., R. 53 W.

  2 - 5 Sand and gravel, brown, fine to medium sand, fine gravel, clayey, silty; moist
  5 - 8 Sand, tan-brown, fine, very clayey, silty; saturated, oxidized

TEST HOLE NUMBER: 160
LOCATION: 166N-53W-14DDB
LEGAL LOCATION: NE NW NW NW sec. 14, T. 116 N., R. 53 W.

  10 - 32 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 161
LOCATION: 166N-53W-14CAAD
LEGAL LOCATION: SE NE NW SW sec. 14, T. 116 N., R. 53 W.

  1 - 17 Sand and gravel, fine to coarse; shells
  17 - 24 Sand, black, fine to medium

TEST HOLE NUMBER: 162
LOCATION: 166N-53W-15AAAD
LEGAL LOCATION: SE NE NE NE sec. 15, T. 116 N., R. 53 W.

  2 - 14 Sand, medium to coarse
TEST HOLE NUMBER: 163  
LOCATION: 116N-53W-15CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 15, T. 116 N., R. 53 W.  
PRELIMINARY LOG — SUBJECT TO CHANGE

1  -  34 Sand and gravel, medium to coarse, angular sand, some gravel grades to all medium to coarse gravel.

TEST HOLE NUMBER: 164  
LOCATION: 116N-53W-15CCCC 2  
LEGAL LOCATION: SW SW SW SW sec. 15, T. 116 N., R. 53 W.  
PRELIMINARY LOG — SUBJECT TO CHANGE

2  -  34 Sand and gravel, yellow-brown, medium to coarse sand, fine to medium gravel.

TEST HOLE NUMBER: 165  
LOCATION: 116N-53W-16BBCC  
LEGAL LOCATION: NE SW SW NW sec. 16, T. 116 N., R. 53 W.

1  -  11 Sand and gravel, yellow-brown, silt, slightly clayey; oxidized, dry
11  -  24 Sand, tan-brown, medium to coarse, clayey, slightly gravelly; oxidized, moist  
20  -  31 Gravel, tan-brown, medium, clayey, silty, sandy; oxidized, moist

TEST HOLE NUMBER: 166  
LOCATION: 116N-53W-16CCCC 1  
LEGAL LOCATION: SW SW SW SW sec. 16, T. 116 N., R. 53 W.

3  -  4 Sand, medium
18  -  19 Gravel, coarse; may be outwash or till

TEST HOLE NUMBER: 167  
LOCATION: 116N-53W-16DDAA  
LEGAL LOCATION: NE NE SE SE sec. 16, T. 116 N., R. 53 W.

1  -  5 Sand and gravel, reddish-brown, fine to coarse sand, fine to coarse gravel, slightly silt; oxidized, moist
5  -  34 Sand and gravel, reddish-brown, fine to coarse sand, fine gravel, slightly clayey; oxidized, moist; saturated and more clay from 18 feet

TEST HOLE NUMBER: 168  
LOCATION: 116N-53W-17DDAA  
LEGAL LOCATION: NE NE SE SE sec. 17, T. 116 N., R. 53 W.

1  -  16 Sand and gravel, reddish-brown, fine to medium sand, medium to coarse gravel, silty, clayey; oxidized, moist
16  -  20 Sand and gravel, reddish-brown, medium to coarse sand, medium gravel, silty, clayey; oxidized
20  -  30 Sand, reddish-brown, medium to fine, pebbly; clayey, silty, moist

TEST HOLE NUMBER: 169  
LOCATION: 116N-53W-21CCDC  
LEGAL LOCATION: SW SE SW SW sec. 21, T. 116 N., R. 53 W.

0  -  4 Sand and gravel, reddish-brown, fine to coarse sand, fine to medium gravel, very clayey, silty; oxidized, moist.
18 - 20 Sand, gray, coarse, very clayey; very moist; unoxidized
20 - 44 Sand and gravel; gray, fee to coarse sand; fine gravel, very clayey; unoxidized, saturated

TEST HOLE NUMBER: 170
LOCATION: 116N-33W-22AAAA
LEGAL LOCATION: NE NE NE NE sec. 22, T. 116 N., R. 53 W.
6 - 14 Sand; gravel; wet

TEST HOLE NUMBER: 171
LOCATION: 116N-33W-22BBBB
LEGAL LOCATION: NW NW NW NW sec. 22, T. 116 N., R. 53 W.
5 - 17 Sand; clean; occasional gravel pebbles
17 - 25 Gravel, fine; sand
25 - 37 Sand and gravel, fine gravel

TEST HOLE NUMBER: 172
LOCATION: 116N-33W-24BBBB
LEGAL LOCATION: NW NW NW SW sec. 24, T. 116 N., R. 53 W.
4 - 8 Gravel

TEST HOLE NUMBER: 173
LOCATION: 116N-33W-26BBBB
LEGAL LOCATION: NW NW NW NW sec. 26, T. 116 N., R. 53 W.
3 - 6 Gravel and clay

TEST HOLE NUMBER: 174
LOCATION: 116N-33W-35CCCC
LEGAL LOCATION: SW SW SW SW sec. 35, T. 116 N., R. 53 W.
4 - 6 Sand and gravel

TEST HOLE NUMBER: 175
LOCATION: 116N-33W-35DDDD
LEGAL LOCATION: SE SE SE SE sec. 35, T. 116 N., R. 53 W.
4 - 28 Sand and gravel; some clay in it

TEST HOLE NUMBER: 176
LOCATION: 116N-33W-36CCCC
LEGAL LOCATION: SW SW SW SW sec. 36, T. 116 N., R. 53 W.
3 - 4 Gravel, fine
4 - 8 Sand, coarse
8 - 9 Gravel, medium
9 - 20 Sand and gravel, coarse, subangular sand

TEST HOLE NUMBER: 177
LOCATION: 116N-34W-01AAAA

30
LEGAL LOCATION: SE NE NE sec. 01, T. 116 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 5 Sand, fine to medium clayey

TEST HOLE NUMBER: 178
LOCATION: 116N-54W-01CBC
LEGAL LOCATION: SW NW SW NW sec. 01, T. 116 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

13 - 20 Gravel

TEST HOLE NUMBER: 179
LOCATION: 116N-54W-16DDDD
LEGAL LOCATION: SE SE SE sec. 16, T. 116 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 8 Sand, yellow-brown, coarse; some gravel

TEST HOLE NUMBER: 180
LOCATION: 116N-54W-19BCCB
LEGAL LOCATION: NW SW SW NW sec. 19, T. 116 N., R. 54 W.

4 - 5 Sand, tan-brown, fine-grained, clayey; oxidized, dry
19 - 21 Sand, tan-brown, fine, clayey, silty; oxidized, moist
24 - 27 Sand, tan-brown, fine, clayey, silty; saturated

TEST HOLE NUMBER: 181
LOCATION: 116N-54W-19CBCC
LEGAL LOCATION: NW SW NW NW sec. 19, T. 116 N., R. 54 W.

6 - 8 Gravel, brown, clayey, oxidized, dry; some silt, some sand

TEST HOLE NUMBER: 182
LOCATION: 116N-54W-19CBBCC
LEGAL LOCATION: SW NW NW SW sec. 19, T. 116 N., R. 54 W.

3 - 5 Sand, brown, clayey, sandy, oxidized, saturated

TEST HOLE NUMBER: 183
LOCATION: 116N-54W-19CDDDD
LEGAL LOCATION: SE SE SW sec. 19, T. 116 N., R. 54 W.

5 - 9 Sand and gravel, brown, clayey; oxidized, moist
9 - 14 Sand and gravel, brown, clayey; oxidized, saturated

TEST HOLE NUMBER: 184
LOCATION: 116N-54W-25BCCB
LEGAL LOCATION: NW NW SW NW sec. 25, T. 116 N., R. 54 W.

1 - 4 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey, silt; oxidized, dry
4 - 7 Sand, brown, fine to medium, very silty, very clayey, oxidized, dry; some fine gravel
22 - 28 Sand, gray-brown, medium, very clayey; partially oxidized, saturated

31
TEST HOLE NUMBER: 185
LOCATION: 116N-54W-33DDAD
LEGAL LOCATION: SE NE SE SE sec. 33, T. 116 N., R. 54 W.

1 - 3 Sand and gravel, brown, fine sand, fine gravel, clayey, very silty, oxidized, dry

TEST HOLE NUMBER: 186
LOCATION: 116N-55W-6AAAAD 2
LEGAL LOCATION: SE NE NE NE sec. 01, T. 116 N., R. 55 W.
PRELIMINARY LOG – SUBJECT TO CHANGE

1 - 10 Sand, medium; some lake clay (silt)

TEST HOLE NUMBER: 187
LOCATION: 116N-55W-33DDAD
LEGAL LOCATION: SE SE NE SE sec. 33, T. 116 N., R. 55 W.

0 - 1 Sand, dark-brown (fill)
1 - 6 Sand, light-brown; oxidized, dry; some silt, some clay pebbles
6 - 23 Sand, dark-brown, medium-grained, clayey, silty; oxidized, dry; few clay pebbles
23 - 55 Sand, gray, medium to fine, clayey; unoxidized, saturated

TEST HOLE NUMBER: 188
LOCATION: 116N-55W-35BAAA
LEGAL LOCATION: NE NE NW NW sec. 35, T. 116 N., R. 55 W.

0 - 6 Sand, brown, silty; oxidized, dry; some gravel

TEST HOLE NUMBER: 189
LOCATION: 117N-51W-6AMAAD
LEGAL LOCATION: SE NE sec. 04, T. 117 N., R. 51 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 7 Gravel

TEST HOLE NUMBER: 190
LOCATION: 117N-51W-60BCEBB
LEGAL LOCATION: NW NW SW NW sec. 06, T. 117 N., R. 51 W.

1 - 3 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized, dry

TEST HOLE NUMBER: 191
LOCATION: 117N-51W-69BBEB
LEGAL LOCATION: NW NW NW NW sec. 09, T. 117 N., R. 51 W.

1 - 4 Sand and gravel, brown, coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
4 - 7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, slightly clayey; oxidized, dry
20 - 22 Gravel, brown-gray, medium, slightly clayey; saturated
22 - 29 Sand and gravel, brown-gray, course sand, medium gravel, slightly clayey; saturated

32
TEST HOLE NUMBER: 192
LOCATION: 117N-51W-16AADA
LEGAL LOCATION: NE NE NE sec. 16, T. 117 N., R. 51 W.

6 - 17 Sand, black, fine to coarse, very clayey; saturated at 9 feet; some fine gravel; increasing clay content with depth

TEST HOLE NUMBER: 193
LOCATION: 117N-51W-17BAAB
LEGAL LOCATION: NW NE NE NW sec. 17, T. 117 N., R. 51 W.

5 - 15 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
15 - 21 Sand, brown, fine to medium, clayey; oxidized, saturated at 19 feet; gravel layer at 17 to 18 feet

TEST HOLE NUMBER: 194
LOCATION: 117N-51W-19BCC
LEGAL LOCATION: SW SW SW NW sec. 17, T. 117 N., R. 51 W.

1 - 19 Gravel, sandy, sticky, pebbly, poorly sorted

TEST HOLE NUMBER: 195
LOCATION: 117N-51W-18ADD 1
LEGAL LOCATION: SE SE NE sec. 18, T. 117 N., R. 51 W.

2 - 6 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, slightly clayey; oxidized, moist
6 - 9 Sand, brown, medium, slightly clayey; oxidized, saturated; some coarse sand
9 - 13 Sand, dark-gray, fine to medium, clayey; saturated
13 - 16 Sand and gravel(?); no return; abandoned hole at 16 feet due to boulders

TEST HOLE NUMBER: 196
LOCATION: 117N-51W-18ADD 2
LEGAL LOCATION: SE SE NE sec. 18, T. 117 N., R. 51 W.

2 - 8 Sand, brown, fine to coarse, slightly clayey; oxidized, moist; some fine gravel
8 - 11 Sand, dark-brown, medium to coarse; oxidized, saturated; some fine to coarse gravel
11 - 25 Sand, dark-gray, medium to coarse; unoxidized, saturated; some fine to medium gravel, little clay; gravel layer from 19 to 20 feet

TEST HOLE NUMBER: 197
LOCATION: 117N-51W-18CBAA
LEGAL LOCATION: NE NE NW SW sec. 18, T. 117 N., R. 51 W.

1 - 14 Sand and gravel, light-brown, fine to coarse sand, fine to coarse gravel, clayey, poorly sorted; less clay with depth
14 - 25 Sand, brown, medium to coarse, slightly clayey; gravelly from 20 to 21 feet; oxidized, saturated at 15 feet; some fine to coarse gravel

TEST HOLE NUMBER: 198
LOCATION: 117N-51W-19ADD
2 - 5 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
5 -  7 Sand and gravel, brown, coarse sand, fine gravel, clayey; oxidized, damp

TEST HOLE NUMBER: 199
LEGAL LOCATION: NW NW NW sec. 19, T. 117 N., R. 51 W.
1 - 17 Gravel, fine to medium

TEST HOLE NUMBER: 200
LOCATION: 117N-51W-19CBBB
LEGAL LOCATION: NW NE NW sec. 23, T. 117 N., R. 51 W.
5 -  6 Gravel, brown, fine to coarse, very clayey, sandy; oxidized, moist

TEST HOLE NUMBER: 201
LOCATION: 117N-51W-23BAAB
LEGAL LOCATION: SE SE SE sec. 24, T. 117 N., R. 51 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE
11 - 16 Sand, tan-brown, fine to medium, very clayey, silty; some pebbles, saturated

TEST HOLE NUMBER: 202
LOCATION: 117N-51W-26DADD
LEGAL LOCATION: SE SE NE sec. 26, T. 117 N., R. 51 W.
12 -  5 Sand and gravel, brown, fine to coarse sand, fine gravel, very clayey; oxidized, moist

TEST HOLE NUMBER: 203
LOCATION: 117N-51W-31AADD
LEGAL LOCATION: SE NE NE sec. 31, T. 117 N., R. 51 W.
1 -  3 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
3 -  7 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 204
LOCATION: 117N-51W-36BBB
LEGAL LOCATION: NW NW NW sec. 36, T. 117 N., R. 51 W.
5 -  5 Sand, yellow-brown, fine to coarse, clayey; oxidized, moist
18 - 21 Gravel, brown, coarse, clayey, sandy; poor return
21 - 26 Sand, brown, medium to coarse; oxidized, saturated; some fine gravel

TEST HOLE NUMBER: 205
LOCATION: 117N-52W-03DDAA
LEGAL LOCATION: NE SE SE sec. 03, T. 117 N., R. 52 W.
1 -  4 Gravel, tan-brown, fine to coarse, very sandy; oxidized, dry
8 -  9 Gravel, red-brown, fine to coarse, sandy, clayey; oxidized
9 - 12 Gravel, ties boulder abandoned hole at 12 feet

34
<table>
<thead>
<tr>
<th>Test Hole Number</th>
<th>Location: 117N-52W-03DAAA</th>
<th>Legal Location: SE NE SE SE sec. 03, T. 117 N., R. 52 W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, very clayey; oxidized, damp</td>
<td></td>
</tr>
</tbody>
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<table>
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<tr>
<th>Test Hole Number</th>
<th>Location: 117N-52W-03DCC</th>
<th>Legal Location: SW SW SE SE sec. 07, T. 117 N., R. 52 W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 - 12</td>
<td>Sand and gravel, brown, medium sand, fine to medium gravel, clayey; oxidized, moist</td>
<td></td>
</tr>
<tr>
<td>12 - 14</td>
<td>Sand and gravel, brown, medium sand, fine to medium gravel, very clayey; oxidized, saturated</td>
<td></td>
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<thead>
<tr>
<th>Test Hole Number</th>
<th>Location: 117N-52W-03EEBB</th>
<th>Legal Location: NW NW NW NW sec. 05, T. 117 N., R. 52 W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 6</td>
<td>Sand, gray, brown, fine; moist, some pebbles</td>
<td></td>
</tr>
<tr>
<td>6 - 18</td>
<td>Sand, brown, medium to coarse; wet</td>
<td></td>
</tr>
<tr>
<td>18 - 30</td>
<td>Sand, light-grayish-brown, fine to medium</td>
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<table>
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<tr>
<th>Test Hole Number</th>
<th>Location: 117N-52W-03DDD</th>
<th>Legal Location: SE SE SE SW sec. 05, T. 117 N., R. 52 W.</th>
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</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>Gravel</td>
<td></td>
</tr>
<tr>
<td>4 - 10</td>
<td>Gravel, with silt</td>
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<th>Test Hole Number</th>
<th>Location: 117N-52W-05CDDD</th>
<th>Legal Location: SE SW SW SE sec. 05, T. 117 N., R. 52 W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 8</td>
<td>Sand and gravel; dry</td>
<td></td>
</tr>
<tr>
<td>10 - 20</td>
<td>Sand and gravel, medium to coarse; dry</td>
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</tbody>
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<table>
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<th>Test Hole Number</th>
<th>Location: 117N-52W-05DCC</th>
<th>Legal Location: SW SW NE sec. 06, T. 117 N., R. 52 W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 17</td>
<td>Sand and gravel, fine to very coarse; boulders</td>
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</tr>
<tr>
<td>20 - 63</td>
<td>Sand and gravel, fine to coarse; cemented</td>
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</tr>
</tbody>
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<th>Location: 117N-52W-06ADEC</th>
<th>Legal Location: SW SE SE NE sec. 06, T. 117 N., R. 52 W.</th>
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</thead>
<tbody>
<tr>
<td>5 - 15</td>
<td>Sand and gravel, medium to coarse</td>
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<th>Test Hole Number</th>
<th>Location: 117N-52W-06AAA</th>
<th>Legal Location:</th>
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</thead>
<tbody>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

35
LEGAL LOCATION: NE NE NW sec. 06, T. 117 N., R. 52 W.

6 - 19 Sand, medium; gravel, fine
15° - 59 Sand and gravel

TEST HOLE NUMBER: 214
LOCATION: 117N-52W-063BAB
LEGAL LOCATION: NW NE NW NW sec. 06, T. 117 N., R. 52 W.

3 - 10 Sand and gravel, medium to very coarse
11 - 22 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 215
LOCATION: 117N-52W-063CCC
LEGAL LOCATION: SW SW SW NW sec. 06, T. 117 N., R. 52 W.

8 - 20 Sand, fine to coarse; cemented

TEST HOLE NUMBER: 216
LOCATION: 117N-52W-063CC
LEGAL LOCATION: SW SW SE sec. 06, T. 117 N., R. 52 W.

10 - 15 Sand, fine to medium
15 - 18 Sand and gravel, fine to coarse; boulders
18 - 31 Sand, fine

TEST HOLE NUMBER: 217
LOCATION: 117N-52W-063CC
LEGAL LOCATION: SW SW SW SE sec. 06, T. 117 N., R. 52 W.

2 - 5 Sand and gravel, brown, medium to coarse sand; fine gravel, slightly clayey; oxidized, dry
5 - 14 Sand, brown, medium, slightly clayey; oxidized, saturated; few fine pebbles
14 - 34 Sand, brown, fine, slightly clayey; oxidized, saturated; increased clay content below 24 feet

TEST HOLE NUMBER: 218
LOCATION: 117N-52W-063DD
LEGAL LOCATION: SE SE SE sec. 06, T. 117 N., R. 52 W.

0 - 9 Sand, fine to coarse; some clay
9 - 29 Sand; some clay

TEST HOLE NUMBER: 219
LOCATION: 117N-52W-063DDD
LEGAL LOCATION: NW SE SE SE sec. 06, T. 117 N., R. 52 W.

8 - 16 Sand, fine
28 - 35 Gravel, iron-stain

TEST HOLE NUMBER: 220
LOCATION: 117N-52W-063DDDD

36
LEGAL LOCATION: SE SE SE sec. 06, T. 117 N., R. 52 W.

2 - 15 Sand and gravel, medium, clayey
20 - 27 Sand and gravel, brown, coarse

TEST HOLE NUMBER: 221
LOCATION: 117N-52W 07AAAA
LEGAL LOCATION: NE NE NE NE sec. 07, T. 117 N., R. 52 W.

0 - 1 Sand, brown, coarse; clean
1 - 4 Sand, medium-brown, weathered pea-sized gravel; clean
4 - 13 Gravel, brown, pea-sized
13 - 19 Sand, coarse
19 - 26 Gravel sandy; with high clay content

TEST HOLE NUMBER: 222
LOCATION: 117N-52W 07AABB
LEGAL LOCATION: NW NE NE NE sec. 07, T. 117 N., R. 52 W.

2 - 15 Sand and gravel
21 - 30 Gravel

TEST HOLE NUMBER: 223
LOCATION: 117N-52W 07BCC
LEGAL LOCATION: SW SW NW sec. 07, T. 117 N., R. 52 W.

3 - 22 Sand and gravel, medium to very coarse; boulders

TEST HOLE NUMBER: 224
LOCATION: 117N-52W 07CCCA
LEGAL LOCATION: NE SW SW SW sec. 07, T. 117 N., R. 52 W.

1 - 8 Sand

TEST HOLE NUMBER: 225
LOCATION: 117N-52W 09BDDC
LEGAL LOCATION: SW SW SE NW sec. 08, T. 117 N., R. 52 W.

3 - 18 Sand
21 - 38 Gravel, coarse

TEST HOLE NUMBER: 226
LOCATION: 117N-52W 09DAAA
LEGAL LOCATION: NE NE NE SE sec. 09, T. 117 N., R. 52 W.

4 - 21 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 227
LOCATION: 117N-52W 10BCCB
LEGAL LOCATION: NW SW SW NW sec. 10, T. 117 N., R. 52 W.

3 - 5 Gravel, dark-brown-black, medium to coarse, very clayey, slightly sandy; oxidized, moist
TEST HOLE NUMBER: 228  
LOCATION: 117N-52W-12AAAA  
LEGAL LOCATION: NE NE NE NE sec. 12, T. 117 N., R. 52 W.  
12 - 26 Sand and gravel  
20 - 31 Sand  

TEST HOLE NUMBER: 229  
LOCATION: 117N-52W-13DDDD  
LEGAL LOCATION: SE SE SE SE sec. 13, T. 117 N., R. 52 W.  
7 - 23 Gravel and sand; dry  
23 - 40 Gravel, nil, dark gray  

TEST HOLE NUMBER: 230  
LOCATION: 117N-52W-13DDDD 1  
LEGAL LOCATION: SE SE SE SE sec. 13, T. 117 N., R. 52 W.  
PRELIMINARY LOG — SUBJECT TO CHANGE  
2 - 15 Gravel, coarse  

TEST HOLE NUMBER: 231  
LOCATION: 117N-52W-16AAAA 2  
LEGAL LOCATION: NE NE NE NE sec. 16, T. 117 N., R. 52 W.  
PRELIMINARY LOG — SUBJECT TO CHANGE  
3 - 23 Sand and gravel, medium sand, medium to coarse gravel  

TEST HOLE NUMBER: 232  
LOCATION: 117N-52W-16AAAA 1  
LEGAL LOCATION: NW NE NE NE sec. 16, T. 117 N., R. 52 W.  
4 - 15 Sand and gravel, black to dark gray, medium to coarse sand, fine gravel, slightly clayey, saturated  

TEST HOLE NUMBER: 233  
LOCATION: 117N-52W-16AAAA 1  
LEGAL LOCATION: SW NE NE NE sec. 16, T. 117 N., R. 52 W.  
4 - 12 Gravel, boulders  

TEST HOLE NUMBER: 234  
LOCATION: 117N-52W-16BABA  
LEGAL LOCATION: NE NW NW NW sec. 16, T. 117 N., R. 52 W.  
2 - 6 Sand, and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, dry  

TEST HOLE NUMBER: 235  
LOCATION: 117N-52W-17BBBA  
LEGAL LOCATION: NE NW NW NW sec. 17, T. 117 N., R. 52 W.  
4 - 11 Sand, brown, fine, very clayey; oxidized, moist; saturated at 9 feet
TEST HOLE NUMBER: 236
LOCATION: 117N-52W-171BBB
LEGAL LOCATION: NW NW NW NW sec. 17, T. 117 N., R. 52 W.

4 - 5 Gravel and clay

TEST HOLE NUMBER: 237
LOCATION: 117N-52W-181BBB
LEGAL LOCATION: NW NW NW sec. 18, T. 117 N., R. 52 W.

4 - 5 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 238
LOCATION: 117N-52W-221BBB
LEGAL LOCATION: NW NW NE NE sec. 22, T. 117 N., R. 52 W.

1 - 2 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 239
LOCATION: 117N-52W-221BABA
LEGAL LOCATION: NE NE NE NW sec. 22, T. 117 N., R. 52 W.

1 - 3 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, dry

6 - 11 Sand and gravel, brown, medium to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 240
LOCATION: 117N-52W-221CCC
LEGAL LOCATION: SW NW SW SW sec. 22, T. 117 N., R. 52 W.

11 - 28 Gravel, fine to coarse, very clayey, sandy; oxidized, dry; saturated at 15 feet; some clay lenses

TEST HOLE NUMBER: 241
LOCATION: 117N-52W-251BBA
LEGAL LOCATION: NE NW NW sec. 25, T. 117 N., R. 52 W.

2 - 18 Sand, yellow and blue

TEST HOLE NUMBER: 242
LOCATION: 117N-52W-251BCECC
LEGAL LOCATION: SW SW NW SW sec. 25, T. 117 N., R. 52 W.
PRELIMINARY LOG -- SUBJEC TO CHANGE

0 - 12 Sand and rocks

TEST HOLE NUMBER: 243
LOCATION: 117N-52W-251DADD
LEGAL LOCATION: SE SE NE SE sec. 25, T. 117 N., R. 52 W.

1 - 4 Sand and gravel, light-brown, medium to coarse sand, medium to coarse gravel, slightly clayey; oxidized, moist
TEST HOLE NUMBER: 244
LOCATION: 117N-52W-26AAAD
LEGAL LOCATION: SE SE NE sec. 26, T. 117 N., R. 52 W.

   0 - 2 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey; oxidized, moist
  11 - 15 Sand, brown, medium, clayey; oxidized, moist
  20 - 21 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, dry
  22 - 24 Sand, brown, medium, clayey; oxidized, moist

TEST HOLE NUMBER: 245
LOCATION: 117N-52W-26BABA
LEGAL LOCATION: NE NW NE NW sec. 26, T. 117 N., R. 52 W.

   1 - 4 Gravel, brown, medium to coarse, clayey, sandy; oxidized, dry
   4 - 7 Sand and gravel, brown, fine to coarse sand, medium to coarse gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 246
LOCATION: 117N-52W-26BBBB
LEGAL LOCATION: NW NW NW NW sec. 26, T. 117 N., R. 52 W.

   6 - 8 Gravel, medium; lots of chalk
   8 - 12 Gravel and sand; water at 12 feet
   12 - 22 Gravel and silt, blue silt

TEST HOLE NUMBER: 247
LOCATION: 117N-52W-27AA
LEGAL LOCATION: NE NE sec. 27, T. 117 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

   2 - 30 Gravel

TEST HOLE NUMBER: 248
LOCATION: 117N-52W-27AAAA
LEGAL LOCATION: NE NE NE NE sec. 27, T. 117 N., R. 52 W.

   4 - 22 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 249
LOCATION: 117N-52W-28DDD
LEGAL LOCATION: SW SW SE SE sec. 28, T. 117 N., R. 52 W.

   13 - 17 Gravel, black, fine to coarse, very clayey, silty; dry to moist; poor return
   17 - 22 Gravel, red-brown, fine to coarse, very clayey, slightly sandy; saturated at 20 feet; increasing clay content with depth

TEST HOLE NUMBER: 250
LOCATION: 117N-52W-30BCC
LEGAL LOCATION: SW SW NW sec. 30, T. 117 N., R. 52 W.

   2 - 11 Sand and gravel, fine to coarse
TEST HOLE NUMBER: 251  
LOCATION: 117N-52W-30C3D  
LEGAL LOCATION: SE NW SW sec. 30, T. 117 N., R. 52 W.  
2 - 26 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 252  
LOCATION: 117N-52W-31C3A  
LEGAL LOCATION: NW NE SW sec. 31, T. 117 N., R. 52 W.  
6 - 10 Sand and gravel, fine to coarse; sea shells

TEST HOLE NUMBER: 253  
LOCATION: 117N-52W-31C3B  
LEGAL LOCATION: SW NW SW sec. 31, T. 117 N., R. 52 W.  
3 - 21 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 254  
LOCATION: 117N-52W-32C3D  
LEGAL LOCATION: NW SE SE SW sec. 32, T. 117 N., R. 52 W.  
9 - 44 Gravel, coarse

TEST HOLE NUMBER: 255  
LOCATION: 117N-52W-32D3C  
LEGAL LOCATION: SW SW SE SE sec. 32, T. 117 N., R. 52 W.  
3 - 14 Gravel, brown; clay, poorly sorted  
14 - 29 Gravel, coarse to fine; some clay

TEST HOLE NUMBER: 256  
LOCATION: 117N-52W-33C3B  
LEGAL LOCATION: SW SW NW SW sec. 33, T. 117 N., R. 52 W.  
0 - 24 Sand and gravel, clayey  
24 - 44 Gravel, medium; some clay

TEST HOLE NUMBER: 257  
LOCATION: 117N-52W-33D3D  
LEGAL LOCATION: NE SE SE sec. 37, T. 117 N., R. 52 W.  
0 - 4 Gravel

TEST HOLE NUMBER: 258  
LOCATION: 117N-52W-34B3A  
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.  
1 - 10 Sand and gravel, brown, fine sand, medium to coarse gravel; slightly clayey; oxidized; dry; clay layer at 3.5 to 4 feet  
10 - 14 Sand and gravel, brown, fine to coarse sand; fine to medium gravel, clayey; oxidized, saturated
TEST HOLE NUMBER: 259
LOCATION: 11T-N-52W-34BA BA A 1
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.

  6 - 10 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 260
LOCATION: 11T-N-52W-34BA BA A 2
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.

  2 - 11 Gravel, coarse to very coarse

TEST HOLE NUMBER: 261
LOCATION: 11T-N-52W-35A A B A B
LEGAL LOCATION: NW NE NW NE sec. 35, T. 117 N., R. 52 W.

  2 - 5 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
  6 - 7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
  7 - 8 Sand, brown, medium, clayey; oxidized, dry; few fine pebbles
  8 - 10 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
  10 - 15 Gravel, brown, coarse, slightly clayey; oxidized, dry
  15 - 23 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 262
LOCATION: 11T-N-52W-35A A B B
LEGAL LOCATION: NW NW NW NE sec. 35, T. 117 N., R. 52 W.

  10 - 20 Gravel, sandy; some clay

TEST HOLE NUMBER: 263
LOCATION: 11T-N-52W-01B C A
LEGAL LOCATION: NE SW NW NW sec. 01, T. 117 N., R. 53 W.

  2 - 18 Sand, coarse

TEST HOLE NUMBER: 264
LOCATION: 11T-N-52W-01CDD
LEGAL LOCATION: SE SE SW sec. 01, T. 117 N., R. 53 W.

  5 - 7 Sand and gravel, medium to very coarse
  13 - 23 Sand and gravel, medium to very coarse; boulders

TEST HOLE NUMBER: 265
LOCATION: 11T-N-52W-02CCC
LEGAL LOCATION: SW SW SW SW sec. 02, T. 117 N., R. 53 W.

  1 - 12 Sand and gravel, coarse
  12 - 27 Gravel

TEST HOLE NUMBER: 266
LOCATION: 11T-N-52W-02DA

42
2 - 34 Gravel

TEST HOLE NUMBER: 267
LOCATION: 117N-5SW-02DAA
LEGAL LOCATION: NE NE SE sec. 02, T. 117 N., R. 53 W.
0 - 14 Sand and gravel; some clay
14 - 19 Sand and gravel
19 - 24 Sand and gravel; some clay

TEST HOLE NUMBER: 268
LOCATION: 117N-5SW-02DDD
LEGAL LOCATION: SE SE SE sec. 02, T. 117 N., R. 53 W.
6 - 39 Sand, gray, coarse to fine; some coal

TEST HOLE NUMBER: 269
LOCATION: 117N-5SW-03BBB
LEGAL LOCATION: NW NW NW NW sec. 03, T. 117 N., R. 53 W.
2 - 26 Sand and gravel

TEST HOLE NUMBER: 270
LOCATION: 117N-5SW-04DDD
LEGAL LOCATION: SE SE SE sec. 04, T. 117 N., R. 53 W.
12 - 19 Sand, medium; with fine gravel
19 - 29 Sand, medium; some clay intermixed; occasional coarse gravel

TEST HOLE NUMBER: 271
LOCATION: 117N-5SW-05DCC
LEGAL LOCATION: SW SW SE SE sec. 05, T. 117 N., R. 53 W.
8 - 20 Gravel and sand
20 - 30 Sand and silt; dry

TEST HOLE NUMBER: 272
LOCATION: 117N-5SW-05DDD
LEGAL LOCATION: SE SE SE sec. 05, T. 117 N., R. 53 W.
0 - 17 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 273
LOCATION: 117N-5SW-07AAA
LEGAL LOCATION: NE NE NE NE sec. 07, T. 117 N., R. 53 W.
2 - 13 Sand and gravel

43
| TEST HOLE NUMBER: 274 |
| LOCATION: 117N-53W-070-06B |
| LEGAL LOCATION: NW NW SW NW sec. 07, T. 117 N., R. 53 W. |
| 2 - 4 | Gravel, medium to fine |
| 4 - 7 | Gravel, fine; sand, medium to fine; washed |
| 7 - 11 | Gravel, coarse |
| 11 - 24 | Sand, coarse |

| TEST HOLE NUMBER: 275 |
| LOCATION: 117N-53W-070-07C |
| LEGAL LOCATION: SW SW sec. 07, T. 117 N., R. 53 W. |
| 9 - 11 | Sand, medium |
| 11 - 27 | Sand, medium; gravel |

| TEST HOLE NUMBER: 276 |
| LOCATION: 117N-53W-080-08A |
| LEGAL LOCATION: NW NE NE NE sec. 08, T. 117 N., R. 53 W. |
| 5 - 19 | Sand, medium to coarse; coarse gravel |

| TEST HOLE NUMBER: 277 |
| LOCATION: 117N-53W-080-09C |
| LEGAL LOCATION: NW NW NW SW sec. 08, T. 117 N., R. 53 W. |
| 2 - 23 | Sand, silt, pebbly (outwash) |

| TEST HOLE NUMBER: 278 |
| LOCATION: 117N-53W-080-09D |
| LEGAL LOCATION: NW NW NW SW sec. 09, T. 117 N., R. 53 W. |
| 2 - 23 | Sand and gravel |

| TEST HOLE NUMBER: 279 |
| LOCATION: 117N-53W-090-09A |
| LEGAL LOCATION: NE SE SE sec. 09, T. 117 N., R. 53 W. |
| 3 - 13 | Sand and gravel, fine to very coarse |
| 14 - 20 | Sand and gravel, fine to coarse |

| TEST HOLE NUMBER: 280 |
| LOCATION: 117N-53W-090-10A |
| LEGAL LOCATION: SE SE SE sec. 09, T. 117 N., R. 53 W. |
| 2 - 7 | Sand, with black silt |
| 7 - 9 | Sand, medium; gravel; silt |
| 9 - 50 | Gravel, fine; sand, medium; clay |

| TEST HOLE NUMBER: 281 |
| LOCATION: 117N-53W-100-0BB |
| 44 |
LEGAL LOCATION: NW NW NW sec. 10, T. 117 N., R. 53 W.

- 1 - 7 Sand, coarse
- 7 - 24 Sand, brown, fine to coarse
- 24 - 31 Sand, coarse

TEST HOLE NUMBER: 282
LOCATION: 117N-5SW-10RCH
LEGAL LOCATION: NW SW NW sec. 10, T. 117 N., R. 53 W.
- 5 - 30 Sand and gravel, fine to medium

TEST HOLE NUMBER: 283
LOCATION: 117N-5SW-10CDAD
LEGAL LOCATION: SE NE SE SW sec. 10, T. 117 N., R. 53 W.
PRELIMINARY LOG - SUBJECT TO CHANGE
- 1 - 20 Sand and gravel, yellow-brown, medium sand to fine gravel

TEST HOLE NUMBER: 284
LOCATION: 117N-5SW-10DDDD
LEGAL LOCATION: SE SE SE sec. 10, T. 117 N., R. 53 W.
- 5 - 13 Sand and gravel, medium to coarse
- 17 - 38 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 285
LOCATION: 117N-5SW-11AAS
LEGAL LOCATION: NE NE NE sec. 11, T. 117 N., R. 53 W.
- 10 - 20 Sand and gravel, medium to very coarse; boulders
- 20 - 42 Sand and gravel, fine to medium

TEST HOLE NUMBER: 286
LOCATION: 117N-5SW-11ACC
LEGAL LOCATION: SW SW NW sec. 11, T. 117 N., R. 53 W.
- 8 - 28 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 287
LOCATION: 117N-5SW-11BAB 2
LEGAL LOCATION: NW NE NW sec. 11, T. 117 N., R. 53 W.
- 8 - 17 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 288
LOCATION: 117N-5SW-11CBBBB
LEGAL LOCATION: NW NW NW SW sec. 11, T. 117 N., R. 53 W.
- 9 - 37 Gravel, fine to medium
TEST HOLE NUMBER: 289
LOCATION: 117N-53W-11CDE
LEGAL LOCATION: SW SE SW sec. 11, T. 117 N., R. 53 W.
7 - 28 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 290
LOCATION: 117N-53W-11DDDA
LEGAL LOCATION: NE SE SE SE sec. 11, T. 117 N., R. 53 W.
1 - 20 Sand and gravel

TEST HOLE NUMBER: 291
LOCATION: 117N-53W-11DDDD
LEGAL LOCATION: SE SE SE SE sec. 11, T. 117 N., R. 53 W.
6 - 10 Sand, black; with silt; water
10 - 50 Gravel and silt, fine gravel and dark-brown silt

TEST HOLE NUMBER: 292
LOCATION: 117N-53W-12AAAA
LEGAL LOCATION: NE NE NE NE sec. 12, T. 117 N., R. 53 W.
7 - 15 Sand, light-gray, fine
15 - 42 Sand, fine to coarse

TEST HOLE NUMBER: 293
LOCATION: 117N-53W-12ACC
LEGAL LOCATION: SW SW NE sec. 12, T. 117 N., R. 53 W.
3 - 22 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 294
LOCATION: 117N-53W-12BCC 1
LEGAL LOCATION: SW SW NW sec. 12, T. 117 N., R. 53 W.
9 - 29 Sand; some clay

TEST HOLE NUMBER: 295
LOCATION: 117N-53W-12BCC 2
LEGAL LOCATION: SW SW NW sec. 12, T. 117 N., R. 53 W.
7 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 296
LOCATION: 117N-53W-12CCE
LEGAL LOCATION: SE SW SW sec. 12, T. 117 N., R. 53 W.
7 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 297
LOCATION: 117N-53W-12CDD

46
LEGAL LOCATION: SE SW SW sec. 12, T. 117 N., R. 53 W.
3 - 8 Sand, brown, fine to medium, silty; some clay, saturated at 7 feet.

TEST HOLE NUMBER: 298
LOCATION: 117N-53W-12CD
LEGAL LOCATION: SE SW sec. 12, T. 117 N., R. 53 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *
1 - 17 Sand, yellow
18 - 26 Gravel, coarse

TEST HOLE NUMBER: 299
LOCATION: 117N-53W-12CD
LEGAL LOCATION: SE SE SW sec. 12, T. 117 N., R. 53 W.
3 - 15 Sand and gravel; medium to very coarse; boulders

TEST HOLE NUMBER: 300
LOCATION: 117N-53W-12CDDD
LEGAL LOCATION: SE SE SE SW sec. 12, T. 117 N., R. 53 W.
1 - 18 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 301
LOCATION: 117N-53W-12DCC
LEGAL LOCATION: SW SW SE sec. 12, T. 117 N., R. 53 W.
0 - 9 Sand and gravel; some clay
9 - 39 Sand and gravel

TEST HOLE NUMBER: 302
LOCATION: 117N-53W-12DDCD
LEGAL LOCATION: SE SW SE sec. 13, T. 117 N., R. 53 W.
2 - 3 Sand

TEST HOLE NUMBER: 303
LOCATION: 117N-53W-12AAA
LEGAL LOCATION: NE NE NE sec. 14, T. 117 N., R. 53 W.
6 - 25 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 304
LOCATION: 117N-53W-14ACC
LEGAL LOCATION: SW SW NE sec. 14, T. 117 N., R. 53 W.
2 - 20 Sand and gravel, medium to very coarse

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<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>305</td>
<td>117N-5SW-14BAA</td>
<td>NE NE NW sec. 14, T. 117 N., R. 53 W.</td>
<td>5 - 25</td>
<td>Sand and gravel, medium to very coarse</td>
</tr>
<tr>
<td>306</td>
<td>117N-5SW-14BCC</td>
<td>SW SW NW sec. 14, T. 117 N., R. 53 W.</td>
<td>1 - 17</td>
<td>Sand and gravel, fine to coarse; see shells</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17 - 24</td>
<td>Sand, black, fine to medium</td>
</tr>
<tr>
<td>307</td>
<td>117N-5SW-14CBB</td>
<td>NW NW SW sec. 14, T. 117 N., R. 53 W.</td>
<td>2 - 15</td>
<td>Sand and gravel, medium to very coarse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15 - 18</td>
<td>Sand and gravel, medium to coarse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18 - 26</td>
<td>Sand, medium to coarse; boulders</td>
</tr>
<tr>
<td>308</td>
<td>117N-5SW-14CBC</td>
<td>SW NW SW sec. 14, T. 117 N., R. 53 W.</td>
<td>3 - 21</td>
<td>Sand and gravel, fine to very coarse</td>
</tr>
<tr>
<td>309</td>
<td>117N-5SW-14C3CD</td>
<td>SE SW NW SW sec. 14, T. 117 N., R. 53 W.</td>
<td>6 - 26</td>
<td>Sand</td>
</tr>
<tr>
<td>310</td>
<td>117N-5SW-14CCC</td>
<td>SW SW SW sec. 14, T. 117 N., R. 53 W.</td>
<td>1 - 12</td>
<td>Sand and gravel, fine to coarse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12 - 16</td>
<td>Sand, coarse</td>
</tr>
<tr>
<td>311</td>
<td>117N-5SW-14DDA</td>
<td>NE NE SE sec. 14, T. 117 N., R. 53 W.</td>
<td>0 - 4</td>
<td>Sand, coarse; some clay</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 - 22</td>
<td>Sand, coarse</td>
</tr>
<tr>
<td>312</td>
<td>117N-5SW-14DDDAA</td>
<td>NE SE SE SE sec. 14, T. 117 N., R. 53 W.</td>
<td>3 - 14</td>
<td>Sand</td>
</tr>
</tbody>
</table>
TEST HOLE NUMBER: 313
LOCATION: 117N-53W-14DDDD

1 - 15 Sand and gravel

TEST HOLE NUMBER: 314
LOCATION: 117N-53W-15AADD
LEGAL LOCATION: SE NE NE sec. 15, T. 117 N., R. 53 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

1 - 24 Sand and gravel, yellow-brown grading to gray, medium sand to 3/4-inch gravel; clam shell fragments from a layer (?) in about 12 feet

TEST HOLE NUMBER: 315
LOCATION: 117N-53W-17ABAB
LEGAL LOCATION: NW NE NW NE sec. 17, T. 117 N., R. 53 W.

3 - 18 Sand and gravel

TEST HOLE NUMBER: 316
LOCATION: 117N-53W-19AAAA
LEGAL LOCATION: NE NE NE NE sec. 18, T. 117 N., R. 53 W.

2 - 12 Sand and gravel

TEST HOLE NUMBER: 317
LOCATION: 117N-53W-18AAAA
LEGAL LOCATION: NE NE NE sec. 18, T. 117 N., R. 53 W.

2 - 8 Sand, medium to coarse

TEST HOLE NUMBER: 318
LOCATION: 117N-53W-18AADB
LEGAL LOCATION: NW SE NE NE sec. 18, T. 117 N., R. 53 W.

1 - 7 Gravel
7 - 12 Sand, medium

TEST HOLE NUMBER: 319
LOCATION: 117N-53W-18BBBC
LEGAL LOCATION: NW SW NW NW sec. 18, T. 117 N., R. 53 W.

4 - 6 Gravel, coarse

TEST HOLE NUMBER: 320
LOCATION: 117N-53W-18CCCC
LEGAL LOCATION: SW SW SW SW sec. 18, T. 117 N., R. 53 W.

1 - 4 Sand and gravel
TEST HOLE NUMBER: 321
LOCATION: 117N-53W-1RDGA
LEGAL LOCATION: NE SW SE SE sec. 18, T. 117 N., R. 53 W.

3 - 15 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 322
LOCATION: 117N-53W-19BBBC
LEGAL LOCATION: SW NW NW NW sec. 19, T. 117 N., R. 53 W.
PRELIMINARY LOG – SUBJECT TO CHANGE

1 - 2 Sand, medium to coarse
3 - 5 Gravel
5 - 50 Sand and gravel

TEST HOLE NUMBER: 323
LOCATION: 117N-53W-22CDDC
LEGAL LOCATION: SW SE SW sec. 22, T. 117 N., R. 53 W.

10 - 17 Sand and gravel, fine to coarse
22 - 23 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 324
LOCATION: 117N-53W-22DCC
LEGAL LOCATION: SW SW SE sec. 22, T. 117 N., R. 53 W.

3 - 14 Sand, yellow, coarse

TEST HOLE NUMBER: 325
LOCATION: 117N-53W-22DDC
LEGAL LOCATION: SW SE SE sec. 22, T. 117 N., R. 53 W.

4 - 16 Sand, blue, fine

TEST HOLE NUMBER: 326
LOCATION: 117N-55W-23AA
LEGAL LOCATION: NE NE sec. 23, T. 117 N., R. 53 W.

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2 - 9 Sand, yellow
9 - 18.5 Sand, coarse

TEST HOLE NUMBER: 327
LOCATION: 117N-53W-23AAA
LEGAL LOCATION: NE NE NE sec. 23, T. 117 N., R. 53 W.

3 - 16 Sand, packed

TEST HOLE NUMBER: 328
LOCATION: 117N-55W-23AAAA

50
LEGAL LOCATION: NE NE NE NE sec. 23, T. 117 N., R. 53 W.

2 - 18 Gravel, yellow, coarse

TEST HOLE NUMBER: 329
LOCATION: 117N-5SW-23ABA
LEGAL LOCATION: NE NW NE sec. 23, T. 117 N., R. 53 W.

3 - 14 Sand, packed

TEST HOLE NUMBER: 330
LOCATION: 117N-5SW-23ABAB
LEGAL LOCATION: NW NE NW NE sec. 23, T. 117 N., R. 53 W.

4 - 20 Sand, fine

TEST HOLE NUMBER: 331
LOCATION: 117N-5SW-23ABB
LEGAL LOCATION: NW NW NE sec. 23, T. 117 N., R. 53 W.

3 - 10 Sand, fine
10 - 20 Sand and gravel, fine to coarse
20 - 26 Sand, coarse

TEST HOLE NUMBER: 332
LOCATION: 117N-5SW-23ABCD
LEGAL LOCATION: SE NW NE sec. 23, T. 117 N., R. 53 W.

3 - 15 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 333
LOCATION: 117N-5SW-23ACB
LEGAL LOCATION: NW SW NE sec. 23, T. 117 N., R. 53 W.

3 - 28 Sand and gravel

TEST HOLE NUMBER: 334
LOCATION: 117N-5SW-23ADD
LEGAL LOCATION: SE SE NE sec. 23, T. 117 N., R. 53 W.

2 - 8 Sand, coarse
8 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 335
LOCATION: 117N-5SW-23BAB
LEGAL LOCATION: NW NE NW sec. 23, T. 117 N., R. 53 W.

1 - 8 Sand, packed
8 - 15 Sand, coarse
15 - 22 Sand and gravel, fine to coarse
22 - 27 Sand, coarse
TEST HOLE NUMBER: 336
LOCATION: 117N-33W-23SSID
LEGAL LOCATION: SW SW NW sec. 23, T. 117 N., R. 55 W.

6 - 17 Sand and gravel; dry

TEST HOLE NUMBER: 337
LOCATION: 117N-33W-24SBB
LEGAL LOCATION: NE NE NW sec. 24, T. 117 N., R. 55 W.

1 - 7 Sand; packed

TEST HOLE NUMBER: 338
LOCATION: 117N-33W-24BBB
LEGAL LOCATION: NE NW NW sec. 24, T. 117 N., R. 55 W.

1 - 17 Sand; packed

TEST HOLE NUMBER: 339
LOCATION: 117N-33W-24CBB
LEGAL LOCATION: NW NW SW SW sec. 24, T. 117 N., R. 55 W.

5 - 11 Gravel, red to brown
16 - 35 Sand and gravel

TEST HOLE NUMBER: 340
LOCATION: 117N-33W-24DAA
LEGAL LOCATION: NE NE SE SW sec. 24, T. 117 N., R. 55 W.

5 - 14 Sand

TEST HOLE NUMBER: 341
LOCATION: 117N-33W-24CDC
LEGAL LOCATION: SW SE SW sec. 24, T. 117 N., R. 55 W.

3 - 10 Sand; packed
10 - 16 Sand, coarse

TEST HOLE NUMBER: 342
LOCATION: 117N-33W-24DCB
LEGAL LOCATION: NW SW SE sec. 24, T. 117 N., R. 55 W.

3 - 16 Gravel

TEST HOLE NUMBER: 343
LOCATION: 117N-33W-24DD
LEGAL LOCATION: SE SE sec. 24, T. 117 N., R. 55 W.

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* THIS LOG CONTAINS UNVERIFIED INFORMATION *
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4 - 13 Sand
14 - 15 Sand pocket

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TEST HOLE NUMBER: 344
LOCATION: 117N-53W-24DDAC
LEGAL LOCATION: SW NE SE SE sec. 24, T. 117 N., R. 53 W.

4 - 12 Gravel

TEST HOLE NUMBER: 345
LOCATION: 117N-53W-25AAA
LEGAL LOCATION: NE NE NE sec. 25, T. 117 N., R. 53 W.

0 - 17 Sand, clay, poorly sorted
17 - 39 Sand, some clay

TEST HOLE NUMBER: 346
LOCATION: 117N-53W-25AAAB
LEGAL LOCATION: NW NE NE NE sec. 25, T. 117 N., R. 53 W.

1 - 13 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 347
LOCATION: 117N-53W-25ADD
LEGAL LOCATION: SE SE NE sec. 25, T. 117 N., R. 53 W.

2 - 7 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 348
LOCATION: 117N-53W-25AB
LEGAL LOCATION: NE NE NW sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand, coarse
8 - 15 Sand and gravel, fine to coarse
15 - 19 Sand, coarse

TEST HOLE NUMBER: 349
LOCATION: 117N-53W-25BAD 1
LEGAL LOCATION: SE NE NW sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand, yellow and blue

TEST HOLE NUMBER: 350
LOCATION: 117N-53W-25BAD 2
LEGAL LOCATION: SE NE NW sec. 25, T. 117 N., R. 53 W.

2 - 17 Sand and gravel

TEST HOLE NUMBER: 351
LOCATION: 117N-53W-25BHA
LEGAL LOCATION: NE NW NW sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand, yellow

53
TEST HOLE NUMBER: 352
LOCATION: 117N-53W-25BBB
LEGAL LOCATION: NW NW NW sec. 25, T. 117 N., R. 53 W.

3 - 25 Sand, yellow

TEST HOLE NUMBER: 353
LOCATION: 117N-53W-25BCA 1
LEGAL LOCATION: NE SW NW sec. 25, T. 117 N., R. 53 W.

2 - 7 Sand
7 - 16 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 354
LOCATION: 117N-53W-25BCA 2
LEGAL LOCATION: NE SW NW sec. 25, T. 117 N., R. 53 W.

2 - 5 Sand

TEST HOLE NUMBER: 355
LOCATION: 117N-53W-25BCC
LEGAL LOCATION: SW SW NW sec. 25, T. 117 N., R. 53 W.

3 - 17 Gravel, yellow, coarse

TEST HOLE NUMBER: 356
LOCATION: 117N-53W-25BCD 1
LEGAL LOCATION: SE SW NW sec. 25, T. 117 N., R. 53 W.

2 - 32 Sand, yellow and blue, very fine; some gravel

TEST HOLE NUMBER: 357
LOCATION: 117N-53W-25BCD 2
LEGAL LOCATION: SE SW NW sec. 25, T. 117 N., R. 53 W.

1 - 23 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 358
LOCATION: 117N-53W-25BDB 1
LEGAL LOCATION: NW SE NW sec. 25, T. 117 N., R. 53 W.

2 - 20 Sand, yellow and brown; gravel, coarse

TEST HOLE NUMBER: 359
LOCATION: 117N-53W-25BDB 2
LEGAL LOCATION: NW SE NW sec. 25, T. 117 N., R. 53 W.

3 - 20 Sand, yellow and blue

TEST HOLE NUMBER: 360
LOCATION: 117N-53W-25BDC
LEGAL LOCATION: SW SE NW sec. 25, T. 117 N., R. 53 W.

2 - 23 Sand, yellow, coarse

TEST HOLE NUMBER: 361
LOCATION: 117N-53W-25CAB
LEGAL LOCATION: NW NE SW sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 362
LOCATION: 117N-53W-25CAC
LEGAL LOCATION: SW NE SW sec. 25, T. 117 N., R. 53 W.

3 - 8 Sand and gravel, fine to coarse
8 - 11 Sand, fine
11 - 21 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 363
LOCATION: 117N-53W-25CBA
LEGAL LOCATION: NE NW SW sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand, fine
8 - 15 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 364
LOCATION: 117N-53W-25CBC
LEGAL LOCATION: SW NW SW sec. 25, T. 117 N., R. 53 W.

3 - 18 Sand, yellow, coarse

TEST HOLE NUMBER: 365
LOCATION: 117N-53W-25CCB 1
LEGAL LOCATION: NW SW SW sec. 25, T. 117 N., R. 53 W.

4 - 9 Sand

TEST HOLE NUMBER: 366
LOCATION: 117N-53W-25CCB 2
LEGAL LOCATION: NW SW SW sec. 25, T. 117 N., R. 53 W.

2 - 19 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 367
LOCATION: 117N-53W-25CCC
LEGAL LOCATION: SW SW SW sec. 25, T. 117 N., R. 53 W.

2 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 368
LOCATION: 117N-53W-25CDA
LEGAL LOCATION: NE SE SW sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 369
LOCATION: 117N-5SW-25DAAC
LEGAL LOCATION: SW NE NE SE sec. 25, T. 117 N., R. 53 W.

2 - 5 Sand, coarse

TEST HOLE NUMBER: 370
LOCATION: 117N-5SW-25DBB
LEGAL LOCATION: NW NW SE sec. 25, T. 117 N., R. 53 W.

2 - 12 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 371
LOCATION: 117N-5SW-25DBC
LEGAL LOCATION: SW NW SE sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand and gravel, fine to coarse
13 - 16 Sand, fine

TEST HOLE NUMBER: 372
LOCATION: 117N-5SW-25DCB 1
LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

3 - 8 Sand, fine
8 - 15 Sand and gravel, fine to coarse
15 - 18 Sand, fine

TEST HOLE NUMBER: 373
LOCATION: 117N-5SW-25DCB 2
LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand and gravel, fine to coarse
8 - 18 Sand, coarse
18 - 22 Gravel
22 - 26 Sand

TEST HOLE NUMBER: 374
LOCATION: 117N-5SW-25DCB 3
LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand, packed

TEST HOLE NUMBER: 375
LOCATION: 117N-5SW-25DCB 4
LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

3 - 17 Sand and gravel, fine to coarse
TEST HOLE NUMBER: 376
LOCATION: 11T-53W-25DCC
LEGAL LOCATION: SW SW SE sec. 25, T. 117 N., R. 53 W.
   2 - 35 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 377
LOCATION: 11T-53W-25DDA
LEGAL LOCATION: NE SE SE sec. 25, T. 117 N., R. 53 W.
   1 -  3 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 378
LOCATION: 11T-53W-26AAA
LEGAL LOCATION: NE NE NE sec. 26, T. 117 N., R. 53 W.
   3 - 13 Sand, yellow, fine

TEST HOLE NUMBER: 379
LOCATION: 11T-53W-26AAB 1
LEGAL LOCATION: NW NE NE sec. 26, T. 117 N., R. 53 W.
   2 - 22 Sand, yellow

TEST HOLE NUMBER: 380
LOCATION: 11T-53W-26AAB 2
LEGAL LOCATION: NW NE NE sec. 26, T. 117 N., R. 53 W.
   0 - 23 Sand, yellow
   23 - 33 Sand, blue

TEST HOLE NUMBER: 381
LOCATION: 11T-53W-26AAC
LEGAL LOCATION: SW NE NE sec. 26, T. 117 N., R. 53 W.
   2 - 30 Sand, yellow, fine

TEST HOLE NUMBER: 382
LOCATION: 11T-53W-26AAD
LEGAL LOCATION: SE NE NE sec. 26, T. 117 N., R. 53 W.
   2 - 14 Sand, yellow, fine

TEST HOLE NUMBER: 383
LOCATION: 11T-53W-26ABA
LEGAL LOCATION: NE NW NE sec. 26, T. 117 N., R. 53 W.
   6 - 27 Sand, blue

TEST HOLE NUMBER: 384
LOCATION: 11T-53W-26ABB

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LEGAL LOCATION: NW NW NE sec. 26, T. 117 N., R. 53 W.

0 - 3 Sand, yellow
3 - 18 Sand, blue
18 - 25 Sand, yellow

TEST HOLE NUMBER: 385
LOCATION: 117N-53W-26ABD
LEGAL LOCATION: SE NW NE sec. 26, T. 117 N., R. 53 W.

2 - 25 Sand, yellow

TEST HOLE NUMBER: 386
LOCATION: 117N-53W-26ACC
LEGAL LOCATION: SW SW NE sec. 26, T. 117 N., R. 53 W.

2 - 8 Sand, white

TEST HOLE NUMBER: 387
LOCATION: 117N-53W-26ADD
LEGAL LOCATION: SE SE NE sec. 26, T. 117 N., R. 53 W.

3 - 23 Sand, yellow, fine

TEST HOLE NUMBER: 388
LOCATION: 117N-53W-26DAE
LEGAL LOCATION: NE NE SE sec. 26, T. 117 N., R. 53 W.

2 - 25 Sand, yellow, fine; rocks

TEST HOLE NUMBER: 389
LOCATION: 117N-53W-26DAA
LEGAL LOCATION: NE NE SE sec. 26, T. 117 N., R. 53 W.

3 - 34 Sand, yellow, fine; rock

TEST HOLE NUMBER: 390
LOCATION: 117N-53W-26DAD
LEGAL LOCATION: SE NE SE sec. 26, T. 117 N., R. 53 W.

4 - 9 Sand

TEST HOLE NUMBER: 391
LOCATION: 117N-53W-26DAB
LEGAL LOCATION: NW NW SE sec. 26, T. 117 N., R. 53 W.

4 - 11 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 392
LOCATION: 117N-53W-27AAAA
LEGAL LOCATION: NE NE NE NW sec. 27, T. 117 N., R. 53 W.
2 - 12 Sand and gravel

TEST HOLE NUMBER: 393
LOCATION: 117N-53W-28CCBB
LEGAL LOCATION: NW NW SW NW sec. 28, T. 117 N., R. 53 W.
0 - 22 Sand and gravel, medium to coarse; clean, caving

TEST HOLE NUMBER: 394
LOCATION: 117N-53W-28DBBB 1
LEGAL LOCATION: NW NW NW SE sec. 28, T. 117 N., R. 53 W.
6 - 45 Sand, fine

TEST HOLE NUMBER: 395
LOCATION: 117N-53W-28DDBB 2
LEGAL LOCATION: NW NW NW SE sec. 28, T. 117 N., R. 53 W.
2 - 47 Sand

TEST HOLE NUMBER: 396
LOCATION: 117N-53W-31CCCC
LEGAL LOCATION: SW SW SW SW sec. 31, T. 117 N., R. 53 W.
19 - 24 Sand and gravel

TEST HOLE NUMBER: 397
LOCATION: 117N-53W-32CC
LEGAL LOCATION: SW SW sec. 32, T. 117 N., R. 53 W.
* THIS LOG CONTAINS UNVERIFIED INFORMATION *
5 - 13 Gravel, coarse

TEST HOLE NUMBER: 398
LOCATION: 117N-53W-33BBBB
LEGAL LOCATION: NW NW NW NW sec. 33, T. 117 N., R. 53 W.
11 - 17 Sand, fine to coarse; some gravel
17 - 47 Sand, coarse; gravel

TEST HOLE NUMBER: 399
LOCATION: 117N-53W-33CDDD
LEGAL LOCATION: SE SE SE SW sec. 33, T. 117 N., R. 53 W.
2 - 25 Sand, fine to coarse

TEST HOLE NUMBER: 400
LOCATION: 117N-53W-33DDDC
LEGAL LOCATION: SW SE SE SE sec. 33, T. 117 N., R. 53 W.

   2 - 31 Sand, coarse; gravel

TEST HOLE NUMBER: 401
LOCATION: 117N-3SW-3XDDD
LEGAL LOCATION: SE SE SE sec. 33, T. 117 N., R. 53 W.

   1 - 20 Gravel; silt; sand mixture
   20 - 21 Gravel, pea-size

TEST HOLE NUMBER: 402
LOCATION: 117N-3SW-34BBBB
LEGAL LOCATION: NW NW NW NW sec. 34, T. 117 N., R. 53 W.

   3 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 403
LOCATION: 117N-3SW-34CCCC
LEGAL LOCATION: SW SW sec. 34, T. 117 N., R. 53 W.

   0 - 19 Sand, brown; gravel; some clay

TEST HOLE NUMBER: 404
LOCATION: 117N-3SW-34CCCC 1
LEGAL LOCATION: SW SW SW sec. 34, T. 117 N., R. 53 W.

   1 - 14 Sand and gravel

TEST HOLE NUMBER: 405
LOCATION: 117N-3SW-34CCCC 2
LEGAL LOCATION: SW SW SW sec. 34, T. 117 N., R. 53 W.

   2 - 11 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 406
LOCATION: 117N-3SW-35AAAA 1
LEGAL LOCATION: NE NE NE NE sec. 35, T. 117 N., R. 53 W.

   0 - 14 Sand, brown, unsorted; clay
   14 - 29 Sand, medium; some clay

TEST HOLE NUMBER: 407
LOCATION: 117N-3SW-35AAAA 2
LEGAL LOCATION: NE NE NE NE sec. 35, T. 117 N., R. 53 W.

   1 - 3 Sand, coarse
   3 - 15 Sand; some gravel

TEST HOLE NUMBER: 408
LOCATION: 117N-3SW-35ADDD
LEGAL LOCATION: SE SE SE NE sec. 35, T. 117 N., R. 53 W.
1 - 6 Sand, brown, medium
6 - 8 Sand, coarse
8 - 13 Sand, medium
13 - 15 Gravel, coarse

TEST HOLE NUMBER: 409
LOCATION: 117N-5SW-XBCC
LEGAL LOCATION: SW SW NW sec. 35, T. 117 N., R. 53 W.
0 - 9 Sand, some clay, poorly sorted
9 - 24 Sand and gravel, poorly sorted

TEST HOLE NUMBER: 410
LOCATION: 117N-5SW-3CBBB
LEGAL LOCATION: NW NW NW SW sec. 35, T. 117 N., R. 53 W.
9 - 12 Sand

TEST HOLE NUMBER: 411
LOCATION: 117N-5SW-3SAAA
LEGAL LOCATION: NE NE SE sec. 35, T. 117 N., R. 53 W.
0 - 10 Sand and gravel, becoming silt
10 - 14 Sand and gravel, saturated

TEST HOLE NUMBER: 412
LOCATION: 117N-5SW-36AAC
LEGAL LOCATION: SW NE NE sec. 36, T. 117 N., R. 53 W.
1 - 14 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 413
LOCATION: 117N-5SW-36ADB 1
LEGAL LOCATION: NW NW NE sec. 36, T. 117 N., R. 53 W.
4 - 14 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 414
LOCATION: 117N-5SW-36ADB 2
LEGAL LOCATION: NW NW NE sec. 36, T. 117 N., R. 53 W.
4 - 13 Sand and gravel, fine to coarse
14 - 25 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 415
LOCATION: 117N-5SW-36AEED
LEGAL LOCATION: SE NW NE sec. 36, T. 117 N., R. 53 W.
5 - 17 Sand and gravel, fine to coarse
TEST HOLE NUMBER: 416
LOCATION: 117N-5SW-36ACB 1
LEGAL LOCATION: NW SW NE sec. 36, T. 117 N., R. 53 W.

5 - 13 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 417
LOCATION: 117N-5SW-36ACB 2
LEGAL LOCATION: NW SW NE sec. 36, T. 117 N., R. 53 W.

1 - 11 Sand and gravel, fine to coarse
13 - 18 Sand, fine to medium

TEST HOLE NUMBER: 418
LOCATION: 117N-5SW-36ADA 1
LEGAL LOCATION: NE SE NE sec. 36, T. 117 N., R. 53 W.

2 - 21 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 419
LOCATION: 117N-5SW-36ADA 2
LEGAL LOCATION: NE SE NE sec. 36, T. 117 N., R. 53 W.

2 - 11 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 420
LOCATION: 117N-5SW-36BAA
LEGAL LOCATION: NW NE NW sec. 36, T. 117 N., R. 53 W.

1 - 12 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 421
LOCATION: 117N-5SW-36BAC
LEGAL LOCATION: SW NE NW sec. 36, T. 117 N., R. 53 W.

5 - 17 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 422
LOCATION: 117N-5SW-36BAD
LEGAL LOCATION: SE NE NW sec. 36, T. 117 N., R. 53 W.

1 - 30 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 423
LOCATION: 117N-5SW-36BBB
LEGAL LOCATION: NW SE NW sec. 36, T. 117 N., R. 53 W.

4 - 14 Sand and gravel, fine to coarse
16 - 25 Sand, fine to coarse

TEST HOLE NUMBER: 424
LOCATION: 117N-5SW-36CCA

62
LEGAL LOCATION: NE SW SW sec. 36, T. 117 N., R. 53 W.

4 - 23 Sand, packed
23 - 28 Sand, fine

TEST HOLE NUMBER: 425
LOCATION: 117N-3SW-36CC
LEGAL LOCATION: SW SW SW sec. 36, T. 117 N., R. 53 W.

2 - 8 Sand, medium, clean
8 - 20 Sand, some silt

TEST HOLE NUMBER: 426
LOCATION: 117N-3SW-36DD
LEGAL LOCATION: SE NW SE sec. 36, T. 117 N., R. 53 W.

4 - 10 Sand, coarse
10 - 23 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 427
LOCATION: 117N-3SW-36DB
LEGAL LOCATION: NW SE SE sec. 36, T. 117 N., R. 53 W.

0 - 24 Sand, medium
24 - 34 Gravel, fine

TEST HOLE NUMBER: 428
LOCATION: 117N-5SW-01AAA
LEGAL LOCATION: NE NE NE NE sec. 01, T. 117 N., R. 54 W.

3 - 4 Sand, medium, clean
4 - 13 Gravel, medium to fine
13 - 15 Gravel, medium to coarse

TEST HOLE NUMBER: 429
LOCATION: 117N-5SW-01ACDC
LEGAL LOCATION: SW SE NE SW sec. 01, T. 117 N., R. 54 W.

4 - 9 Gravel, fine; coarse to medium sand
8 - 20 Sand, coarse; some fine gravel
20 - 28 Gravel, medium to fine

TEST HOLE NUMBER: 430
LOCATION: 117N-5SW-01DD
LEGAL LOCATION: SE SE NE SE sec. 01, T. 117 N., R. 54 W.

4 - 15 Gravel, rusty colored
18 - 38 Gravel, rusty colored

TEST HOLE NUMBER: 431
LOCATION: 117N-5SW-01DB

63
LEGAL LOCATION: NW SE NW SE sec. 01, T. 117 N., R. 54 W.

0 - 3 Sand, brown, very coarse; with pea-sized gravel; dry
3 - 7 Sand, gray, very coarse; some large gravel; moist
7 - 12 Gravel, gray, pea-sized; clay present; saturated, unoxidized
12 - 37 Gravel, blackish-gray, pea-sized; shows traces of iron manganese stain

TEST HOLE NUMBER: 432
LOCATION: 117N-54W-02DBAC
LEGAL LOCATION: SW NW SE NE sec. 02, T. 117 N., R. 54 W.

8 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized, dry
19 - 26 Gravel, brown, medium to coarse, sandy; could not penetrate past 26 feet

TEST HOLE NUMBER: 433
LOCATION: 117N-54W-02DBDD
LEGAL LOCATION: SE SE SE NE NW sec. 02, T. 117 N., R. 54 W.

6 - 27 Gravel, reddish-brown; very coarse sand; clay present

TEST HOLE NUMBER: 434
LOCATION: 117N-54W-02DBAC
LEGAL LOCATION: SW NE NW SE sec. 02, T. 117 N., R. 54 W.

5 - 7 Gravel, medium to fine; medium sand
7 - 8 Gravel, medium to fine; fine sand
8 - 13 Gravel, fine; sand, fine
13 - 18 Gravel, medium; coarse sand
18 - 20 Gravel, medium; medium sand
20 - 22 Gravel, medium
22 - 28 Gravel, coarse

TEST HOLE NUMBER: 435
LOCATION: 117N-54W-04DBDD
LEGAL LOCATION: SE NE NW SE sec. 04, T. 117 N., R. 54 W.

1 - 9 Sand, light-brown, coarse to medium; dry
9 - 13 Sioux, dark-brown, coarse to medium; with some gravel; dry
13 - 15 Sand, medium; clayey; dry
15 - 19 Sand and clay, dark-brown, medium sand; no large pebbles; moist
19 - 30 Sand and clay, dull-gray, medium sand; no large pebbles

TEST HOLE NUMBER: 436
LOCATION: 117N-54W-06B BBB
LEGAL LOCATION: NW NW NW NW sec. 06, T. 117 N., R. 54 W.

19 - 20 Gravel, coarse

TEST HOLE NUMBER: 437
LOCATION: 117N-54W-11ABC
LEGAL LOCATION: SW NW SW NE sec. 11, T. 117 N., R. 54 W.

3 - 10 Sand, grayish-brown, coarse; some pea-sized gravel
10 - 27 Sand, blackish-gray, very coarse; some pea-sized gravel, clay present
TEST HOLE NUMBER: 438
LOCATION: 117N-54W-12C3BD
LEGAL LOCATION: SE NW NW SW sec 12, T. 117 N., R. 54 W.
  12 - 55 Gravel

TEST HOLE NUMBER: 439
LOCATION: 117N-54W-12D5DC
LEGAL LOCATION: SW SE SW SE sec 12, T. 117 N., R. 54 W.
  3 - 30 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 440
LOCATION: 117N-54W-12DD2D
LEGAL LOCATION: SE SE SE SE sec 12, T. 117 N., R. 54 W.
  1 - 8 Sand, light-brown, very silty
  8 - 15 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 441
LOCATION: 117N-54W-15AAAA
LEGAL LOCATION: NE NE NE NE sec 15, T. 117 N., R. 54 W.
  1 - 15 Sand, orange-brown, fine to medium; oxidized
  15 - 20 Gravel and sand, orange-brown, fine gravel, fine to coarse sand; oxidized, moist
  20 - 28 Sand and gravel, brown, medium to coarse sand, fine gravel, clayey; oxidized

TEST HOLE NUMBER: 442
LOCATION: 117N-54W-17ABBA
LEGAL LOCATION: NE NW NW NE sec 17, T. 117 N., R. 54 W.
  1 - 8 Sand, brown, fine to medium; oxidized, dry to moist; some fine to medium gravel; increased clay content with depth

TEST HOLE NUMBER: 443
LOCATION: 117N-54W-19ABB
LEGAL LOCATION: NW NW NE NW sec 19, T. 117 N., R. 54 W.
  5 - 7 Sand, brown to red, fine to medium, clayey; oxidized, dry; some gravel

TEST HOLE NUMBER: 444
LOCATION: 117N-54W-22DCCC
LEGAL LOCATION: SW SW SW SW sec 22, T. 117 N., R. 54 W.
  1 - 32 Gravel, fine to medium, silty; some sand

TEST HOLE NUMBER: 445
LOCATION: 117N-54W-21DCCC
LEGAL LOCATION: SW SW SW SW sec 23, T. 117 N., R. 54 W.
  1 - 22 Gravel, brown, sandy, silty
TEST HOLE NUMBER: 446
LOCATION: 117N-54W-26CDDD
LEGAL LOCATION: SE SE SE SW sec. 26, T. 117 N., R. 54 W.
19 - 57 Sand

TEST HOLE NUMBER: 447
LOCATION: 117N-54W-34DABC
LEGAL LOCATION: SW NW SW SE sec. 34, T. 117 N., R. 54 W.
 7 - 14 Sand, brown, fine to medium, very clayey; oxidized, saturated; some gravel
 14 - 22 Sand, gray, fine to medium, very clayey; saturated

TEST HOLE NUMBER: 448
LOCATION: 117N-55W-01BBBB
LEGAL LOCATION: NE NW NW NW sec. 01, T. 117 N., R. 55 W.
 1 - 4 Gravel, gray-brown, fine to medium, sandy; oxidized, dry

TEST HOLE NUMBER: 449
LOCATION: 117N-55W-01BBBB
LEGAL LOCATION: NW SW NW NW sec. 01, T. 117 N., R. 55 W.
10 - 27 Sand, medium; some brown clay

TEST HOLE NUMBER: 450
LOCATION: 117N-55W-01CCCC
LEGAL LOCATION: SW SW SW SW sec. 01, T. 117 N., R. 55 W.
13 - 18 Sand, medium; some brown clay

TEST HOLE NUMBER: 451
LOCATION: 117N-55W-02BBBB
LEGAL LOCATION: NW NW NW NW sec. 02, T. 117 N., R. 55 W.
 5 - 6 Sand, light-brown, fine, well-sorted; oxidized, dry

TEST HOLE NUMBER: 452
LOCATION: 117N-55W-03AAAA
LEGAL LOCATION: NE SE NE NE sec. 05, T. 117 N., R. 55 W.
 1 - 3 Sand and gravel, brown, fine to medium sand, fine to coarse gravel, silty; oxidized, dry; little clay
 3 - 6 Sand, brown, fine, well-sorted, silty; oxidized, dry; little clay

TEST HOLE NUMBER: 453
LOCATION: 117N-55W-10AAAA
LEGAL LOCATION: NE NE NE NE sec. 10, T. 117 N., R. 55 W.
 2 - 6 Sand, brown, fine to medium, silty, clayey; oxidized, dry; some clay layers
 6 - 26 Sand, brown, medium, clayey, silty; oxidized, saturated; some coarse sand
TEST HOLE NUMBER: 454
LOCATION: 117N-5SW-15CABC
LEGAL LOCATION: SW NW NE SW sec. 15, T. 117 N., R. 55 W.

2 -  7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
7 - 11 Sand, brown, fine to medium, clayey, rounded; oxidized, dry to moist

TEST HOLE NUMBER: 455
LOCATION: 117N-5SW-15CCDB
LEGAL LOCATION: NW SE SW SW sec. 15, T. 117 N., R. 55 W.

0 -  2 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, silty, clayey; oxidized, dry
2 -  7 Sand, brown, medium to coarse, silty, clayey; oxidized, moist; some fine gravel

TEST HOLE NUMBER: 456
LOCATION: 117N-5SW-22ACC
LEGAL LOCATION: SW SW SW NW sec. 22, T. 12@N., R. 55 W.
PRELIMINARY LOG – SUBJECT TO CHANGE

1 - 15 Sand, orange, fine to medium

TEST HOLE NUMBER: 457
LOCATION: 117N-5SW-27DCC
LEGAL LOCATION: SW SE SW SE sec. 27, T. 117 N., R. 55 W.

2 -  3 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey, silty; oxidized, damp

TEST HOLE NUMBER: 458
LOCATION: 117N-5SW-33DDD
LEGAL LOCATION: SE SE SE SW sec. 33, T. 117 N., R. 55 W.

4 - 10 Sand and gravel, brown, fine to medium, clayey; oxidized, moist

TEST HOLE NUMBER: 459
LOCATION: 117N-5SW-35DCCD
LEGAL LOCATION: SE SW SW SE sec. 35, T. 117 N., R. 55 W.

0.5 -  2 Sand, red-brown, fine to medium, well-sorted; oxidized, dry; some silt, some clay
13 - 18 Sand, brown, fine to medium, very clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 460
LOCATION: 117N-5SW-36AACA
LEGAL LOCATION: NE SW NE NE sec. 36, T. 117 N., R. 55 W.

0 -  4 Gravel, brown, medium to coarse, clayey, silty; oxidized, dry; some fine sand
4 - 11 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; oxidized, moist

TEST HOLE NUMBER: 461
LOCATION: 118N-5SW-01BBBA
LEGAL LOCATION: NE NW NW NW sec. 01, T. 118 N., R. 51 W.

1 -  4 Sand, burnt-orange-brown, fine to coarse; oxidized; little silt
4 - 10 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel; oxidized
10 - 31 Sand and gravel, orange-brown, fine to coarse sand, fine to coarse gravel; oxidized; saturated

TEST HOLE NUMBER: 462
LOCATION: 118N-51W-01DADA
LEGAL LOCATION: NE SE NE SE sec. 01, T. 118 N., R. 51 W.

3 - 4 Gravel, coarse
4 - 15 Gravel(?) no cuttings received

TEST HOLE NUMBER: 463
LOCATION: 118N-51W-06ABBC
LEGAL LOCATION: SW NW NW NE sec. 06, T. 118 N., R. 51 W.

0 - 16 Gravel

TEST HOLE NUMBER: 464
LOCATION: 118N-51W-07DAAA
LEGAL LOCATION: NE NE NE SE sec. 07, T. 118 N., R. 51 W.

2 - 4 Gravel, coarse
4 - 9 Gravel, coarse to medium
9 - 14 Sand, coarse; to fine gravel
14 - 15 Sand; yellow clay with pebbles

TEST HOLE NUMBER: 465
LOCATION: 118N-51W-11BBBB
LEGAL LOCATION: NW NW NW NW sec. 11, T. 118 N., R. 51 W.

1 - 23 Sand and gravel, tan-brown, medium sand, fine to medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 466
LOCATION: 118N-51W-12BBBB
LEGAL LOCATION: NE NW NW NW sec. 12, T. 118 N., R. 51 W.

1 - 12 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine gravel, silty, clayey; oxidized; saturated at 5 feet

TEST HOLE NUMBER: 467
LOCATION: 118N-51W-16AAABA
LEGAL LOCATION: NE NW NE NE sec. 16, T. 118 N., R. 51 W.

2 - 19 Sand and gravel, brown, fine to medium sand, fine to medium gravel, coarse gravel from 17 to 19 feet; silty; oxidized
19 - 36 Sand, brown, medium to coarse, slightly clayey; oxidized; saturated at 30 feet; some gravel; more clay with depth

TEST HOLE NUMBER: 468
LOCATION: 118N-51W-18BCCBC
LEGAL LOCATION: SW NW SW NW sec. 18, T. 118 N., R. 51 W.

1 - 2 Gravel, fine to medium, silty, sandy
TEST HOLE NUMBER: 469  
LOCATION: 118N-51W-21AABB  
LEGAL LOCATION: NE NW NE NE sec. 21, T. 118 N., R. 51 W.  
11 - 22 Sand and gravel, orange-brown, fine to coarse sand, fine gravel, silty; oxidized; wet at 18 feet  
22 - 30 Sand and gravel, yellow-brown, fine to coarse sand, fine gravel, silty; oxidized; saturated  

TEST HOLE NUMBER: 470  
LOCATION: 118N-51W-27BBBB  
LEGAL LOCATION: NW NE NW NW sec. 27, T. 118 N., R. 51 W.  
4 - 6 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized  
6 - 8 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; could not penetrate past 8 feet  

TEST HOLE NUMBER: 471  
LOCATION: 118N-51W-34BBB  
LEGAL LOCATION: NW NW NW NE sec. 34, T. 118 N., R. 51 W.  
1 - 6 Sand, orange-brown, very clayey, silty; oxidized; some fine gravel  
6 - 12 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized  
12 - 14 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, silty; oxidized  
14 - 16 Sand, yellow-brown, fine to coarse, clayey, silty; oxidized  

TEST HOLE NUMBER: 472  
LOCATION: 118N-51W-34BBCC  
LEGAL LOCATION: NW SW NW NW sec. 34, T. 118 N., R. 51 W.  
6 - 12 Sand and gravel, yellow-brown, fine to medium sand, fine gravel, silty; oxidized; wet  

TEST HOLE NUMBER: 473  
LOCATION: 118N-52W-01ADD  
LEGAL LOCATION: SE SE NE NE sec. 01, T. 118 N., R. 52 W.  
1 - 4 Gravel, medium to coarse  
4 - 48 Sand and gravel, yellow-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; more clay with depth; wet at 51 feet  

TEST HOLE NUMBER: 474  
LOCATION: 118N-52W-01CDAB  
LEGAL LOCATION: NW NE SE SW sec. 01, T. 118 N., R. 52 W.  
4 - 31 Sand and gravel  

TEST HOLE NUMBER: 475  
LOCATION: 118N-52W-01DDCC  
LEGAL LOCATION: SW SW SE SE sec. 01, T. 118 N., R. 52 W.  
1 - 32 Sand and gravel, medium to very coarse  

TEST HOLE NUMBER: 476  
LOCATION: 118N-52W-02BBA  

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LEGAL LOCATION: NE NW NW sec. 02, T. 118 N., R. 52 W.

3 - 6  Gravel, orange-tan-brown, fine to medium, very silty; oxidized; some orange-tan-brown silt
8 - 10  Gravel, coarse
21 - 25  Gravel(?); broke too; hard drilling

TEST HOLE NUMBER: 477
LOCATION: 118N-52W-02BBA 1
LEGAL LOCATION: NE NW NW NW sec. 02, T. 118 N., R. 52 W.

3 - 9  Gravel, orange-tan-brown, fine to medium, silty; oxidized; some tan-brown silt
9 - 11  Gravel, coarse
23 - 27  Gravel, pea-size; hard packed; saturated

TEST HOLE NUMBER: 478
LOCATION: 118N-52W-02CDDD 1
LEGAL LOCATION: SE SE SE SW sec. 02, T. 118 N., R. 52 W.

2 - 30  Gravel

TEST HOLE NUMBER: 479
LOCATION: 118N-52W-02CDDD 2
LEGAL LOCATION: SE SE SE SW sec. 02, T. 118 N., R. 52 W.

3 - 31  Gravel

TEST HOLE NUMBER: 480
LOCATION: 118N-52W-45CDDC
LEGAL LOCATION: SW SW SE sec. 05, T. 118 N., R. 52 W.

4 - 9  Sand, orange-tan-brown, fine to coarse clayey, silty, gravelly; oxidized
9 - 15  Sand, tan-brown, fine to coarse, clayey, silty, gravelly; oxidized; saturated

TEST HOLE NUMBER: 481
LOCATION: 118N-52W-68CDDD
LEGAL LOCATION: SE SE SW sec. 08, T. 118 N., R. 52 W.

3 - 9  Sand and gravel, orange-tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized
19 - 21  Gravel(?); no return; driller reports drills like gravel

TEST HOLE NUMBER: 482
LOCATION: 118N-52W-69DDD
LEGAL LOCATION: SE SE SE sec. 08, T. 118 N., R. 52 W.

2 - 38  Sand and gravel, medium to coarse

TEST HOLE NUMBER: 483
LOCATION: 118N-52W-69CBBB
LEGAL LOCATION: NW NW NW sec. 09, T. 118 N., R. 52 W.

6 - 12  Gravel
TEST HOLE NUMBER: 484
LOCATION: 118N-52W-09CDC
LEGAL LOCATION: SW SE SE SW sec. 09, T. 118 N., R. 52 W.
1 - 18 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized; some coarse gravel from 7 to 10 feet
18 - 32 Sand and gravel, gray-brown, medium to coarse sand, medium to coarse gravel; moist

TEST HOLE NUMBER: 485
LOCATION: 118N-52W-11AAD
LEGAL LOCATION: SE NE NE NE sec. 11, T. 118 N., R. 52 W.
1 - 10 Gravel, coarse, silty, sandy
10 - 26 Sand and gravel, brown, fine sand, fine to medium gravel, silty; oxidized; saturated at 20 feet

TEST HOLE NUMBER: 486
LOCATION: 118N-52W-11CBC
LEGAL LOCATION: SW NW NW SW sec. 11, T. 118 N., R. 52 W.
3 - 30 Sand and gravel; good pea gravel towards bottom

TEST HOLE NUMBER: 487
LOCATION: 118N-52W-12CDC
LEGAL LOCATION: SW SE SW NW sec. 12, T. 118 N., R. 52 W.
12 - 36 Gravel

TEST HOLE NUMBER: 488
LOCATION: 118N-52W-12CBB
LEGAL LOCATION: NW NW SW sec. 12, T. 118 N., R. 52 W.
8 - 32 Gravel

TEST HOLE NUMBER: 489
LOCATION: 118N-52W-13BBB
LEGAL LOCATION: NW NW NW NW sec. 13, T. 118 N., R. 52 W.
2 - 5 Sand, yellow-brown, fine to medium, clayey, silty; oxidized

TEST HOLE NUMBER: 490
LOCATION: 118N-52W-15BBB
LEGAL LOCATION: NW NW NW NW sec. 15, T. 118 N., R. 52 W.
3 - 10 Sand and gravel, medium to coarse; poor, large rocks

TEST HOLE NUMBER: 491
LOCATION: 118N-52W-16ABBA
LEGAL LOCATION: NE NW NE NE sec. 16, T. 118 N., R. 52 W.
2 - 9 Sand, medium to coarse, silty; with pebbles
TEST HOLE NUMBER: 492
LOCATION: 118N-52W-16HDC
LEGAL LOCATION: SW SE NW sec. 16, T. 118 N., R. 52 W.
4 - 13 Gravel; dry
13 - 36 Sand and gravel; water producing

TEST HOLE NUMBER: 493
LOCATION: 118N-52W-17AABB
LEGAL LOCATION: NW NW NE NE sec. 17, T. 118 N., R. 52 W.
10 - 20 Gravel

TEST HOLE NUMBER: 494
LOCATION: 118N-52W-17ABAA
LEGAL LOCATION: NE NE NW NE sec. 17, T. 118 N., R. 52 W.
20 - 40 Gravel

TEST HOLE NUMBER: 495
LOCATION: 118N-52W-17ADAA
LEGAL LOCATION: NE NE SE NE sec. 17, T. 118 N., R. 52 W.
12 - 30 Gravel

TEST HOLE NUMBER: 496
LOCATION: 118N-52W-17CCCA
LEGAL LOCATION: NE SW SW SW sec. 17, T. 118 N., R. 52 W.
5 - 40 Gravel

TEST HOLE NUMBER: 497
LOCATION: 118N-52W-18AAAA
LEGAL LOCATION: NE NE NE NE sec. 18, T. 118 N., R. 52 W.
4 - 15 Sand and gravel; medium to coarse

TEST HOLE NUMBER: 498
LOCATION: 118N-52W-18BBBB
LEGAL LOCATION: NW NW NW NW sec. 18, T. 118 N., R. 52 W.
2 - 8 Gravel, brown; medium to coarse

TEST HOLE NUMBER: 499
LOCATION: 118N-52W-18DDDD
LEGAL LOCATION: SE SE SE SE sec. 18, T. 118 N., R. 52 W.
1 - 28 Sand and gravel; medium to coarse

TEST HOLE NUMBER: 500
LOCATION: 118N-52W-19ACCD
LEGAL LOCATION: SE SW NE sec. 19, T. 118 N., R. 52 W.

5 - 20 Sand and gravel, medium to very coarse
20 - 35 Sand, fine to coarse, cemented

TEST HOLE NUMBER: 501
LOCATION: 118N-52W-19DCC
LEGAL LOCATION: SW SW NE sec. 19, T. 118 N., R. 52 W.

17 - 37 Sand; some clay

TEST HOLE NUMBER: 502
LOCATION: 118N-52W-19DDD
LEGAL LOCATION: SE SE SE sec. 19, T. 118 N., R. 52 W.

4 - 41 Sand, gray, medium to coarse

TEST HOLE NUMBER: 503
LOCATION: 118N-52W-20AADA
LEGAL LOCATION: NE SE NE sec. 20, T. 118 N., R. 52 W.

3 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 504
LOCATION: 118N-52W-20ADDX
LEGAL LOCATION: SW SE NE sec. 20, T. 118 N., R. 52 W.

6 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 505
LOCATION: 118N-52W-20BIB
LEGAL LOCATION: NW NW NW sec. 20, T. 118 N., R. 52 W.

14 - 29 Sand and gravel; little clay

TEST HOLE NUMBER: 506
LOCATION: 118N-52W-20DBBB
LEGAL LOCATION: NW NW NW NE sec. 20, T. 118 N., R. 52 W.

3 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 507
LOCATION: 118N-52W-21AAAD
LEGAL LOCATION: SE NE NE sec. 21, T. 118 N., R. 52 W.
PRELIMINARY LOG — SUBJECT TO CHANGE

1 - 3 Sand and gravel, brown, medium sand to fine gravel

TEST HOLE NUMBER: 508
LOCATION: 118N-52W-21ABAB

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LEGAL LOCATION: NW NE NW NE sec. 21, T. 118 N., R. 52 W.

1 - 6 Sand, yellow-tan-brown, fine to coarse, gravelly; oxidized
6 - 12 Gravel, orange-tan-brown, fine to medium, silty, slightly sandy; oxidized; some coarse gravel
12 - 24 Gravel, yellow-tan-brown, fine to medium, clayey, silty, sandy; oxidized; wet

TEST HOLE NUMBER: 509
LOCATION: 118N-52W-21HBB
LEGAL LOCATION: NW SW NW NW sec. 21, T. 118 N., R. 52 W.

3 - 15 Gravel, coarse
15 - 42 Gravel, fine

TEST HOLE NUMBER: 510
LOCATION: 118N-52W-23BAAA
LEGAL LOCATION: NE NE NE NW sec. 23, T. 118 N., R. 52 W.

3 - 9 Sand, fine to coarse, silty; driller reports some gravel, but no return

TEST HOLE NUMBER: 511
LOCATION: 118N-52W-23BBBA
LEGAL LOCATION: NE NW NW NW sec. 23, T. 118 N., R. 52 W.

2 - 8 Gravel(?); no return; driller reports drills like gravel

TEST HOLE NUMBER: 512
LOCATION: 118N-52W-26AADD
LEGAL LOCATION: NE SE SE NE sec. 26, T. 118 N., R. 52 W.

3 - 5 Gravel, coarse; no return; driller reports drills like gravel

TEST HOLE NUMBER: 513
LOCATION: 118N-52W-28BCCC
LEGAL LOCATION: SW SW NW sec. 28, T. 118 N., R. 52 W.

0 - 10 Sand, brown, clayey

TEST HOLE NUMBER: 514
LOCATION: 118N-52W-28CDDD
LEGAL LOCATION: SW SW SW sec. 28, T. 118 N., R. 52 W.

6 - 30 Sand and gravel

TEST HOLE NUMBER: 515
LOCATION: 118N-52W-28CDCE
LEGAL LOCATION: SE SW SE SW sec. 28, T. 118 N., R. 52 W.

7 - 28 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty; oxidized; saturated at 13 feet

TEST HOLE NUMBER: 516
LOCATION: 118N-52W-29BAAA
LEGAL LOCATION: NE NE NW sec. 29, T. 118 N., R. 52 W.

4 - 49 Gravel, fine

TEST HOLE NUMBER: 517
LOCATION: 118N-52W-29BAAA
LEGAL LOCATION: NE NE NE NW sec. 29, T. 118 N., R. 52 W.

2 - 38 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 518
LOCATION: 118N-52W-29BDDC
LEGAL LOCATION: SW SE NW sec. 29, T. 118 N., R. 52 W.

5 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 519
LOCATION: 118N-52W-29CCC
LEGAL LOCATION: SW SW SW sec. 29, T. 118 N., R. 52 W.

11 - 29 Gravel, coarse; some clay

TEST HOLE NUMBER: 520
LOCATION: 118N-52W-30CCCC
LEGAL LOCATION: SW SW SW sec. 30, T. 118 N., R. 52 W.

2 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 521
LOCATION: 118N-52W-30CCDD
LEGAL LOCATION: SE SW SW sec. 30, T. 118 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 522
LOCATION: 118N-52W-30CDC
LEGAL LOCATION: SE SW SE sec. 30, T. 118 N., R. 52 W.

5 - 17 Sand and gravel, medium to coarse

19 - 42 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 523
LOCATION: 118N-52W-30DCC
LEGAL LOCATION: SW SW SE sec. 30, T. 118 N., R. 52 W.

0 - 9 Gravel, red

9 - 29 Gravel, medium to coarse; some clay

TEST HOLE NUMBER: 524
LOCATION: 118N-52W-31AAAA

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LEGAL LOCATION: NE NE NE NE sec. 31, T. 118 N., R. 52 W.
7 - 12 Sand, tan; silt; water
12 - 18 Gravel, medium-brown; water
18 - 30 Sand, coarse; gravel, fine

TEST HOLE NUMBER: 525
LOCATION: 118N-52W-31AABB
LEGAL LOCATION: NW NW NE NE sec. 31, T. 118 N., R. 52 W.
3 - 37 Sand and gravel; fine to coarse

TEST HOLE NUMBER: 526
LOCATION: 118N-52W-31BCC
LEGAL LOCATION: SW SW NW sec. 31, T. 118 N., R. 52 W.
2 - 12 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 527
LOCATION: 118N-52W-31DDBA
LEGAL LOCATION: NE NW NW SE sec. 31, T. 118 N., R. 52 W.
3 - 28 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 528
LOCATION: 118N-52W-31D2CD
LEGAL LOCATION: SE SW SE SE sec. 31, T. 118 N., R. 52 W.
3 - 20 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 529
LOCATION: 118N-52W-31DDD
LEGAL LOCATION: SE SE SE sec. 31, T. 118 N., R. 52 W.
5 - 3' Sand and gravel; some clay

TEST HOLE NUMBER: 530
LOCATION: 118N-52W-32BAD
LEGAL LOCATION: SE NE NW sec. 32, T. 118 N., R. 52 W.
14 - 54 Sand, coarse; gravel, fine

TEST HOLE NUMBER: 531
LOCATION: 118N-52W-32BCCC
LEGAL LOCATION: SW SW SW NW sec. 32, T. 118 N., R. 52 W.
4 - 20 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 532
LOCATION: 118N-52W-32CCDD
LEGAL LOCATION: SE SE SW SW sec. 32, T. 118 N., R. 52 W.

3 - 7  Gravel, medium; sand, coarse; water
7 - 9  Sand, medium; gravel, fine
9 - 24 Sand, coarse
24 - 65 Sand, medium to fine

TEST HOLE NUMBER: 533
LOCATION: 118N-32W-32DBBA
LEGAL LOCATION: NE NW NW SE sec. 32, T. 118 N., R. 52 W.

4 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 534
LOCATION: 118N-32W-32DCC
LEGAL LOCATION: SW SW SW SE sec. 32, T. 118 N., R. 52 W.

3 - 18 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 535
LOCATION: 118N-32W-33BBBB 1
LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 52 W.

2 - 23 Sand and gravel

TEST HOLE NUMBER: 536
LOCATION: 118N-32W-33BBBB 2
LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 52 W.

0 - 2 Gravel, coal (road fill)
2 - 23 Sand and gravel, reddish-brown, coarse

TEST HOLE NUMBER: 537
LOCATION: 118N-32W-34BBBB
LEGAL LOCATION: NW NW NW NW sec. 34, T. 118 N., R. 52 W.

7 - 30 Sand, coarse; water at 25 feet

TEST HOLE NUMBER: 538
LOCATION: 118N-32W-34CBB
LEGAL LOCATION: SW NW NW SW sec. 34, T. 118 N., R. 52 W.

1 - 4 Sand and gravel, tan-brown, fine sand, fine gravel, silty; oxidized
4 - 9 Gravel, tan-brown, coarse, silty, sandy; oxidized; hit rock; unable to penetrate past 9 feet; abandoned hole

TEST HOLE NUMBER: 539
LOCATION: 118N-32W-07CCCC
LEGAL LOCATION: SW SW SW SW sec. 07, T. 118 N., R. 53 W.

1 - 2 Gravel, medium to coarse; dry

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8 - 11 Sand, brown, fine to medium, clayey, silty; oxidized, moist
11 - 34 Sand and gravel, brown, fine to medium sand, fine to coarse gravel, clayey; oxidized, saturated at 13 feet

TEST HOLE NUMBER: 540
LOCATION: 118N-53W-06ABB
LEGAL LOCATION: SW NW NW NE sec. 08, T. 118 N., R. 53 W.
11 - 20 Sand, brown, fine to medium, very clayey, slightly gravelly; oxidized, saturated; more gravel below 15 feet; unoxidized at 14 feet

TEST HOLE NUMBER: 541
LOCATION: 118N-53W-06ACBB
LEGAL LOCATION: NW NW SW NW NE sec. 08, T. 118 N., R. 53 W.
5 - 15 Gravel
19 - 39 Gravel

TEST HOLE NUMBER: 542
LOCATION: 118N-53W-06CD3D
LEGAL LOCATION: SE SE SW SE sec. 08, T. 118 N., R. 53 W.
9 - 14 Gravel, coarse; grades to sand
14 - 19 Sand, medium to coarse
19 - 24 Sand, fine to medium
24 - 29 Sand, medium

TEST HOLE NUMBER: 543
LOCATION: 118N-53W-06DDDD
LEGAL LOCATION: SE SE SE SE sec. 08, T. 118 N., R. 53 W.
4 - 25 Sand and gravel

TEST HOLE NUMBER: 544
LOCATION: 118N-53W-13CDDC
LEGAL LOCATION: SW SE SE SE sec. 13, T. 118 N., R. 53 W.
4 - 11 Sand, tan, fine to coarse, silty, gravelly; oxidized, wet; a little clay
11 - 21 Sand, tan-orange-brown, fine to coarse, silty, clayey; oxidized; saturated; some fine gravel

TEST HOLE NUMBER: 545
LOCATION: 118N-53W-13DDDD
LEGAL LOCATION: SE SE SE SE sec. 13, T. 118 N., R. 53 W.
PRELIMINARY LOG - SUBJECT TO CHANGE
1 - 16 Sand and gravel, medium sand to fine gravel; oxidized; minor clay

TEST HOLE NUMBER: 546
LOCATION: 118N-53W-17D3D
LEGAL LOCATION: SE SE SE NE sec. 17, T. 118 N., R. 53 W.
2 - 12 Sand, medium
12 - 20 Sand, gray, medium to coarse
20 - 24 Gravel, coarse, with rocks

TEST HOLE NUMBER: 547
LOCATION: 118N-53W-17BAAA
LEGAL LOCATION: NE NE NE NW sec. 17, T. 118 N., R. 53 W.

5 - 8 Sand brown, fine to coarse, clayey; oxidized, damp
8 - 9 Sand, brown, fine to coarse, very clayey; oxidized, moist; few fine pebbles
9 - 15 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey; oxidized, saturated; gravel is corner at 11 feet
18 - 23 Sand and gravel, brown, fine to coarse sand, fine gravel, very clayey; oxidized, saturated

TEST HOLE NUMBER: 548
LOCATION: 118N-53W-18BBBB
LEGAL LOCATION: NW NW NW NW sec. 18, T. 118 N., R. 53 W.

4 - 6 Sand and gravel

TEST HOLE NUMBER: 549
LOCATION: 118N-53W-18CBB
LEGAL LOCATION: SW SW NW NW sec. 18, T. 118 N., R. 53 W.

4 - 49 Gravel, coarse, rocky; saturated below 25 feet

TEST HOLE NUMBER: 550
LOCATION: 118N-53W-19BBBA
LEGAL LOCATION: NE NW NW NW sec. 19, T. 118 N., R. 53 W.
PRELIMINARY LOG — SUBJECT TO CHANGE

1 - 13 Sand and gravel, fine to medium sand, medium gravel; clayey

TEST HOLE NUMBER: 551
LOCATION: 118N-53W-21BBBA
LEGAL LOCATION: NE NW NW NW sec. 21, T. 118 N., R. 53 W.

24 - 53 Sand, yellow-brown, fine, slightly clayey, slightly silty; oxidized at 27 feet; unoxidized at 34 feet; increased clay content below 36 feet

TEST HOLE NUMBER: 552
LOCATION: 118N-53W-24AAAA
LEGAL LOCATION: NE NE NE sec. 24, T. 118 N., R. 53 W.

1 - 20 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 553
LOCATION: 118N-53W-24DDDD
LEGAL LOCATION: SE SE SE sec. 24, T. 118 N., R. 53 W.

3 - 21 Sand and gravel, medium to coarse
TEST HOLE NUMBER: 554
LOCATION: 118N-3SW-2
LEGAL LOCATION: SW SW SW SW sec. 25, T. 118 N., R. 53 W.
7 - 30 Sand, coarse, water

TEST HOLE NUMBER: 555
LOCATION: 118N-3SW-2
LEGAL LOCATION: SW SE SW SW sec. 25, T. 118 N., R. 53 W.
1 - 6 Sand and gravel, dark-brown, fine to coarse sand, fine to medium gravel, clayey, oxidized, moist

TEST HOLE NUMBER: 556
LOCATION: 118N-3SW-3
LEGAL LOCATION: SW SW SW NW sec. 31, T. 118 N., R. 53 W.
3 - 4 Sand, medium; clean
4 - 13 Gravel, medium-fine
13 - 15 Gravel, medium-coarse; rocks

TEST HOLE NUMBER: 557
LOCATION: 118N-3SW-3
LEGAL LOCATION: SW SW SW NW sec. 31, T. 118 N., R. 53 W.
PRELIMINARY LOG — SUBJECT TO CHANGE
1 - 29 Gravel, fine to medium pebble, surrounded; oxidized(?), some sand

TEST HOLE NUMBER: 558
LOCATION: 118N-3SW-3
LEGAL LOCATION: NE NW NW NW sec. 33, T. 118 N., R. 53 W.
21 - 26 Gravel

TEST HOLE NUMBER: 559
LOCATION: 118N-3SW-3
LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 53 W.
9 - 19 Sand, medium; with clay

TEST HOLE NUMBER: 560
LOCATION: 118N-3SW-3
LEGAL LOCATION: SW SW SW SW sec. 33, T. 118 N., R. 53 W.
0 - 19 Sand, brown, medium, clayey
19 - 24 Sand, fine, clayey

TEST HOLE NUMBER: 561
LOCATION: 118N-3SW-3
LEGAL LOCATION: NE NE sec. 36, T. 118 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

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TEST HOLE NUMBER: 562
LOCATION: 118N-5SW-36AAAA
LEGAL LOCATION: NE NE NE NE sec. 36, T. 118 N., R. 53 W.
2 - 8 Gravel; dry
8 - 12 Gravel; with water

TEST HOLE NUMBER: 563
LOCATION: 118N-5SW-36BBBB 1
LEGAL LOCATION: NW NW NW sec. 36, T. 118 N., R. 53 W.
2 - 14 Gravel
2 - 7 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 564
LOCATION: 118N-5SW-36BBBB 2
LEGAL LOCATION: NW NW NW NW sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
1 - 9 Sand; orange, medium to coarse

TEST HOLE NUMBER: 565
LOCATION: 118N-5SW-36DDDD 1
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.
6 - 16 Sand; some gravel

TEST HOLE NUMBER: 566
LOCATION: 118N-5SW-36DDDD 2
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
1 - 11 Sand and gravel, tan, medium sand to fine gravel
21 - 30 Sand and gravel

TEST HOLE NUMBER: 567
LOCATION: 118N-5SW-36DDDD 3
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
1 - 11 Sand and gravel, tan, medium sand to fine gravel
21 - 30 Sand and gravel

TEST HOLE NUMBER: 568
LOCATION: 118N-5SW-06BDCA
LEGAL LOCATION: NE SW SE NE sec. 06, T. 118 N., R. 54 W.
10 - 27 Sand; coarse to medium; fine gravel; tan silt or clay

TEST HOLE NUMBER: 569
LOCATION: 118N-5SW-06CDDD
TEST HOLE NUMBER: 570
LOCATION: 118N-34W-1HADD A
LEGAL LOCATION: SE SW SE sec. 09, T. 118 N., R. 54 W.

0 - 4 Sand and gravel, gray-brown, fine to medium sand, fine gravel, clayey, silty, oxidized
4 - 40 Sand and gravel, yellow-brown, fine to coarse sand, fine gravel, silty, very clayey, oxidized; saturated at 12 feet

TEST HOLE NUMBER: 571
LOCATION: 118N-34W-10CDDC
LEGAL LOCATION: SW SE SE sec. 10, T. 118 N., R. 54 W.

1 - 12 Sand, medium to fine
25 - 26 Gravel(?)

TEST HOLE NUMBER: 572
LOCATION: 118N-34W-10CDDC 2
LEGAL LOCATION: SW SE SE SW sec. 10, T. 118 N., R. 54 W.

PRELIMINARY LOG — SUBJECT TO CHANGE

1 - 34 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 573
LOCATION: 118N-34W-10DDCCD
LEGAL LOCATION: SE SW SE SE sec. 10, T. 118 N., R. 54 W.

6 - 14 Sand, coarse; fine gravel
23 - 53 Gravel, medium to fine, some coarse

TEST HOLE NUMBER: 574
LOCATION: 118N-34W-12BBBC
LEGAL LOCATION: SW NW NW NW sec. 12, T. 118 N., R. 54 W.

12 - 27 Sand and gravel, fine to coarse sand and fine gravel

TEST HOLE NUMBER: 575
LOCATION: 118N-34W-12DCDC
LEGAL LOCATION: SW SE SW SE sec. 12, T. 118 N., R. 54 W.

1 - 4 Sand, brown, fine, very Silty, clayey; oxidized; some gravel
4 - 5 Gravel, tan-brown, medium, clayey, silty, sandy; oxidized
5 - 18 Sand and gravel, tan-brown, fine sand, fine to medium gravel, very clayey, very silty; oxidized; some coarse gravel from 15 to 18 feet
18 - 24 Sand and gravel, tan-brown, fine sand, fine gravel, silty; oxidized; some clay, hit rock at 24 feet; abandoned hole

TEST HOLE NUMBER: 576
LOCATION: 118N-34W-13ABAB
LEGAL LOCATION: NW NE NW NE sec. 13, T. 118 N., R. 54 W.

4 - 6 Gravel, medium to coarse

TEST HOLE NUMBER: 577
LOCATION: 118N-54W-18DDD
LEGAL LOCATION: NE SE SE SE sec. 18, T. 118 N., R. 54 W.

20 - 26 Sand, medium; some clay; moist

TEST HOLE NUMBER: 578
LOCATION: 118N-54W-20CCCD
LEGAL LOCATION: SE SW SW SW sec. 20, T. 118 N., R. 54 W.

0 - 7 Sand, brown, fine to coarse
7 13 Sand, tan, fine to coarse; fine gravel

TEST HOLE NUMBER: 579
LOCATION: 118N-54W-24BBBB
LEGAL LOCATION: NW NW NW NW sec. 24, T. 118 N., R. 54 W.

20 - 28 Sand and gravel, gray-brown, fine to medium sand, fine to medium gravel, very clayey, silty, subangular

TEST HOLE NUMBER: 580
LOCATION: 118N-54W-26CBBA
LEGAL LOCATION: NE NW NW SW sec. 26, T. 118 N., R. 54 W.

1 - 5 Sand, brown, fine to medium; oxidized, moist; some clay, some silt
5 18 Gravel, brown, medium to coarse; sandy; oxidized, moist
18 20 Sand and gravel, brown, fine to medium sand, fine to medium gravel; clayey; oxidized, moist

TEST HOLE NUMBER: 581
LOCATION: 118N-54W-26CCCC
LEGAL LOCATION: SW SW SW SW sec. 26, T. 118 N., R. 54 W.

4 - 8 Sand, coarse to medium; fine gravel

TEST HOLE NUMBER: 582
LOCATION: 118N-54W-26CCDA
LEGAL LOCATION: NE SE SW SW sec. 26, T. 118 N., R. 54 W.

6 - 11 Gravel, tan-brown, medium to coarse; very silty, slightly sandy; oxidized, dry
11 - 14 Sand and gravel, brown, coarse sand; medium gravel; very silty; oxidized, dry
14 - 24 Sand and gravel, brown, medium to coarse sand; fine gravel; slightly silty; oxidized, dry

TEST HOLE NUMBER: 583
LOCATION: 118N-54W-27AAAA
LEGAL LOCATION: NE NE NE NE sec. 27, T. 118 N., R. 54 W.

4 - 5 Gravel(?); no return; drill reports drills like gravel
5 - 22 Sand, orange-brown; silty; oxidized; some fine gravel
22 - 23 Gravel(?); no return; drill reports drills like gravel
TEST HOLE NUMBER: 584
LOCATION: 118N-54W-27CBBB
LEGAL LOCATION: NW NW NW SW sec. 27, T. 118 N., R. 54 W.

1 - 30 Gravel, orange-brown, medium to coarse, sandy; oxidized; some clay at 21 feet

TEST HOLE NUMBER: 585
LOCATION: 118N-54W-28ABAB
LEGAL LOCATION: NW NE NW NE sec. 28, T. 118 N., R. 54 W.

0 - 1 Sand, brown, very course; pea-sized gravel; dry
21 - 30 Gravel, brown, pea-sized; viscous clay present

TEST HOLE NUMBER: 586
LOCATION: 118N-54W-28BCBB
LEGAL LOCATION: NW NW SW NW sec. 28, T. 118 N., R. 54 W.

3 - 4 Sand, orange-brown, fine to coarse, clayey, silty; oxidized

TEST HOLE NUMBER: 587
LOCATION: 118N-54W-28DADD
LEGAL LOCATION: SE SE NE SE sec. 28, T. 118 N., R. 54 W.

1 - 21 Gravel, very coarse
21 - 34 Sand; saturated

TEST HOLE NUMBER: 588
LOCATION: 118N-54W-28DADD 1
LEGAL LOCATION: SE SE NE SE sec. 28, T. 118 N., R. 54 W.

2 - 30 Sand, brown, fine to medium, clayey; oxidized, moist; some gravel; saturated at 15 feet; more clay content below 25 feet

TEST HOLE NUMBER: 589
LOCATION: 118N-54W-29CD
LEGAL LOCATION: SE SW sec. 29, T. 118 N., R. 54 W.

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8 - 74 Gravel, very coarse; with boulders

TEST HOLE NUMBER: 590
LOCATION: 118N-54W-31BDDED
LEGAL LOCATION: SE SE NW sec. 31, T. 118 N., R. 54 W.

0 - 6 Gravel, very coarse; dry; medium-fine sand

TEST HOLE NUMBER: 591
LOCATION: 118N-54W-31CBBC
LEGAL LOCATION: SW NW SW sec. 31, T. 118 N., R. 54 W.

2 - 7 Gravel
TEST HOLE NUMBER: 592
LOCATION: 118N-54W-31CCAB
LEGAL LOCATION: NW NE SW SW sec. 31, T. 118 N., R. 54 W.
1 - 4 Sand and gravel, brown, coarse sand, fine to coarse gravel, very silty; oxidized, dry
4 - 17 Sand and gravel, red-brown, fine to coarse sand, fine to medium gravel, slightly silty, slightly clayey; oxidized, dry
17 - 20 Sand, brown, fine to coarse, very clayey, silty; oxidized, saturated; few pebbles

TEST HOLE NUMBER: 593
LOCATION: 118N-54W-31CCDD 1
LEGAL LOCATION: SE SE SW SW sec. 31, T. 118 N., R. 54 W.
PRELIMINARY LOG — SUBJECT TO CHANGE
7 - 18 Gravel and sand; mostly medium gravel
23 - 29 Gravel and sand

TEST HOLE NUMBER: 594
LOCATION: 118N-54W-31CCDD 2
LEGAL LOCATION: SE SE SW SW sec. 31, T. 118 N., R. 54 W.
PRELIMINARY LOG — SUBJECT TO CHANGE
0 - 18 Sand and gravel
21 - 40 Gravel and sand

TEST HOLE NUMBER: 595
LOCATION: 118N-54W-32AACC
LEGAL LOCATION: SW SW NE NE sec. 32, T. 118 N., R. 54 W.
1 - 3 Gravel, tan-brown, coarse, sandy; dry
3 - 15 Sand, brown, coarse; oxidized, dry; some gravel; abandoned hole at 15 feet, unable to penetrate boulders

TEST HOLE NUMBER: 596
LOCATION: 118N-54W-32ABCC
LEGAL LOCATION: SW SW NW NE sec. 32, T. 118 N., R. 54 W.
0 - 5 Sand, coarse to fine, gravelly
5 - 9 Sand, dark-brown, medium; moist
9 - 19 Sand, dull-gray, medium; moist
19 - 29 Sand and clay, dark-tan, medium sand; no large pebbles, clayey

TEST HOLE NUMBER: 597
LOCATION: 118N-54W-32BA
LEGAL LOCATION: NE NW sec. 32, T. 118 N., R. 54 W.
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* THIS LOG CONTAINS UNVERIFIED INFORMATION *
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4 - 25 Sand, very fine
25 - 38 Sand, coarse

TEST HOLE NUMBER: 598
LOCATION: 118N-54W-32CBA

85
LEGAL LOCATION: NE NW SW SW sec. 32, T. 118 N., R. 54 W.

0 - 5 Gravel, medium to coarse; some fine gravel
5 - 7 Gravel, coarse
7 - 16 Gravel, medium to fine; coarse sand

TEST HOLE NUMBER: 599
LOCATION: 118N-54W-32DAAA
LEGAL LOCATION: NE NE SE SE sec. 32, T. 118 N., R. 54 W.

0 - 14 Gravel, brown, medium to coarse, sandy, poorly sorted; oxidized, dry
14 - 38 Sand, brown, medium to coarse, clayey; oxidized, moist to saturated; some gravel

TEST HOLE NUMBER: 600
LOCATION: 118N-54W-32DABB
LEGAL LOCATION: NW NW NE SE sec. 32, T. 118 N., R. 54 W.

4 - 21 Sand and gravel, brown, fine to coarse sand, medium to coarse gravel, clayey, silty; oxidized, moist at 15 feet

TEST HOLE NUMBER: 601
LOCATION: 118N-54W-32DADD
LEGAL LOCATION: SE SE NE SE sec. 32, T. 118 N., R. 54 W.

1 - 28 Gravel, brown, medium to coarse, sandy; oxidized; saturated at 28 feet

TEST HOLE NUMBER: 602
LOCATION: 118N-54W-32DDBA
LEGAL LOCATION: NE NW SE SE sec. 32, T. 118 N., R. 54 W.

1 - 8 Sand and gravel, brown, medium to coarse sand, coarse gravel; oxidized, dry; some clay; abandoned hole at 8 feet due to very coarse gravel

TEST HOLE NUMBER: 603
LOCATION: 118N-54W-33DADD
LEGAL LOCATION: SE SE SE SE sec. 33, T. 118 N., R. 54 W.

1 - 5 Gravel and sand, brown, fine to coarse gravel, medium to coarse sand; oxidized, dry
5 - 6 Sand, red-brown, coarse; oxidized, dry
6 - 45 Gravel, red-brown, fine to coarse, sandy; oxidized, moist; some clay

TEST HOLE NUMBER: 604
LOCATION: 118N-54W-34CADAA
LEGAL LOCATION: NE SE NE SW sec. 34, T. 118 N., R. 54 W.

6 - 30 Sand, reddish-brown, coarse; scattered coarse gravel, dry

TEST HOLE NUMBER: 605
LOCATION: 118N-54W-34CBBB
LEGAL LOCATION: NW NW SW SW sec. 34, T. 118 N., R. 54 W.

0 - 35 Sand, reddish-brown, coarse; dry
TEST HOLE NUMBER: 606
LOCATION: 118N-54W-35CDBA
LEGAL LOCATION: NE SE NW SW sec. 35, T. 118 N., R. 54 W.

3 - 6  Sand, black, coarse; clay present
6 - 10  Sand, very coarse; pea-sized gravel, clay present
21 - 67  Gravel, blackish-gray, pea-sized; clay present, becoming fairly clean at about 50 to 60 feet

TEST HOLE NUMBER: 607
LOCATION: 118N-54W-35CCDD
LEGAL LOCATION: SE SE SW SW sec. 35, T. 118 N., R. 54 W.

1 - 10  Sand and gravel, brown, fine to medium sand, fine gravel, very silty; oxidized, dry
14 - 38  Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, silty; oxidized, dry

TEST HOLE NUMBER: 608
LOCATION: 118N-54W-35CDA
LEGAL LOCATION: NE SE SW SW sec. 35, T. 118 N., R. 54 W.

24 - 40  Gravel, brown, pea-sized; clay present

TEST HOLE NUMBER: 609
LOCATION: 118N-54W-36HBCA
LEGAL LOCATION: NE SW NW NW sec. 36, T. 118 N., R. 54 W.

1 - 2  Gravel, medium

TEST HOLE NUMBER: 610
LOCATION: 118N-55W-02AAD
LEGAL LOCATION: SE NE NE sec. 02, T. 118 N., R. 55 W.

0 - 6  Sand, orange-brown, fine to medium, gravelly; oxidized
6 - 10  Sand, black-brown, fine to coarse; oxidized; some fine gravel
10 - 30  Sand, orange-brown, fine to coarse, gravelly; oxidized; saturated; some clay; coarse gravel from 17 to 20 feet

TEST HOLE NUMBER: 611
LOCATION: 118N-55W-02BBB
LEGAL LOCATION: NW NW NW NW sec. 02, T. 118 N., R. 55 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

2 - 5  Sand and gravel, orange, medium to coarse

TEST HOLE NUMBER: 612
LOCATION: 118N-55W-05CCA
LEGAL LOCATION: NE SW SW sec. 05, T. 118 N., R. 55 W.

1 - 3  Gravel and clay

TEST HOLE NUMBER: 613
LOCATION: 118N-45W-06AABA
LEGAL LOCATION: NE NW NE NE sec. 06, T. 118 N., R. 55 W.

20 - 27 Sand, tan-brown, fine to medium, very clayey, silty; saturated

TEST HOLE NUMBER: 614
LOCATION: 118N-35W-07DD
LEGAL LOCATION: SE SE sec. 07, T. 118 N., R. 55 W.

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3 - 45 Gravel

TEST HOLE NUMBER: 615
LOCATION: 118N-35W-12DDCD
LEGAL LOCATION: SE SW SE SE sec. 12, T. 118 N., R. 55 W.

3 - 10 Sand, orange-tan-brown, fine to coarse, clayey, silty, gravelly; oxidized

TEST HOLE NUMBER: 616
LOCATION: 118N-35W-14DDAD
LEGAL LOCATION: SE SW NE SE sec. 14, T. 118 N., R. 55 W.

0 - 1 Gravel, poorly sorted
1 - 16 Sand, poorly sorted; fine to medium gravel

TEST HOLE NUMBER: 617
LOCATION: 118N-35W-18ABB
LEGAL LOCATION: NW NW NW NW sec. 18, T. 118 N., R. 55 W.

0 - 20 Sand, orange-tan-brown, fine to coarse, clayey, silty; oxidized; less silt from 9 to 20 feet; some fine gravel
20 - 27 Gravel, orange-tan-brown, fine to medium; oxidized; clean

TEST HOLE NUMBER: 618
LOCATION: 118N-35W-18DDDA
LEGAL LOCATION: NE SE SE SE sec. 18, T. 118 N., R. 55 W.

1 - 3 Sand, very fine, well-sorted
3 - 21 Sand, fine to coarse; fine to medium gravel
21 - 26 Sand, fine to coarse

TEST HOLE NUMBER: 619
LOCATION: 118N-35W-18DDDDD
LEGAL LOCATION: SE SE SE sec. 18, T. 118 N., R. 55 W.

10 - 25 Gravel, red-tan-brown, fine to coarse, clayey, very silty; oxidized

TEST HOLE NUMBER: 620
LOCATION: 118N-35W-20DDDD
LEGAL LOCATION: SE SE SE sec. 20, T. 118 N., R. 55 W.

1 - 19 Sand, brown; very coarse; some fine, medium, and coarse sand; minor amounts of granules and small gravel

TEST HOLE NUMBER: 621
LOCATION: 118N-55W-21RCC
LEGAL LOCATION: SW SW SW NW sec. 21, T. 118 N., R. 55 W.

1 - 8 Sand brown, coarse, some medium and very coarse

TEST HOLE NUMBER: 622
LOCATION: 118N-55W-21DCDC
LEGAL LOCATION: SW SE SW SE sec. 21, T. 118 N., R. 55 W.

1 - 7 Gravel, fine; coarse sand; some medium sand and gravel

TEST HOLE NUMBER: 623
LOCATION: 118N-55W-23ADAA
LEGAL LOCATION: NE NE SE NE sec. 23, T. 118 N., R. 55 W.

2 - 4 Sand, yellow, medium; bands of crystalline gypsum

TEST HOLE NUMBER: 624
LOCATION: 118N-55W-25CCCD
LEGAL LOCATION: SE SW SW SW sec. 25, T. 118 N., R. 55 W.
PRELIMINARY LOG – SUBJECT TO CHANGE

1 - 26 Sand, orange, medium to coarse

TEST HOLE NUMBER: 625
LOCATION: 118N-55W-25DDDD
LEGAL LOCATION: SE SE SE SE sec. 25, T. 118 N., R. 55 W.

12 - 28 Gravel; some coarse sand

TEST HOLE NUMBER: 626
LOCATION: 118N-55W-26DDDC
LEGAL LOCATION: SW SW SE SE sec. 26, T. 118 N., R. 55 W.

4 - 6 Gravel and sand, brown, fine to medium gravel, fine to coarse sand, clayey; oxidized; some silt
6 - 9 Sand, brown, well-sorted; moist; clean; some pebbles, little clay
9 - 10 Gravel layer(7); poor return

TEST HOLE NUMBER: 627
LOCATION: 118N-55W-26DDDD
LEGAL LOCATION: SE SE SE SE sec. 26, T. 118 N., R. 55 W.

3 - 6 Sand and gravel; coarse sand to fine gravel; fairly clean
6 - 21 Sand, medium; high clay content
TEST HOLE NUMBER: 629
LOCATION: 118N-35W-24CCDC
LEGAL LOCATION: SW SW SE SE sec. 27, T. 118 N., R. 55 W.

16 - 17 Sand and gravel(?); poor return

TEST HOLE NUMBER: 629
LOCATION: 118N-35W-28CCDC
LEGAL LOCATION: SE SW SW SW sec. 28, T. 118 N., R. 55 W.

4 - 16 Sand, poorly sorted; fine to medium gravel
17 - 21 Sand, medium to coarse; fine to medium gravel, some clay

TEST HOLE NUMBER: 630
LOCATION: 118N-35W-28DDAD
LEGAL LOCATION: SE NE SE SE sec. 28, T. 118 N., R. 55 W.

1 - 2 Gravel, medium to coarse
16 - 39 Sand, fine

TEST HOLE NUMBER: 631
LOCATION: 118N-35W-29DDCC
LEGAL LOCATION: SW SW SE NW sec. 29, T. 118 N., R. 55 W.

4 - 11 Sand and gravel, brown, coarse sand, fine to medium gravel, clayey, oxidized, moist

TEST HOLE NUMBER: 632
LOCATION: 118N-35W-29DDCD
LEGAL LOCATION: SE NW NE SW sec. 29, T. 118 N., R. 55 W.

5 - 8 Sand and gravel, red-brown, medium to coarse sand, fine to coarse gravel, clayey, oxidized, dry
8 - 15 Sand and gravel, red-brown, medium to coarse sand, fine to medium gravel, very clayey, oxidized, dry
21 - 22 Sand, grey, medium to coarse, slightly clayey; unoxidized, moist

TEST HOLE NUMBER: 633
LOCATION: 118N-35W-29CBAA
LEGAL LOCATION: NE NE NW SW sec. 29, T. 118 N., R. 55 W.

4 - 5 Gravel, brown, medium, sandy; oxidized, moist; some coarse sand
5 - 11 Sand, brown, fine to medium; oxidized, saturated in 8 feet; some gravel

TEST HOLE NUMBER: 634
LOCATION: 118N-35W-29CBAD
LEGAL LOCATION: NE NE NW 1W sec. 29, T. 118 N., R. 55 W.

0 - 4 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
4 - 6 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, saturated
6 - 11 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, saturated
11 - 22 Sand, brown-gray, fine, clayey; partially oxidized, saturated; few fine pebbles

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TEST HOLE NUMBER: 635
LOCATION: 118N-35W-30A
LEGAL LOCATION: SE SE NE NE sec. 30, T. 118 N., R. 55 W.
1 -  14 Sand, brown, fine to coarse in the upper 3 feet; then becomes very coarse sand with gravel

TEST HOLE NUMBER: 636
LOCATION: 118N-35W-30A
LEGAL LOCATION: NE NE SE NE sec. 30, T. 118 N., R. 55 W.
9 -  13 Sand, medium to fine
18 -  30 Sand, medium to fine; some clay

TEST HOLE NUMBER: 637
LOCATION: 118N-35W-35A
LEGAL LOCATION: SE NE SE SE sec. 35, T. 118 N., R. 55 W.
4 -  22 Sand, fine
22 -  30 Sand, medium

TEST HOLE NUMBER: 638
LOCATION: 118N-35W-36A
LEGAL LOCATION: SE NE NE sec. 36, T. 118 N., R. 55 W.
2 -  11 Gravel, red-brown, fine to medium, sandy; oxidized, dry

TEST HOLE NUMBER: 639
LOCATION: 118N-35W-36A
LEGAL LOCATION: SW SW NW NE sec. 36, T. 118 N., R. 55 W.
1 -  3 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
3 -  11 Sand and gravel, red-brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 640
LOCATION: 118N-35W-38B
LEGAL LOCATION: NE NW NE NW sec. 36, T. 118 N., R. 55 W.
1 -  3 Sand and gravel, brown, fine sand, fine to medium gravel, very clayey, silty; oxidized, dry to moist
7 -  13 Sand and gravel, dark-brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized, moist
13 -  16 Sand and gravel, brown, fine to medium sand, fine to medium gravel, very clayey, silty; oxidized, saturated
25 -  35 Sand, gray, fine, clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 641
LOCATION: 118N-35W-41B
LEGAL LOCATION: NW SE NE NE sec. 01, T. 119 N., R. 51 W.
0 -  6 Sand and gravel, orange, fine sand, medium gravel, silty; oxidized, some clay
6 -  25 Sand and gravel, orange; fine sand, medium to coarse gravel, silty; oxidized, saturated; some clay
25 -  29 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized, saturated, more clay
TEST HOLE NUMBER: 642
LOCATION: 119N-51W-01BDDD
LEGAL LOCATION: SE SE NE NW sec. 01, T. 119 N., R. 51 W.

1  -  4 Sand and gravel, fine to medium sand, coarse gravel
4  -  23 Sand and gravel, fine to medium sand, medium gravel; bit rock at 23 feet; abandoned hole

TEST HOLE NUMBER: 643
LOCATION: 119N-51W-01CADC
LEGAL LOCATION: SW SE NE SW sec. 01, T. 119 N., R. 51 W.

1  -  20 Sand and gravel, fine to medium sand, medium gravel
30  -  34 Sand and gravel, coarse sand, medium gravel

TEST HOLE NUMBER: 644
LOCATION: 119N-51W-01CDDC
LEGAL LOCATION: SE SW SE SW sec. 01, T. 119 N., R. 51 W.

0  -  40 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, silty

TEST HOLE NUMBER: 645
LOCATION: 119N-51W-01DCDC
LEGAL LOCATION: SW SE SW SE sec. 01, T. 119 N., R. 51 W.

0  -  4 Sand, orange-brown, fine, silty, pebbly, with clay
4  -  10 Sand and gravel, orange-brown, fine sand, medium gravel, silty, clayey
10  -  14 Sand and gravel, orange-brown, fine sand, medium to coarse gravel, silty, clayey
14  -  19 Sand and gravel, orange-brown, fine sand, pea-size gravel, silty, clayey
19  -  26 Sand and gravel, orange-brown, fine sand, fine gravel, silty, with clay

TEST HOLE NUMBER: 646
LOCATION: 119N-51W-01DDDC 1
LEGAL LOCATION: SW SE SW SE sec. 01, T. 119 N., R. 51 W.

0  -  4 Sand, orange-brown, silty, clayey, pebbly
4  -  6 Sand and gravel, orange-brown, fine sand, medium gravel, silty, with clay; bit rock at 6 feet; abandoned hole

TEST HOLE NUMBER: 647
LOCATION: 119N-51W-02CBBC
LEGAL LOCATION: SW NW NW SW sec. 02, T. 119 N., R. 51 W.

1  -  2 Sand, red-brown, fine to medium, pebbly
2  -  13 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, silty; oxidized
13  -  17 Sand, brown, fine

TEST HOLE NUMBER: 648
LOCATION: 119N-51W-02CBBC
LEGAL LOCATION: SW NW NW NW sec. 03, T. 119 N., R. 51 W.

0  -  5 Sand, orange-brown, fine, silty; oxidized
5  -  12 Sand, tan-brown, fine to coarse; oxidized; some fine gravel
12  -  20 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; oxidized
20  -  24 Sand and gravel, brown, fine to medium sand, fine to medium gravel; clayey; oxidized

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TEST HOLE NUMBER: 649
LOCATION: 19N-51W-03DDDA
LEGAL LOCATION: NE SE SE SE sec. 03, T. 119 N., R. 51 W.

1 - 12 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 650
LOCATION: 19N-51W-09AAAB
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

4 - 15 Sand, orange-brown, fine to coarse, clayey; oxidized, some gravel stringers; hit rock at 15 feet, abandoned hole

TEST HOLE NUMBER: 651
LOCATION: 19N-51W-09AAAB 1
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

4 - 13.5 Sand, orange-brown, fine to coarse, clayey; oxidized, some gravel stringers; hit rock at 13 feet, abandoned hole

TEST HOLE NUMBER: 652
LOCATION: 19N-51W-09AAAB 2
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

9 - 17 Sand, tan-yellow-brown, fine sand, silty; oxidized; some fine gravel

TEST HOLE NUMBER: 653
LOCATION: 19N-51W-10DAAAB
LEGAL LOCATION: NW NE SE sec. 10, T. 119 N., R. 51 W.

0 - 8 Sand, red
8 - 10 Sand, gray
15 - 20 Sand, gray

TEST HOLE NUMBER: 654
LOCATION: 19N-51W-10DAAAB
LEGAL LOCATION: NE NW NE SE sec. 10, T. 119 N., R. 51 W.

0 - 20 Sand, red
20 - 28 Sand, gray

TEST HOLE NUMBER: 655
LOCATION: 19N-51W-10DDBB
LEGAL LOCATION: NW NW SE SE sec. 10, T. 119 N., R. 51 W.

2 - 30 Sand, medium

TEST HOLE NUMBER: 656
LOCATION: 19N-51W-14BAAD
LEGAL LOCATION: SE NE NE NW sec. 14, T. 119 N., R. 51 W.

5 - 31 Sand, fine to medium; some gravel; wet; saturated at 31 feet
TEST HOLE NUMBER: 657
LOCATION: 119N-51W-15ABB
LEGAL LOCATION: NW NW NW NE sec. 15, T. 119 N., R. 51 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
3 - 29 Sand, gray, fine to medium; minor amount of clay

TEST HOLE NUMBER: 658
LOCATION: 119N-51W-15CCA 1
LEGAL LOCATION: NE SW SW SW sec. 15, T. 119 N., R. 51 W.
16 - 17 Sand and gravel, dark-gray, fine to coarse sand, little fine gravel; slightly moist
17 - 18 Sand, brownish-gray, fine, slightly silty; moist

TEST HOLE NUMBER: 659
LOCATION: 119N-51W-15CCA 2
LEGAL LOCATION: NE SW SW SW sec. 15, T. 119 N., R. 51 W.
16 - 17 Sand and gravel, dark-gray, fine to coarse sand, little fine gravel; slightly moist
17 - 18 Sand, brownish-gray, fine, slightly silty; moist

TEST HOLE NUMBER: 660
LOCATION: 119N-51W-16ABAB
LEGAL LOCATION: NW NE NW NE sec. 16, T. 119 N., R. 51 W.
1 - 2 Sand, tan, fine to very fine, silty; oxidized
2 - 5 Sand, orange-brown, fine to very fine, silty; oxidized
5 - 7 Sand, orange-brown, fine to very fine, silty, clayey; oxidized
7 - 22 Sand, orange-brown, fine to very fine, silty; oxidized
22 - 29 Sand, orange-brown-gray, fine to very fine, silty, pebbly; oxidized; some clay

TEST HOLE NUMBER: 661
LOCATION: 119N-51W-21BCBC
LEGAL LOCATION: SW NW SW NW sec. 21, T. 119 N., R. 51 W.
0 - 6 Sand and gravel, brown, fine to medium sand, fine to medium gravel, silty; oxidized

TEST HOLE NUMBER: 662
LOCATION: 119N-51W-23BB
LEGAL LOCATION: NW NW sec. 23, T. 119 N., R. 51 W.
4 - 8 Sand, coarse
8 - 24 Gravel and sand, coarse
24 - 34 Sand, coarse to medium

TEST HOLE NUMBER: 663
LOCATION: 119N-51W-23DCCD
LEGAL LOCATION: SE SW SW SE sec. 23, T. 119 N., R. 51 W.
1 - 23 Gravel, medium to coarse, very clayey, slightly sandy; oxidized, moist
23 - 29 Gravel, fine to medium, very clayey, sandy; oxidized, saturated

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TEST HOLE NUMBER: 664
LOCATION: 119N-51W-24BBB
LEGAL LOCATION: NW NW NW sec. 24, T. 119 N., R. 51 W.

0 - 12 Sand and gravel, burnt-orange-brown, fine to coarse sand, fine to medium gravel; oxidized
12 - 21 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel; oxidized; some coarse gravel stringers
21 - 34 Gravel, orange-brown, fine to medium, sandy; oxidized

TEST HOLE NUMBER: 665
LOCATION: 119N-51W-24CDD
LEGAL LOCATION: SE SW SE SW sec. 24, T. 119 N., R. 51 W.

0 - 7 Sand and gravel, tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; tough drilling
7 - 9 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; sheared tip off; abandoned hole

TEST HOLE NUMBER: 666
LOCATION: 119N-51W-26AAAA
LEGAL LOCATION: NE NE NE NE sec. 26, T. 119 N., R. 51 W.

2 - 7 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized
12 - 32 Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, clayey; oxidized; very moist

TEST HOLE NUMBER: 667
LOCATION: 119N-51W-26DDD
LEGAL LOCATION: SE SE SE SE sec. 26, T. 119 N., R. 51 W.

2 - 28 Sand, brown; with gravel

TEST HOLE NUMBER: 668
LOCATION: 119N-51W-27DDD
LEGAL LOCATION: SW SE SE sec. 27, T. 119 N., R. 51 W.

6 - 40 Gravel

TEST HOLE NUMBER: 669
LOCATION: 119N-51W-29ABAB
LEGAL LOCATION: NW NE NW NE sec. 29, T. 119 N., R. 51 W.

1 - 5 Sand and gravel, brown, fine to medium sand, fine to medium gravel, silty; oxidized
7 - 8 Gravel, very coarse; unable to penetrate past 8 feet; abandoned hole

TEST HOLE NUMBER: 670
LOCATION: 119N-51W-29DCCC
LEGAL LOCATION: SW SW SW SE sec. 29, T. 119 N., R. 51 W.

7 - 14 Sand, yellow-orange to tan-brown, clayey, silty; oxidized, saturated; some fine to medium gravel

TEST HOLE NUMBER: 671
LOCATION: 119N-51W-29DCCC 1

95
LEGAL LOCATION: SW SW SW SE sec. 29, T. 119 N., R. 51 W.

- 8 - 9  Gravel, medium to coarse, silty; oxidized; saturated
- 9 - 25  Sand and gravel; poor return; driller reports driller found sand and gravel
- 25 - 37  Sand, tan-brown, fine to coarse, silty, clayey; saturated

TEST HOLE NUMBER: 672
LOCATION: 119N-51W-31CCCD

LEGAL LOCATION: SE SW SW SW sec. 31, T. 119 N., R. 51 W.
PRELIMINARY LOG — SUBJECT TO CHANGE

- 3 - 8  Sand and gravel, yellow-brown

TEST HOLE NUMBER: 673
LOCATION: 119N-51W-31DDDD

LEGAL LOCATION: SE SE SE SE sec. 31, T. 119 N., R. 51 W.

- 1 - 13  Sand and gravel; medium to coarse

TEST HOLE NUMBER: 674
LOCATION: 119N-51W-33BAAA

LEGAL LOCATION: NE NE NE NW sec. 33, T. 119 N., R. 51 W.

- 15 - 29  Sand, tan-brown, very fine to medium, silty, clayey; oxidized; saturated

TEST HOLE NUMBER: 675
LOCATION: 119N-51W-33B33C

LEGAL LOCATION: SW NW SW NW sec. 33, T. 119 N., R. 51 W.

- 1 - 7  Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty; oxidized
- 18 - 24  Sand, orange-tan-brown, fine to coarse, silty; oxidized; saturated

TEST HOLE NUMBER: 676
LOCATION: 119N-51W-35BABA

LEGAL LOCATION: NE NW NE NW sec. 35, T. 119 N., R. 51 W.

- 1 - 8  Sand, fine to medium, clayey, slightly sandy; oxidized

TEST HOLE NUMBER: 677
LOCATION: 119N-51W-36CBBB

LEGAL LOCATION: NW NW NW SW sec. 36, T. 119 N., R. 51 W.

- 4 - 48  Gravel, fine to medium, slightly sandy, very clayey; oxidized, dry; saturated at 10 feet

TEST HOLE NUMBER: 678
LOCATION: 119N-52W-03CDDD

LEGAL LOCATION: SE SE SW SW sec. 03, T. 119 N., R. 52 W.

- 7 - 8  Gravel, very coarse; no penetration; abandoned hole after 4 tries; pseudo end depth

TEST HOLE NUMBER: 679
LOCATION: 119N-52W-03DCCD

96
LEGAL LOCATION: SE SW SW SE sec. 03, T. 119 N., R. 52 W.

8 - 9 Gravel, very coarse; could not penetrate

TEST HOLE NUMBER: 660
LOCATION: 119N-52W-09BCCC
LEGAL LOCATION: SW SW SW NW sec. 09, T. 119 N., R. 52 W.

3 - 18 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty; oxidized; some cobbble-size gravel
18 - 24 Gravel, gray, coarse, clayey, silty; some sand
24 - 43 Gravel, fine to coarse, silty; some sand; moist; saturated at 38 feet

TEST HOLE NUMBER: 681
LOCATION: 119N-52W-09CBCC
LEGAL LOCATION: NW NW SW NW sec. 09, T. 119 N., R. 52 W.

1 - 6 Sand and gravel, gray-brown, fine to medium sand, fines to medium gravel, silty, clayey; partially oxidized (light brown)
6 - 10 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized

TEST HOLE NUMBER: 682
LOCATION: 119N-52W-12AHBA
LEGAL LOCATION: NE NW NW NE sec. 12, T. 119 N., R. 52 W.

5 - 30 Sand and gravel, yellow-brown, medium to coarse sand, fine to medium gravel, clayey, silty; oxidized; saturated at 11 feet

TEST HOLE NUMBER: 683
LOCATION: 119N-52W-12BCCC
LEGAL LOCATION: SW SW SW SW sec. 12, T. 119 N., R. 52 W.

2 - 4 Sand, orange-brown, fine, silty; oxidized
4 - 8 Sand and gravel, orange-brown, fine sand, fine to medium gravel, silty; oxidized
8 - 12 Gravel, coarse; little return
14 - 16 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized; saturated
16 - 34 Gravel, gray-brown, fine to medium, clayey; unoxidized; saturated

TEST HOLE NUMBER: 684
LOCATION: 119N-52W-14BCCB
LEGAL LOCATION: NW NW SW NW sec. 14, T. 119 N., R. 52 W.

1 - 7 Sand and gravel, orange-brown, fine sand, fine to coarse gravel, silty; oxidized
7 - 15 Sand and gravel, tan-brown, fine to coarse sand, fine gravel, silty; oxidized; saturated

TEST HOLE NUMBER: 685
LOCATION: 119N-52W-16BCCB
LEGAL LOCATION: NW NW NW NW sec. 16, T. 119 N., R. 52 W.

2 - 4 Gravel, tan-brown, fine to coarse, sandy; oxidized
4 - 7 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine to medium gravel, oxidized
7 - 11 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine gravel, oxidized, saturated; some silt
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 5</td>
<td>Sand and gravel, dark-gray-brown, fine to medium sand, fine to medium gravel, silty; oxidized</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17 - 48</td>
<td>Sand, tan-reddish-brown, medium to coarse, clayey, silty; oxidized; saturated; some fine to medium gravel</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 11</td>
<td>Sand and gravel, gray-brown, fine to medium sand, fine gravel, silty</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 20</td>
<td>Sand and gravel, brown, fine sand, fine to medium gravel, silty; oxidized; saturated as 9 feet</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRELIMINARY LOG ... SUBJECT TO CHANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 12</td>
<td>Sand and gravel, medium sand to medium gravel; tan clay</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 25</td>
<td>Sand and gravel, medium to coarse</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, silty, oxidized</td>
<td></td>
</tr>
<tr>
<td>2 - 10</td>
<td>Sand and gravel, brown-black, coarse sand, fine to medium gravel, silty; oxidized; wet; some clay</td>
<td></td>
</tr>
<tr>
<td>10 - 30</td>
<td>Sand and gravel, golden-tan-brown, fine to coarse sand, fine gravel, silty, clayey; oxidized; saturated</td>
<td></td>
</tr>
</tbody>
</table>

<p>| TEST HOLE NUMBER: 693  | LOCATION: 119N-52W-32DDAA  | 98  |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>Sand and gravel, yellow-tan-brown, fine to coarse sand, fine to coarse gravel; oxidized</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>Gravel, tan-brown, fine to medium, sandy; oxidized; some silt</td>
</tr>
<tr>
<td>7</td>
<td>16</td>
<td>Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, very clayey, silty; oxidized; wet</td>
</tr>
<tr>
<td>23</td>
<td>31</td>
<td>Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, silty, clayey at 30 feet; oxidized, saturated</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 694  
**LOCATION:** 119R-53W-38UBBB  
**LEGAL LOCATION:** NW NW NW NW sec. 18, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>Gravel, medium to coarse; poor return</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 695  
**LOCATION:** 119R-53W-19CDDD  
**LEGAL LOCATION:** SE SE SW SW sec. 19, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>Sand, tan-brown, fine to medium, clayey, silty, pebbly; oxidized; some gravel</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>Gravel, tan-brown, coarse, silty, sandy; oxidized</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>Sand, tan-brown, fine, silty, pebbly; oxidized</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 696  
**LOCATION:** 119R-53W-30CDDC  
**LEGAL LOCATION:** SW SS SE SW sec. 30, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>Gravel, orange-brown, fine to medium, silty; oxidized</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 697  
**LOCATION:** 119R-53W-31ABBA  
**LEGAL LOCATION:** NE NW NW NE sec. 31, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>17</td>
<td>Gravel, coarse to cobble-size; could not penetrate past 17 feet; abandoned hole</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 698  
**LOCATION:** 119R-53W-32CCBC  
**LEGAL LOCATION:** SW SW NW SW sec. 32, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>25</td>
<td>Sand</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 699  
**LOCATION:** 119R-53W-32CDDD  
**LEGAL LOCATION:** SE SE SW SW sec. 32, T. 119 N., R. 53 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>11</td>
<td>Sand, yellow-tan-brown, fine to coarse, very clayey, silty; oxidized; saturated</td>
</tr>
</tbody>
</table>

**TEST HOLE NUMBER:** 700  
**LOCATION:** 119R-54W-01CDDC  
**LEGAL LOCATION:** SE SW SE SW sec. 01, T. 119 N., R. 54 W.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>Sand, orange-brown, fine to medium, pebbly; oxidized</td>
</tr>
</tbody>
</table>
TEST HOLE NUMBER: 701
LOCATION: 119N-54W-65CCBB
LEGAL LOCATION: NW NW SW SW sec. 05, T. 119 N., R. 54 W.
1 - 6 Sand, tan-brown, very fine, silty; oxidized

TEST HOLE NUMBER: 702
LOCATION: 119N-54W-32AB24
LEGAL LOCATION: NW NE NW NE sec. 13, T. 119 N., R. 54 W.
0 - 6 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 703
LOCATION: 119N-54W-20CCCC
LEGAL LOCATION: SW SW SW SW sec. 20, T. 119 N., R. 54 W.
12 - 17 Gravel, tan-yellow-brown, silty, pebbly; oxidized (outwash)

TEST HOLE NUMBER: 704
LOCATION: 119N-54W-26DDDD
LEGAL LOCATION: SE SE SE NW sec. 26, T. 119 N., R. 54 W.
8 - 18 Sand, fine

TEST HOLE NUMBER: 705
LOCATION: 119N-54W-34CDDC
LEGAL LOCATION: SE SW SE SW sec. 34, T. 119 N., R. 54 W.
4 - 7 Sand, orange-tan-brown, fine to coarse, silty, very gravelly; oxidized; wet
7 - 15 Sand, orange-tan-brown, fine to coarse, very clayey, silty; oxidized; saturated

TEST HOLE NUMBER: 706
LOCATION: 119N-54W-36DDDD
LEGAL LOCATION: SE SE SE SE sec. 36, T. 119 N., R. 54 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
15 - 68 Sand, coarse; to medium gravel; many clay stringers; oxidized

TEST HOLE NUMBER: 707
LOCATION: 119N-54W-36DDDD
LEGAL LOCATION: SE SE SE SE sec. 36, T. 119 N., R. 54 W.
4 - 5 Gravel, mottle-tan-brown, fine to medium, sandy; oxidized
5 - 7 Sand; orange-tan-brown, fine to coarse, silty; oxidized
15 - 16 Gravel, fine to cobbles; could not penetrate past 16 feet; abandoned hole

TEST HOLE NUMBER: 708
LOCATION: 119N-55W-18CCCC
LEGAL LOCATION: NW SW SW SW sec. 18, T. 119 N., R. 55 W.
6 - 8 Sand, fine, slightly gravelly

100
8 - 9 Sand, fine, slightly gravelly, saturated
9 - 26 Sand, fine, silty, clayey, some pebbles

TEST HOLE NUMBER: 709
LOCATION: 119N-35W-19BBBC1
LEGAL LOCATION: SW NW NW NW sec. 19, T. 119 N., R. 55 W.
0 - 36 Sand and gravel, medium to coarse sand, fine to medium gravel; clay layer from 26 to 28 feet

TEST HOLE NUMBER: 710
LOCATION: 119N-35W-19BBBC2
LEGAL LOCATION: SW NW NW NW sec. 19, T. 119 N., R. 55 W.
5 - 14 Sand, brown, coarse to very coarse, with some gravel

TEST HOLE NUMBER: 711
LOCATION: 119N-35W-20BBCC1
LEGAL LOCATION: NW SW SW NW sec. 20, T. 119 N., R. 55 W.
0 - 21 Sand, brown, medium to coarse; with some gravel

TEST HOLE NUMBER: 712
LOCATION: 119N-35W-20BBCC2
LEGAL LOCATION: NW SW SW NW sec. 20, T. 119 N., R. 55 W.
0 - 17 Sand, brown, medium to coarse; with some gravel

TEST HOLE NUMBER: 713
LOCATION: 119N-35W-20BBCC
LEGAL LOCATION: SW SW SW NW sec. 20, T. 119 N., R. 55 W.
1 - 4 Gravel, poorly sorted

TEST HOLE NUMBER: 714
LOCATION: 119N-35W-20BBDD
LEGAL LOCATION: SE SE NW SE sec. 28, T. 119 N., R. 55 W.
15 - 31 Gravel and rock, yellow

TEST HOLE NUMBER: 715
LOCATION: 119N-35W-29AAAA
LEGAL LOCATION: NE NE NE NE sec. 29, T. 119 N., R. 55 W.
9 - 12 Sand, yellow-brown, coarse to very coarse

TEST HOLE NUMBER: 716
LOCATION: 119N-35W-29ABB
LEGAL LOCATION: NW NW NE NE sec. 29, T. 119 N., R. 55 W.
5 - 15 Sand, brown, medium to coarse; with some gravel, granules, and very coarse sand grains
<table>
<thead>
<tr>
<th>Test Hole Number</th>
<th>Location</th>
<th>Legal Location</th>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>717</td>
<td>19N-55W-29AABB 2</td>
<td>NW NW NE NE sec. 29, T. 119 N., R. 55 W.</td>
<td>9 - 29</td>
<td>Sand, brown, coarse to very coarse; with some gravel</td>
</tr>
<tr>
<td>718</td>
<td>19N-55W-29BDDD</td>
<td>SE SE NE NW sec. 29, T. 119 N., R. 55 W.</td>
<td>1 - 4</td>
<td>Gravel, orange-tan-brown, fine to coarse, clayey, silty, oxidized; dry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 - 6</td>
<td>Sand, orange-tan-brown, fine to coarse, silty, oxidized; some fine gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 - 10</td>
<td>Sand, gray-tan, fine to coarse, clayey, silty; oxidized; saturated at 8 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 17</td>
<td>Sand, tan-brown, fine to coarse, clayey, silty; oxidized; saturated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17 - 22</td>
<td>Sand, gray-tan-brown, fine to coarse, very clayey, silty; unoxidized; some fine gravel</td>
</tr>
<tr>
<td>719</td>
<td>19N-55W-33DDAA</td>
<td>NE NE SE SE sec. 33, T. 119 N., R. 55 W.</td>
<td>0 - 2</td>
<td>Gravel, poorly sorted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 - 6</td>
<td>Sand, medium to fine; some fine gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 - 9</td>
<td>Gravel, fine; coarse to medium sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 - 13</td>
<td>Sand, medium to fine; silt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13 - 27</td>
<td>Sand, coarse to medium</td>
</tr>
<tr>
<td>720</td>
<td>19N-55W-34AAAD</td>
<td>SE NE NE NE sec. 34, T. 119 N., R. 55 W.</td>
<td>7 - 8</td>
<td>Sand and clay, fine, well-sorted sand</td>
</tr>
<tr>
<td>721</td>
<td>19N-55W-34BCCC</td>
<td>SW SW SW NW sec. 34, T. 119 N., R. 55 W.</td>
<td>0 - 18</td>
<td>Sand, brown, medium to coarse; secondary amounts of fine and very coarse sand, trace of gravel</td>
</tr>
<tr>
<td>722</td>
<td>19N-55W-34CABA</td>
<td>NW NW NE SW sec. 34, T. 119 N., R. 55 W.</td>
<td>7 - 10</td>
<td>Gravel, brown; small gravel up to 3/8-inch with coarse and very coarse sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 - 41</td>
<td>Sand, gray, medium to very coarse; minor amounts of gravel</td>
</tr>
<tr>
<td>723</td>
<td>19N-55W-34CACA</td>
<td>SW NE SE SW sec. 34, T. 119 N., R. 55 W.</td>
<td>6 - 17</td>
<td>Sand, brown, coarse to very coarse</td>
</tr>
<tr>
<td>724</td>
<td>19N-55W-34CABC</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
LEGAL LOCATION: NW SW NW SW sec. 34, T. 119 N., R. 55 W.

8 - 22 Sand, brown, very coarse; with 1/4-inch gravel, also granules and coarse sand, minor amounts of fine and medium sand

TEST HOLE NUMBER: 725
LOCATION: 119N-55W-34CD6B
LEGAL LOCATION: NW NW SW SW sec. 34, T. 119 N., R. 55 W.

4 - 10 Sand, brown, medium to very coarse

TEST HOLE NUMBER: 726
LOCATION: 119N-55W-34CD6A
LEGAL LOCATION: NE NW SE SW sec. 34, T. 119 N., R. 55 W.

5 - 11 Sand, brown, very coarse to coarse; poorly sorted

TEST HOLE NUMBER: 727
LOCATION: 119N-55W-35CB6B
LEGAL LOCATION: NW SW NW SW sec. 35, T. 119 N., R. 55 W.

0 - 1 Gravel, orange-tan-brown, medium to coarse, very silty, very clayey, oxidized
APENDIX B. List of test holes in Codington County, South Dakota, which encountered sand or gravel within 25 feet of the land surface and are located within the boundary of the Lake Traverse Indian Reservation.

Lithologic descriptions, as listed, have been condensed from data contained in logs on file at the South Dakota Geological Survey, 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.

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Sand, fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>118N-32W-04DDCC R</td>
<td>SW SW SE SE sec. 04, T. 118 N., R. 52 W.</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
<td>Sand</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Sand, fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>118N-32W-05A1BB R</td>
<td>NW NW NW NE sec. 05, T. 118 N., R. 52 W.</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>Sand, fine</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>24</td>
<td>Sand and gravel, fine to coarse sand, fine gravel, slightly clayey, saturated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Sand, fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>118N-32W-06CDDD R</td>
<td>SE SE SE SW sec. 06, T. 118 N., R. 52 W.</td>
<td>17</td>
</tr>
<tr>
<td>17</td>
<td>25</td>
<td>Sand and gravel, gray-brown, fine to medium sand, fine to medium gravel, very clayey, silty, saturated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Sand, fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>118N-32W-09ABBB R</td>
<td>NW NW NW SEC sec. 10, T. 118 N., R. 52 W.</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>20</td>
<td>Sand, fine</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>Sand, fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>118N-32W-15BAGA R</td>
<td>NE NW NW NW sec. 15, T. 118 N., R. 52 W.</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>Sand, brown, medium to coarse, slightly clayey, gravelly, oxidized, damp</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey, oxidized, damp</td>
<td></td>
</tr>
</tbody>
</table>

104
8 - 10 Sand, brown, fine to coarse, clayey; oxidized, moist; few fine pebbles
10 - 12 Sand, brown, fine to coarse, clayey, oxidized, saturated; few pebbles
12 - 38 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 7
LOCATION: 118N-52W-15BBB R
LEGAL LOCATION: NW NW NW sec. 15, T. 118 N., R. 52 W.
12 - 19 Gravel, fine, silty
19 - 36 Gravel, fine

TEST HOLE NUMBER: 8
LOCATION: 118N-52W-16ABB R
LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.
2 - 9 Sand, brown, fine to coarse; few pebbles, saturated at 7 feet, oxidized

TEST HOLE NUMBER: 9
LOCATION: 118N-52W-16ABB 1R
LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.
3 - 36 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 10
LOCATION: 118N-52W-16ABBB 2R
LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.
PRELIMINARY LOG – SUBJECT TO CHANGE
3 - 37 Sand, medium

TEST HOLE NUMBER: 11
LOCATION: 118N-52W-16CCCC R
LEGAL LOCATION: SW SW SW SW sec. 16, T. 118 N., R. 52 W.
3 - 35 Sand, medium to coarse

TEST HOLE NUMBER: 12
LOCATION: 118N-52W-16CDDD R
LEGAL LOCATION: SE SE SE SW sec. 16, T. 118 N., R. 52 W.
4 - 17 Sand and gravel; brown, fine to coarse sand, fine to medium gravel, slightly silty; oxidized
17 - 18 Gravel, coarse; poor return

TEST HOLE NUMBER: 13
LOCATION: 118N-52W-16DDDD R
LEGAL LOCATION: SE SE SE SE sec. 16, T. 118 N., R. 52 W.
3 - 25 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 14
LOCATION: 118N-52W-21ADAA R

105
LEGAL LOCATION: NE NE SE NE sec. 21, T. 118 N., R. 52 W.

5 - 6 Sand, brown, fine to coarse, clayey, poorly sorted; oxidized, dry; some gravel
12 - 14 Sand, brown, fine to coarse, clayey, gravelly, poorly sorted; oxidized, moist
14 - 24 Gravel, brown, medium to coarse, clayey, sandy; oxidized, moist; saturated at 21 feet

TEST HOLE NUMBER: 15
LOCATION: 118N-52W-21CCC R
LEGAL LOCATION: SW SW SW SW sec. 21, T. 118 N., R. 52 W.

6 - 65 Sand, brown, medium; with occasional pebbles, water at 64 feet

TEST HOLE NUMBER: 16
LOCATION: 118N-52W-21DDD R
LEGAL LOCATION: SW SE SE sec. 21, T. 118 N., R. 52 W.

1 - 5 Sand, fine
5 - 10 Sand and gravel
10 - 15 Gravel; some sand
15 - 30 Sand

TEST HOLE NUMBER: 17
LOCATION: 118N-52W-21DDD R
LEGAL LOCATION: SE SE SE sec. 21, T. 118 N., R. 52 W.

9 - 24 Sand; some clay

TEST HOLE NUMBER: 18
LOCATION: 118N-52W-22BBB R
LEGAL LOCATION: NW NW NW sec. 22, T. 118 N., R. 52 W.

0 - 14 Sand, red; some clay
14 - 34 Sand, brown; some clay

TEST HOLE NUMBER: 19
LOCATION: 118N-52W-22BBBA R
LEGAL LOCATION: NE NW NW NW sec. 22, T. 118 N., R. 52 W.

1 - 33 Sand, coarse; some pebbles

TEST HOLE NUMBER: 20
LOCATION: 118N-52W-27BBAB R
LEGAL LOCATION: NW NE NW NW NW sec. 27, T. 118 N., R. 52 W.

5 - 20 Sand and gravel, medium

TEST HOLE NUMBER: 21
LOCATION: 119N-52W-01BCC R
LEGAL LOCATION: SW SW NW NW sec. 01, T. 119 N., R. 52 W.

1 - 6 Sand and gravel, yellow-brown, fine sand, fine to medium gravel, silty; oxidized
6 - 11 Sand, tan-brown, fine, well-sorted, silty, oxidized; some pebbles
<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>7-9</td>
<td>Gravel, brown, fine to medium, silty, sandy; oxidized</td>
</tr>
<tr>
<td>9-11</td>
<td>Sand, brown, fine to medium, silty; oxidized; some pebbles</td>
</tr>
<tr>
<td>11-15</td>
<td>Sand, brown, fine to medium, very clayey, very silty, pebbly, subrounded, poorly sorted; oxidized</td>
</tr>
<tr>
<td>3-4</td>
<td>Gravel, coarse</td>
</tr>
<tr>
<td>4-9</td>
<td>Sand, medium to coarse, silty; some gravel</td>
</tr>
<tr>
<td>9-14</td>
<td>Gravel</td>
</tr>
<tr>
<td>14-24</td>
<td>Sand, medium to coarse</td>
</tr>
<tr>
<td>24-36</td>
<td>Sand, medium</td>
</tr>
<tr>
<td>1-11</td>
<td>Sand and gravel, coarse to medium</td>
</tr>
<tr>
<td>2-6</td>
<td>Sand, medium to coarse</td>
</tr>
<tr>
<td>0-4</td>
<td>Sand and gravel, orange-tan-brown, very fine to coarse sand, fine gravel, silty; oxidized; dry</td>
</tr>
<tr>
<td>4-12</td>
<td>Sand, tan-brown, very fine to coarse, very silty, very clayey; oxidized; saturated</td>
</tr>
<tr>
<td>12-25</td>
<td>Sand, tan-green, very fine to coarse, very clayey, very silty; oxidized; saturated</td>
</tr>
<tr>
<td>25-35</td>
<td>Sand and gravel, olive-gray, fine to coarse sand, fine gravel, clayey, silty; unoxidized; saturated</td>
</tr>
<tr>
<td>0-20</td>
<td>Sand, orange-tan-brown, fine to coarse, silty, clayey; oxidized; some fine gravel; wet at 15 feet</td>
</tr>
<tr>
<td>20-48</td>
<td>Sand, olive-gray, fine to coarse, silty, clayey; unoxidized; some fine gravel; saturated</td>
</tr>
<tr>
<td>TEST HOLE NUMBER: 29</td>
<td>LOCATION: 119N-52W-05CDDC R</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>3 - 23</td>
<td>Sand, tan-brown, fine to coarse, very clayey, silty; oxidized, some fine gravel; saturated at 4 feet</td>
</tr>
<tr>
<td>23 - 41</td>
<td>Sand, gray-tan-brown, fine to coarse, very clayey, silty; mostly oxidized, some fine gravel; gravel stringer at 40 feet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 30</th>
<th>LOCATION: 119N-52W-07AAAA R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized</td>
</tr>
<tr>
<td>4 - 10</td>
<td>Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty, clayey; oxidized; moist; coarse gravel stringer from 6 to 8 feet</td>
</tr>
<tr>
<td>10 - 15</td>
<td>Sand and gravel, yellow-orange-tan-brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized; saturated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 31</th>
<th>LOCATION: 119N-52W-07D-CDD R</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 17</td>
<td>Sand and gravel, medium to coarse; with large rocks and clay</td>
</tr>
<tr>
<td>20 - 42</td>
<td>Sand and gravel, brown, medium to coarse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 32</th>
<th>LOCATION: 119N-52W-07D-DDDD R</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 - 19</td>
<td>Sand, orange-brown, fine to coarse, silty; oxidized; some fine gravel</td>
</tr>
<tr>
<td>19 - 29</td>
<td>Sand and gravel, orange-brown, fine to coarse sand, coarse gravel, silty; oxidized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 33</th>
<th>LOCATION: 119N-52W-09DDDDD R</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 18</td>
<td>Sand and gravel</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 34</th>
<th>LOCATION: 119N-52W-10BCCB 1R</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 28</td>
<td>Sand and gravel, medium to coarse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER: 35</th>
<th>LOCATION: 119N-52W-10BCCB 2R</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 21</td>
<td>Sand and gravel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER:</th>
<th>LOCATION: 119N-52W-10BCCB 3R</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 19</td>
<td>Sand and gravel</td>
</tr>
</tbody>
</table>

108
TEST HOLE NUMBER: 36
LOCATION: 119N-52W-10B2CC 1R
LEGAL LOCATION: SW SW NW NW sec. 10, T. 119 N., R. 52 W.

5 - 22 Sand and gravel

TEST HOLE NUMBER: 37
LOCATION: 119N-52W-10BCBB 1R
LEGAL LOCATION: NW NW SW NW sec. 10, T. 119 N., R. 52 W.

5 - 19 Sand and gravel

TEST HOLE NUMBER: 38
LOCATION: 119N-52W-10BCBB 2R
LEGAL LOCATION: NW NW SW NW sec. 10, T. 119 N., R. 52 W.

4 - 20 Sand and gravel

TEST HOLE NUMBER: 39
LOCATION: 119N-52W-10BCCD R
LEGAL LOCATION: SE SW SW NW sec. 10, T. 119 N., R. 52 W.

2 - 10 Sand and clay
10 - 18 Sand and gravel

TEST HOLE NUMBER: 40
LOCATION: 119N-52W-10BCCD R
LEGAL LOCATION: SE SE SW SE sec. 10, T. 119 N., R. 52 W.

2 - 18 Sand and gravel

TEST HOLE NUMBER: 41
LOCATION: 119N-52W-10DDDD R
LEGAL LOCATION: SE SE SE SE sec. 10, T. 119 N., R. 52 W.

2 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 42
LOCATION: 119N-52W-15BBAA R
LEGAL LOCATION: NE NE NW NW sec. 15, T. 119 N., R. 52 W.

6 - 21 Sand, tan-brown, fine, rounded, well-sorted; oxidized; saturated; some silt; some gravel
21 - 30 Sand, tan-brown, fine to medium, rounded; oxidized; saturated; some pebbles; some gravel

TEST HOLE NUMBER: 43
LOCATION: 119N-52W-15DDCC R
LEGAL LOCATION: SW SW SW SE sec. 15, T. 119 N., R. 52 W.

1 - 20 Sand, medium

TEST HOLE NUMBER: 44
LOCATION: 119N-52W-15DDDA R

109
LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

3 - 11 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 45
LOCATION: 119N-52W-15DDDA 1R
LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

2 - 9 Sand and gravel, dark-brown, fine to coarse sand, fine to medium gravel; saturated at 7 feet, oxidized

TEST HOLE NUMBER: 46
LOCATION: 119N-52W-15DDDA 2R
LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

Preliminary Log - Subject to change

2 - 14 Sand and gravel, orange, medium sand, medium gravel

TEST HOLE NUMBER: 47
LOCATION: 119N-52W-16CCD R
LEGAL LOCATION: SE SW SW sec. 16, T. 119 N., R. 52 W.

10 - 15 Sand

TEST HOLE NUMBER: 48
LOCATION: 119N-52W-17AAAA R
LEGAL LOCATION: NE NE NE NE sec. 17, T. 119 N., R. 52 W.

4 - 5 Gravel

TEST HOLE NUMBER: 49
LOCATION: 119N-52W-20CBBR
LEGAL LOCATION: SW NW SW NW sec. 20, T. 119 N., R. 52 W.

16 - 25 Sand and gravel, yellow-brown, fine to coarse sand, medium to coarse gravel, silty; oxidized; saturated

TEST HOLE NUMBER: 50
LOCATION: 119N-52W-20CCCC R
LEGAL LOCATION: SW SW SW SW sec. 20, T. 119 N., R. 52 W.

5 - 7 Sand and gravel; rocks

TEST HOLE NUMBER: 51
LOCATION: 119N-52W-20DDEDD R
LEGAL LOCATION: SE SE SE SE sec. 20, T. 119 N., R. 52 W.

4 - 9 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 52
LOCATION: 119N-52W-20DDEDD 1R

110
5 - 10 Sand and gravel, tan-brown, fine sand, fine to medium gravel, clayey, very silty; oxidized

TEST HOLE NUMBER: 53
LOCATION: 119N-52W-20+00 N 2R
LEGAL LOCATION: SE SE SE sec. 20, T. 119 N., R. 52 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

2 - 6 Sand, orange, medium to coarse
6 - 12 Gravel, coarse

TEST HOLE NUMBER: 54
LOCATION: 119N-52W-21AAAA R
LEGAL LOCATION: NE NE NE NE sec. 21, T. 119 N., R. 52 W.

1 - 48 Sand and gravel tan-brown, fine sand, fine to medium gravel, silty; oxidized; saturated at 33 feet; some clay

TEST HOLE NUMBER: 55
LOCATION: 119N-52W-21DDAA R
LEGAL LOCATION: NE NE SE SE sec. 21, T. 119 N., R. 52 W.

1 - 4 Gravel and sand, coarse
4 - 9 Sand, medium to coarse; grades into fine gravel and coarse sand
9 - 14 Gravel, fine; coarse sand
14 - 19 Gravel and sand, coarse
24 - 34 Gravel, coarse

TEST HOLE NUMBER: 56
LOCATION: 119N-52W-22AAAAA R
LEGAL LOCATION: NW NE NE NE sec. 22, T. 119 N., R. 52 W.

10 - 26 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, silty; oxidized; saturated at 10 feet

TEST HOLE NUMBER: 57
LOCATION: 119N-52W-22BBBB R
LEGAL LOCATION: NW NW NW NW sec. 22, T. 119 N., R. 52 W.

4 - 29 Sand, medium to coarse; medium gravel

TEST HOLE NUMBER: 58
LOCATION: 119N-52W-22CCCC R
LEGAL LOCATION: NW NW SW SW sec. 22, T. 119 N., R. 52 W.

0 - 16 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel; oxidized; some silt; coarse gravel stringers at 9 and 12 feet
16 - 22 Sand, orange-tan-brown, fine to coarse; oxidized; saturated; a little clay

TEST HOLE NUMBER: 59
LOCATION: 119N-52W-22DDCC R

111
<table>
<thead>
<tr>
<th>TEST HOLE NUMBER</th>
<th>LOCATION</th>
<th>LEGAL LOCATION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>119N-52W-22IDCD</td>
<td>SE SW SW SE sec. 22, T. 119 N., R. 52 W.</td>
<td>2 - 13 Sand and gravel, medium to coarse</td>
</tr>
<tr>
<td>61</td>
<td>119N-52W-26HCDC</td>
<td>SE SW SW SE sec. 22, T. 119 N., R. 52 W.</td>
<td>1 - 7 Sand and gravel, tan-brown, fine to medium sand, fine to coarse gravel, silty, oxidized</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 - 17 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel; oxidized; saturated; some silt and clay</td>
</tr>
<tr>
<td>62</td>
<td>119N-52W-26DAAA</td>
<td>SE SE SW NW sec. 26, T. 119 N., R. 52 W.</td>
<td>4 - 19 Sand and gravel, medium to coarse</td>
</tr>
<tr>
<td>63</td>
<td>119N-52W-26HBBB</td>
<td>SE NE NE SE sec. 26, T. 119 N., R. 52 W.</td>
<td>3 - 3 Gravel, coarse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 - 9 Sand, coarse; fine gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 - 19 Gravel, fine, silty</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>19 - 29 Sand, coarse; fine to coarse gravel, silt</td>
</tr>
<tr>
<td>64</td>
<td>119N-52W-27CCBB</td>
<td>NW NW NW NW sec. 27, T. 119 N., R. 52 W.</td>
<td>4 - 18 Sand, gray-tan brown, fine to very coarse, clayey; oxidized; saturated</td>
</tr>
<tr>
<td>65</td>
<td>119N-52W-27DDDD</td>
<td>NW NW SW SW sec. 27, T. 119 N., R. 52 W.</td>
<td>2 - 6 Sand, brown, fine to coarse, clayey; oxidized; little silt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 - 11 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, silty, clayey; saturated; gravel stringer at 10 to 11 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11 - 16 Sand and gravel, gray, fine to coarse sand, fine gravel, very clayey, silty; unoxidized; saturated</td>
</tr>
<tr>
<td>66</td>
<td>119N-52W-26AAGA</td>
<td>SE SE SE SE sec. 26, T. 119 N., R. 52 W.</td>
<td>2 - 4 Sand, yellow-tan, fine to coarse, silt; oxidized; some clay</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 - 15 Sand and gravel, medium to coarse</td>
</tr>
</tbody>
</table>
TEST HOLE NUMBER: 67
LOCATION: 119N-52W-33BAAA R
LEGAL LOCATION: NE NE NE NW sec. 33, T. 119 N., R. 52 W.

5 - 10 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey, silty; cattinized; saturated at 6 feet

TEST HOLE NUMBER: 68
LOCATION: 119N-52W-33B3DC R
LEGAL LOCATION: SW SE SW SE sec. 33, T. 119 N., R. 52 W.

2 - 18 Sand, brown; some coarse gravel, cobbles

TEST HOLE NUMBER: 69
LOCATION: 119N-52W-34BBBB R
LEGAL LOCATION: NW NW NW NW sec. 34, T. 119 N., R. 52 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

6 - 15 Sand and gravel, medium sand, medium gravel

TEST HOLE NUMBER: 70
LOCATION: 120N-52W-26AAAA R
LEGAL LOCATION: NE NE NE NE sec. 26, T. 120 N., R. 52 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

2 - 6 Sand and gravel, orange, medium sand, medium gravel

TEST HOLE NUMBER: 71
LOCATION: 120N-52W-27DDDD R
LEGAL LOCATION: SE SE SE SW sec. 27, T. 120 N., R. 52 W.

2 - 20 Sand

TEST HOLE NUMBER: 72
LOCATION: 120N-52W-28DDDD R
LEGAL LOCATION: SE SE SE SE sec. 28, T. 120 N., R. 52 W.

3 - 7 Sand, medium
7 - 33 Gravel, coarse

TEST HOLE NUMBER: 73
LOCATION: 120N-52W-29AAAA R
LEGAL LOCATION: NE NE NE NE sec. 29, T. 120 N., R. 52 W.

10 - 12 Sand, fine to medium

TEST HOLE NUMBER: 74
LOCATION: 120N-52W-30DDAA R
LEGAL LOCATION: NE NE NE SE sec. 30, T. 120 N., R. 52 W.

9 - 18 Sand and gravel, light-orange-brown, fine to coarse sand, fine to coarse gravel, very silty; cattinized
18 - 21 Sand and gravel, orange-brown, fine to coarse sand, fine gravel, silty; cattinized
21 - 23 Sand, gray-orange-brown, fine to coarse, very clayey, silty; cattinized

113
TEST HOLE NUMBER: 75
LOCATION: 120N-32W-31DDCC R
LEGAL LOCATION: SW SW SW SE sec. 31, T. 120 N., R. 52 W.

0 - 3 Gravel, orange-brown, fine to coarse, very silty; oxidized
7 - 13 Gravel, very coarse; poor return; could not penetrate past 13 feet; abandoned hole

TEST HOLE NUMBER: 76
LOCATION: 120N-32W-31DDCA R
LEGAL LOCATION: NE SW SE SE sec. 31, T. 120 N., R. 52 W.

1 - 43 Sand, orange-brown, very fine, clayey, silty; oxidized; some fine gravel; bit rock at 43 feet; abandoned hole

TEST HOLE NUMBER: 77
LOCATION: 120N-32W-32AAAA R
LEGAL LOCATION: NE NE NE NE sec. 32, T. 120 N., R. 52 W.

2 - 14 Sand, medium to coarse

TEST HOLE NUMBER: 78
LOCATION: 120N-32W-32AAAA 1R
LEGAL LOCATION: NE NE NE NE sec. 32, T. 120 N., R. 52 W.

3 - 6 Sand, brown, fine to coarse; dry to moist
6 - 10 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; saturated at 8 feet

TEST HOLE NUMBER: 79
LOCATION: 120N-32W-32BAJB R
LEGAL LOCATION: NW NE NE NW sec. 32, T. 120 N., R. 52 W.

0 - 12 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; wet at 7 feet
12 - 20 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, clayey, silty; unoxidized; saturated

TEST HOLE NUMBER: 80
LOCATION: 120N-32W-32BAAB R
LEGAL LOCATION: NE NW NE NW sec. 32, T. 120 N., R. 52 W.

2 - 9 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; could not penetrate past 9 feet; abandoned hole

TEST HOLE NUMBER: 81
LOCATION: 120N-32W-32DDCC R
LEGAL LOCATION: NW SW SW SE sec. 32, T. 120 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 16 Sand and gravel, orange, fine to medium sand, medium to coarse gravel, some clay
16 - 31 Sand, gray, fine to medium

TEST HOLE NUMBER: 82
LOCATION: 120N-32W-34BBBB B1R

114
LEGA L LOCATION: NW NW NN NW NN sec. 34, T. 120 N., R. 52 W.

4 - 6 Sand

TEST HOLE NUMBER: 63
LOCATION: 120N-52W-343853 2R
LEGAL LOCATION: NW NW NN NW NN sec. 34, T. 120 N., R. 52 W.

6 - 9 Sand, medium
APPENDIX C: List of land tracts in Codington County, South Dakota, which have been tested for sand and gravel by the South Dakota Department of Transportation or have been bonded with the intent to mine sand and gravel with the Office of Minerals and Mining, Department of Environment and Natural Resources.

EXPLANATION:

Column Description:

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

Land Tract 1

a. Landowner: JAMES OLSON - REVILLO
b. Location: NE¼ SE¼ sec. 14, T. 116 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 2

a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ sec. 18, T. 116 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 3

a. Landowner: M. WAGNER - WATERTOWN
b. Location: SW¼ sec. 18, T. 116 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 4

a. Landowner: LEO KLINE - WATERTOWN
b. Location: SW¼ sec. 30, T. 116 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 5

a. Landowner: ROBERT L. ENDRES - WATERTOWN
b. Location: NE¼ sec. 4, T. 116 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---
Land Tract 6
a. Landowner: NICK & JOHN KRANZ - WATERTOWN  
b. Location: SW¼ sec 4, T. 116 N., R. 52 W.  
c. Aggregate type: GRAVEL  
d. Deposit thickness (ft): 6 - 8  
e. Overburden thickness (ft): 2 - 4

Land Tract 7
a. Landowner: NICK & JOHN KRANZ - WATERTOWN  
b. Location: SW¼ SW¼ sec 4, T. 116 N., R. 52 W.  
c. Aggregate type: SAND  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---

Land Tract 8
a. Landowner: PAUL KINGSILIEN - WATERTOWN  
b. Location: NW¼ NE¼ sec 9, T. 116 N., R. 52 W.  
c. Aggregate type: SAND  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---

Land Tract 9
a. Landowner: PAUL KINGSILIEN - WATERTOWN  
b. Location: NE¼ NW¼ sec 9, T. 116 N., R. 52 W.  
c. Aggregate type: SAND  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---

Land Tract 10
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN  
b. Location: NE¼ sec 13, T. 116 N., R. 52 W.  
c. Aggregate type:  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---

Land Tract 11
a. Landowner: JAMES OLSON - REVILLO  
b. Location: NE¼ SE¼ sec 13, T. 116 N., R. 52 W.  
c. Aggregate type: ---  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---

Land Tract 12
a. Landowner: HALLET CONSTRUCTION CO. - WATERTOWN  
b. Location: W½ NE¼ sec 15, T. 116 N., R. 52 W.  
c. Aggregate type: SAND AND GRAVEL  
d. Deposit thickness (ft): ---  
e. Overburden thickness (ft): ---
Land Tract 13
a. Landowner: HALLET CONSTRUCTION CO. - WATERTOWN
b. Location: E1/4 NW1/4 sec. 15, T. 116 N., R. 52 W.
c. Aggregate type: SAND AND GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 14
a. Landowner: W. BRIGGS - WATERTOWN
b. Location: SE1/4 sec. 16, T. 116 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 15
a. Landowner: FRANCIS JUNGERS - WATERTOWN
b. Location: SE1/4 sec. 25, T. 116 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 16
a. Landowner: MANNERUD INC. - BROOKINGS
b. Location: S1/2 NW1/4 sec. 33, T. 116 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 17
a. Landowner: PEARL MCFARLAND - WATERTOWN
b. Location: E1/4 SW1/4 sec. 5, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 18
a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
b. Location: E1/4 SW1/4 sec. 5, T. 116 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 19
a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
b. Location: SE1/4 sec. 5, T. 116 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---
Land Tract 20

a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ SE¼ sec. 5, T. 116 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 21

a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ sec. 5, T. 116 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 22

a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
b. Location: NE¼ sec. 8, T. 116 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 23

a. Landowner: PORTER WHITE - WATERTOWN
b. Location: SE¼ sec. 8, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 7 +
e. Overburden thickness (ft): 4.5

Land Tract 24

a. Landowner: LEONARD LANOUE - WATERTOWN
b. Location: NE¼ sec. 9, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 25

a. Landowner: MARY MCFARLAND - WATERTOWN
b. Location: E½ NW¼ sec. 9, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 26

a. Landowner: DEPT. GAME, FISH & PARKS - PIERRE
b. Location: SW¼ sec. 9, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

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Land Tract 27

a. Landowner: NOT GIVEN
b. Location: SW 1/4 sec. 9, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 28

a. Landowner: NOT GIVEN
b. Location: SE 1/4 sec. 16, T. 116 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 8
e. Overburden thickness (ft): 1

Land Tract 29

a. Landowner: D. NAGELMIER - KAMPESKA
b. Location: NW 1/4 sec. 11, T. 116 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 30

a. Landowner: BERNARD KRANZ - ADDRESS NOT GIVEN
b. Location: NE 1/4 sec. 36, T. 116 N., R. 54 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 31

a. Landowner: NOT GIVEN
b. Location: W 1/4 SW 1/4 sec. 9, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 32

a. Landowner: W. M. McMAHON - WATERTOWN
b. Location: SE 1/4 sec. 9, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 12 +
e. Overburden thickness (ft): 1.8

Land Tract 33

a. Landowner: JAMES OLSON - REVILLO
b. Location: NE 1/4 SE 1/4 sec. 15, T. 117 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

120
Land Tract 34

a. Landowner: RAY STURN - KRANZBURG
b. Location: NW¼ sec. 15, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 35

a. Landowner: NOT GIVEN
b. Location: NW¼ sec. 16, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 36

a. Landowner: GLEN BUCHOLZ - WATERTOWN
b. Location: NW¼ sec. 19, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 37

a. Landowner: DEPT. OF TRANSPORTATION - PIERRE
b. Location: S¼ SW¼ sec. 19, T. 117 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 38

a. Landowner: ROBERT FOX - WATERTOWN
b. Location: S¼ SW¼ sec. 19, T. 117 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 39

a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ NW¼ NW¼ SW¼ sec. 19, T. 117 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 40

a. Landowner: CLARENCE BAUER - WATERTOWN
b. Location: NE¼ sec. 2, T. 117 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 5 +
e. Overburden thickness (ft): 1.5

121
Land Tract 41
a. Landowner: EDWARD FOX - WATERTOWN
b. Location: E1/4 NE1/4 sec. 18, T. 117 N., R. 52 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 42
a. Landowner: H. J. STURM - WATERTOWN
b. Location: W1/4 NE1/4 sec. 18, T. 117 N., R. 52 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): 6.5
e. Overburden thickness (ft): 0.5

Land Tract 43
a. Landowner: ALBERT STURM - WATERTOWN
b. Location: N1/4 SW1/4 sec. 18, T. 117 N., R. 52 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): 6.5
e. Overburden thickness (ft): 1.5

Land Tract 44
a. Landowner: EDWARD FOX - WATERTOWN
b. Location: SE1/4 sec 18, T. 117 N., R. 52 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 45
a. Landowner: HARRY WEAGLE - WATERTOWN
b. Location: NE1/4 sec. 22, T. 117 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 12
e. Overburden thickness (ft): 2.5

Land Tract 46
a. Landowner: JAMES OLSON - REVILLO
b. Location: NW1/4 NE1/4 sec. 22, T. 117 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 47
a. Landowner: HALLETT CONSTRUCTION CO. - ST. PETER, MN.
b. Location: SE1/4 sec. 26, T. 117 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---
Land Tract 48
a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
   b. Location: NE 1/4 sec. 27, T. 117 N., R. 52 W.
   c. Aggregate type: ---
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 49
a. Landowner: EDWARD & MARVIN ALJOE - WATERTOWN
   b. Location: NE 1/4 SE 1/4 sec. 33, T. 117 N., R. 52 W.
   c. Aggregate type: GRAVEL
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 50
a. Landowner: HALLET CONSTRUCTION CO. - ST. PETER, MN.
   b. Location: SW 1/4 NE 1/4 sec. 33, T. 117 N., R. 52 W.
   c. Aggregate type: ---
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 51
a. Landowner: EDWARD & MARVIN ALJOE - WATERTOWN
   b. Location: N 1/4 SE 1/4 sec. 33, T. 117 N., R. 52 W.
   c. Aggregate type: ---
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 52
a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
   b. Location: N 1/4 SW 1/4 SE 1/4 sec. 33, T. 117 N., R. 52 W.
   c. Aggregate type: ---
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 53
a. Landowner: ARCHIE LITTLE - WATERTOWN
   b. Location: E 1/4 S 1/4 SE 1/4 sec. 33, T. 117 N., R. 52 W.
   c. Aggregate type: GRAVEL
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 54
a. Landowner: V. E. MCBRIDGE - WATERTOWN
   b. Location: N 1/4 SW 1/4 sec. 34, T. 117 N., R. 52 W.
   c. Aggregate type: GRAVEL
   d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

123
Land Tract 55

a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
b. Location: SE 1/4 NW 1/4 sec. 34, T. 117 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 56

a. Landowner: NOT GIVEN
b. Location: SE 1/4 sec. 36, T. 117 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 57

a. Landowner: HAROLD BENBOUR - WATERTOWN
b. Location: SE 1/4 NE 1/4 sec. 7, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 11.7
e. Overburden thickness (ft): 1 - 2

Land Tract 58

a. Landowner: HAROLD BENBOUR - WATERTOWN
b. Location: SE 1/4 NE 1/4 sec. 7, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 8.5
e. Overburden thickness (ft): 1.5

Land Tract 59

a. Landowner: NOT GIVEN
b. Location: NE 1/4 NE 1/4 sec. 18, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 60

a. Landowner: ROBERT SCHWANDT - WATERTOWN
b. Location: NW 1/4 sec. 18, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 61

a. Landowner: VERN BELK - HENRY
b. Location: SE 1/4 sec. 18, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

124
Land Tract 62
a. Landowner: STATE OF SOUTH DAKOTA - PIERRE
b. Location: NE¼ SW¼ sec. 25, T. 117 N., R. 53 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 7
e. Overburden thickness (ft): 3

Land Tract 63
a. Landowner: W. F. WILLIAMS
b. Location: N¼ SE¼ SW¼ sec. 29, T. 117 N., R. 53 W.
c. Aggregate type: SAND AND FINE GRAVEL
d. Deposit thickness (ft): 10
e. Overburden thickness (ft): 2.5

Land Tract 64
a. Landowner: PAUL JONGELING - WATERTOWN
b. Location: SE¼ sec. 11, T. 117 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 9
e. Overburden thickness (ft): 1

Land Tract 65
a. Landowner: GENE JONGELING - WATERTOWN
b. Location: W¼ sec. 12, T. 117 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 66
a. Landowner: ROBERT SCHWANDT - WATERTOWN
b. Location: NE¼ sec. 18, T. 117 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 67
a. Landowner: E. DEVRIES - WATERTOWN
b. Location: SW¼ NE¼ sec. 9, T. 118 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 68
a. Landowner: E. DEVRIES - WATERTOWN
b. Location: NW¼ sec. 9, T. 118 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

125
Land Tract 69

a. Landowner: NOT GIVEN
b. Location: NE¼ sec. 10, T. 118 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 70

a. Landowner: HALLETT CONSTRUCTION CO. - ST. PETER, MN.
b. Location: SE¼ sec. 9, T. 118 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 71

a. Landowner: A. MCELHANY & D. MCELHANY - WATERTOWN
b. Location: NW¼ sec. 16, T. 118 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
   e. Overburden thickness (ft): ---

Land Tract 72

a. Landowner: UNION CENTRAL INSURANCE CO. - WATERTOWN
b. Location: NE¼ NW¼ sec. 17 T. 118 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6
e. Overburden thickness (ft): 2.5

Land Tract 73

a. Landowner: RAUVILLE SAND & GRAVEL - WATERTOWN
b. Location: SW¼ sec. 17, T. 118 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 74

a. Landowner: RAUVILLE SAND & GRAVEL - WATERTOWN
b. Location: S½ SE¼ sec. 17, T. 118 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 75

a. Landowner: JAMES OLSON - REVILLO
b. Location: NW¼ NE¼ sec. 23, T. 118 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

126
Land Tract 76

  a. Landowner: PETER ABRAM - WATERTOWN
  b. Location: NW¼ sec. 23, T. 118 N., R. 52 W.
  c. Aggregate type: GRAVEL
  d. Deposit thickness (ft): ---
  e. Overburden thickness (ft): ---

Land Tract 77

  a. Landowner: NOT GIVEN
  b. Location: NW¼ sec. 7, T. 118 N., R. 53 W.
  c. Aggregate type: GRAVEL
  d. Deposit thickness (ft): ---
  e. Overburden thickness (ft): ---

Land Tract 78

  a. Landowner: JOSPEH WENSING - ADDRESS NOT GIVEN
  b. Location: NW¼ sec. 8, T. 118 N., R. 53 W.
  c. Aggregate type: GRAVEL
  d. Deposit thickness (ft): 12
  e. Overburden thickness (ft): 1

Land Tract 79

  a. Landowner: W. GUSSEY - FLORENCE
  b. Location: NW¼ NW¼ sec. 8, T. 118 N., R. 54 W.
  c. Aggregate type: GRAVEL
  d. Deposit thickness (ft): ---
  e. Overburden thickness (ft): ---

Land Tract 80

  a. Landowner: CHRIS SPRINGER - FLORENCE
  b. Location: SW¼ sec. 9, T. 118 N., R. 54 W.
  c. Aggregate type: SAND
  d. Deposit thickness (ft): ---
  e. Overburden thickness (ft): ---

Land Tract 81

  a. Landowner: LÉONARD HECKATHORN - WATERTOWN
  b. Location: NW¼ sec. 10, T. 118 N., R. 54 W.
  c. Aggregate type: SAND
  d. Deposit thickness (ft): 4
  e. Overburden thickness (ft): 2

Land Tract 82

  a. Landowner: R. H. WALRATH - WATERTOWN
  b. Location: NE¼ SW¼ sec. 10, T. 118 N., R. 54 W.
  c. Aggregate type: SAND
  d. Deposit thickness (ft): 2 +
  e. Overburden thickness (ft): 0
Land Tract 83
a. Landowner: DICK BOETTCHERS - WATERTOWN
b. Location: NW¼ sec. 12, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 84
a. Landowner: ELIZABETH MARQUARDT - WATERTOWN
b. Location: NW¼ sec. 15, T. 118 N., R. 54 W.
c. Aggregate type: SAND
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 85
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SE¼ SW¼ sec. 26, T. 118 N., R. 54 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 86
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ SE¼ sec. 26, T. 118 N., R. 54 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 87
a. Landowner: HAROLD MULLER - FLORENCE
b. Location: E½ SW¼ sec. 26, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 11 +
e. Overburden thickness (ft): 0.5 - 6.0

Land Tract 88
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SE¼ SW¼ sec. 27, T. 118 N., R. 54 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 89
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SW¼ SE¼ sec. 27, T. 118 N., R. 54 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---
Land Tract 90
a. Landowner: THOMAS EPHO - FLORENCE
b. Location: W½ SE½ sec. 27, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 10.3
e. Overburden thickness (ft): 3.8

Land Tract 91
a. Landowner: EARL ROE - FLORENCE
b. Location: SE¼ NW¼ sec. 31, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 10
e. Overburden thickness (ft): 3

Land Tract 92
a. Landowner: SYLVESTER ROE - FLORENCE
b. Location: SW¼ SW¼ sec. 31, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 93
a. Landowner: EARL ROE - FLORENCE
b. Location: NE¼ NE¼ sec. 32, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 94
a. Landowner: EARL ROE - FLORENCE
b. Location: SW¼ sec. 32, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 13.3
e. Overburden thickness (ft): 2.3

Land Tract 95
a. Landowner: PETE HAUGEN - FLORENCE
b. Location: NE¼ sec. 34, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 96
a. Landowner: HAROLD MULLER - FLORENCE
b. Location: N½ NE¼ sec. 35, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6.3
e. Overburden thickness (ft): 1.8
Land Tract 97
a. Landowner: NOT GIVEN
b. Location: NW¼ sec. 36, T. 118 N., R. 54 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6.0
e. Overburden thickness (ft): 0.8

Land Tract 98
a. Landowner: GEORGE GROVES - WALLACE
b. Location: NE¼ NE¼ sec. 2, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6.5
e. Overburden thickness (ft): 3.0

Land Tract 99
a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SE¼ sec. 27, T. 118 N., R. 55 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 100
a. Landowner: RAY MCRODEN - HENRY
b. Location: NE¼ sec. 28, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 101
a. Landowner: GRAVER PETERSON - HENRY
b. Location: SE¼ sec. 29, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 102
a. Landowner: S. & H. CONSTRUCTION - CLARK
b. Location: W½ sec. 29, T. 118 N., R. 55 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 103
a. Landowner: W. E. ECK - HENRY
b. Location: NW¼ sec. 30, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 15.0
e. Overburden thickness (ft): 1.5
Land Tract 104

a. Landowner: EARL ROE - FLORENCE
b. Location: NE¼ sec. 36, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 12.4
e. Overburden thickness (ft): 2.1

Land Tract 105

a. Landowner: EARL ROE - FLORENCE
b. Location: NW¼ sec. 36, T. 118 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 106

a. Landowner: JOHN MORS - STOCKHOLM
b. Location: E1/4 SW¼ sec. 1, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 107

a. Landowner: NOT GIVEN
b. Location: NE¼ sec. 20, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 108

a. Landowner: HAROLD LARSON - SOUTH SHORE
b. Location: NE¼ sec. 23, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 18
e. Overburden thickness (ft): 1

Land Tract 109

a. Landowner: DEPT. OF TRANSPORTATION - PIERRE
b. Location: NE¼ NE¼ sec. 23, T. 119 N., R. 51 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 110

a. Landowner: KATE LARSON - SOUTH SHORE
b. Location: SW¼ NW¼ sec. 23, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6
e. Overburden thickness (ft): 2 +
Land Tract 111

a. Landowner: MILFORD HANSON - STOCKHOLM
b. Location: NE¼ sec. 26, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 9
e. Overburden thickness (ft): 1

Land Tract 112

a. Landowner: CHARLES WAEGE - SOUTH SHORE
b. Location: E¼ sec. 35, T. 119 N., R. 51 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 113

a. Landowner: NOT GIVEN
b. Location: NW¼ sec. 1, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 114

a. Landowner: WALLACE BUNDE - SOUTH SHORE
b. Location: NE¼ sec. 9, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 115

a. Landowner: VAN MILLS - WATERTOWN
b. Location: NW¼ sec. 10, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 116

a. Landowner: TINA BERRINGTON - SISSETON
b. Location: SW¼ sec. 10, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 117

a. Landowner: L. H. CHIZEK & A. CHIZEK - SOUTH SHORE
b. Location: SE¼ sec. 15, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 11.0
e. Overburden thickness (ft): 2.5

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Land Tract 118

a. Landowner: FOREST M. MARKVE - GOODWIN
b. Location: NW¼ sec. 26, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 8
e. Overburden thickness (ft): 2

Land Tract 119

a. Landowner: H. B. STREGE - NICOLLETT, MN.
b. Location: SW¼ sec. 27, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 120

a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
b. Location: SE¼ sec. 27, T. 119 N., R. 52 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 121

a. Landowner: MARIE BUNDE & ELSIE BUNDE - WATERTOWN
b. Location: E½ NW¼ sec. 34, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 122

a. Landowner: DARREL BUNDE & MAXIME BUNDE - WATERTOWN
b. Location: W½ NW¼ sec. 34, T. 119 N., R. 52 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 123

a. Landowner: DEXTER TOWNSHIP - FLORENCE
b. Location: E½ NW¼ sec. 31, T. 119 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 124

a. Landowner: DEXTER TOWNSHIP - FLORENCE
b. Location: W½ NE¼ sec. 31, T. 119 N., R. 53 W.
c. Aggregate type: ---
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

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Land Tract 125
a. Landowner: MRS. A. B. OWENS - FLORENCE
b. Location: NE¼ sec. 31, T. 119 N., R. 54 W.
c. Aggregate type: COARSE SAND
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 126
a. Landowner: NOT GIVEN
b. Location: SE¼ NE¼ sec. 19, T. 119 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 6.5
e. Overburden thickness (ft): 3.0

Land Tract 127
a. Landowner: NILS PAULSON - WALLACE
b. Location: SW¼ sec. 20, T. 119 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---

Land Tract 128
a. Landowner: CARL LOVICK - WALLACE
b. Location: SE¼ sec. 20, T. 119 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 8
e. Overburden thickness (ft): 2

Land Tract 129
a. Landowner: EINAR JORDETH - WALLACE
b. Location: SW¼ sec. 22, T. 119 N., R. 55 W.
c. Aggregate type: FINE SAND
d. Deposit thickness (ft): 6.0
e. Overburden thickness (ft): 1.4

Land Tract 130
a. Landowner: L. T. BREKK
b. Location: W¾ NE¼ sec. 29, T. 119 N., R. 55 W.
c. Aggregate type: GRAVEL
d. Deposit thickness (ft): 10.0 +
e. Overburden thickness (ft): 1.5

Land Tract 131
a. Landowner: NOT GIVEN
b. Location: SW¼ sec. 35, T. 119 N., R. 55 W.
c. Aggregate type: SAND AND GRAVEL
d. Deposit thickness (ft): ---
e. Overburden thickness (ft): ---